

# **Influence of Social Media on Rice Farmers Access to Agricultural Extension Services in Danggagan, Bukidnon.**

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## **ABSTRACT**

The rapid expansion of social media has transformed information dissemination across rural communities, offering new opportunities for enhancing agricultural extension delivery. This study examined the influence of social media on rice farmers' access to agricultural extension services in Danggagan, Bukidnon. Specifically, it aimed to assess the level of social media utilization among rice farmers, determine its influence on access to extension information, and identify challenges encountered in using social media as an extension tool.

The study used a descriptive-correlational research design involving rice farmers in selected barangays of Danggagan, Bukidnon. Data were gathered using a structured questionnaire and analyzed through descriptive statistics to determine the relationship between social media use and access to extension services. Key variables included frequency of social media use, types of platforms accessed, extension information obtained, and perceived usefulness of social media in supporting farm decision-making.

## **INTRODUCTION**

Agricultural extension services play a vital role in improving rice production by providing farmers with technical information, training, and advisory support. With the rapid expansion of digital technologies and smartphones in rural areas, social media has emerged as a potential channel for delivering timely and relevant agricultural information to farmers (Jimenez et al., 2025).

In the Philippines, programs promoting digital and social media use in farming are expanding, showing that farmers can benefit from platforms such as Facebook, YouTube, and messaging applications for accessing production tips, market information, and government programs. However, the extent to which rice farmers in specific municipalities like Danggagan, Bukidnon, utilise social media for extension-related purposes, and the factors that facilitate or hinder this use, remains underexplored.

Rice farmers in Bukidnon are increasingly exposed to digital tools and connectivity, yet traditional face-to-face extension and mass media channels still dominate in many communities. Understanding how personal, socioeconomic, supportive, and psychological attributes shape farmers' adoption and use of social media for extension can help tailor programs and policies suited to their needs (Alhassan et al., 2022).

Evaluating the influence of social media reveals its potential to enhance access to extension services through real-time information sharing and peer-to-peer learning, often surpassing the limitations of conventional face-to-face or print-based methods. This assessment considers the frequency, types, and perceived value of content accessed via social platforms, demonstrating how digital channels can deliver tailored, cost-effective support to rice farmers (ATI Region IV, 2025). Thus, this study aims to determine the Influence of social media on Rice Farmers' Access to Agricultural Extension Services in Danggagan, Bukidnon.

## **Objectives**

The study aimed to determine the relationship between social media use and rice farmers access to agricultural extension services in Danggagan, Bukidnon.

### Specific Objectives:

1. Describe the personal, socioeconomic, supportive, and psychological attributes of the rice farmers;
2. Determine the level of social media use among rice farmers in terms of:
  - Usage patterns
  - Types of social platforms; and
  - Engagement Activities
3. Determine the level of rice farmers access to agricultural extension services in terms of:
  - Awareness of social media as an extension provider; and
  - Participation in extension activities
4. Determine whether the significant relationships exist between social media use and rice farmers access to agricultural extension service; and
5. Identify the problems encountered by rice farmers in using social media for accessing information.

## METHODOLOGY

### Research Design

The study will use a quantitative descriptive-correlational method. The descriptive component was used to describe the personal, socioeconomic, supportive and psychological characteristics of the respondents, as well as their social media use and access to agricultural extension services. The correlational component was used to determine the strength and direction of the relationship between social media among rice farmers in Dangcagan, Bukidnon.

The study did not attempt to establish a cause-and-effect relationship. Rather, it examined whether variations in social media use were significantly associated with variations in farmers reported access to agricultural extension services.

### Locale of the Study

This study was carried out in selected barangays of the Municipality of Dangcagan, Bukidnon. The area was selected based on the presence of rice farmers, accessibility by land transportation, and a favorable peace and order condition that supported the conduct of the study.

### Respondents and Sampling Procedure

The respondents of the study were rice farmers from selected barangays of the Municipality of Dangcagan, Bukidnon. The list of qualified farmers was obtained from the Municipal Agriculture Office of Dangcagan, Bukidnon and used as the sampling frame for respondent selection. A complete enumeration sampling technique was employed, wherein all identified rice farmers were included in the study. In total, 30 rice farmers participated in the research.

### Data Gathering Techniques

Primary data were collected using a semi-structured survey administered through face-to-face interviews with rice farmers. The questionnaire was prepared in English and translated into Cebuano to ensure comprehension. Ethical clearance was obtained from the Institutional Ethics Review Committee of Central Mindanao University, and local permission was secured prior to data collection. Participation was voluntary, anonymity was guaranteed, and respondents could decline any question. Interviews were conducted at respondents' homes and

lasted approximately 30 minutes. Data were analyzed using descriptive statistics and Pearson product–moment correlation to examine relationships among study variables.

## Data Analysis and Statistical Treatment

The data gathered from 30 rice farmers were coded, tabulated and analyzed using descriptive and inferential statistical procedures. Frequency counts and percentages were used to summarize the personal, socioeconomic, supportive and psychological characteristics of the respondents. Mean scores used to describe the respondent’s level of social media use and their access to agricultural extension services in terms of usage patterns, types of social media platforms used, engagement activities, awareness, timeliness and relevance, and participation.

To determine the relationship between usage of social media and agricultural extension services access, the Pearson Product- Moment Correlation Coefficient (  $r$  ) was employed. The independent variable, social media use was presented by usage patterns, type of social media platforms used and engagement activities. The dependent variable, access to agricultural extension services was represented by awareness, timeliness and relevance, and participation. Pearson correlation was used to determine the strength and direction of the relationship between the variable. The level of significance was set at 0.05.

