

# Cyber Extension Content and Interactivity Online Social Media Agricultural Ministry During Covid 19

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**Abstract.** This study aims to explain the pattern of content and interactivity on YouTube and Instagram accounts of the ministry of agriculture during the COVID-19 pandemic. McMillan's interactivity model and cyber extension concept used to support for the analysis from content social media side. This research uses the virtual ethnographic method of Nasrullah based on the development of Hine's virtual ethnography method. The object of the research is content in the social media agricultural ministry from March to July 2021. For data analyzing, researchers use Creswell's technique with six steps. The study results show that the content of the two social media focuses on information regarding Covid19 pandemic but does not discuss many agricultural production strategies during the pandemic. There are less information and socialization from ministry to solve the solution of farmer that some mention in the comments. In addition, the lack of interactivity on social media is caused by the ministry's passiveness in engaging in user interaction in the comment's column. The conclusion, social media agricultural ministry must active to respond the comment in the chat column or dialogue with farmer, therefore farmers will be able to increase the productivity of their plants during or after Covid19.

## 1 Introduction

The development of information is closely related to technological innovation. The ease of information today is supported by the emergence of the internet, which develops online media and especially social media. Statistics on the development of the internet in countries worldwide show that China is the largest internet data user globally, with total users reaching 829 million users or 58 percent of the total users globally, which reached 1.42 trillion in 2019. The next order with countries The most significant internet users are India, the United States, and Brazil, occupying the second, third, and fourth positions [1].

Internet growth in Indonesia is increasingly promising in line with the government's focus on strengthening internet signals to villages. based on data from APJII, Indonesia experienced a very rapid growth of internet subscribers, from 1.7 million subscribers in 2006 to an increase of 117.7 million subscribers in 2018. [2]. Meanwhile, in 2019, the total number of internet users in Indonesia has exceeded internet users in Japan and Russia as many as 143 million internet subscribers [3].

The development of the internet creates a new world called the virtual world. Social media is one of the popular virtual worlds for people, especially in Indonesia. The results of wearesocial.com research for social media users in Indonesia in 2020 reached 160 million users or about 59 percent penetration on the

internet [4]. While YouTube ranks first with 88 percent, followed by WhatsApp, Facebook, and Instagram as the social media most widely used by Indonesian people [5]. Social media has changed its function from getting friends to expanding to getting a job. In addition, social media also creates other functions such as creating entertainment and even providing information. One social media that has expanded its function from the start is Instagram. Initially, Instagram aimed to publish a collection of photos or videos with a network of friends. However, Instagram has expanded its features to be used as a place for the industry to promote products for non-governmental and non-governmental organizations to carry out social campaigns to the public [5].

The development of the agricultural industry is closely related to technological developments. The technology is related to agricultural production and how to disseminate information related to agriculture. Research from Rizkiansyah et al. shows that young farmers quickly receive information from online media, while older farmers prefer counseling with extension workers from the local ministry of agriculture [6]. Dissemination of information must be conveyed in a lighter context to avoid boredom from farmers. Information that seems academic is replaced with sentences better understood by farmers [7].

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## 1.1 Objectives

Based on the background, this study to compares how the cyber extension pattern consists of content and interactivity on Instagram and YouTube media from the ministry of agriculture? This study uses a qualitative approach. The object or participant in the qualitative research is determined by researcher by selecting people who can help us understand the phenomenon [8].

The object on this research are Instagram and YouTube owned by agricultural ministry. The reason to select this account because researcher try to figure out how the interactivity and cyber extension in the social media from government side and compare to farmer needs. The focus of the research object is on the contents published on the two social media which are Instagram and Youtube agricultural ministry. The results of the analysis were compared with interviews and surveys on Bangil farming communities.

## 2 Literature Review

According to Kaplan and Hanlein, social media refers to an online application where users can create or modify content [9]. At the same time, the definition of a campaign itself is an effort to create specific changes and impacts in people's lives for a certain period [10]. Thus, a social media campaign is an activity to change or impact people's lives over a while through social media. Campaigns on social media are currently very effective. They are often carried out by message senders, especially when they must introduce a new product or send messages to the masses with a long period and continuity.

The use of social media as a tool for campaigning has several advantages. According to Cruz and Fill, social media can spread messages to many people [11]. Because users are connected in the network with other users, and so on, when a message is thrown to another user and forwarded to other network members, the message can spread quickly. Meanwhile, Jansen et al. added that another advantage to social media campaigns is the power of campaigns through word of mouth or on social media [11]. Sending these messages, also known as comments and testimonials, makes these messages powerful to influence other users to make positive decisions regarding the purpose of the message that has been distributed.

