

Using Online Media as Cyber Extension Urban Farming During Covid-19

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ABSTRACT

The activities of urban farming are tenable for everyone as the technology of information expands. One of them is by utilizing social media to obtain information related to the development of urban farming, from selecting seeds to processing narrow land and various businesses to support agricultural land to marketing crops. Cyber extension is one of the innovations in developing agricultural information communication networks that are effective using information and communication technology. This study aims to see how the pattern of using social media is used by urban farming actors as a cyber extension during the COVID-19 pandemic. This research was conducted in the city of Makassar with the type of survey research with the number of respondents as many as 30 people by describing three research variables, namely frequency, duration, and intensity as seen from the characteristics of each respondent selected based on predetermined criteria. Data were analyzed using cross tabulation to answer the research objectives. The results showed that gender, age, educational background, technological equipment owned, and social media used have a relationship with the level of frequency, duration, and intensity of using social media to find information about urban farming. As it says at the frequency level does not have a relationship to the gender and age variables of the respondents. The social media used is very influential on the frequency level of media use, the existing technological devices have significant impact on duration of media use, and on intensity levels, variable education has significant impact.

Keywords: Social Media, Urban Farming, Cyber Extension, COVID-19

1. INTRODUCTION

The COVID-19 epidemic is increasing urban farming trends. During the endemic period, urban farming has great potential to increase the nutritional value of consumption by providing healthy food for family, to fill spare time and some even use it as ecotherapy from the exhaustion of working from home. In addition, urban farming can be a solution for many people who have lost their jobs during the pandemic. Urban farming activities are tenable for everyone with any educational background and occupation. With the development of information technology that encourages each individual to seek information independently, making this activity easier to do.

The digital era, which later gave rise to the internet, has brought great changes in human life. Online media are increasingly showing their dominance. Social media is usable to obtain information related to the development of urban farming, from selecting seeds to

processing narrow land. The public can also get information about agricultural business actors to get support for their agricultural land to market their crops.

The Minister of Research Technology / Head of the National Innovation Research Agency explained that there will be at least ten shifts in the use of technology in the next two years. This is because in a new normal situation there will be a change in the pattern of community interaction. However, on the other hand the economy will remain productive so that the use of technology will be a way out. The first trend is the change in online shopping which continues to be a public need. Second, digital payment systems will be increasingly in demand because they are efficient. Third, teleworking or work from home that is widespread will produce supporting technology. Fourth, telemedicine or the use of digital medical service applications will be increasingly needed to avoid direct contact. Fifth, tele-education and online

training during the COVID-19 pandemic will also be in demand.

Cyber Extension is a form of tele-education that makes it easier for old and novice urban farming actors to determine what treatment will be given to their land. Cyber extensions are accessible through online media such as official government and private websites, and through social media. Cyber extension is one of the innovations in developing agricultural information communication networks that are effectively programmed using information and communication technology in agricultural extension. This mechanism is expected to increase farmer empowerment through the provision of relevant information and support farming businesses to increase their productivity [1].

According to Rakhmat [2], a person's needs in fulfilling their information are different. Information needs will be influenced by a person's background, experience, and education. The use of media in this study is defined as media exposure. The use of media will continue if the media can meet human needs.

Media is considered as only one way of meeting individual needs and individuals may fulfill their needs through the media or in some other way. The existence of social media will also be very valuable as a medium of communication and information if used properly. The use of online media in the process of agricultural development in urban areas is important to study so that it can be seen to what extent this media usage pattern is used by its users. For this reason, the expectation of this research is helpful to provide an overview of how the development of information about urban farming on social media, and how an individual's background influences the activity of using social media, in this case the use of online media by urban farming actors in the city of Makassar.

2. LITERATURE REVIEW

The presence of online media has become a new human information need. Online media is a new type of journalism that replaces the old mass media because it has the features and characteristics of traditional journalism. Based on its unique features, it offers unlimited possibilities in processing and disseminating information [3]. Presence These new types of media allow ordinary people to talk, participate, share and create networks online.

