

# THE INFLUENCE OF USING SOCIAL MEDIA CHANNELS THROUGH SOCIAL SYSTEM ON THE BEHAVIOR OF ORNAMENTAL PLANT FARMERS IN USING SOCIAL MEDIA FOR E-COMMERCE

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## Abstract

Social learning theory has been widely used in various studies in the fields of education and health to investigate individual behaviour. This research aims to determine the factors that influence the path of social media through social systems on farmers' behaviour in using social media for e-commerce. This research used a survey method with a cross-sectional study design (research carried out once at a certain time). The study sample consisted of 210 randomly selected ornamental plant farmers. The research results show that there is a real influence between the use of social media through social systems and farmers' behavior in using social media for e-commerce and the use of social media as a link to social networks is a variable that has a real influence. Most influential on farmer behavior.

**Keywords:** Behavior, Community Settings, Influence, Social Media, Social Networks.

## 1. INTRODUCTION

Ornamental plants are one of the international trade commodities and export opportunities which play a role in increasing the country's foreign exchange, having a high selling value (Directorate General of Horticulture, 2015); (Department of Food Crops and Horticulture, 2020), the demand for ornamental plants continues to increase (Seingu, 2023). ), has a positive impact on human physical and mental health (Warisman et al., 2023), the ornamental plant business can open up employment opportunities as a rapidly growing micro business sector (Dianto, 2020). Ornamental plants have economic value that can be used as trade and business commodities (Arthurs and Bruck, 2017); (Widayanto, 2018); (Marinova Todorova et al., 2020); (Erlangga et al., 2021); (Ahmed et al., 2021), so that the economic value of ornamental plants becomes an opportunity for farmers to increase their income through market expansion. For five years, the growth of ornamental plant export value was low, but the growth rate of export value was high at 29.64% compared to other horticultural commodities, namely fruit 7.18%, vegetables 7.16% and medicinal plants 6% (Directorate General of Horticulture, 2015).

Bogor Regency is one of the regions in Indonesia that has the potential for developing ornamental plants (Department of Food Crops and Horticulture, 2020); (Surya et al., 2022) and

the increasing interest of the people of Bogor in farming ornamental plants opens up new opportunities for ornamental plant businesses (Ariani et al., 2021). Unfortunately, this business opportunity has not been matched by the ability of farmers to develop ornamental plant businesses as a source of income. The problem of unstable prices for ornamental plants is due to sellers playing with prices to increase profits (Candrawati et al., 2020); (Ariani et al., 2021), low farmer education, low income of ornamental plant farmers, the ability of farmers' human resources to take advantage of business opportunities using technology social media is still limited due to low farmer literacy (Prayoga K, et al., 2019); (Ismet and Indiarto, 2006); (Candrawati, 2020); (Yulida, 2018); (Alant, Olusegun Ojo Bakare, 2021), characteristics of ornamental plants which easily wither and limited ICT facilities and infrastructure (Damanik, I. P., and Tahitu, M. E., 2020), limited collaboration networks between small entrepreneurs and price information systems and a less conducive business climate due to mutually ensuring competition. This problem has an impact on farmers' welfare which is still low and farmers remain poor (Gandasari, D., 2014).

Various efforts to increase the income of ornamental plant farmers have been made through coaching to overcome farmers' problems, but this is still felt to be less than optimal due to various obstacles, namely limited funds to train farmers and human resources for extension workers, communication in these efforts which mostly runs linearly and tends to be top down, so this approach causes farmers to tend to be passive, lack initiative, and become dependent on extension workers and their groups (Prayoga, 2017).

Social learning as an implementation of Development communication objectives, namely to provide education about technology so that behavior changes occur (Van de Fliert E., 2014); (Servaes, 2020) is a solution to overcome farmers' problems (Dooley E., 2020), learning by observing other people will gain knowledge, rules, skills, strategies, beliefs and attitudes, think critically about the suitability of model behavior and its consequences, reflect on the possible consequences of behavior and deciding to act (Romina 2014); (Dooley E., 2020). Social learning can encourage individuals to share knowledge, dialogue, discuss so that participatory communication is formed (Wilkins KG et al., 2014); (Flor, 2019); (Flor and Cangara, 2018); (Servaes, 2020). Social learning is an effort to disseminate knowledge and accelerate the development communication process, increase adoption, increase technology adoption, improve product quality and create jobs (Hamilton and Hudson, 2017); (Lyne et al., 2018), (Toma et al., 2018). From the review of research results, it shows that social learning theory is very relevant for studying the social learning behavior of farmers in using social media for e-commerce.