## RESULTS AND DISCUSSION

This chapter presents the results of the study on the influence of social media on rice farmer’s access to agricultural extension services in Dangcagan, Bukidnon.

### Personal Factor

#### Age

Figure 1 present the profile of the participants. Data revealed that one-fifth (40%) of the participants age group 46-55. The oldest was 75 years old and the youngest was 26 old, with the mean age of 39 years. This result indicates that participants are composed of middle-aged individual which means that the participants have a long experience and deep-rooted knowledge in terms of farming practices. This result is aligned with the study of Mwendwa et al. (2016), who indicated that majority of farmers engaging with social media for agricultural extension were aged around 42 years meaning they have substantial experience and actively adopt digital tools alongside traditional methods.

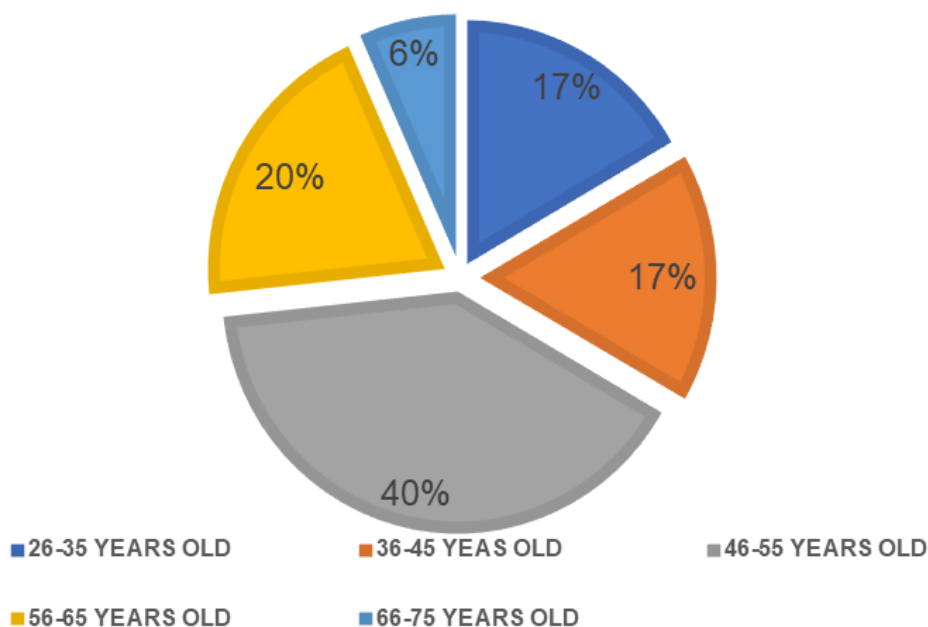


Figure 1. Distribution of participants according to age

## Sex

Figure 2 shows the sex of the participants. Data revealed that more than three-fifth (67%) is male and one-fourth is female. This result indicates that male farmers dominate participation in studies on social media's perceived role in agricultural extension, which implies they hold primary decision-making roles in technology adoption and information dissemination within farming communities. This finding aligns with the study of Mwalyagile (2024), who reported 65% male participation (258 males vs. 139 females) among rice farmers, noting higher male involvement in key extension-related activities like irrigation and input application, reflecting entrenched gender roles in agriculture.

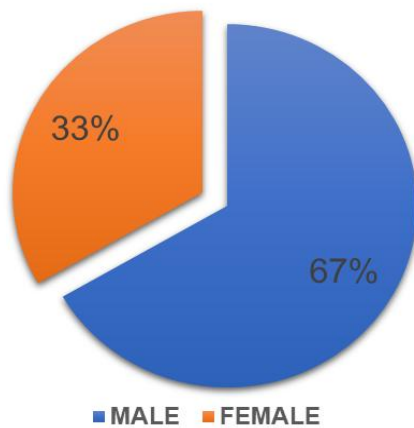


Figure 2. Distribution of participants according to sex

## Household Size

Figure 3 shows the distribution of participants according to household size. Results shows that less than one-fifth (37%) of the participants have 3-4 members. One-fourth (33%) have 5-6 members household size. The greatest household has 10 members, while the smallest has 1 member. This result indicates that participants come from small to medium-sized households which implies that farmers with moderate family labor resources are more likely to engage with social media for agricultural extension information. According to Oni (2024) Household Size of 5-8 members suggest family support enables participation in modern farming practices including information seek via digital means.

