Internet Usage in Agricultural Extension Activities in Lampung Province, Indonesia

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Internet Usage in Agricultural Extension Activities in Lampung Province, Indonesia

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Abstract*: Low internet usage by extension agent, impact on the inhibition of the flow of information to the farmers and lead to the income received by farmers. In the digital era today, if the extension agent is not encouraged to use the internet then they will be left behind and will be left out by the farmers. This study aimed to (1) analyze the internet availability in Lampung Province (2) to analyze the level of internet usage for extension agent in Lampung and (3) to analyze factors influencing internet usage of extension agent. This research was conducted in Lampung Province with analysis unit of extension agent in the office of BP3K (Extension Agency of Agriculture, Fisheries, and Forestry) which has been facilitated by computer and internet network. Respondents consisted of 355 extension agent served in BP3K. Multiple Linear Regression Analysis was used to determine the effect of independent variables on the dependent variable. The availability of facilities and internet network in Extension Offices is not sufficient even extension agent used their private facilities. The Internet network had reached the remote areas very well in spreading and transmitting information. Almost all extension agent have internet-connected devices and internet-based applications. Extension agents facilitated by computer and internet network communicating using social media, however capabilities in using the internet to search information related agricultural technology remained low. The use of the internet by extension agent was influenced by the nature of internet innovation, the number of Internet-based applications and the amount of existed hardware.

Keywords : access, agricultural extension, availability, information

I. INTRODUCTION

Low internet usage by extension agent may impact on the inhibition of the flow of information to the farmers and thereby affect the productivity and income of farmers. Advances in information and communication technology (ICT), particularly on internet technology is not accompanied by the ability of extension agent in mastery and utilization of Internet information technology. This is further compounded by the limited means of information communication technology infrastructure in the agricultural extension system and not optimal information extension system, yet a very rapid progress of science and technology in information and communication has been reached. Utilization of information technology is still facing many difficulties, one of which is the difference between design and implementation caused by various contexts and conditions or failure of a plan. Many development interventions including cyber extension interventions for development that leads to failure; namely the issue of data availability, technological infrastructure, working processes, behavioral culture and motivation, staffing and skills selection, deadlines, management, budget deficit, as well as mismatches of planning and implementation [1].

Ministry of Agriculture of the Republic of Indonesia tries to answer the challenge of internet-based information needs by presenting cyber extension. The results of research indicates that the extension readiness in utilizing cyber extension from Ministry of Agriculture is relatively low, as the high number of extension agent who not able to operate the computer and manage agricultural information system through cyber extension as well as the low capability of agricultural extension to compile, repackage and publish an agricultural information material [2]. Cyber extension can improve farmers' accessibility to market information and agricultural technology [3]. The common information technology facility widely used by farmers to utilize cyber extension in supporting farming activities is mobile phones. The convergent communication is more effective as communication paradigm for counseling in globalization era [4]. Behavior of extension agents in utilizing information technology in Lampung Province is in the medium category [5].

Opportunities for the use of cyber-information technology to access technology and agricultural information from various sources and to spread it by extension agent are enormous. However, this opportunity has not been fully utilized by extension agent due to various issues. Moreover, the ability of extension agent to utilize information sources is influenced by various factors such as the availability of facilities and infrastructure, innovation characteristics, the motivation of extension agent to continue to learn and so on. Approaches that emphasize resource and self-capacity will ensure the sustainability of innovation adoption and also increase the capacity of individuals to run their business .

The extension agent paradigm continues to change.

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The concept of extension in the development approach has undergone many transformations caused by several factors such as the factors of policy change, the needs of changing demands, and the development of science and information technology. Agricultural extension in the 1970s has a notion as a system of non-formal education for farmers and their families, in order to be able, capable and progressive to promote and improve their own welfare and society. Extension is the involvement of a person to communicate information consciously with the aim of helping others to make their own decisions [6].

The difficulty of extension in using the internet will impact on its performance. Extension agent often face difficulty in accessing the information needed for counseling [7]. Most of the civil servant extension agents will retire, thus it is necessary to prepare reliable freelance extension agents called THL extension agents [8]. The speed and accuracy of information that should be obtained by extension agent are constrained by Indonesia's geographical condition that consists of islands with many remote locations. Indonesia as an archipelagic country with wide area coverage is considered important the use cyber extension as a medium of information technology in the effort to provide education for whole people. Therefore, the extension agent need to improve their ability in using the internet. The purpose of this research is to to analyze factors influencing internet usage for extension agent.

