Science and Technology for Community
Management Information System for Village Officers in Pangauban and Sukamukti, Kecamatan Katapang, Bandung Regency

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Keywords: ICT, ICT's Capability, Village Officers.

Abstract: Pangauban and Sukamukti village offices in 2015 did not have village management information system. Therefore, we proposed science and technology for community program to create management information system for the village offices. However, in early 2016, the village offices were given management information systems by the government. Therefore, we shifted the program to increase the ICT's capability of village officers so that the officers would be capable in using and maintaining the system. To implement this program we conducted (a) training for village officers on computer application (MS Word, Excel and Power Point); (b) training for village officers on internet and social media; (c) assistantship on the applications of village management information system. We conducted training and assistantship program on April to November 2016. The participants of the training were 10 officers from each village. The assistantship was given only to the officers in charge. We also evaluated the training by giving questionnaire to the training participant before and after the training. The score of ICT's skill in the questionnaire were 1 to 5 (from very poor to very good). The result of the evaluation in general, ICT's capability of the village officers increased about one point.

1 INTRODUCTION

Pangauban and Sukamukti villages are in *Kecamatan* Katapang, Bandung Regency. In 2015, both villages did not have village management information system. Therefore, the villages were chosen as locations for community service activity, in scheme "Science and Technology for Community". This article is a report paper of the activity.

Kecamatan Katapang is one of sub districts in Bandung Regency adjacent to Bandung City. The sub district consists of seven villages namely Gandasari, Katapang, Cilampeni, Pangauban, Banyusari, Sangkanhurip and Sukamukti. This sub district is one of sub districts that has lower Human Development Index (HDI) than the average of Bandung Regency's (Bappeda Kab. Bandung and BPS Kab. Bandung, 2013). In the year of 2014 HDI of Katapang District was 74.30 while the average of Bandung Regency was 75.40 (BPS Kabupaten Bandung, 2014).

Pangauban and Sukamukti Village are located about 15 kilo meters to the southern of Universitas Komputer Indonesia. Figure 1 showed the village location from Universitas Komputer Indonesia (Jalan Dipati Ukur 112-116, Bandung).

Total population in 2014 of Pangauban Village was 16,133 persons. The village can be categorized as rural in urban area with the major sector is industry. Total population in 2014 of Sukamukti Village was 14,515 persons. The dominant sector in Sukamukti village was agriculture (BPS Kabupaten Bandung, 2014).

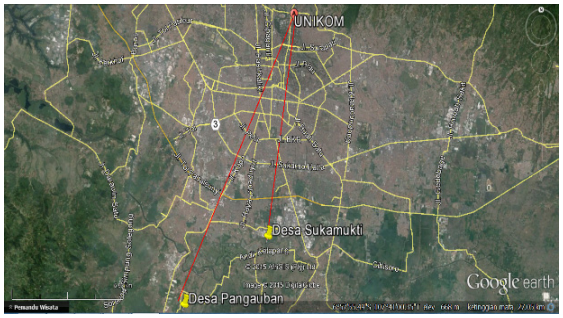

Figure 1: Location of Sukamukti and Pangauban Village, *Kecamatan* Katapang.

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Table 1 shows education level of village officer in Pangauban Village. There are 13 officers in Pangauban Village office. Only two persons have university degree.

Table 1: Education level of Pangauban Village officers.

No.	Level of Education	Number (persons)
1.	University	2
2.	High School	6
3.	Junior High School	3
4.	Elementary School	2
Total		13

Source: Interview with Head of Pangauban Village (2016)

Table 2 shows education level of Sukamukti Village officers. The officers in Sukamukti Village office also are 13 persons. In Sukamukti Village office also only two persons who are university graduates.

Table 2: Education level of Sukamukti Village officers.

No.	Level of Education	Number (persons)
1.	University	2
2.	High School	7
3.	Junior High School	3
4.	Elementary School	1
Total		13

Source: Interview with Head of Sukamukti Village (2016)

Based on Law of the Republic of Indonesia Number 6 2014 regarding Village, "the Village, is a unit of community that has boundaries with the authority to regulate and manage the affairs of government, the interests of local communities based on community initiatives, the right of the origin, and/ or traditional rights recognized and respected in the system of government of the Republic of Indonesia" (Republik Indonesia, 2014). Therefore, the objective of village arrangement to create village government that professional, efficient, effective, transparent, responsible and good public service in order to increase social welfare. Therefore, village is a strategic unit in achieving community welfare through better public service for the village community. Major public service for village community is administrative service from village government.