Social media has been proven to be able to be a learning medium for farmers, because in social media there are models that can be used as examples to motivate individuals to follow what they see, help in the learning process to transfer knowledge (Kamal, 2020), and have the potential to improve communication (Zondo and Nodoro, 2023) and making agricultural information easily available (Kabir et al., 2023). Social media can help farmers connect with other farmers to share experiences, post harvests, find market information, update the latest information, and solve problems (Riley and Robertson, 2021). This media can reach a wider

audience (Nasrullah, 2018), respond more quickly so that it has the opportunity to create dialogue and interaction for its users (Azahari et al., 2021). Social media-based e-commerce as a solution to overcome farmers' problems to gain economic benefits and business opportunities (Couture et al., 2020) is an effective method for narrowing the rural-urban gap and realizing rural revitalization (Lin et al., 2016); (Yuan et al., 2017); (Tang and Zhu, 2020). The learning process for farmers is influenced by environmental factors and personal cognitive (self-efficacy). The factor of using social media through social systems can accelerate the process of social change, this is because social media provides a place for individuals to share knowledge, continue the process of intensive mentoring and social support so that it can increase the individual's desire to carry out social change (Shanghal, 2004).

Much research has been conducted using social learning theory, most of the studies in the fields of education and health (70%) and other fields (30%). The results of the SLR study using the PRISMA protocol showed that there were 7 articles out of 50 that studied the use of social media by farmers as distributors or sellers using social learning theory. Studies that examine environmental factors that influence farmers in using social media for e-commerce from the perspective of social learning theory are still limited and have not been widely explored and this study will continue to develop along with the development of information and communication technology. Provide recommendations for developing the concept of social learning theory (SLT) in solving farmers' problems, namely marketing problems and limited learning resources. This study is interesting to reveal why environmental factors, namely the use of social media through social systems, are factors that influence farmers' behavior in using social media for e-commerce. The aim of this research is:

1. Analyze influence of using social media channels through social systems on the behavior of ornamental plant farmers in using social media for e-commerce
2. Analyze why using social media channels through social systems on the behavior of ornamental plant farmer in using social media for e-commerce

## **2. LITERATURE REVIEW**

### **2.1 Social Learning Theory**

Social learning theory elucidates how the interplay between cognition and the environment shapes individual behavior during the learning process, facilitated by social actors, leading to behavior modifications (Bandura, 1997). These changes in behavior transpire due to the impact of social actors or models. The process involves examining behavior outcomes based on observation and communication, which informs the prediction of subsequent actions influenced by social actors (Fulk, 1993). Observing models provides individuals with knowledge, rules, skills, strategies, beliefs, and attitudes.

From these models, individuals glean the utility and appropriateness of particular behaviors, as well as the outcomes of emulated actions. Their actions align with their beliefs about their own capabilities and anticipated consequences. At its core, social learning theory asserts that learning is essentially a social endeavor, an interaction between individuals who observe

models to anticipate behavior consequences and regulate their own conduct (Littlejohn and A. Foss, 2000).

The foundational assumption of social learning theory is that humans have the capacity to learn and adapt their behavior. Social learning takes place through the imitation of models, and individuals, as observers, play an active role in choosing which behaviors to emulate. They also determine the frequency and intensity of the imitation. This learning process occurs without direct experience, as indirect reinforcement of specific behavior is as effective as direct reinforcement in producing imitation. Individuals, as observers, need the ability to remember and reproduce the imitation process. In the process of imitation, internal mediation plays a crucial role in social learning, with sensory input serving as the basis for behavior learning, which ultimately influences outcomes (Lesilolo, 2018). The impact of modeling gives rise to social learning as follows:

1. **Attention processes** Individuals learn by observing, accurately perceiving the behavior of the model. Attentional processes determine what is selectively observed in the multitude of modeling influences exposed and what is extracted from the modeling. Factors involving attentional processes are characteristics of the observer and features of the activity being modeled
2. **Retention process** The model will influence the observer if the observer remembers that the model's behavior results in imitation. Learning through observation of models involves the retention of activities that have been modeled at a certain time. The observer will gain experience from the model if the observer's response pattern is represented in the form of symbols and it is through these symbols that the modeling experience can be retained in permanent memory.
3. **Motor reproduction** Reproduction is a component of modeling that involves converting symbolic representations into appropriate actions. Behavioral reproduction is achieved by organizing individual responses spatially and temporally according to patterns modeled by analyzing responses, initiation, monitoring and refinement based on informative feedback
4. **Motivational process** Observers will be motivated to repeat what has been observed based on the social responses and consequences they receive when imitating a behavior (Bandura, 1977)

In the social learning process using social media for e-commerce, there is a need for observers, in this case ornamental plant farmers, to recognize and interdependence with existing differences to create cognitive understanding of information on how to use social media for e-commerce systematically and constructively.

## **2.2. Social Media**

Social change can occur in society due to the influence of social media. The communication system for the purpose of social change occurs through two channels, namely through direct social media channels and media channels through social systems. The direct social media route occurs because social media functions as a source of information, as a facilitator,

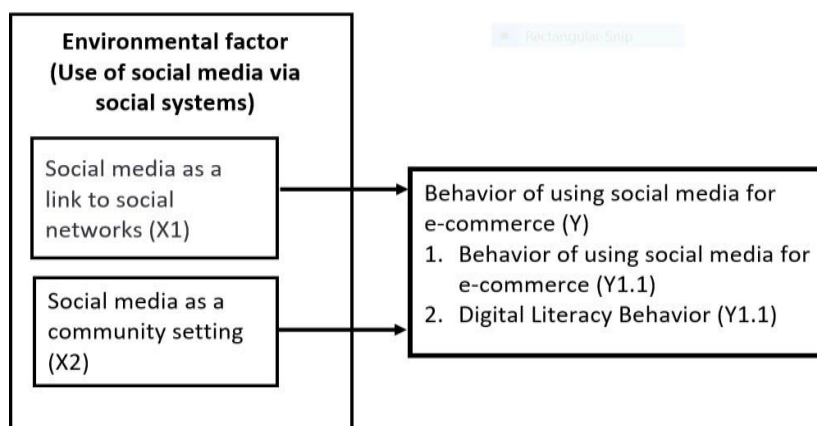
motivator and guide for carrying out social change. Social media channels through social systems, the influence of social media is used to connect participants into social networks and community settings so that social media becomes a means to continue guidance, incentives and social support for desired changes. The social environment is a major part of the behavior change process and assessments are carried out to promote behavior in the social environment. Social media as a product of information and communication technology has a platform for social learning processes where many actors can engage in networking, build trust, and capture opportunities according to their needs. Social media platforms such as Facebook allow users to comment, share (written statuses, images, and videos), view, read, and collaborate, making them effective tools for networking and increasing capacity.

Farmers can carry out a social learning process with other farmers using social networks on social media or directly. Social learning through observing models with direct practice or learning by doing and interactively is a solution to overcome the problem of the number of instructors and the limited ICT capabilities of instructors. The method of direct practice by observing models demonstrating how to use social media for e-commerce can speed up the learning process and apply what has been learned into a habit. An informal learning environment and atmosphere, interactive communication that is adapted to farmers' conditions, not providing too much theory and learning while practicing what has been demonstrated by the model is a learning method that can motivate farmers (Masyhur 2016). Social media-based e-commerce as a solution to overcome farmers' problems to gain economic benefits and business opportunities (Couture et al., 2020) is an effective method for narrowing the rural-urban gap, realizing rural revitalization (Lin et al., 2016; (Yuan et al., 2017); (Tang and Zhu, 2020) and help farmers to market products.

### **3. FRAMEWORK OF RESEARCH**

Social learning is a solution for farmers to change farmer behavior so that they can use social media in marketing ornamental plants so that farmers can increase their income and participate in the development process. Social learning is a solution to bridge the digital literacy gap among crop farmers in the aspect of using social media for e-commerce. This research investigates environmental factors, namely the use of social media through social systems that influence the behavior of ornamental plant farmers in using social media for e-commerce using a social learning theory approach.

Environmental factors play a pivotal role in shaping farmers' behavior concerning the utilization of social media for e-commerce. Specifically, these factors encompass the influence of social media channels through social systems, encompassing the impact of media as a link to social networks (X1) and social media channels as community settings (X2). The novelty of this research lies in its endeavor to discern the environmental factors affecting the behavior of ornamental plant farmers in adopting social media for e-commerce, employing the framework of social learning theory.