In recent years, online interactivity on social media Research has begun to develop human-to-human interactions in the online realm. Research from Chen and Yen shows that the interactivity dimension does not significantly predict the quality of the website [12]. While research from Huang et al. regarding interactivity in online chat shows that the interaction effect of nonverbal images affects customers more than verbal interactivity. [13]. Mahmud and Auter designed an online communication model called the CMC interactivity model. According to him, there are four elements in communication interactions based on

computer media: [14]: 1)—the user (who functions simultaneously as the sender and recipient message) 2). Medium is a condition for the existence of a channel or media in supporting the interaction process between users in the CMC interactivity model, and a computer represents this medium. 3). Messages are sent to each other between the sender and receiver via a computer or online network. 4). Communication arrangements in the form of a flexible communication environment and time according to the participant's wishes considering online communication is real-time. Mc Millan divides interactivity into four parts [15]: 1). User to System. Interactivity is interaction with web technologies such as downloading, traveling to specific links, and clicking certain links. This communication is one-way when visitors interact with the features on the website. 2). User-to-User. The interactivity of this model has the characteristics of communication between users or between users and hosts (system processing through send and response formats found in short messages, moderated chats, or discussion forums). 3). Interaction between users. Shown by communicating with the media by sending interrelated and related messages to one another. 4). Users to Documents. Interactions occur in the construction of website messages, such as how users interact with a website by posting comments. This interaction involves re-creating the content or content that the host did in the past.

Information and communication technology are essential in providing education for farmers in the information era 4.0. research from the World Bank found that information and technology change the capacity of large-scale farmers to become more profitable by relying on the development of new technologies [6]. Wijekooni et al. [16] argue that a cyber extension model is needed to overcome the weakness of the lack of regulation of information and technology in agriculture. The cyber extension is a mechanism of agricultural information exchange through the cyber world, a virtual image space behind the interconnection of computer networks through communication equipment. It utilizes the power of networks, computer communication, and interactive multimedia to facilitate the mechanism of sharing information or knowledge. This system supports overall agricultural development, including production, management, marketing, and other agricultural development activities. The cyber extension model also collects information received by farmers from different and similar sources and is simplified in the local language, accompanied by text and audiovisual illustrations [6].

## 3 Methods

This study uses a virtual ethnographic method to find out how the ministry of agriculture's values and strategy spread agricultural information in general and the message of the coronavirus in particular through social media such as YouTube and Instagram, the ministry of agriculture during the COVID 19 pandemic. Nasrullah

R believes that the virtual ethnography method has four levels in measuring the relationship between online media and users [17]. First, the media space is the structure of the media device and appearance. Second, media documents are text and graphics content or meaningful aspects. Third, media objects are interactions that occur in cyber media, while the fourth, experience is a motive, effect, benefit, or reality connected online and offline. This four levels drawing in the table 1.

**Table 1.** Four level cyber media analysis

level	Object
1. Media space	Media device structure and appearance
2. Media archive	Content, meaning text/graphics aspect
3. Media object	The interaction inside cyber media
4. Experiential stories	Motive, effect, the connecting reality between online and offline

The object of this research is the YouTube and Instagram accounts of the Ministry of Agriculture. The agriculture ministry's YouTube account reached 39.1 thousand subscribers. Meanwhile, the agricultural ministry's Instagram has 327 thousand followers," with a total number of posts reaching 3222 posts. The research duration for social media content analysis starts from March to July 2020. The reason for choosing that month is that the coronavirus began to have a significant impact on agricultural life in Indonesia in March. Researcher also interview Ten farmer and send 88 survey for research data supporting. This ten-farmer chosen because they representation as social media farmers and non-social media farmers. While survey spread in the Bangil because this location has a lot of farmer with various plants planted.

The data analysis technique used in this research was Craswell's [8] technique with six stages of data analysis. The first stage is processing data and preparing data for analysis. These steps include collects YouTube and Instagram data from the Ministry of Agriculture with the theme in general and the coronavirus. In the second stage is reading the entire data by reflecting on the meaning overall and provide marginal notes about the general obtained idea. The researcher read the actual data include posts, and comments on YouTube and Instagram account based on characters of cyber extension theory and interactivity. In the third stage is analyze in more detail by coding the data. the researcher coded the data by grouping objects into four virtual ethnographic levels. The fourth stage is implementing a coding process to describe settings, people, categories, and theme to be written. The researcher using the code to describe result analysis from setting and background sources. We also analyzed data and descriptions according to the virtual ethnographic method. Researchers show how these descriptions and themes

will be written in narrative and qualitative report at fifth stage. This step means the researcher write a report based on data analysis from four level interactivity and cyber extension theory. while in the last stage is interpret data. the researchers made interpretations according to cyber extension theory and interactivity model. The interpretations also compare with previously research to figure out the novelty. The flow chart below represents the step of analysis data in our research.