II. LITERATURE

Information and Communication Technology

Internet is an Innovation of Communication to process messages in order to spread the target audience and to get feedback. Information and communication technology commonly abbreviated as ICT or commonly called Infotech. Information communication technology included hardware and software, and usually includes networking and telecommunication that is usually related to the entrepreneur and business context Information technology as the variety of tools and capabilities used to generate, store and spread information [9]. Information communication technology is a set of tools that help the workers with information and perform jobs related to information processing. Information and communication technology as a technology that combines computing (computer) with high-speed communication lines that carry data, voice, and video [10]. From those definition described by experts.

The exchange of information through communication activities has existed since the first time humans existed. In the beginning, human exchange information through the language, then at that time, the language is defined as technology. But the use of language has many limitations as it can not be saved and will disappear after it is spoken, language endurance depends only on one's memory. After a period of language, the information technology that evolves is the image, with a picture the reach of information can go further and last longer. The next period appears a voice recorder such as radio which furtherly continues to grow with a combination of sound and picture (television). The latest information technology is the discovery of computers and growing with the existence of the internet. Information technology continues to grow to facilitate human activities to disseminate messages. Information technology includes computing technology and communication technology used to process and spread information whether it is financial or non-financial [11].

Concept of Cyber information technology

Cyber information technology is an information technology that utilizes internet network to communicate through the computer or other media in order to access and disseminate information of science and new technology in various fields of agriculture rapidly to all corners of the area which reachable with internet network. The concept of cyber information and communication technology in this study refers to the notion of cyber extension in general. Extension agent should be able to find out an alternative information other than cyber extension information system owned by the ministry of agriculture, by searching agricultural information of accessing the internet.

The term cyberspace is not intended to describe interactions that are intertwined through computer networks. Cyberspace is applied to the world connected to the internet or online. Cyberspace is a space that can not be seen, which is created when a communication relationship is done to spread information, where physical distance is no longer an obstacle. Cyber-related cyberspace is imaginary space or virtual computers that are connected each other on a network around the world. This computer can access information in the form of text, graphics, audio, video and animation files. The software on the network provides the facility to access information interactively from the linked server.

The advantages of using internet within information and communication technology as a hybrid media of other internet technologies are: (1) a worldwide audience (where access is available); (2) the audience can respond to messages via e-mail; (3) news and actuality are often on the internet before being broadcast by radio and television; (4) the internet is able to be negotiated at any time when it suits the user (more flexible time); (5) all received messages may be stored in the computer or printed, and accessed again as needed. According to Leeuwis (2004), the weakness of cyber extensión are: (1) difficult to build a trust relationship, due to limitations in social presence; (2) depending on the broadcast station and editorial board; (3) development and maintenance costs may be high; (4) requires computer skills. The consolidation and strengthening of extension information system through cyber extension, it is necessary to make a mapping of agricultural extension ability in mastering information and communication technology of computer and internet network as well as those agricultural extension agent who mastering in agricultural technology. Thus, it is needed to design a training to extension agent in operating computers and network access using the internet so that extension agent can find alternative agricultural information other than cyber extension information system of the ministry of agriculture.

The advantages gained through the application of information and communication technology especially in supporting sustainable agriculture development are: (1) Encouraging the establishment of agricultural information networks at local and national levels. (2) Opening farmers' access to agricultural information to (a) Increase the opportunity to promote their income and how to achieve it; (b) Improve farmers 'ability to increase their bargaining position, and (c)

Improve farmers' ability to diversify their farms and to relate the commodities they cultivate with available inputs, the amount of production required and market capacity of absorbing output. (3) Encouraging the implementation of development, management, and utilization of agricultural information directly or indirectly to support the development of marginal land. (4) Facilitating the documentation of widely accessible information on indigenous knowledge of agricultural information to support the development of marginal land (3).