Cyber extension is a mechanism for exchanging agricultural information through the digital world, an imaginary space that is interconnected with computer

networks [4]. Cyber extension is considered to be more effective and efficient in organizing agricultural extension to add new knowledge to farmers because the media can be accessed easily [5].

Cyber extension is an initiative to develop information and communication technology (ICT) which has begun to be applied in several countries as a way of disseminating information that is sought to reduce the limitations of farmers in their need for information. The presence of cyber extensions can make it easier for old and novice urban farming actors to determine what treatment will be given to their land. Cyber extensions are accessible through online media such as official government and private websites, and through social media.

According to Cangara [6], the Food and Agriculture Organization (FAO) has utilized the development of information and communication technology (ICT) in various network activities such as publications, databases, and web creation. The main focus of ICT in agriculture is to meet the information needs of farmers. Information such as market information, agricultural mechanization, seed technology, rural development programs, climatology, as well as information on plant diseases and pests will play a role in the growth and development of farmers.

Along with the development of social media as a medium of communication, the new human information needs. Information is something that, consciously or unconsciously, everyone tries to get and share every day through different media types. Information is data that has been processed into a form that has real meaning and value and is felt for the recipient [7].

According to Kuhltau's theory in Suwanto [8], the need for information arises because of the gap (information gap) between the information a person has and the information they need. Kuhlthau wrote that the need for information as something that will arise from a vague awareness of something that is missing, at a later stage the individual seeking information wants to know where the information will contribute in terms of understanding and meaning.

According to Weight in Wilson [9], information needs include the need for new information, the need to explain the information that has been obtained, and the need to strengthen the information obtained. Wilson also cites the opinion of Morgan and King who say that the factors for the emergence of the need for

information are three things, namely, (1) Physiological needs, such as the need to eat, drink, and shelter, (2) Affective needs, which are also called psychological needs. Emotional needs, such as the need for achievement, power, etc., (3) Cognitive needs, such as the need to plan, to learn a skill, and so on.

Urban farming actors take advantage of the capabilities of social media to fulfill their need for information about urban farming. In accordance with the opinion of Bungin [10] which states that the main function of social media is the surveillance function, namely providing information to the public. The online media audience has the same characteristics as the mass media concept. That is, the number of mass audiences is large, located in various places, heterogeneous, not interactive except with assistance, disorganized and moving independently.

The use of media to get the fulfillment of one's needs is one of the theories or approaches in communication called Uses and gratification. This approach does not represent the entire communication process because the actors or users are only explained through their needs and interests as a phenomenon of receiving media messages. This theory emphasizes that media users play an active role in choosing and using the media. Media users are active parties in the communication process, media users try to find the best media sources in an effort to meet their needs. That is, the uses and gratifications theory assumes that users have alternative choices to satisfy their needs [11].

The uses and gratification model shows that what becomes the main problem is not how the media change the attitudes and behavior of the audience, but how to meet the personal and social needs of the audience. So, the weight is on an active audience, who deliberately uses the media to achieve specific goals. It is because most audience actors are only explained as phenomena related to the reception process through their diverse desires and interests, these theories and approaches do not cover or represent the entire communication process (media messages). The Uses and Gratification approach aims to define the acceptance process in mass communication and explain how people use the media [12].

3. METHODOLOGY

This research uses descriptive quantitative research method. Variables are measured to produce data in the form of numbers that can be analyzed by statistical

procedures. This research was conducted in Makassar City, South Sulawesi in September 2021. The location of this research was determined based on the consideration that the Makassar area is an urban area with population characteristics that are familiar with technology and can access the internet all day for 24 hours.

This research was conducted by survey method with a sample size of 30 respondents. Snowball sampling method is used as the sampling. Snowball sampling was carried out because the locations of urban farming actors were scattered throughout the city of Makassar, making it difficult to detect their presence. For this reason, researchers start with 1-2 samples who are members of the urban farming community which is the key to getting data and then connecting with other urban farming actors. The respondents' criteria in this study were (1) residents of Makassar, (2) owning urban farming land, (3) having devices to access the internet, (4) using social media as a source of urban farming information. According to Neuman, snowball sampling is a method used to identify, select, and take samples in a continuous and interconnected network. The sample is obtained through a connected process from one respondent to another.