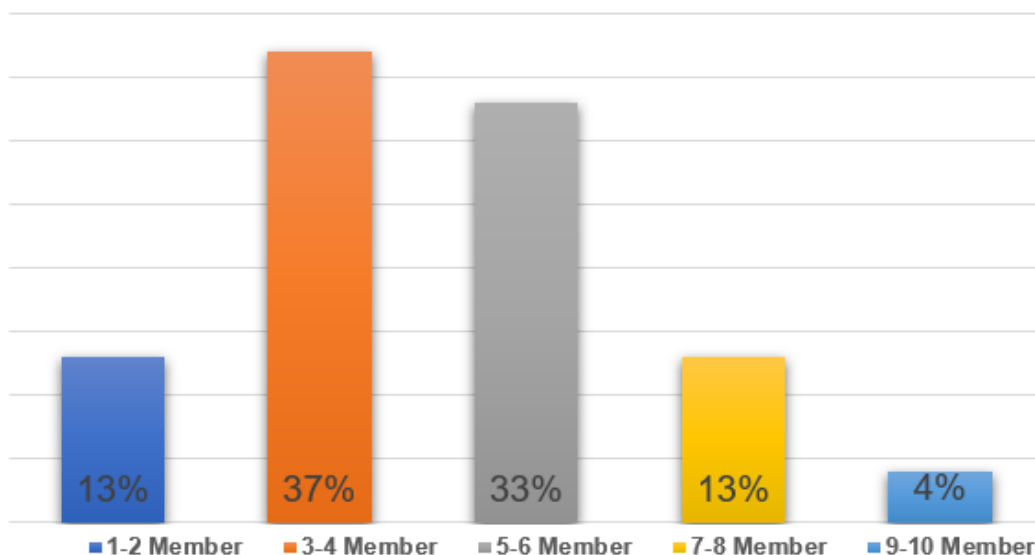


Figure 3. Distribution of participants according to household size

## Socioeconomic Factor

### Educational Attainment

Figure 4 shows the educational attainment of the participants. Majority of the participants were High school graduate (47%), followed by High School level (30%), College Graduate (13%), and College Level (10%). This distribution suggests improved literacy and cognitive readiness for comprehending social media-based extension services. Marquez-Baldapan (2023) reported 21% college-educated among Bukidnon rice farmers, associating higher attainment with better knowledge of paddy techniques and recommending tailored extensions, though elementary levels dominated at 49%, this contradicts the study's elevated profile possibly due to many other factors in local development programs. Moreover, SEARCA studies on Bukidnon lowlands noted average grade-six attainment but higher levels among younger farmers correlating to progressive practices like integrated pest management.

### EDUCATIONAL ATTAINMENT

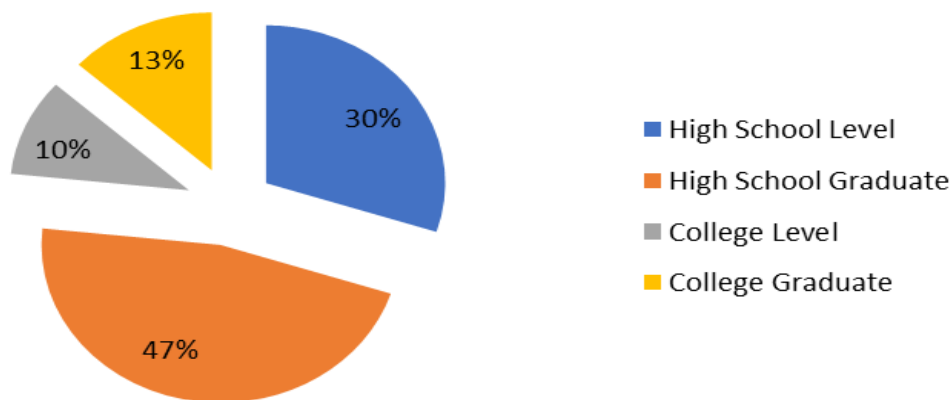


Figure 4. Distribution of Participants according to education attainment

### Ethnic Origin

Figure 5 shows the distributi of participants according to their ethnic origin. Data revealed that 44% of the participants were cebuano, followed by 23% boholanos, 17% bisaya, 10% Manobo, and 3% ilonggo and tagalog. The result shows diversity in ethnolinguistic groups, where dominant group- Cebuano, may leverage shared linguistic ties for social media information sharing, while smaller indigenous representations highlights potential cultural barriers. Similar study of Lasco et al. (2014) it was noted that 48% Cebuano migrants with better market integration versus 20% Manobo, correlating ethnic plurality to varied resilience in climate-adaptive farming disseminated through local digital channels.

### ETHNIC ORIGIN

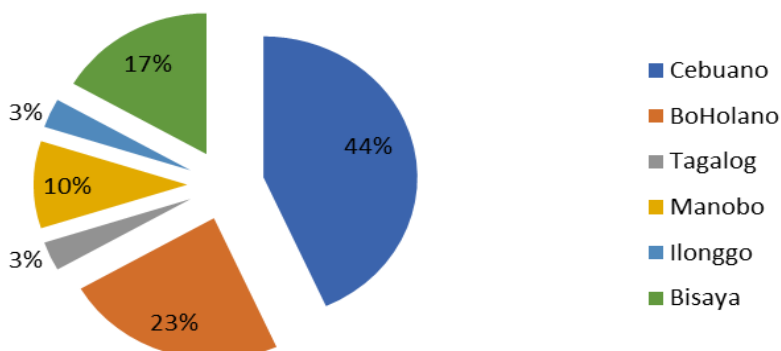
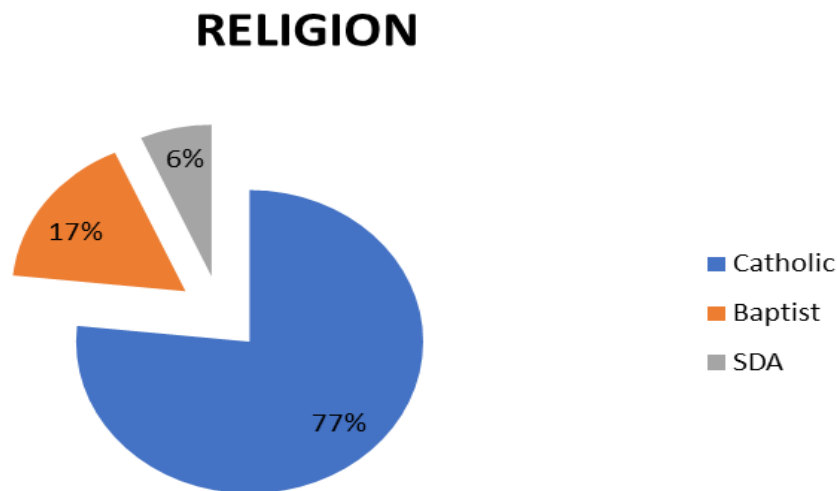