Barriers in the Use of ICT

Information and technology has a very important role in supporting agricultural development, yet until now extension agent and farmers remained not able to utilize cyber information and communication technology optimally. Utilization of information and communication technology in extension activities requires the process of education and capacity building as there are still gaps in both technical and skill to use it. The obstacles in adopting ICT by farmers, especially horticultural farmers were: limited ability; gaps in training, awareness of ICT benefits, time and cost of technology used, system integration and software availability . Moreover, participants from developed countries emphasize the barriers were the absence of perceived economic benefits, not understanding the value of ICTs, not having enough time to use technology and not knowing how to gain benefit from ICT usage. While respondents from developing countries emphasized the main obstacles on information and communication technology costs and technology infrastructure gaps.

The obstacles in the application of information and communication technology to support sustainable agriculture development are: (1) The lack of commitment from management at managerial stakeholder level, indicated by the inconsistent policy. (2) Leadership-level managerial capability at stakeholder level mostly still lacks capacity in information technology, thus a lot of input processing process that should be facilitated with the application of information technology is not considered and even tended to be avoided. (3) Most of the managerial levels don't know the exact concept of information technology applications thereby implicating the low application of information technology to support the operationalization of daily jobs. (4) Supporting infrastructure does not promote the managerial operation of information technology and its information dissemination, such as insufficient power supplies, insufficiently in quality or quantity of hardware equipment, inadequate buildings or rooms, and very limited internet connection networks (especially for remote areas). (5) Operational costs of information technology applications for access and management of information provided by local governments are particularly inadequate, especially for ISP subscription fees for Internet-based information management. (6) Inadequate and expensive telecommunication infrastructure. (7) The place to access information through the application of information technology is very limited. (8) Some of the productive ages and those working in the subsystem of the information network of agricultural innovation are not based on information technology, so that all works are ordinary done and never think of the efficiency or consistent usage of information technology. The information technology is changing and developing rapidly, yet most of the existing human resources in the institutional of the subsystem of information networks of agricultural innovation tend to lack their motivation to continue to pursue advances in information and communication technology. These barriers can be reduced by utilizing information technology. The development of information and communication technology of internet extensión is the basic consideration of the importance of local institutional revitalization to support rural internet utilization among others in the aspect of (1) access to information and communication technology resources; (2) knowledge and skills for the information technology application; (3) access to training and training facilitation; (4) access to facilities and infrastructure for information technology; and (5) access to institutions for online media access. The result of the test shows that there is a positive and significant correlation between social factor and utilization, there is no significant relationship between affect and utilization, negative relationship between complexity and utilization, and positive relationship between job fit and utilization. Relationship between long-term consequences with utilization and the relationship between facilitating conditions and utilization which indicates a negative and weak relationship.

III. METHOD

This study is explanatory research, a research that seeks to answer whether a variable related to other variables and test the hypothesis formulated previously. The variables used in this study were: nature of innovation (X1), the degree of actuality (X2), completeness (X3), affordability (X4), number of software (X5), and number of hardware (X6). The research was conducted in Lampung Province, administratively, covered six regencies and cities (Pesawaran, Tulang Bawang, Bandar Lampung, Mesuji, East Lampung and Way Kanan). The six areas were selected based on the closeness of information source as well as the difficulties and accessibility of the information. Areas close to the information source are represented by Bandar Lampung city and Pesawaran Regency. Tulang Bawang and East Lampung Regency were chosen as the location not too far from the source of information, while location far from the source of information represented by Mesuji and Way Kanan Regencies. Time to collect quantitative data and intensive observation in field conducted for six months, from October 2016 to March 2017. The unit of analysis in this research is Agricultural Extension, Fishery and Forestry in Lampung Province and the assisted farmers. The total population of extension agent served on BP3K model/facilitated was 355 people, whole were sampled in this study. This research used descriptive analysis and parametric statistics. The collected data was analyzed by tabulation, using descriptive analysis. To answer the research objectives and to test whether there is a relationship between independent and dependent variables then it used multiple linear regression analysis with the following equation:

$$Y_1 = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + \ldots + e \qquad (1)$$

Single regression parameter test aimed to know the effect of each indicator variable X (independent variable) on indicator variable Y

(dependent variable).