The data collected in this study consisted of primary data and secondary data. Primary data is obtained from questionnaires that have been filled out by each respondent, while secondary data is collected from various sources which are intended to support the information needed in the study. Singarimbun and Effendi [13] say that the key to the sampling technique is population representation, meaning that the members/elements in the sample can be considered to describe the state or characteristics of the population. Furthermore, Sugiyono [14] states that the sample is part of the number and characteristics possessed by the population.

The data from the respondents that have been obtained are then tested for validity and reliability. Validity test is used to measure whether or not a questionnaire is valid. As it said to be valid if the questions on the questionnaire are able to reveal something that will be measured by the questionnaire [15]. Reliability Test is a tool to measure a questionnaire which is an indicator of a variable. It pointed to be reliable or reliable if a person's answer to a statement is consistent or stable over time [15].

The data that has been tested is then analyzed using cross-tabulation analysis, to see if there is a relationship

between one variable and another variable which will be presented in the form of a contingency table. Then Pearson's chi square analysis was performed which was used to determine the relationship between variables with nominal-nominal, nominal-ordinal and ordinal-nominal scales [15]. The pattern of media use can be seen from 3 indicators, namely, frequency (Y1), duration (Y2), and intensity (Y3) which will be associated with variable characteristics of respondents, namely gender (X1), age (X2), level of education (X3), technological devices owned (X4), and the type of social media owned (X5).

Media usage is the amount of time used in various media, the types of media consumed, and the various relationships between individual media consumers and media content consumed or with the media as a whole. The level of media use in this study was calculated based on frequency, duration and intensity. The indicators are, (1) frequency is the level of frequency in using a media, (2) duration is the outpouring of time required to consume a media, (3) intensity is the level of understanding of media contents in using a media that occurs before being exposed to exposure. media, when exposed to media exposure and after exposure to media.

4. RESULT AND DISCUSSION

To find out the relationship between respondent characteristics and the frequency distribution, it is presented in the following table:

Characteristics of Respondents		Frequency (Y1)				
		Very often	Often	Sometimes	Seldom	Never
Gender (X1)	Man	2	6	2	1	0
	Percentage (%)	18.2	54.5	18.2	9.1	0
	Woman	3	0	8	8	0
	Percentage (%)	15.8	0	42.1	42.1	0
Age (X2)	21-30	1	4	4	3	0
	Percentage (%)	8.3	33.3	33.3	25.0	0
	31-40	1	1	5	5	0
	Percentage (%)	8.3	8.3	41.7	41.7	0
	41-50	3	0	1	0	0
	Percentage (%)	75.0	0	25.0	0	0
	51-60	0	1	0	1	0
	Percentage (%)	0	50.0	0	50.0	0
Level of education (X3)	SD	0	0	0	0	0
	Percentage (%)	0	0	0	0	0
	junior high school	0	0	0	0	0
	Percentage (%)	0	0	0	0	0
	senior High School	2	1	4	0	0

	Percentage (%)	28.6	14.3	57.1	0	0
	S1	3	5	5	8	8
	Percentage (%)	14.3	23.8	23.8	38.1	38.1
	S2	0	0	1	1	0
	Percentage (%)	0	0	50.0	50.	0
	S3	0	0	0	0	0
	Percentage (%)	0	0	0	0	0
Owned device (X4)	Mobile phone	3	1	4	2	0
	Percentage (%)	30.0	10.0	40.0	20.0	0
	Computer/Laptop	0	0	0	0	0
	Percentage (%)	0	0	0	0	0
	Both of them	2	5	6	7	0
	Percentage (%)	10.0	25.0	30.0	35.0	0
Social media (X5)	Using 1 social media	1	1	4	2	0
	Percentage (%)	12.5	12.5	50.0	25.0	0
	Using 2 social media	1	4	5	4	0
	Percentage (%)	7.1	28.6	35.7	28.6	0
	Using 3 social media	3	1	1	3	0
	Percentage (%)	37.5	12.5	12.5	37.5	0