Law Number 6 2014 regarding Village article 86 stated that:

- The village is entitled to access information through the village information system developed by the Local Government District / City.
- Government and Local Government shall develop information systems and development Village Rural Areas.
- The village information system referred to in paragraph (2) includes hardware facilities and software, network, and human resources.
- The village information system referred to in paragraph (2) includes the village of data, the data Rural Development, Rural Areas, as well as other information relating to the construction of Rural Development and Rural Areas.
- The village information system referred to in paragraph (2) is managed by the village authorities and may be accessed by the village community and all stakeholders.
- Local Government District / City provide information development planning district /city to the village.

Early in the year 2016, both villages obtained management information system for the village namely "*Aplikasi Pelayanan Dasar Berbasis Data Kependudukan* (*Yandas*)" or "Basic Service Based on Demographical Data Application" from the Government of Bandung Regency. Figure 2 shows the application menu of village management information system. The system was created to fulfil the Law of the Republic Indonesia Number 6 2014 regarding Village article 86 paragraph 2.

One evident that other village had implemented Law Number 6 2014 is Panjalu Village. Panjalu village had already used ICT to increase interaction between the village officers and village community to disseminate information regarding village development. The utilization of ICT in Panjalu Village was to support village service to the village community (Praditya, 2014).

Figure 2: Basic service based on demographical data application.

In 2015 we planned to create village management information system and we would execute the program in 2016 as community service activity. However, the villages already had the system.

Therefore, we shifted the program into training and assistantship to optimize management information system for village officers. The objective of training program is to increase village officers' ability in information communication technology (ICT) so that they can use and manage village management information system.

There were two similar activities regarding management information system or information communication technology (ICT) as community service activity. Firstly, Harahap, Lubis and Effiyanty (2017) conducted community service activity in 2016 by training and guiding in bookkeeping and marketing based on ICT in Melur Entrepreneur Community. The materials in bookkeeping training were cash flows, cost analysis and financial reports. The marketing strategy was given by using online store through internet and social media. Secondly, Somantri et.al (2017) conducted community service activity in SMAN 1 Subah by implementing internet learning. The participants in this activity were 16 teachers.

2 METHOD

The activity of community service was funded by Directorate of Research and Community Service, Ministry of Research, Technology and Higher Education of Republic Indonesia. The funding scheme is science and technology for community. The objectives of the activity were:

- The ICT's capability of the village officers would increase,
- The village officers could manage Management Information System for village administration well,
- The village officers could use internet and social media optimally for the benefit of village administration.

To achieve the objectives, we gave computer application training, internet training, assistantship in using and managing village management information system. The method to execute the activity of science and technology for community in Pangauban and Sukamukti Village were:

- Computer application training of Microsoft Office 2007 (Microsoft Word, Microsoft Excel and Microsoft Power Point)
- Internet and social media training (internet explorer, search engine, e-mail, social media) and also mobile Wi-Fi setting.
- Assistantship in using and managing village management information system
- Assistantship in using and managing Finance Management Information System of the Village.

For the training we provided two manuals or modules. First module is Microsoft Office 2007 training (Figure 3). The modules are put into USB drive that also as a participant identity (Figure 4). Second module is Internet Manual (Figure 5).

We conducted the training in September 2016 for three days. We assisted the village officers on management information system from July to November 2016. The participants in the training were ten persons in each village. Before the training we gave the participant the questionnaire to self-evaluation regarding the ability in ICT. The criteria and score for ICT ability is shown in Table 3.