IV. RESULT AND DISCUSSION

Availability of Internet Information Technology

Most extension agent judged the availability of the internet has not been optimal to support extension worker, some extension agent reported the absence of internet access in their working area (Table 1) because of its location away from the city center or located between the mountains with a low internet signal. In addition, several extension offices located in the middle of the rice fields with access to the power grid and only provided generator set and even that is not always used. The existence of the generator is used only at certain times, such as during the monitoring from local government, conducting training activities and other important activities. Extension agent who stated that internet availability was very good are those who are working in extension office in the downtown area, whether in subdistrict or district.

Measurement of internet availability variable was done by using several parameters such as the nature of internet innovation, the actuality level of information obtained from the internet, completeness of information obtained from the internet, affordability of the network to obtain information, the number of applications and media used by extension worker to connect to the Internet network. The nature of Internet innovation was measured innovation characteristic namely: relative advantages, complexity, trialability, and observability [12]. The distribution of respondents based on the independent variables can be seen in Table 2.

Table 1: Respondents' Distribution Based on Internet Availability of Lampung Province in 2017

Internet Availability Classification	Extension agent		Mean
	number	(%)	
No Internet (0 - 20)	13	3,6	65,7
Very low (21 – 40)	22	6,2	
Low (41 – 60)	108	30,4	
Medium (61 – 80)	157	44,2	
High (81 – 100)	55	15,5	
Total	**355**	**100,0**	

Nature of Internet innovation

Based on the Extension worker's view, the internet had a relative advantage, not contrast to the prevailing values of society, not complicated to use, easy to try and observe. Based on percentage data (Table 2), it is suggested that only a small percentage of extension agent who judge that the nature of Internet innovation is very good while more than a quarter of the extension agent assess the nature of Internet innovation is quite difficult to use. However, Internet-based information technology can support new extension activities to disseminate information (disseminate meeting schedule, meeting location) among the extension agent and with farmers using smartphones, as well as can be used to access information or news. Agricultural extension activities are still more effective with using conventional communication technique (face to face) (Table 2).

Internet as a media conveys information to the global community as users who expected to independently understand a concept. This is supported by the ability of the computer to combine text, color, images, and video (in the form of voice and motion) through electronic communication network system or often referred as the internet. The development of the internet has begun in this century, it has increased very rapidly of which digital technology is the foundation of internet technology. The spread of messages via the Internet is two-way communication, due to the interaction, such as the change of text content, images and video through Social Media (Twitter, Path), Social Network (Facebook, Google+) Blogspot, WordPress). Utilization of Internet-based information technology is currently used to facilitate all activities of the general society, this research is especially focused on improving the capacity of extension agent.

Actuality Level of Information from the Internet

A number of extension agent judged that the actuality evil of information obtained from the Internet network was not so good. This means that agricultural information obtained from the internet is not always right on target, then the information needed by the extension agent should be sorted out whether it is appropriate to be a reference or just an individual information from individual blogs without scientifically justifiable. In fact, lots of individual and corporations blogs existed on the internet but not able to be used as a reference. On the other hand, blogs or websites owned by official institutions (ministry of agriculture, universities, research centers, companies) sometimes not provide fully accessible articles (whole information required) on the website, prior to downloading the extension (visitor) must firstly register but only a few extension agent understand the procedure. However, according to extension agent, the information obtained from the internet is on time and can be accessed anytime as long as the internet network is available.

Level of completeness of information

Not much different from the actuality level of information obtained from the internet, Extension agent judged that the level of completeness of the information obtained from the internet was not complete. This suggests that information obtained from the internet cannot always be directly transmitted to farmers and not all information or technology are a unified whole of information. To get the full information related to technology that can be directly transmitted to farmers, extension agent have to visit several blogs or websites to confirm the truth of the technology. The existence of the internet has the potential to present information to the community (extension agent) widely, however, the extension agent need to sort out which information can be provided to the assisted farmers. Thus, the proper use of the internet has great potential to promote the capacity of extension agent and farmers.