Table 1. Results of Characteristics Analysis of Respondents with Frequency Level

Source: Primary data after processing

Table 1 shows that most of the respondents are women with the frequency of using social media to seek information about urban farming on an occasional and infrequent level with a percentage of 42.1% for both levels. As for the male gender, the frequency of using social media is at a frequent level with a percentage of 54.5%. This shows that men are relatively high in using social media to find information about urban farming. Furthermore, it points that the average age of the respondents is in the range of 21-30 years and 31-40 years with the frequency of using social media at an occasional level with a percentage of 33.3% and 41.7%, while for the age of 41-50 years is at a very frequent level but with a smaller number of

respondents. This suggests that the age of urban farming was in a span of 21-50 years with the frequency of regular media use.

The third respondent's characteristic is education level. It points out from Table 1 that the average education of the respondents is S1 with a frequency of rarely using the media with a percentage of 38.1%. This illustrates that in general those who can access social media to find information about urban farming are those with relatively high education. When viewed from the communication tools owned by the respondents, it indicates that most of the respondents have two devices, namely mobile phones and

computers/laptops with the frequency of using media in finding information about urban farming is at a rare level with a percentage of 35.0%. This illustrates that the ability of respondents to search for information and use technology is relatively high, as evidenced by the two devices they have to support the fulfillment of their information. Furthermore, it points that the average respondent has two social media accounts that they use to find information about urban farming with the highest frequency, sometimes with a percentage of 35.7%. The use of more than one social media will

increase respondents' sources of information to help their urban farming activities.

In this study, the frequency level of media use in seeking information about urban farming is weekly frequency. This means that when viewed as a whole, the characteristics of the respondents are in the frequency of using social media with a level of sometimes every week. To see whether there is a relationship between respondent characteristics and the level of frequency of using social media, it is presented in table 2.

Variable Relations	Value	Conclusion
Gender (X1) to frequency (Y1)	0.003	Non Significant
Age (X2) to frequency (Y1)	0.063	Non Significant
Level of Education (X3) to frequency (Y1)	0.378	Significant
Owned Device (X4) to frequency (Y1)	0.384	Significant
Social Media (X5) to frequency (Y1)	0.440	Significant

Table 2. The Relationship Between Respondent Characteristics and Frequency Level

Source: Primary data after processing

From table 2, it shows that the level of education, the technology equipment owned, and the social media used have a relationship with the frequency variable with a significance level of > 0.5 . Meanwhile, gender and age were not found to be associated with the frequency of media use. It points out that the strongest influence on the frequency of respondents' media use is social media ownership. Based on the results of the analysis that has been presented which shows a positive relationship between the level of education, technological equipment owned, and social media on the level of frequency of use of social media used to find information about urban farming. This shows that the higher a person's education, the more technological

devices and social media accounts he has, which can affect how often each urban farming actor uses social media. Frequency is the number of repetitions of a behavior, whether intentional or not. Someone who already enjoys using social media often does not realize that its use is repeated every day and every week. Where according to Del Brio the number of activities carried out can be seen from the frequency. When it relates to social media, the frequency context refers to how individual's attention and interest in using social media as an activity. The following table will present the duration of using social media in finding information about urban farming related to the characteristics of the respondents.

Characteristics of Respondents		Duration > 1 hour (Y2)				
		Very often	Often	Sometimes	Seldom	Never
Gender (X1)	Man	1	4	4	1	1
	Percentage (%)	9.1	36.4	36.4	9.1	9.1
	Woman	0	9	4	6	0
	Percentage (%)	0	47.4	21.1	31.6	0
Age (X2)	21-30	1	4	6	1	0
	Percentage (%)	8.3	33.3	50.0	8.3	0