MODUL PELATIHAN

LAM SISTEM INFORMASI MANAJEMEN (TATA KELOLA) DESA

PENGENALAN MICROSOFT OFFICE 2007
(MICROSOFT WORD, MICROSOFT EXCEL DAN MICROSOFT POWERPOINT)

Oleh :

Dr.Lia Warlina, Ir., M.SI 0026086101
Supriyanti S.E., M.SI, Ak., CA. 0426018002
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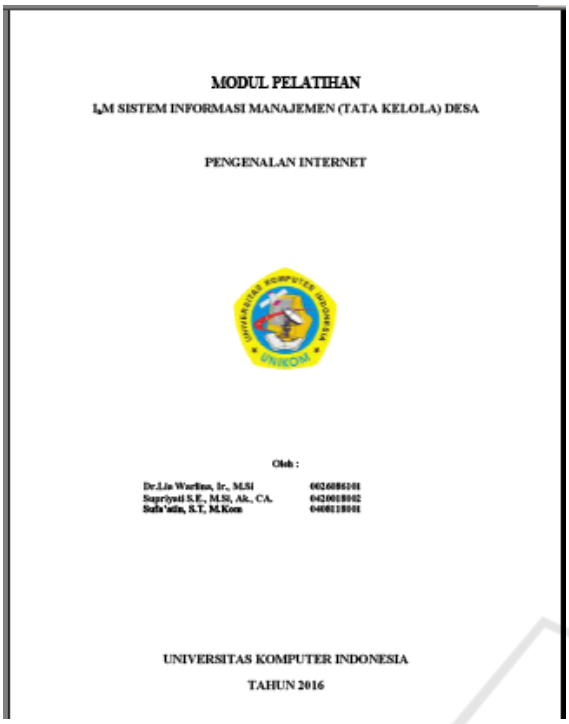
TAHUN 2016

Figure 3: Microsoft office 2007 module.

Figure 4: USB flash drive for training material and participant identity.



MODUL PELATIHAN

I4M SISTEM INFORMASI MANAJEMEN (TATA KELOLA) DESA

PENGENALAN INTERNET

Oleh :

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Figure 5: Internet manual module.

Table 3: The criteria and score for evaluation.

Criteria	Score
Very Poor	1 (one)
Poor	2 (two)
Fair	3 (three)
Good	4 (four)
Very Good	5 (five)

3 RESULTS AND DISCUSSION

We conducted computer application training in three days for the village officers. Material for computer application was Microsoft Office 2007 (Microsoft Word, Microsoft Excel and Microsoft Power Point). Material for internet and social media training were internet explorer, search engine, e-mail and Instagram. We also gave tutorial for mobile Wi-Fi setting.

We assisted in using village management information system. We also assisted in using village finance management information system.

There were ten participants in computer application training in Pangauban Village. The other three officers could not attend the training due to their level of education. Figure 6 shows the activity of computer application training in Pangauban Village.

Figure 6: Computer application training in Pangauban Village.

In Sukamukti also ten officers participated in computer application training. The other three could not participate due to same reason with Pangauban Village. Figure 7 shows computer application training in Sukamukti Village.

Figure 7: Computer application training in Sukamukti Village.

The evaluation on the activity of science and technology for community for Pangauban Village shows in Figure 8 to 12. In general, the officers increased their ability on computer application due to the training.

The average ability of Pangauban village officers in MS Word Application before the training were 2.54 to 2.85 (Figure 8). These scores are categorized into poor to fair. After the training, the score increased into 3.46 to 3.77. These scores are categorized into fair to good criteria.

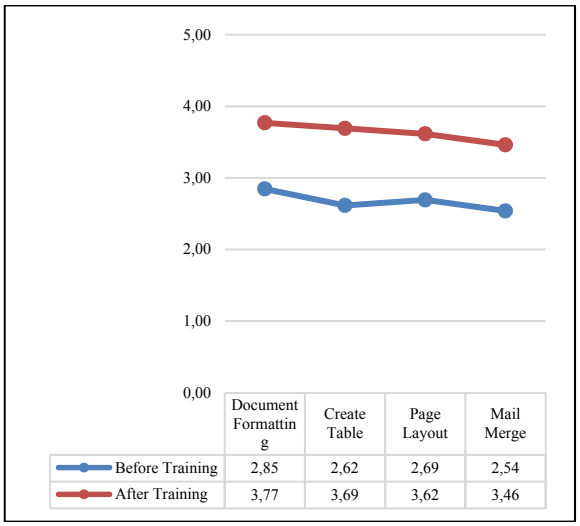

Figure 8: Graph of Pangauban Village officer's ability in MS Word before and after training.