Table 2: Distribution of Variable of the Internet Availability in Lampung Province in 2017

Independent Variables	Σ Extension Workers	(%)	Mean
Nature of Internet Innovation			
No Innovation (0 – 20)	17	4,8	67,1
Very low (21 – 40)	26	7,3	
Low (41 – 60)	73	20,6	
Medium (61 – 80)	176	49,6	
High(81 – 100)	63	17,7	
Actuality Level			
Not actual (0 – 20)	30	8,5	
Very low (21 – 40)	23	6,5	64,3
Low (41 – 60)	27	7,6	
Medium (61 – 80)	228	64,2	
High(81 – 100)	47	13,2	
Level ofcompleteness of information			
Not complete (0 – 20)	30	8,4	60,0
Very low (21 – 40)	74	20,8	
Low (41 – 60)	0	0,0	
Medium (61 – 80)	194	54,6	
High (81 – 100)	57	16,1	
affordability			
Not affordable (0 – 20)	32	9,0	
Very low (21 – 40)	27	7,6	80,4
Low (41 – 60)	0	0,0	
Medium (61 – 80)	88	24,7	
High(81 – 100)	208	58,6	
Number of application ownership			
No ownership (0 – 20)			
Very low (21 – 40)	37	10,4	3
Low (41 – 60)	98	27,6	
Medium (61 – 80)	89	25,1	
High(81 – 100)	98	27,6	
	37	10,4	
Number of media ownership			
No ownership (0 – 20)	28	7,9	2
Very low (21 – 40)	67	18,9	
Low (41 – 60)	144	40,6	
Medium (61 – 80)	108	30,4	
High(81 – 100)	8	2,3	

Information Affordability

Almost all extension agent judged that the Internet network was reached to all corners, even in remote areas. However, several places cannot be reached by all internet providers and except for certain providers with a relatively expensive price of internet quota. Internet technology is needed in supporting the development of the agricultural sector as well as in supporting increased productivity and sustainability of farming to ensure the welfare of farmers. The development of the agricultural sector cannot be separated from the role of extension agent who have an important role in providing information on farming technology to farmers both on accessible and inaccessible sites. Extension agent should be more active in exploring the problems faced by their assisted farmers in order to provide information technology of agriculture to all farmers. The role of extension institutions needs to be improved, through the intensity of extension activities with an appropriate method, the extension media conducted by extension agents visiting fish processing sites [13]. Support of related institutions, regional libraries, printed media, electronic media, research from an institution, skilled or pioneering farmers, personal experience, and information accessible through the internet media are sources that may be used by extension agent in providing agricultural technology information to their assisted farmers. Affordability of an accessed information source at the extension location affects the speed of the information dissemination to the assisted farmers.

Number of Application Types (software)

Applications commonly used by most extension agent to obtain or disseminate information were facebook, WhatsApp, e-mail and BlackBerry Messenger. More than half of the extension worker had taken advantage of Facebook and WhatsApp social media applications to obtain and disseminate information to the farmers (Table 3). Most of the extension agent have facebook application, which is widely used since six-seven years ago. Some BP4K and BP3K have facebook groups to spread information to the public. The applications frequently accessed and used by women in doing online business are WhatsApp, Facebook, and Instagram [14]. This is reinforced by the results of research by [15] found that WhatsApp is the most popular applications.

The current era having skills in using the internet is crucial [16]. The Internet facilities being used by the global community, including The Web, a system of searching and providing information with hypertext technology, (2) Email, an electronic mail used by the global citizen (3) Discussion Group or better known as Mailing List, (4) Bulletin Board System (BBS), the center of information services, such as technology, business and others, (5) online Chatting, a conversation of two or more global communities using the internet network, (6) Newsgroups, another discussion group on the internet network, (8) File Transfer Protocal (FTP), an internet service to transfer files, (9) Gropher, a specially designed TCP / IP application layer protocol over an internal network. In addition, the Internet also provides benefits for the global community such as (1) to add insight and knowledge, (2) to provide a faster communication, (3) to facilitate shopping in e-commerce (online) and so on.

Table 3 : Types of Internet-Based Applications used by Extension agent in Lampung Province, 2017

Application types	Σ Extension workers	(%)	Mean
Email	219	62	4
WA	240	68	
BBM	198	56	
Facebook	256	72	
Twitter	67	19	
Path	53	15	
Instagram	61	18	
Line	26	7	

Number of Hardware (media owned by extension agent)

The majority of extension agent have smartphone and laptops to access the internet (Table 4). The use of both devices is common among extension agent because the price is relatively affordable and easy to use and carry. Besides being communication tools, android and blackberry smartphones are often used to search news, watch videos using youtube channel, and listen to music and radio. The frequency of extension agent in finding information using the internet was still rare, as they are more utilizing the internet to communicate and seek

entertainment.