**Figure 1: Framework of Research**

Based on the framework above, the formulation of this research hypothesis is as follows:

1. There is a significant influence between social media channels through social system as a link to social networks on behavior using social media for e-commerce.
2. There is a significant influence between social media channels through social system as a community setting on behavior using social media for e-commerce.

#### 4. METHOD

This research employs a survey design with data collection techniques involving interview questionnaires administered to 210 farmers. The study incorporates both quantitative and qualitative data. The research population comprises ornamental plant farmers engaged in ornamental plant trade through social media and possessing Android smartphones. This population encompasses farmers under the auspices of the Department of Agriculture, Food Crops, Horticulture, and Plantations in Bogor Regency, ornamental plant farmers who are members of Facebook groups, WhatsApp (WA) groups, and farmers receiving support from IPB (Bogor Agricultural University), totaling 427 individuals. The research sample was determined using the Slovin formula, and the sampling was carried out via simple random sampling, resulting in a sample size of 210 farmers. The research is conducted within Bogor Regency, encompassing the South Bogor, North Bogor, and East Bogor areas, including the sub-districts of Taman Sari, Gunung Sindur, Cijeruk, Cipanas, Cisarua, Pasir Kuda, Cibodas, Ciawi, Ciomas, Ciseeng, Cibinong, Tajur Halang, Cilendek, Ciherang, Cipendawa, Pengesingan, and Padurenan sub-districts. The selection of this area is based on the fact that Bogor Regency is a prominent hub for ornamental plant cultivation in West Java Province, with a significant proportion of ornamental plant farmers actively using social media for e-commerce. Data collection spans a four-month period, from May to August 2023.

The measurement of research variables utilizes nominal and ordinal scales, which are initially transformed into interval and ratio scales (Sumardjo, 1999). Descriptive statistics are employed to delineate the distribution of respondents across various research variables, encompassing

personal characteristics, social media factors through social systems, and behavior related to the utilization of social media for e-commerce among ornamental plant farmers. This research investigates the influence of the environment, specifically the use of social media through social systems as an independent variable, on the behavior of employing social media for e-commerce as a dependent variable.

## 5. RESULTS AND DISCUSSION

### 5.1 General Description of Research Locations

Bogor Regency, as one of the districts in the West Java region, is one of the provinces that has high potential for cultivating ornamental plants. The results of the inter-census agricultural survey (2018) conducted by the Central Statistics Agency (BPS), the number of ornamental plant farmers in West Java Province reached 3,250,825 people because this region contains highland and mountainous areas which have a good climate for planting. The ornamental plant producing areas in Bogor Regency are spread across several sub-districts, namely: Tamansari, Cijeruk, Ciawi, Megamendung, Tajurhalang, Gunung Sindur, Bojonggede and others. The potential for various types of ornamental plants makes Bogor Regency the largest production and marketing center for ornamental plants.

### 5.2 Sociodemography of respondent

#### 5.2.1 Distribution of respondent based on region

The distribution respondent based on region can be seen in Figure 2 below:

**Table 1: Distribution Respondent based on Region**

Subdistrict	Persentase (%)
Taman sari	68,1
Gunung sindur	12,4
Cijeruk	12,4
Cipanas	0,47
Cisarua	0,95
Ciomas	0,47
Ciawi	0,47
Cibinong	2,85
Tajur halang	1,42
Dramaga	0,47
N =210	100

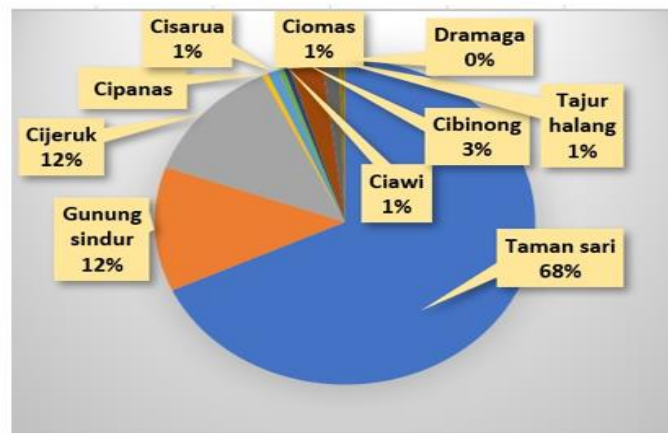


Figure 2: Diagram of Grouping Respondents based on Region

Figure 2 shows that Taman Sari is the area with the most ornamental plant farmers who use social media for e-commerce, amounting to 143 people (68%) of the total number of respondents, namely 210 people. This shows that Taman Sari District is an area that has the potential to develop the ornamental plant business. Distribution respondent based on age can be seen in Figure 3 below:

### 5.2.2 Age

Table 2: Distribution of Respondents based on Age

Subdistrict	Persentase (%)
< 20 year	2,4
20 - 30 year	23,3
31- 41 year	39,5
42 – 52 year	27,6
53 – 63 year	6,7
> 63 year	0,5
N =210	100

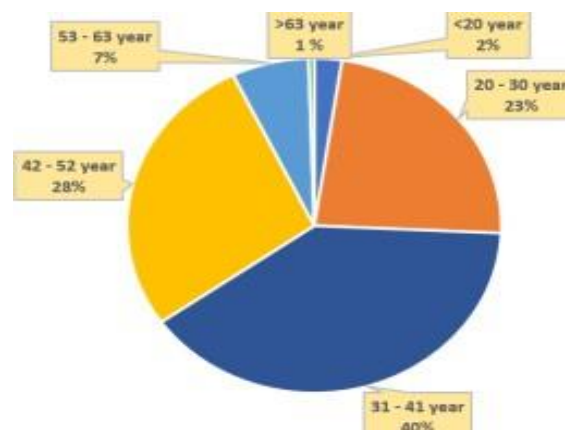


Figure 3: Diagram of Grouping Respondents based on Age

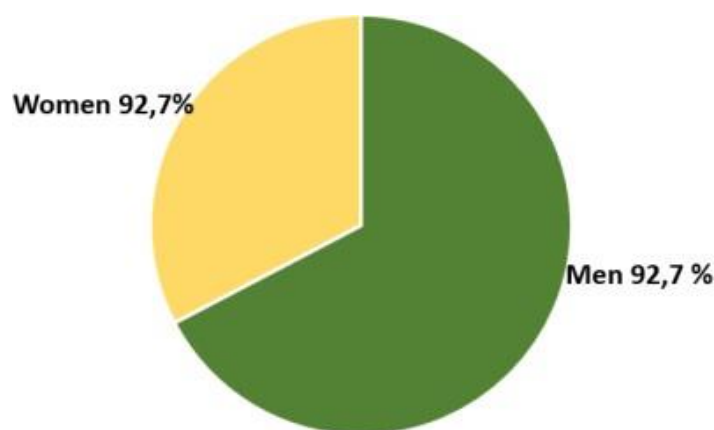


Figure 3 shows that the average age of respondents is at a productive age, namely 31 – 41 years, which is a productive age category and is included in the category of the millennial generation who is productive and actively uses social media for e-commerce. In accordance with Fahmi's opinion (2019); Ghanny and Fatwa (2021) stated that the millennial generation is the generation born between 1980 - 2000 at a time when technological advances were rapidly developing and as many as 35.4% of the millennial generation used social media for marketing activities.

### 5.2.3 Gender

**Table 3: Distribution of respondents based on gender**

Subdistrict	Persentase (%)
Male	92,7
Female	7,3
N =210	100



**Figure 4: Diagram of Grouping Respondents based on Gender**

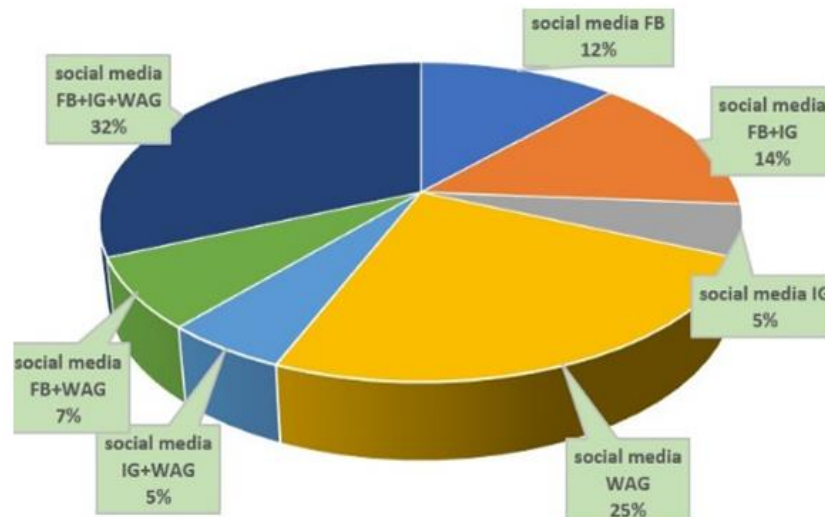
Figure 3 shows that the majority of farmers who use social media for e-commerce are male 191 people (92.7%) and female 15 people (7.3%). Most of the male farmers indicated that ornamental plant farming was dominated by male as heads of families, while female mostly took care of the household, worked in other sectors or were assistants in the ornamental plant business.