Figure 5. Distribution of participants according to ethnic origin

## Religion

Figure 6 presents the distribution of the participants according to their religion. Data reveals that 77% of the participants were catholic, followed by Baptist (17%) and Seventh-day Adventist (6%). This reflects the dominance of Christian demographics in rural Mindanao agricultural communities shaped by Spanish colonial legacies. Sumaylo et al. (2020) links catholic dominance to collective pesticide safety adoption via church networks, while Protestant minorities showed higher individual innovativeness. A UN-FAO report (2024) on interfaith rice cooperatives in Kabacan, Mindanao, highlighted Christian (predominantly Catholic) farmers at 75% cooperating with Muslims, attributing success to religious respect facilitating shared extension practices, mirroring Bukidnon's Catholic-Baptist dynamics in overcoming farming challenges.



## Annual Income

Table 1 shows the estimated annual income of the participants. Based on the result, 53% of the participants have an annual income range from Php 80,000-109,999. The highest income was Php200,000 while the lowest income was Php20,000. Sanglay (2021) documented similar low brackets (<100,000 PHP) among Philippine rice farmers, linking them to poor financial literacy and barriers to technology adoption. On the other hand, Sumaylo et al. (2020) found 69.3% of 300 farmers earning below 101,000 PHP annually, primarily non-owners with modest farms, mirroring Danggagan's constraints.

Table 1. Distribution of participants according to income in 2024

| Annual Income   | Frequency | Percentage |
|-----------------|-----------|------------|
| 50,000-79,999   | 6         | 20         |
| 80,000-109,999  | 16        | 53         |
| 110,000-139,999 | 1         | 3          |
| 140,000-169,999 | 5         | 17         |
| 170,000-200,000 | 2         | 7          |
| TOTAL           | 30        | 100        |

## Tenurial Status

Figure 7 presents the distribution of participants according to their tenurial status. Based on the data results, three-fifth (60%) of the participants were owners of their cultivated rice farms. Followed by tenants (30%), owner & lease (7%), and owner & tenant (3%). A SEARCA study on Bukidnon lowland rice farmers links ownership to progressive development needs and reduced problems in farming practices. Sumaylo et al. (2020) found 62% owner-cultivators in Mindanao rice farming communities, associating secure tenure. Similarly, Lasco

et al. (2014) in Lantapan, Bukidnon, observed similar owner dominance (55-65%) fostering resilience amid climate vulnerabilities, contrasting tenant constraints in resource access.

## TENURIAL STATUS

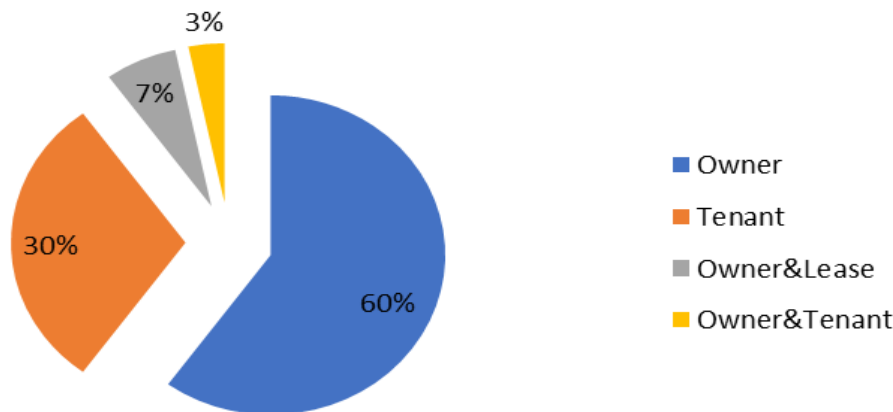


Figure 7. Distribution of participants according to tenurial status

## Supportive Factor

Table 2 presents the summary of the supportive factors influencing rice farmer's access to agricultural extension services in Danggagan, Bukidnon. Results indicate that only a small proportion of respondents attended agricultural seminars, while the majority reported non-attendance. Despite low seminar attendance, farmers continue to receive agricultural information, implying that social media platforms serve as alternative sources of extension knowledge. This finding supports the notion that ICT-based extension tools help overcome physical and logistical barriers associated with conventional extension delivery (Davis, 2008).

The respondents reported participation in several government-led agricultural programs such as the Guaranteed Access Program (GAP), Farmers Field School (FFS) for Rice, Corn, and Cacao, and the GOAT program, although participation varied across programs. This reflects the presence of agricultural interventions in the locality, but with uneven reach among farmers. Farmers who are active on social media platforms are more likely to learn about available programs and extension opportunities, reinforcing findings that digital communication improves access to institutional support (Mittal & Mehar, 2016).

Also, findings reveal that the majority of farmers receive technician visits once a month, while fewer experience visits twice a month or quarterly. Although regular visits indicate active extension efforts, the limited frequency highlights constraints in manpower and resources. The use of social media further strengthens this relationship by enabling continuous interaction beyond physical encounters. Through messaging applications and online groups, extension workers can respond to farmers' concerns, disseminate advisories, and provide timely feedback, consistent with the diffusion of innovations framework (Rogers, 2003).