Before the training, the average ability of Pangauban village officers in MS Excel Application were 1.92 to 2.62 (Figure 9). These scores are categorized into very poor to poor. After the training, the score increased into 2.92 to 3.46. These scores are categorized into poor to fair criteria.

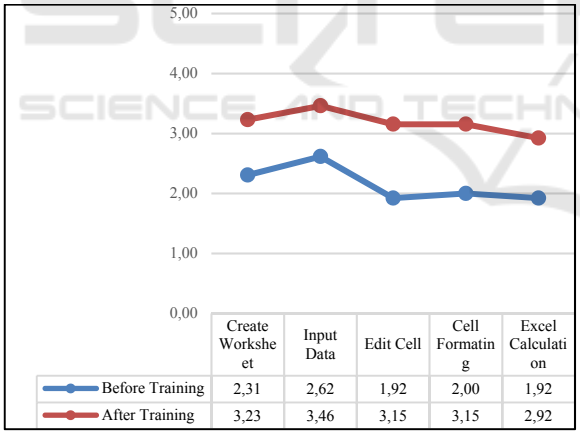

Figure 9: Graph of Pangauban Village officer's ability in MS Excel before and after training.

The average ability of Pangauban village officers in MS Power Point Application, before the training were 1.62 to 1.69 (Figure 10). These scores are categorized into very poor. After the training, the score increased into 3.15. These scores are considered into fair criteria.

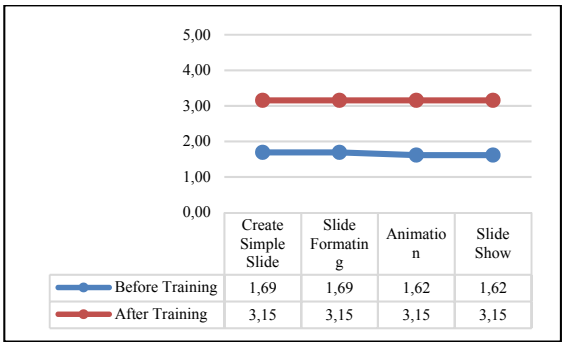

Figure 10: Graph of Pangauban Village officer's ability in MS Power Point before and after training.

Before the training, the average ability of Pangauban village officers on internet were 2.15 to 2.31 (Figure 11). These scores are categorized to poor. After the training, the score increased into 3.15 to 3.31. These scores are categorized to fair criteria.

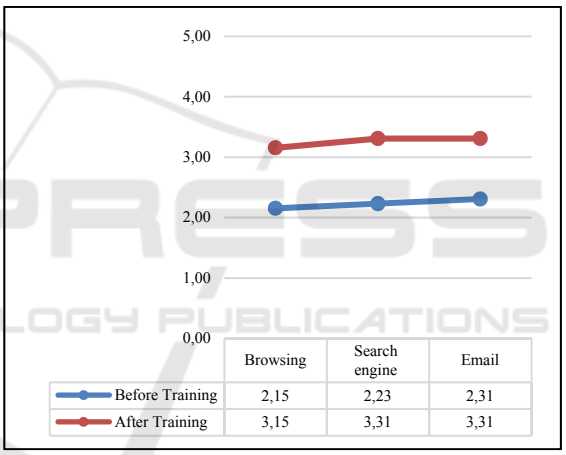

Figure 11: Graph of Pangauban Village officer's ability on internet before and after training.

The average ability of Pangauban village officers in social media before the training were 2.38 to 2.77 (Figure 12). These scores are categorized into poor to fair. After the training, the score increased into 3.31 to 3.68. These scores are categorized into fair to good criteria.

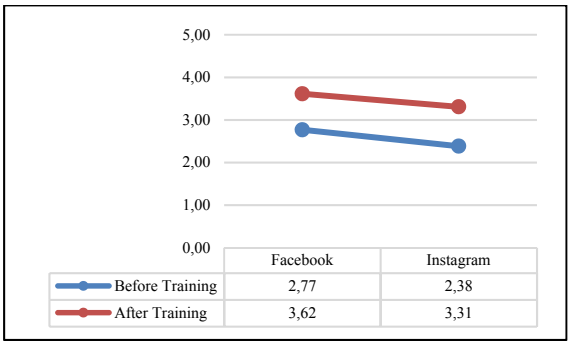

Figure 12: Graph of Pangauban Village officer's ability on social media before and after training.