Table 4 : Internet-Based Hardware Ownership by Extension agent in Lampung Province, 2017

Type of Internet Media	Σ Extension agent	(%)	Mean
Android/iphone	239	67	2
Blackberry	102	29	
Laptop	266	75	
Computer	108	31	

Internet Usage Level

The use of the internet by extension agent to obtain information and technology related to their job was still low (Table 6). The low internet usage among extension agent is due to various obstacles such as (1) low signals or networks especially in remote areas (2) limited funds to buy internet quotas (wifi network is available in some BP4K but difficult to access due to password inquiries that often change and many users, thus personal internet quota may be used) (3) In some locations internet network unavailable; facilities in BP3K is poor (there is no wifi, no internet modem, and no office operating costs for the procurement of Internet quota). (4) The availability of electricity facilities is also inadequate such as frequent up and down voltages, frequent power outages; (5) the searched website address is often no longer connected; (6) lack of training on internet usage. In addition to network and infrastructure constraints, there are still extension agent who have not mastered to use the internet.

The use of the internet and the utilization of agricultural information by agricultural extension agent for government agencies that have authority over the sustainability of information dissemination, it is expected to improve and multiply the devices supporting the information access activities of agricultural extension agent, such as computer procurement and improvement of internet connection system evenly throughout the region. The results of this study recommend that institutions with authority in capacity building and agricultural extension capability should be required to conduct training and development to facilitate agricultural extension agent in accessing information. The use of the internet is defined as the tendency of extension agent to access agricultural information using a media connected to electronic networks. Indicators of internet use in this study include affordability levels, internet usage intensity, level of information management, level of information dissemination and feedback management.

Table 5 : Level of Internet Usage by Extension agent in Lampung Province, 2017

Internet usage	Σ Extension Agent	(%)	mean
No usage	16	4,5	57
Very low	98	27,6	
low	138	38,9	
medium	75	21,1	
high	28	7,9	
Total	355	100	

Level of Information Technology Access

The access of extension marker to get an information using the internet was still low (Table 6), this because BP3K did not provide adequate facilities and infrastructure. Although BP3K has been facilitated with computers and internet network, the absence of power grid, the door, and window of the office have not installed yet for security purpose, and location which is far from the center of the district and the sub-district center lead the internet signal is not available. so far, not all the extension agent have the opportunity to participate in internet usage training, thus only some BP3K facilitated with computers and internet have their own blog to upload existing information and to access information. Some extension agent already have WhatsApp group, Facebook group, BBM group and other social networks to support their job by sharing information.

tensity of Internet Usage

The use of the internet by the agricultural extension agent is defined as the intensity of using the internet or illustration of how long and often agricultural extension agent using the internet (Table 6). Percentage of extension agent who use the internet with the frequency of a week was low, while the duration of internet usage was still rare, of which extension agent use the internet less than three hours a day. Almost all extension agent use the internet in a relatively short time. This is because counselors have a core task to visits the farmers' groups and other routines, so do not have enough time to use the internet. In addition, due to the Internet network cannot be achieved in certain locations, thus limiting extension agent to use the internet.

Level of Information Processing

Information obtained from the internet was transmitted directly by extension agent to farmers. In general, extension agent still rare to process the information prior to distributed to farmers. Most extension agent consider that the information obtained from the internet is true and good, so checks and reprocessing are not required. This is very dangerous if not addressed immediately, the Internet as an advanced media of information technology in dissemination and exchange of information is not always present a true information. hence, extension agent should be trained to be able to filter news and information obtained from the internet.