Table 2. Distribution of participants according to supportive factors

| Supportive Factor                  | Key Findings                                        | Implication on Extension Access                               |
|------------------------------------|-----------------------------------------------------|---------------------------------------------------------------|
| Attendance in Seminars             | Majority did not attend seminars                    | Social media compensates for limited physical participation   |
| Exposure to Agricultural Programs  | Participation in GAP, FFS (Rice, Corn, Cacao), GOAT | Social media enhances awareness and information dissemination |
| Familiarity with Extension Workers | All respondents know an extension worker            | Digital communication strengthens trust and accessibility     |
| Frequency of Technician Visits     | Mostly once a month                                 | Social media bridges gaps between physical visits             |

## Psychological Factor

### Aspiration in Life

Table 3 presents the aspiration in life of the rice farmers. Data shows that they have a high aspiration in life, with a total mean of 4.06. Rice farmers indicates that they want to receive more training to improve their farming skills, with a highest mean of 4.40. this is followed by their aspiration to adopt more farming technologies, make their farm sustainable and achieve long term financial security- all with a mean of 4.37. These high aspirations highlights rice farmers' drive for skill-building and innovation, consistent with global patterns where psychological factors like motivation propel technology adoption for productivity gains (Ghimire et al., 2023). The top emphasis on training and sustainability aligns with Philippine studies showing farmers' high interest in digital extension and financial literacy programs to secure income and legacy farms (Cadavos et al., 2022; Lapitan et al., 2025). Furthermore, goals for technological uptake and environmental practices reflect findings from African and Asian contexts, where aspirations correlate with extension access to overcome barriers like climate risks (Kipkurgat et al., 2016; Nyarko & Kozári, 2021). Lower means for leadership (3.23) suggest opportunities to strengthen networking via community programs, amplifying overall high aspiration.

Table 3. Aspiration in Life

| INDICATORS                                                              | MEAN | DESCRIPTIVE RATING |
|-------------------------------------------------------------------------|------|--------------------|
| I want to receive more training to improve my farming skills.           | 4.40 | High               |
| I want to adopt more farming technologies.                              | 4.37 | High               |
| I aspire to make my farm more sustainable and environmentally friendly. | 4.37 | High               |
| I aim to achieve long term financial security through farming.          | 4.37 | High               |
| I want to pass a successful farm to the next generation.                | 4.27 | High               |
| I aspire to improve my skills in using digital tools for farming.       | 4.23 | High               |
| I aspire to increase my farm income in the coming years.                | 3.93 | High               |
| I aim to expand the size of my farm in the future.                      | 3.73 | High               |
| I aim to build stronger networks with fellow farmers.                   | 3.73 | High               |
| I aspire to become a recognized leader in my farming community.         | 3.23 | Moderate           |
| TOTAL                                                                   | 4.06 | High               |

4.51 – 5.00 – Very High

3.51 – 4.50 – High

2.51 – 3.50 – Moderate

1.51 – 2.50 – Low

1.00 – 1.50 – Very Low

Attitude of Farmers Towards the Influence of social media on Rice Farmer's Access to Agricultural Extension Services

Table 4 presents the attitudes of rice farmers towards the influence of social media on their access to agricultural extension services, revealing an overall positive attitude with a mean of 3.55. the highest means (3.70) were recorded as social media improves their farm decision-making and it motivates them to adopt new agricultural practices, highlighting strong endorsement of social media's role in enhancing cognitive and behavioural outcomes in farming. These are closely followed by their perception that social media is an effective tool for communication with other farmers (3.67), underscoring its value in fostering networks.

This agreeable stance aligns with studies showing social media bolsters decision-making and technology adoption among smallholder farmers by providing diverse, peer-validated information (Mittal & Mehar, 2016). Meanwhile, neutral perceptions on trust and timeliness suggest opportunities for verified content, consistent with research highlighting credibility challenges in rural digital extension (Aker, 2011; Ragasa & Niu, 2017).

Table 4. Attitude of farmers towards influence of social media

| INDICATORS                                                                        | MEAN | DESCRIPTIVE RATING |
|-----------------------------------------------------------------------------------|------|--------------------|
| Social media improves my decision-making in farm management.                      | 3.70 | Agree              |
| Using social media motivates me to adopt new agricultural practices               | 3.70 | Agree              |
| I believe social media is an effective tool for communicating with other farmers. | 3.67 | Agree              |
| I find social media useful for learning new farming techniques.                   | 3.60 | Agree              |
| Social media helps me easily access agricultural information.                     | 3.53 | Agree              |
| Social media has a positive impact on my overall farming productivity.            | 3.53 | Agree              |
| Social media encourages me to participate in agricultural discussions.            | 3.47 | Neutral            |
| I find social media easy to use for agricultural purposes.                        | 3.47 | Neutral            |
| I trust the agricultural content shared on social media.                          | 3.40 | Neutral            |
| Social media platforms provide timely updates relevant to my farm activities.     | 3.40 | Neutral            |
|                                                                                   | 3.55 | Agree              |

4.51 – 5.00 – Strongly Agree

3.51 – 4.50 – Agree

2.51 – 3.50 – Neutral

1.51 – 2.50 – Disagree

1.00 – 1.50 – Strongly Disagree

Influence of social media on Rice Farmer's Access to Agricultural Extension Services in Danggagan, Bukidnon

## Usage Patterns

### Frequency of Social Media Usage for Agricultural Information

Table 5 reveals the influence of social media on rice farmers' access to agricultural extension services in Danggagan, Bukidnon. The results show an overall mean of 3.32, indicating a neutral influence of social media in terms of frequency of use for agricultural information.