The evaluation for science and technology activity in Sukamukti Village is shown in Figure 13 to 17. In general the activity could increase the ability of the officers in training material.

The average ability of Sukamukti village officers in MS Word Application before the training were 2.55 to 2.82 (Figure 13). These scores are categorized into poor to fair. After the training, the score increased into 3.5 to 3.8. These scores are categorized into fair to good criteria.

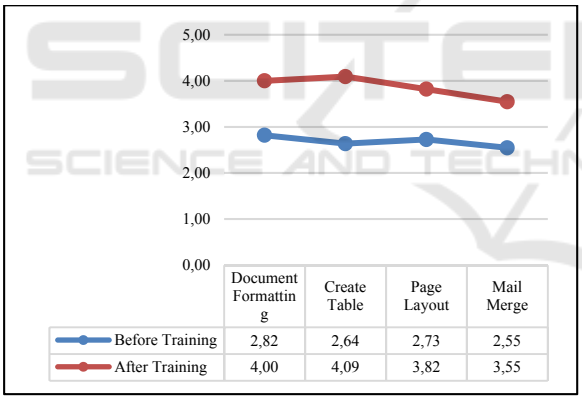

Figure 13: Graph of Sukamukti Village officer's ability in MS Word before and after training.

The average ability of Sukamukti village officers in MS Excel Application before the training were 1.91 to 2.82 (Figure 14). These scores are considered into very poor to poor. After the training, the score increased into 3.27 to 3.91. These scores are categorized into fair to good criteria.

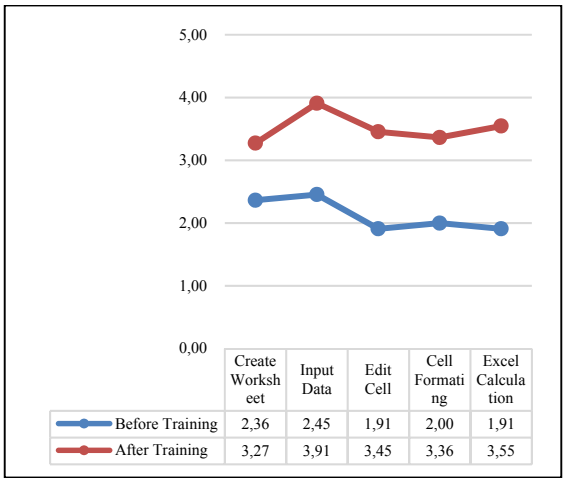

Figure 14: Graph of Sukamukti Village officer's ability in MS Excel before and after training.

The average ability of Sukamukti village officers in MS Power Point Application before the training were 1.64 to 1.73 (Figure 15). These scores are considered to very poor. After the training, the score increased into 3.18 to 3.36. These scores are categorized to fair criteria.

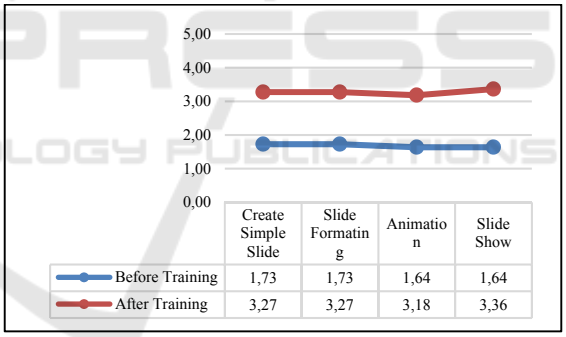

Figure 15: Graph of Sukamukti Village officer's ability in MS Power Point before and after training.

The average ability of Sukamukti village officers on internet before the training were 2.27 to 2.45 (Figure 16). These scores are categorized to poor. After the training, the score increased into 3.73 to 3.91. These scores are categorized into fair to good criteria.