**Fig. 1.** Flow chart analysis data in this research

## 4 Discussion and analysis

### 4.1 Research Results

At the first level of analysis on the Ministry of Agriculture's YouTube media, the account published 51 videos from March to July 2020, consisting of 21 documentaries and 30 other videos in straight news. While on Instagram media, the Ministry of Agriculture account issued 197 posts from March to July 2020 consisting of 26 audiovisuals and 12 video graphics, while the other posts were graphic images with 159 posts. At the document level, the youtube account of the ministry of agriculture issued three videos about the Covid 19 virus, including information about the virus and how to prevent its transmission to farmers. The three videos were also produced in graphics and music video formats. In contrast, the other videos are about job promotion from the ministry of agriculture, inspirational success stories from farmers, tips on how to grow certain crops and promotional campaigns about the policies of the ministry of agriculture programs, and congratulations on religious holidays.

On social media on Instagram, the Ministry of Agriculture's account released various posts about Covid 19, and other themes related to agriculture. Thirty-two posts are published with various themes and creative productions every month. The themes published from the 32 posts regarding the understanding of COVID-19 19 consist of information on the right plants to prevent the spread of COVID-19 19, procedures for worshipping Eid al-Adha during the pandemic such as how to cut sacrifices safely, information about the number of farmers who can survive during a pandemic. The pandemic crisis, policy guidelines from the government regarding COVID-19 19 and farmers, socialization about COVID-19 19, and examples of crop production that are not affected by sales by the pandemic.

At the media object level, the number of comments on posts on the YouTube account of the Ministry of Agriculture reached 1141 comments from March to July 2020. Of these comments, 12 comments were under the topic of the Covid 19 message narrated in the video. Other themes that emerged from the interaction included encouraging the agriculture ministry to continue

producing quality content. Then comments - comments that criticize the policies of the ministry of agriculture, such as the low selling price of agricultural products during the pandemic. Some comments also questioned the distribution flow of agricultural products, questions based on content produced, such as questioning the address of the source or the method of production related to the content.

The number of comments on the Ministry of Agriculture's Instagram account from March to July reached 4604 comments. Of the total comments, 376 comments related to COVID-19 19. Most comments related to farmers interpreting working at home as being associated with religion, while others interpreted working at home as not working for farmers because farmers at work are not related to other people. Other comments related to COVID-19 19 and agriculture are complaints about market prices that are not comparable to product prices. Many comments complained about the distribution channels of agricultural production, protesting farmer cards that have no benefits for farmers, enthusiasm for farming among fellow farmers, and praised the performance of the minister of agriculture and the ministry of agriculture.

To get results at level 4, namely the motivation, effects, and benefits of online and offline information, the researcher connects the interactions in comments on YouTube and Instagram with some interview and survey data. Many social media users among farmers are between the ages of 20 – 40. Most young people are currently reluctant to engage in agriculture, so the information contained in social media is minimal. During the COVID pandemic, farmers relied heavily on disseminating information through social media to access information amid the limitations of extension workers to hold meetings. The effectiveness of information is a motive for farmers to try to access social media amidst limitations. Some farmers understand that social media such as YouTube and Instagram make it easier to find buyers, but most have difficulty understanding social media information. Information about technological developments has been published several times through social media. However, the information is minimally practiced in the field because only a few farmers use social media. Even if they use social media, these technological tools are difficult to practice because they are constrained by difficulties in understanding the content contained on social media.

#### **4.2 Research Analysis**

From the results of data analysis on types of social media content, the ministry of agriculture accounts mostly uses the documentary version or feature for YouTube than straight news. Most of the content on YouTube is themed about inspirational stories from farmers or tutorials about plants. While on Instagram content, the ministry of agriculture account focuses on graphics or text about COVID-19 19 and how to prevent it. YouTube is content that focuses on audio visuals, while Instagram focuses on graphic images or text.

What the ministry of agriculture account has done is right by creating content according to the characteristics of the social media where it is published. Meanwhile, choosing features instead of straight news is also appropriate because features or documentaries can be enjoyed anytime without any time limit. It is different from straight news which is limited to one day because it is related to the time of the news event so that if the audience sees it at another time, the news will be unattractive because the theme is outdated.

From the results of commentary analysis, farmers prefer content related to other inspirational stories of farmer success, both Instagram and YouTube social media. However, the ministry of agriculture account shows no interest in the comments that appear in that column. Even though the comments column can be a clue for the themes that farmers like so that they can be used as material to be raised in the next content. Even though there are many inspirational themes, the questions that become problems from farmers in the comment's column have never been a special discussion on the two social media accounts of the ministry of agriculture.

If the results of the content analysis on the two social media are compared with the reality conditions in the field through surveys or interviews, farmers generally feel that agricultural content that appears on social media is still difficult to believe. If they trust the information offered by social media, they will try to follow it based on their knowledge so that it is difficult to apply because of limited guidance when the imitation process from social media is carried out. This condition makes it difficult to disseminate information through social media so that it requires someone as an introduction to information such as an extension agent from the local ministry of agriculture service.