Table 6 : Level of Internet Usage by Extension agent in Lampung Province, 2017

Internet Usage	Σ Extension agent	(%)	Mean
Level of Internet access			
No Access (0 – 20)	12	3	53
Very low (21 – 40)	112	32	
low (41 – 60)	162	46	
Medium (61 – 80)	57	16	
High (81 – 100)	12	3	
Usage Intensity			
Never(0 – 20)	45	13	59
Very low (21 – 40)	58	16	
low (41 – 60)	75	21	
Medium (61 – 80)	130	37	
High (81 – 100)	47	13	
Information Processing			
Without processing (0 – 20)			
Very low (21 – 40)	18	5	50
low (41 – 60)	88	25	
Medium (61 – 80)	113	33	
High (81 – 100)	108	30	

Internet Usage	Σ Extension agent	(%)	Mean
	24	7	
Information Dissemination			
No dissemination (0 – 20)			
Very low (21 – 40)			
low (41 – 60)	28	8	49
Medium (61 – 80)	168	47	
High (81 – 100)	62	17	
	65	18	
	32	9	
Feedback management			
No feedback (0 – 20)	34	10	43
Very low (21 – 40)	204	57	
low (41 – 60)	80	23	
Medium (61 – 80)	28	8	
High (81 – 100)	9	3	

Level of Information Dissemination

Data based on the percentage of extension agent indicated that nearly fifty percent of extension agent were still low in spreading extension information through internet media (Table 6). Some extension agent consider that the most effective information dissemination from extension agent to farmers is face-to-face meetings. The results of the study found that the dissemination of agricultural information by extension agent by utilizing the internet was still very low since not all farmers can access the internet, in addition, there were many extension agent use the internet only to communicate among them or just delivering the schedule and extension activities.

Level of Feedback Management

The results of the study obtained that more than fifty percent of respondents judged the level of internet IT actuality is very low (Table 6). The results of the interviews indicated that both the extension of civil servants and freelence considered the level of feedback management was very low, which means that farmers were not able to use the internet (social media and email) as channels to advise extension agent.

Factors Influencing Internet Usage

The nature of internet innovation had a significant effect on internet usage. This indicates that the extension will use the internet or not if the internet has more advantages than if not using the internet. In addition, if the use of the Internet is easy and not complicated, then the extension will often use the internet. The better the nature of Internet innovation, the higher the intensity of internet use by extension agent. The number of software has a positive and significant effect on the use of the internet by extension agent, the greater number of software or applications existed in hardware extension agent will facilitate them in using the internet. With the current technological advances, it is not difficult for extension agent to add applications to their mobile phones and laptops. Extension agent can download various applications through playstore on android device and Appstore on I-phone device. The number of hardware owned by extension agent has a significant effect on the use of the internet by extension agent. The hardware owned by the extension agent facilitates them to access the internet anywhere and anytime they need it. The more numerous hardware affects the higher the level of Internet usage. This indicates that extension agent who accustomed to using the internet will have more than one hardware. Generally, extension agent in addition to having a laptop they also have a smartphone and even some extension agent have more than two hardware devices. Factors influencing the use of the internet by extensionists are the nature of Internet innovation, the number of hardware or Internet-based software applications owned by extension agent. In total, variables of Internet conformity, the actuality of information obtained from the internet, completeness of information, affordability of information, number of software and hardware affect the internet usage by extension agent by 0.402 (R2). This suggests that internet usage by extension agent has influenced the independent variable equal to 40,2% while the rest 59,8% may be influenced by other variables which are not examined in this research. The result of partial test of each independent variable are presented in Table 7.

Table 7: Regression coefficient of effect of independent variable on dependent variable

Independent variable	Regression coefficient	Significancy
Nature of Innovation	1,795	0,001
Actuality	0,289	0,476
Informaation Completeness	0,337	0,335
Affordability	0,157	0,393
Number of Application	0,720	0,020
Number of hardware	0,828	0,001

V. CONCLUSION

The availability of facilities and internet network in Extension Centers in remote areas is not sufficient for the needs of extension agent. The reach of the Internet in isseminating and transmitting information is quite good to reach remote areas. Almost all extension agent already have devices connected to the internet with the applications that can be used by extension agent. However, the use of internet by extension agent in accessing information and technology related to their job remains low. Extension agent more often use the internet to communicate and to seek entertainment. The use of internet by extension agent are influenced by the nature of Internet innovation, the number of software applications, and the number of hardware owned extension agent (smart phones and laptops).

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