The highest mean was obtained by the statement "I frequently use social media to search for agricultural tips and advice" (3.50), suggesting that farmers occasionally rely on social media when seeking farming information. According to Aker (2011), mobile phones and social media platforms are often used by farmers as supplementary information sources rather than primary channels, especially in rural areas. The second highest mean was recorded for "I regularly follow agricultural pages or groups to stay informed" (3.40), implying that farmers value online agricultural communities. This finding is supported by Chowdhury et al. (2020), who found that farmers follow online agricultural groups to access timely updates and peer-shared experiences. The third highest mean ("I use social media more often than other sources to get updates about rice farming", (3.33) indicates that traditional sources such as extension workers and fellow farmers remain important. This aligns with Rivera and

Sulaiman (2009), who emphasized that conventional extension services continue to play a dominant role in farmers' decision-making.

Table 5. Distribution of participants according to the frequency of social media usage

| INDICATORS                                                                          | MEAN | DESCRIPTIVE RATING |
|-------------------------------------------------------------------------------------|------|--------------------|
| I frequently use social media to search for agricultural tips and advice.           | 3.50 | Neutral            |
| I regularly follow agricultural pages or groups to stay informed.                   | 3.40 | Agree              |
| I use social media more often than other sources to get updates about rice farming. | 3.33 | Neutral            |
| I check agricultural-related posts on social media almost every day.                | 3.20 | Neutral            |
| I check agricultural-related posts on social media almost every day.                | 3.17 | Neutral            |
| TOTAL                                                                               | 3.32 | Neutral            |

4.51 – 5.00 – Strongly Agree

3.51 – 4.50 – Agree

2.51 – 3.50 – Neutral

1.51 – 2.50 – Disagree

1.00 – 1.50 – Strongly Disagree

### Types of Social Media Platforms Used

Table 6 presents the types of social media platforms used by rice farmers. The overall mean of 3.99 indicates that farmers actively utilize various platforms for agricultural purposes. The highest means were observed for Facebook and YouTube (5.00). Facebook is widely used for networking and information exchange, while YouTube serves as a visual learning platform for farming practices. This finding is consistent with Klerkx, Jakku, and Labarthe (2019), who reported that visual and interactive platforms enhance farmers' understanding of complex agricultural techniques. Lastly, Messenger or group chats (3.53) followed to be the highest mean, highlighting the importance of instant communication. According to Eastwood, Klerkx, and Nettle (2017), messaging applications support real-time interaction between farmers and extension agents, improving knowledge sharing.

Table 6. Distribution of participants according to types of social media platforms used

| INDICATORS                                                                                | MEAN | DESCRIPTIVE RATING |
|-------------------------------------------------------------------------------------------|------|--------------------|
| I use Facebook to connect with other farmers and agricultural agencies.                   | 5.00 | Strongly Agree     |
| I watch YouTube videos to learn about modern farming practices.                           | 5.00 | Strongly Agree     |
| I use Messenger or group chats to discuss farming matters with fellow farmers.            | 3.53 | Agree              |
| I follow government or extension-related social media pages for reliable farming updates. | 3.47 | Agree              |
| I rely on TikTok for quick and visual demonstrations of farming techniques.               | 2.93 | Neutral            |
| TOTAL                                                                                     | 3.99 | Agree              |

4.51 – 5.00 – Strongly Agree

3.51 – 4.50 – Agree

2.51 – 3.50 – Neutral

1.51 – 2.50 – Disagree

1.00 – 1.50 – Strongly Disagree

Engagement Activities (viewing, liking, sharing, commenting)

Table 7 shows the engagement activities of farmers on social media, with an overall mean of 3.59, indicating active participation. The highest mean was obtained for “I help spread agricultural information through social media sharing” (4.17). This suggests that farmers act as information multipliers, supporting the findings of Ragasa and Niu (2017), who noted that peer-to-peer information sharing strengthens informal extension systems. The second highest mean (4.00) further confirms this behavior. Meanwhile, “I often view and react to agricultural content” (3.53) reflects both passive and active engagement. Mittal and Mehar (2016) emphasized that even passive engagement increases exposure to agricultural innovations.

Table 7. Distribution of participants according to engagement activities

| INDICATORS                                                           | MEAN | DESCRIPTIVE RATING |
|----------------------------------------------------------------------|------|--------------------|
| I share posts or videos that I find helpful to other farmers.        | 4    | Agree              |
| I help spread agricultural information through social media sharing. | 4.17 | Agree              |
| I often view and react to agricultural content on social media.      | 3.53 | Agree              |
| I comment or ask questions on farming-related social media posts.    | 3.20 | Neutral            |
| I participate in online discussions about agricultural practices.    | 3.03 | Neutral            |
| TOTAL                                                                | 3.59 | Agree              |

4.51 – 5.00 – Strongly Agree

3.51 – 4.50 – Agree

2.51 – 3.50 – Neutral

1.51 – 2.50 – Disagree

1.00 – 1.50 – Strongly Disagree

## Access to Agricultural Extension Services

### Awareness to social media as Extension Service Provider

Table 8 shows farmers’ awareness of social media as an extension service provider, with an overall mean of 3.56. The highest mean (“I believe social media is an important tool for agricultural information dissemination”, 3.87) indicates strong recognition of its value. This supports Davis and Sulaiman (2014), who stated that digital tools are increasingly recognized as essential components of modern extension systems. Familiarity with extension-related social media accounts (3.73) suggests institutional presence online. According to Faure, Davis, Ragasa, and Franzel (2018), visible institutional engagement on social media improves farmers’ awareness and trust in extension services.