Interactivity is divided into four parts based on the interaction, namely 1). User to system 2). User-to-host 3). User to user 4). Users to documents. In the first part, namely user to the system, interactivity arises because of user interaction with the system. The Ministry of Agriculture's YouTube account published 51 videos from March to July 2020. The total audience was 25,34603 viewers and 24197 likes. The highest views and likes were obtained in the episode "lost a leg due to a mine, now Serda Mugiyanto has succeeded in farming longan," with several viewers reaching 1.5 million and 11,000 likes.

Meanwhile, the Ministry of Agriculture's Instagram account published 197 posts. The Ministry of Agriculture's Instagram account got 429225 views of the total posts. Unlike YouTube, Instagram only lists the number of views and comments. However, it does not show the number of likes on each post. The highest post entitled Indonesian farmers are the nation's fighters, with 28254 views.

In the second interactivity, the user with the host is very minimal. It can even be said to be non-existent. Both the Instagram and YouTube accounts of the Ministry of

Agriculture are passive in responding to the interactions that appear in the comment's column on the two-social media. Even though some viewers are active in inviting the host to interact by asking questions, most of them asked questions about the address of the resource person on a content or a more straightforward way of producing a plant. This habit causes a lack of attachment between farmers on social media and the ministry of agriculture account. One of the factors to bind users to one account on social media is to strengthen the interactivity that occurs due to the interaction between the account owner and visitor users.

Although the host's interactivity with the visitor user is minimal, the opposite result occurs in the interactivity that arises because of the interaction between the visitor's user. The Ministry of Agriculture's accounts on YouTube and Instagram have become a forum for discussion for farmers to develop ideas, be critical of government policies, propose ideas to solve problems, and complain about the realities of agriculture. Even in the episode with the highest number on YouTube, resource users in that episode interact through the YouTube account of the Ministry of Agriculture with other farmers, thereby creating active involvement in the comment's column. The topics that provoke users to get involved in comments are questioning the place to buy seeds or plants and complaints about prices that are not in favor of farmers. The other topics also complaints about how farmers do not get any assistance programs from the government and discussion forums for exchanging information about farms or farms that can create innovations in new systems.

Meanwhile, the last part of interactivity is users to document. Social media is a place for farmers to post comments related to a given topic. Most comments on the YouTube account of the ministry of agriculture are given to topics regarding success stories of farmers from other areas, such as the key to successful hydro politics farming or success amid limitations with sergeant Mugiyanto. However, minimal comments will be obtained if the topic is related to the job campaign or the success of the minister of agriculture. In contrast to YouTube, there are still many comments on Instagram on posts containing speeches from the minister of agriculture, Syahrul Yasin Limpo. Although some comments encouraged the minister of agriculture, many also protested the minister's policies and questioned or complained about policies that did not solve agricultural problems in their regions. The majority of complaints are in the form of fertilizer scarcity in an area, difficulties in obtaining quality plant seeds, and agricultural production import policies carried out by the government, making it difficult for local agricultural production to be sold in the market.

## 5 Conclusion

The implementation of cyber extensions in farmers during the COVID 19 pandemic was mainly done through Instagram rather than YouTube. The messages

sent to farmers via Instagram are more about the successful campaign and activities of the Ministry of Agriculture in managing agriculture in Indonesia. Meanwhile, user interaction with accounts does not answer the problems faced by farmers.

Meanwhile, the cyber extension pattern with the theme of COVID 19 is more about the information on the success of certain plants in penetrating exports to various countries. Meanwhile, user interaction and accounts regarding COVID 19 also do not answer farmers' information needs for marketing access during the COVID 19 pandemic.

As the government representative who pays attention to the rate of agricultural activity in Indonesia, the ministry of agriculture can pay attention to educational content for farmers. As well as keeping farmers informed via Instagram, the Ministry of Agriculture can continue to encourage farmers to have the ability to innovate and technology without compromising their ability to protect their environment.

In addition, the ministry of agriculture must pay attention to minimal interactivity. This effect is because the host passively responds to complaints, congratulations, or questions from user visitors in the comment's column. In contrast, interactivity is one of the characteristics of social media and an advantage that must be utilized to create closeness between farmers and the ministry of agriculture through social media channels.

The results of this research suggest that the Ministry of Agriculture provides a special space for two-way interaction in the comments column so that interactivity can be realized. Social media can be a means for the ministry of agriculture to transfer knowledge if the effectiveness of interactivity between the host and user is high so that social media can be a means for solving problems that occur to farmers. In addition, extension workers must also use social media as a means for disseminating information in farming communities so that the use of social media technology can replace the presence of extension workers in the field so that information can run smoothly without farmers waiting to be collected in the output hall for the latest information from agriculture.

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