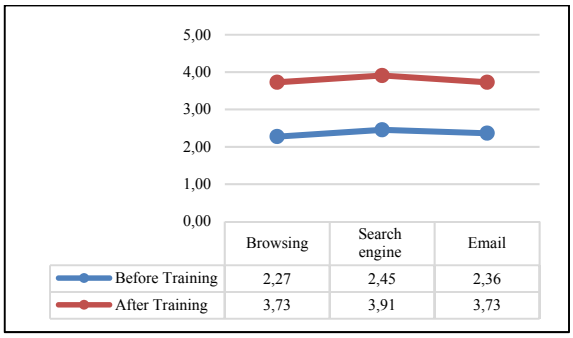

Figure 16: Graph of Sukamukti Village officer's ability on internet before and after training.

The average ability of Sukamukti village officers in social media before the training were 2.45 to 2.64 (Figure 17). These scores are categorized into poor to fair. After the training, the score increased into 3.64 to 4.27. These scores are categorized into good to very good criteria.

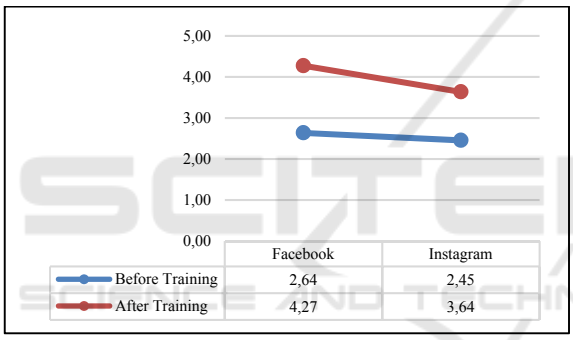

Figure 17: Graph of Sukamukti Village officer's ability on social media before and after training.

The result of community service activity is similar with the activity conducted by Harahap, Lubis and Effiyanti (2017) and Somantri et.al (2017). Harahap, Lubis and Effiyanty (2017) conducted community service activity in 2016 by training and guiding in bookkeeping and marketing based on ICT in Melur Entrepreneur Community. The activity found that the participants in this program faced computer anxiety, so that for marketing strategy the participant needed other reseller who was familiar with ICT. Somantri et.al (2017) conducted community service activity in SMAN 1 Subah by implementing internet learning. The evaluation result showed that the average increase of e-learning skill was 91%.

Similar condition to Pangauban and Sukamukti Village is the study in Bangladesh. Islam and Mannan (2014) found that ICT's skill of senior civil servant in Bangladesh were poor. The study was conducted to modify the ICT curriculum for senior staff course

The opposite result was shown from the study in Northern Ontario and Kenya. The study in Northern Ontario conducted by Carpenter et.al (2013) to investigate women in rural communities in using ICT. The women who lived in remote and rural area were asked their thoughts and experiences about ICT use in daily life, ICT for health and wellness, ICT for cultural preservation. The findings showed that the women were active user of ICT, using internet for communication with other communities and they were familiar with telemedicine.

The sudy in Kenya conducted by Boit, Menjo and Kimutai (2012) to evaluate the implementation of ICT to support learning, school administration and use of e-communication between cooperating rural secondary school in Western Kenya. The study found that ICT had been implemented in the schools. There was an evident that the quality of teaching, learning, and students' level of interaction, reasoning, recall, synthesis and evaluation had improved.

4 CONCLUSIONS

This article is a report of community service activity with the scheme of science and technology for community. In 2015, we planned and proposed to create management information system for Pangauban and Sukamukti Village, because both villages did not have the system. However, early in 2016 they were given village management information system by the local government. Therefore, we shifted the program into computer application training for village officers and assistantship in managing and using the Basic Service Based on Demographical Data Application (*Aplikasi Pelayanan Dasar Berbasis Data Kependudukan* or *Yandas*) and Village Finance Management Information System.

Pangauban and Sukamukti Village Officers had lowest ability level on computer application before and after the training was in MS Power Point. However, the officers had the highest level in before and after the training was in MS Word. In general, the increase of ability level on computer application was about one point. Thefore, village officers in both villages are more confident with their ICT's capabilty. In conclusion, they will be more capable in using and managing village information system.

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