### 5.2.4 Use of Social Media

Based on the results of the field survey, it shows that the majority of respondents use Facebook to sell ornamental plants as shown in the following picture:

**Table 4: Distribution Respondent based on use Social Media**

Use social media							
	FB	FB+IG	IG	WAG	IG+WAG	FB+WAG	FB+IG+WAG
Amount	25	30	11	52	11	15	66
Percentage	11,9	14,28	5,2	24,76	5,2	7,16	31,5



**Figure 5: Diagram of Grouping Respondents based on use Social Media**

Figure 5 shows that the majority of farmers who use social media for e-commerce use the social media Facebook, Instagram and WhatsApp Group, 66 people (31.50%). The results of this research show that respondents have used various social media to sell ornamental plants. Respondents use various social media for e-commerce due to the advantages and disadvantages of each social media.

### 5.3 Environmental Factors That Influence Farmers in Using Social Media for E-Commerce

Environmental factors in this research are external factors that influence farmers' behavior in using social media for e-commerce, namely social media as a link to social networks and social media as a community setting. Social media provides support for mass and organized social interaction by turning communication into interactive dialogue (Fitriansyah, 2018), a tool to support individual involvement in groups for learning purposes (See Yin Lim et al., 2014), community support, enabling e-learning, increasing professional networks (Khan and Loh, 2022).

Social media can connect participants to social networks and virtual community environments, this refers to the capacity of digital platforms used to connect individuals to various online social networks and virtual community environments. Social media platforms allow users to observe and interact with others, exchange information, and acquire new knowledge and behavior through the process of observational learning. Social media amplifies the reach and influence of social interactions, fostering opportunities for individuals to model, learn from, and share their experiences with others in the digital world. Social networks and community environments can shape individual beliefs, values and behavior because there are role models that can provide opportunities for individuals to follow models so that they can become models and learn from the behavior and experiences of other people in the social environment. The

influence of social media as a network connector (X1.1) and community settings (X1.2) on farmers' behavior in using social media for e-commerce can be seen from the linear regression analysis as follows:

**Table 5: Model Summary of Regression Analysis**

Model	R	R Square	Adjusted R Square	Standar Error of the estimate
	0,876	0,767	0,72	38,56

From table 5, it can be seen that the R value is 0.876, indicating that the correlation between behavior and the factor of using social media as a social network and community setting is strong because it is above 0.5. The R square figure or coefficient of determination is 0.767 (derived from 0.876 x 0.876), this means that 76.7% of the variation in behavior can be explained by variations in the two variables while the remaining 23.3% is explained by other factors. The regression coefficient values from the regression equation can be seen from the following table:

**Table 6: Regression Coefficient of Environmental Factor Variables (X) on behavior (Y)**

Model		Unstandardized B	Coefficient Std Error	Standardized Coefficients Beta	t	Sig
1	(Constant)	193,22	72,56	0,77	8,150	0,00
	X1.1	18,37	0,25	0,158	5,560	0,012
	X1.2	12,77	1,33	0,112	4,220	0,032

From table 6, the regression equation is obtained:

$$Y = 193,22 + 18,37 X1 + 12,77 X2 \tag{1}$$

Y1 = The behavior of using social media for e-commerce

X1.1 = social networks

X1.2 = community settings

A constant value of 193.22 means that if there were no factors influencing social media as a social network and community setting, the behavioral value of using social media for e-commerce would be 193.22. A regression coefficient of 12.77 means that every additional value (+ sign) from the influence of social media as a social network by 1 unit will increase the behavioral value of using social media for e-commerce by 12.77. The regression coefficient value is 18.37, meaning that each additional value (+ sign) from the influence of social media as a community setting will increase behavior using social media for e-commerce by 12.77. From the equation above, it can be seen that the factors of social media use through social systems through social networks and community settings have a strong relationship with a significance level above 0.05.