	31-40	0	5	2	4	1
	Percentage (%)	0	41.7	16.7	33.3	8.3
	41-50	0	2	0	2	0
	Percentage (%)	0	50.0	0	50.0	0
	51-60	0	2	0	0	0
	Percentage (%)	0	100.0	0	0	0
Level of education (X3)	SD	0	0	0	0	0
	Percentage (%)	0	0	0	0	0
	junior high school	0	0	0	0	0
	Percentage (%)	0	0	0	0	0
	senior High School	1	2	2	2	0
	Percentage (%)	14.3	28.6	28.6	28.6	0
	S1	0	11	5	4	1
	Percentage (%)	0	52.4	23.8	19.0	4.8
	S2	0	0	1	1	0
	Percentage (%)	0	0	50.0	50.0	0
	S3	0	0	0	0	0
	Percentage (%)	0	0	0	0	0
Owned device (X4)	Mobile phone	0	6	2	2	0
	Percentage (%)	0	60.0	20.0	20.0	0
	Computer/Laptop	0	0	0	0	0
	Percentage (%)	0	0	0	0	0
	Both of them	1	7	6	5	1
	Percentage (%)	5.0	35.0	30.0	25.0	5.0
Social media (X5)	Using 1 social media	0	3	1	4	0
	Percentage (%)	0	37.5	12.5	50.0	0
	Using 2 social media	1	6	4	2	1
	Percentage (%)	7.1	42.9	28.6	14.3	7.1
	Using 3 social media	0	4	3	1	0
	Percentage (%)	0	50.0	37.5	12.5	0

Table 3. Results of the Analysis of Respondents' Characteristics with Duration Level

Source: Primary data after processing

Table 3 shows that female respondents spent more than one hour using social media to find information about urban farming with a percentage of 47.4%, compared to men who use social media at frequent and occasional levels. When viewed from the age variable, it points that the age range of 21-30 years is at the level of duration sometimes with a percentage of 50%, the age range of 31-40 years is at the level of duration often with a percentage of 41.7%. This shows that the age range of 21-40 years is still productive using social media for more than one hour compared to the age range of 41-60 years.

For the education level of the respondents, it indicates in Table 3 that the average respondent is at the undergraduate education level with a duration level of often using social media for more than one hour to find information about urban farming, with a percentage of 52.4%.

When viewed from the communication technology devices owned by the respondents. It shows that

respondents who have two devices are at the level of frequent use of social media with a percentage of 35%. For respondents who only have one device, namely a telephone, the duration of their use of social media ranges from frequent to occasional. Furthermore, it indicates that respondents who have two social media accounts show a more frequent duration of time to seek information about urban farming with a percentage of 42.9%.

To see whether there is a relationship between respondent characteristics and the level of duration of social media use, it is presented in table 4.

Variable Relations	Value	Conclusion
Gender (X1) to duration (Y2)	0.217	Significant
Age (X2) to duration (Y2)	0.394	Significant
Level of Education (X3) to duration (Y2)	0.573	Significant
Owned Device (X4) to duration (Y2)	0.684	Significant
Social Media (X5) to duration (Y2)	0.565	Significant

Table 4. The Relationship Between Respondent Characteristics and Frequency Level Source: Primary data after processing

Based on table 4, it shows that the five respondents' characteristic variables have a relationship with the duration variable with a significance level of > 0.5 . In the table above it is presented that the variable that has the strongest influence on the duration of media use is the technology device owned by the respondent. This shows that the more information technology devices owned, the higher the duration of their use. Duration is the amount of time it takes to consume a medium. Duration can be interpreted as how long the interval or the length of time something lasts. When using social

media, people sometimes lose track of time because they are too focused on enjoying themselves. The next table will present an intensity of social media use in searching for information on urban farming relates to the characteristics of respondents.