Table 8. Distribution of participants according to awareness to social media as extension service provider

| INDICATORS                                                                                  | MEAN | DESCRIPTIVE RATING |
|---------------------------------------------------------------------------------------------|------|--------------------|
| I believe social media is an important tool for agricultural information dissemination.     | 3.87 | Agree              |
| I am familiar with social media accounts of agricultural extension workers or institutions. | 3.73 | Agree              |
| I am aware that agricultural agencies use social media to deliver extension services.       | 3.50 | Neutral            |
| I have seen official agricultural extension posts or announcements on social media.         | 3.50 | Neutral            |
| I know how to access government agricultural programs through social media.                 | 3.23 | Neutral            |
| TOTAL                                                                                       | 3.56 | Agree              |

4.51 – 5.00 – Strongly Agree

3.51 – 4.50 – Agree

2.51 – 3.50 – Neutral

1.51 – 2.50 – Disagree

1.00 – 1.50 – Strongly Disagree

### Timeliness and Relevance of Content

Table 9 reflects farmers' perception of timeliness and relevance, with an overall mean of 3.24. The highest mean "The content helps me respond to changing farm conditions", (3.37) suggests partial usefulness. However, neutrality across indicators implies limitations in localized content. Anderson and Feder (2007) explained that agricultural information loses effectiveness when it is not tailored to local conditions. Similarly, Nyarko and Kozári (2021) found that generic online agricultural content often fails to address farmers' specific climatic and cultural contexts.

Table 9. Distribution of participants according to timeliness and relevance of content

| INDICATORS                                                                        | MEAN | DESCRIPTIVE RATING |
|-----------------------------------------------------------------------------------|------|--------------------|
| The content I find online helps me respond to changing farm conditions.           | 3.37 | Neutral            |
| I find the agricultural updates on social media relevant to my local situation.   | 3.30 | Neutral            |
| The posts on social media address the current needs of rice farmers.              | 3.23 | Neutral            |
| The agricultural information I see on social media is timely and up-to-date.      | 3.17 | Neutral            |
| I can easily access accurate and useful farming information through social media. | 3.13 | Neutral            |
| TOTAL                                                                             | 3.24 | Neutral            |

4.51 – 5.00 – Strongly Agree

3.51 – 4.50 – Agree

2.51 – 3.50 – Neutral

1.51 – 2.50 – Disagree

1.00 – 1.50 – Strongly Disagree

### Participation in Extension Activities

Table 10 shows farmers’ participation in extension activities through social media, with an overall mean of 3.39. The highest mean was obtained “I communicate with extension workers through social media” (4.30), indicating that social media provides an accessible channel for communication between farmers and extension workers. This was followed by the farmers perception that they feel more involved in agricultural activities because of social media (3.76).

However, low participation in online webinars or trainings was obtained the lowest mean of 2.40, indicating a low level of participations in this activity. This may suggest that although farmers use social media for communication and information access, their participation in more structured online extension activities remains limited. Possible barriers include poor internet connectivity.

Table 10. Distribution of participants according to participation in extension activities

| INDICATORS                                                                         | MEAN | DESCRIPTIVE RATING |
|------------------------------------------------------------------------------------|------|--------------------|
| I communicate with extension workers through social media platforms.               | 4.3  | Agree              |
| I feel more involved in agricultural extension activities because of social media. | 3.76 | Agree              |
| Social media has encouraged me to engage more actively in agricultural programs.   | 3.30 | Neutral            |
| I have attended extension activities that I learned about through social media.    | 3.16 | Neutral            |
| I often participate in online agricultural webinars or training sessions.          | 2.4  | Disagree           |
| TOTAL                                                                              | 3.39 | Neutral            |

4.51 – 5.00 – Strongly Agree

3.51 – 4.50 – Agree

2.51 – 3.50 – Neutral

1.51 – 2.50 – Disagree

1.00 – 1.50 – Strongly Disagree

### Correlation Between Social Media Use and Access to Agricultural Services

To determine whether social media use was significantly related to farmers access to agricultural extension services, the Pearson product- moment correlation coefficient was computed. The analysis considered usage patterns, types of social media platforms used, and engagement activities as dimensions of social media use, while awareness, timeliness and relevance, and participation represented dimensions of access to agricultural extension services.

Table 12. Pearson Product- Moment Correlation between Social Media Use and Access to Agricultural Extension Services

| Social Media Use                     | Access to Agricultural Extension Services                | Pearson r    | p-value         | Interpretation                           |
|--------------------------------------|----------------------------------------------------------|--------------|-----------------|------------------------------------------|
| Usage Patterns                       | Awareness/ Access                                        | 0.883        | <.001           | Significant positive relationship        |
| Types of Social Media Platforms Used | Awareness/ Access                                        | 0.791        | <.001           | Significant positive relationship        |
| Engagement Activities                | Awareness/ Access                                        | 0.828        | <.001           | Significant positive relationship        |
| Usage Patterns                       | Timeliness and Relevance                                 | 0.793        | <.001           | Significant positive relationship        |
| Types of Social Media Platforms Used | Timeliness and Relevance                                 | 0.713        | <.001           | Significant positive relationship        |
| Engagement Activities                | Timeliness and Relevance                                 | 0.654        | <.001           | Significant positive relationship        |
| Usage Patterns                       | Participation                                            | 0.669        | <.001           | Significant positive relationship        |
| Types of Social Media Platforms Used | Participation                                            | 0.663        | <.001           | Significant positive relationship        |
| Engagement Activities                | Participation                                            | 0.751        | <.001           | Significant positive relationship        |
| <b>Overall Social Media Use</b>      | <b>Overall Access to Agricultural Extension Services</b> | <b>0.912</b> | <b>&lt;.001</b> | <b>Significant positive relationship</b> |

Statistical significance was assessed at the 0.05 level. Pearson (r) indicates the strength and direction of the linear relationship between the variables.