The influence of social media factors as social networks has a higher coefficient value than that of community settings. This shows that the influence of social media which functions as a social network has a greater influence on changes in farmer behavior in using social media for e-commerce than in community settings. The results of this research are in accordance with the opinion of (Kumah, 2023) which states that social media plays an important role in connecting

participants to social networks by facilitating the development and maintenance of social relationships, thereby encouraging social learning. Social networks play an important role in the agricultural sector which is a determining factor in the application of agricultural technology (Maertens et al., 2017; Murendo et al., 2018). Social networks are a manifestation of users' efforts to represent themselves and their interests on social platforms and increase activity with others on social media channels, users have access to meet each other without meeting face to face (Meilinda, 2018). Social media has become a valuable tool for farmers to connect and reduce isolation, thereby enabling farmers and various stakeholders in agriculture to share expertise, expand knowledge, and exchange marketing information (Kabir et al., 2023). Social media also helps in crisis communication by increasing transparency through two-way communication. It has been emphasized that social interactions in social networks have a positive impact on technology adoption through social learning (Kabir et al. 2023); (Maertens and Barrett, 2013).

Communities or groups on social media act as a link between individuals and other individuals to interact, ask questions, request information, seek experience, and solve problems within their network (Lee and A. Suzuki, 2020). Social media communities offer opportunities to connect and learn to create relationships as well as develop a sense of belonging, shared interests, build identity and gradually build a supportive learning environment (Kabir et al., 2023). Online communities can be used as a space for social learning and as an advanced form of extension system (e-farming) that encourages the exchange of information between individuals. Most users on social media use groups to connect with other individuals and interact with each other in virtual communities (Lee and A. Suzuki, 2020). The results of interviews with farmers who feel the influence of social media as a social network are as follows:

*Social media can expand social networks in marketing ornamental plants, so we can get more information that we need because more members can provide information (Mr. Dd, 35 years)*

*Social networks on social media have members who are in accordance with the field the members are involved in, so be more specific (Mr Sy, 50 years old)*

Table 6 shows that the coefficient value for the influence of social media as a community connector is 12.77, which is lower than the influence of social media as a social network (18.37). These results indicate that the influence of social media as a community setting has an influence on behavior. Community settings refer to social environments or groups that play a role in shaping individual behavior, attitudes and knowledge through social interactions. Farmers learn through experience and the social context in which they participate. Individuals who join communities on social media will be influenced by social groups, communities or environments where they can observe and interact with other people so as to gain knowledge and skills through an observational learning process which will encourage individuals to behave in new ways. This is in accordance with the opinion (Shen and Bissell, 2013) that social media has features for posting, commenting, liking and sharing content including videos which are features for creating communities, allowing users to build communities of like-minded individuals to exchange information about a topic. (Mazman and Usuel, 2010).

*Learning through social media creates a conducive environment to motivate yourself to use social media to sell ornamental plants (Mr. Syf, 40 years old)*

*Social media regulates us so we can obey the rules in the community (Mr Ys, 34 years old)*

Farmers learn through experience and the social context in which they participate. Individuals who join communities on social media will be influenced by social groups, communities, or environments where they can observe and interact with other people so as to gain knowledge and skills through an observational learning process which will encourage individuals to behave in new ways. This is in accordance with the opinion (Shen and Bissell, 2013) that social media has features for posting, commenting, liking and sharing content including videos which are features for creating communities, allowing users to build communities of like-minded individuals to exchange information about a topic (Mazman and Usluel, 2010). Facebook social media is effective for strengthening social networks that support resource mobilization in developing entrepreneurial companies (Drummond et al., 2018).

## 6. CONCLUSION

Based on the research results, the following conclusions were obtained:

1. There is a real influence between social media through social systems on the behavior of using social media for e-commerce among ornamental plant farmers
2. The use of social media through social systems as a social network has a strong coefficient value of 18.37 compared to the use of social media as a community setting of 12.77
3. The use of social media through a system as a social network has a stronger relationship compared to community settings. This is because social networks on social media can provide encouragement for farmers to learn socially, so that there is a change in behavior using social media for e-commerce.

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