Characteristics of Respondents		Intensity (Y3)				
		Very often	Often	Sometimes	Seldom	Never
Gender (X1)	Man	4	7	0	0	0
	Percentage (%)	36.4	63.6	0	0	0
	Woman	4	12	3	0	0
	Percentage (%)	21.1	63.2	15.8	0	0
Age (X2)	21-30	2	9	1	0	0
	Percentage (%)	16.7	75.0	8.3	0	0
	31-40	3	7	2	0	0
	Percentage (%)	25.0	58.3	16.7	0	0
	41-50	3	7	2	0	0
	Percentage (%)	25.0	58.3	16.7	0	0
	51-60	0	2	0	0	0
Percentage (%)	0	100.0	0	0	0	
Level of education (X3)	SD	0	0	0	0	0
	Percentage (%)	0	0	0	0	0
	junior high school	0	0	0	0	0
	Percentage (%)	0	0	0	0	0
	senior High School	3	3	1	0	0
	Percentage (%)	42.9	42.9	14.3	0	0
	S1	5	14	2	0	0
	Percentage (%)	23.8	66.7	9.5	0	0
	S2	0	2	0	0	0
	Percentage (%)	0	100.0	0	0	0
	S3	0	0	0	0	0
	Percentage (%)	0	0	0	0	0
Owned device (X4)	Mobile phone	4	4	2	0	0
	Percentage (%)	40.0	40.0	20.0	0	0
	Computer/Laptop	0	0	0	0	0
	Percentage (%)	0	0	0	0	0
	Both of them	4	15	1	0	0
	Percentage (%)	20.0	75.0	5.0	0	0

Social media (X5)	Using 1 social media	1	6	1	0	0
	Percentage (%)	12.5	75.0	12.5	0	0
	Using 2 social media	4	8	2	0	0
	Percentage (%)	28.6	57.1	14.3	0	0
	Using 3 social media	3	5	0	0	0
	Percentage (%)	37.5	62.5	0	0	0

Table 5. Results of Analysis of Respondents' Characteristics with Intensity

Source: Primary data after processing

In table 5 presented above, it shows that the female gender is more dominant in the intensity of using social media to seek information about urban farming with a frequent frequency level, with a percentage of 63.2%. In the age variable, it indicates that the age range of 21-30 years is at a frequent level with a percentage of 75%. For the education level of the respondents, it can be seen in Table 5 that the average respondent is at the level of S1 education with an intensity level of often using social media to find information about urban farming, with a percentage of 66.7%.

When viewed from the communication technology devices owned by the respondents. It shows that respondents who have two devices are at the level of intensity of frequently using social media with a percentage of 75%. Furthermore, it points that respondents who have two social media accounts show the intensity of often seeking information about urban farming with a percentage of 57.1%.

To see whether there is a relationship between respondent characteristics and the level of intensity of social media use, it is presented in table 6.

Variable Relations	Value	Conclusion
Gender (X1) to intensity (Y3)	0.309	Significant
Age (X2) to intensity (Y3)	0.292	Significant
Level of Education (X3) to intensity (Y3)	0.637	Significant
Owned Device (X4) to intensity (Y3)	0.150	Significant
Social Media (X5) to intensity (Y3)	0.670	Significant

Table 6. The Relationship Between Respondents' Characteristics and Intensity

Source: Primary data after processing

From table 6, it shows that gender, age, level of education, technological equipment owned, and social media used have a relationship with the intensity variable with a significance level of > 0.5. It also points out that the strongest influence on the intensity of respondents' media use is the respondent's level of education. Intensity is the level of understanding of media content in using a media that occurs before exposure to media exposure, when exposed to media exposure, and after exposure to media exposure. This shows that the higher the education level of the respondents, the higher the ability to understand

information about urban farming obtained through social media.

5. CONCLUSION

All respondent characteristic variables are positively related to the duration and intensity of using social media to find information about urban farming. As it shows that the variables of gender and age do not have a relationship with the frequency of using social media to find information about urban farming. Cyber extension-based information technology as a medium of information and communication is quite effective in

providing technological information that can be accessed quickly by urban farming actors to support their agricultural activities. It showed from the positive relationship between the characteristics of respondents to the use of social media to find information about urban farming. The background of respondents who do not have in-depth knowledge of agricultural activities but have internet access to be able to use social media actively, gives birth to the possibility that they can develop agricultural businesses by utilizing narrow land and even not using land media.

The development of information and communication technology, especially social media, can be used to bridge the information and knowledge that is spread between those who master information and those who do not, as well as increase direct participation from the public and create networks and access to information and business opportunities. In addition, it can also provide agricultural information according to location-specific needs, so as to accelerate the provision of information for urban farming actors in making decisions in their farming activities.

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