The results shows that all examined dimensions of social media use had statistically significant positive relationships with the dimensions of access to agricultural extension services. Among the individual relationships, usage patterns had a strong positive relationship with awareness/ access ( $r= 0.883$ ,  $0<0.001$ ), followed by engagement activities ( $r= 0.828$ ,  $p< 0.001$ ) and the types of social media platforms used ( $r= 0.791$ ,  $p<0.001$ ).

Similarly, social media use demonstrated significant positive relationships with the timeliness and relevance of agricultural information. Usage patterns showed a strong positive relationship ( $r=0.793$ ,  $p<.001$ ), while platform use ( $r=0.713$ ,  $p<.001$ ) and engagement activities ( $r=0.654$ ,  $p<.001$ ) also showed significant positive relationships.

For participation in extension activities, usage patterns ( $r=0.669$ ,  $p<.001$ ), platform use ( $r=0.663$ ,  $p<.001$ ) and engagement activities ( $r=0.751$ ,  $p<.001$ ) were all significantly and positively related to participation.

When the three dimensions of social media use were considered collectively and correlated with the three dimensions of access to agricultural extension services, a very strong positive relationship was obtained ( $r=0.912$ ,  $p<.001$ ). This indicates that higher levels of social media use were associated with higher reported levels of access to agricultural extension services among the respondents.

Since the p-value was less than the 0.05 level of significance, the null hypothesis stating that there is no significant relationship between social media use and access to agricultural extension services was rejected. The finding supports the view that social media serves as an important supplementary channel through which rice farmers can obtain agricultural information, communicate with extension workers and participate in extension-related activities.

However, because the study employed s correlational design, the result should be interpreted as an association rather than evidence that social media use directly causes improved access to agricultural extension service.

Problems Encountered by Rice Farmers towards Influence of social media to Agricultural Extension Services  
The data in table 11 shows the problems encountered by the rice farmers towards the influence of social media to agricultural extension services. As reflected, the most common problem is poor internet connectivity, followed by language barriers and conflicting agricultural advice.

These findings are consistent with Aker and Mbiti (2010), who identified connectivity as a major constraint in digital agriculture. Language barriers were also highlighted by Qiang et al. (2012) as a factor limiting farmers' understanding of online information. Conflicting advice causing confusion supports Rehman et al. (2016), who warned about misinformation on open-access digital platforms.

Table 11. Problems encountered by the rice farmers towards the influence of social media to agricultural extension services

| INDICATORS                                                                                                                 | MEAN | DESCRIPTIVE RATING |
|----------------------------------------------------------------------------------------------------------------------------|------|--------------------|
| I have problems with technical aspects of social media, including slow internet or lack of connectivity.                   | 30   | 1                  |
| The agriculture extension information available on social media is usually not in my local language.                       | 22   | 2                  |
| The conflicting agricultural advice that many social media platforms proffer confuses me.                                  | 13   | 3                  |
| I find it hard to participate in social media-based agricultural extension activities because I lack the necessary skills. | 11   | 4                  |
| Finding timely updates of agricultural programs via social media is difficult.                                             | 4    | 5                  |
| I do not consider agricultural information that comes from social media sources to be credible.                            | 3    | 6                  |
| Social media restricts me from direct interaction with agricultural extension agents.                                      | 2    | 7                  |
| I find it difficult to access reliable agricultural information on social media.                                           | 2    | 8                  |
| Social media distracts me from focusing on practical farming activities.                                                   | 1    | 9                  |

\*Multiple Responses

## CONCLUSION AND RECOMMENDATION

Based on the findings of the study, rice farmers in Danggagan, Bukidnon demonstrated varying levels of social media for agricultural purposes. Farmers showed neutral use in terms of frequency of accessing agricultural information, while Facebook and YouTube were the most familiar platforms.

In terms of access to agricultural services, farmers demonstrated awareness of social media as an extension service provider, although perceptions regarding the timeliness and relevance of online agricultural information and participation in online extension activities were generally neutral. Communication with extension workers through social media received a relatively high rating, while participation in online webinars and training sessions are still limited.

The study therefore concludes that social media is significantly associated with rice farmers access to agricultural extension services in Danggagan, Bukidnon. However, the findings should be interpreted as a relationship rather than a casual effect because the study employed a descriptive-correlational research design.

Despite the positive relationship, farmers continued to experience challenges, particularly poor internet connectivity, language barriers and conflicting information. These challenges indicate the need for agricultural extension agencies to strengthen the quality, accessibility, credibility and localization of digital extension services.

It is recommended that agricultural extension agencies strengthen their official social media platforms to provide farmers with timely, accurate and reliable agricultural information. Agricultural content should be localized and presented in a language that is easily understood by farmers to improve accessibility and comprehension.

Programs that enhance farmers digital literacy should be conducted to help them effectively access, evaluate and utilize agricultural information available online. In addition, relevant agencies and stakeholders should support initiatives aimed at improving internet connection in rural farming communities. Social media should be utilized as a complementary tool to traditional extension services to enhance communication, information dissemination and farmer participation. Finally, future researchers may conduct similar studies using larger sample sizes and additional variables to further examine the relationship between social media use and access to agricultural extension services.

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