

Intangible Economic Benefit of Remote Sensing Data in Indonesia

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Abstract

¹¹ Indonesian National Institute of Aeronautics and Space (LAPAN) as a space ecosystem runner government institution of space agency in Indonesia is mandated by Indonesia space law of 2013 to carry out remote sensing activities that are not only strategic nationally in nature but also charged being benefits economically. This study investigated the intangible economic benefits of remote sensing activities in Indonesia. This research explored qualitatively advantage the use of remote sensing information by users obtained from the results of questionnaires and in-depth interviews. The conceptual framework of intangible benefit is based on the information system success model by the De-Lone and McLean Information Value model. The results showed that the quality of remote sensing was good. This can be seen from most responses of user respondents on the Perceived System Quality and Information Quality indicators giving a good rating. The response of the user respondents caused a sense of satisfaction and also caused the use of the system to be more intense. These had a good impact on the performance of respondents, both individually and organizationally. Strengthened by in-depth interviews showed that economically provide benefits with an average of 64% increasing in the performances efficiency by Agriculture and Palm Oil sectors. In short, space agency in Indonesia is proven to provide intangible economic benefits on remote sensing activities.

Key words: Government Institutions, Remote Sensing, Perceived System Quality, Information Quality, intangible economic benefits

Introduction

Remote sensing activities in Indonesia are national strategic activities in nature. The National Aeronautics and Space Agency (LAPAN) is a state institution officially appointed by the government to manage this activity in Indonesia. Remote sensing activities in Indonesia are regulated in the Law of the Republic of Indonesia (RI) Number 21 of 2013, regulation. Thus, space activities have had a strong legal foundation for a long time.

The advance of remote sensing technology in the 20th century has provided a powerful means to conduct regional and global measurements. Remote sensing technology can quickly access a wide range of real-time land surface spatial information and provides an effective way for resource surveys, environmental monitoring and disaster prediction. With the help of remote sensing technology, one can get geo-information quickly, accurately, efficiently and comprehensively (Wu and Li, 2009). Activities using remote sensing have been started since 1990s (Mulyadi, 2009). The use of remote sensing from the results of research Acil Tasman, 2013; USGS, 2013; Space.tec partners, 2012; EARSC, 2016 showed that there were high benefit from the use of remote sensing data and information. Specifically, remote sensing technology is also useful in many sectors. In the plantation sector, remote sensing technology through SPOT-6 imagery can be used to estimate productivity value of oil palms (Diana et al, 2019).

One of the objectives in issuing RI Law No. 21 of 2013 above described in article 2 (Republic of Indonesia, 2013) which is in order to optimize the implementation of space for the welfare and the productivity of the Indonesia people. Referring to this article, remote sensing space activities must be able to improve people's welfare and also the nation's productivity. However, the use of data and the dissemination of remote sensing information as referred to in article 15 paragraph (1) letter d, also must be carried out based on guidelines set by the Institute (namely LAPAN) as described in article 22.

Based on that mandate, LAPAN as an Indonesian space agency must calculate the economic benefit of remote sensing activities. Although remote sensing activities have long been carried out, the calculation of economic benefits has not been done much especially indirect benefit. The direct use of remote sensing data distribution by LAPAN that quantitatively calculated has been proven to provide significant economic value as stated in the research (Diana et al., 2019). This study states that measure the direct utilization of the use of remote sensing technology using the Net Present Value approach (NPV) gave a positive economic value viz IDR.19.456.530.139.740,-. This calculation shows that remote sensing activities have direct quantifiable economic benefits, so that the program must be continued and developed. NPV value was a valuation of direct utilization, while indirect utilization so far has not been calculated qualitatively nor quantitatively. Therefore it is important to continue research on the indirect benefits, or what is called the intangible benefits of remote sensing.

The goals of this study specifically examines the intangible economic benefits of remote sensing in Indonesia qualitatively, which are benefits can be felt but difficult to quantify. The study was conducted by exploring the benefits obtained from the results of questionnaires and in-depth interviews of remote sensing users. From these results, the benefits up to the multiplier effect of remote sensing activities that can only be felt, are explored and described its usefulness economically. This research to prove that the use of remote sensing by LAPAN was already economically and technically appropriate, be able to base policy of the further development on the utilization of remote sensing in Indonesia. Further, with a description of the qualitative economic benefits can be used as a basis for decision making and improvement of the sustainability of the space activities.

Based on the above background, this paper will examine the intangible benefits economically of remote sensing activities in Indonesia. The purpose of this paper is generating intangible economic benefit study of remote sensing in Indonesia by LAPAN into information that gives a real picture of the level of success of the remote sensing activities in providing economic benefits and productivity increases, as a form of

15
implementing of the Law Republic of Indonesia Number 21 Year 2013 concerning Space. In this case, these will show the importance of the role of LAPAN as an institution driving the operation of the space ecosystem in Indonesia through one of its space activities.

4
The research method used to answer this research problem is descriptive and exploratory studies. To carried out data in this paper is through questionnaire results and indepth interviews. Datas were collected from the end user beneficiary of remote sensing information released by LAPAN in Indonesia especially in Agriculture and Palm Oil sectors. The limitation of the research is that the data processed using explorative and descriptive analysis rather than treated using structural equation analysis as quantitative statistic tools because of lack of respondents. The organization of this research started with an introduction, continued with literature review, methodology, research results, and closed by conclusion.

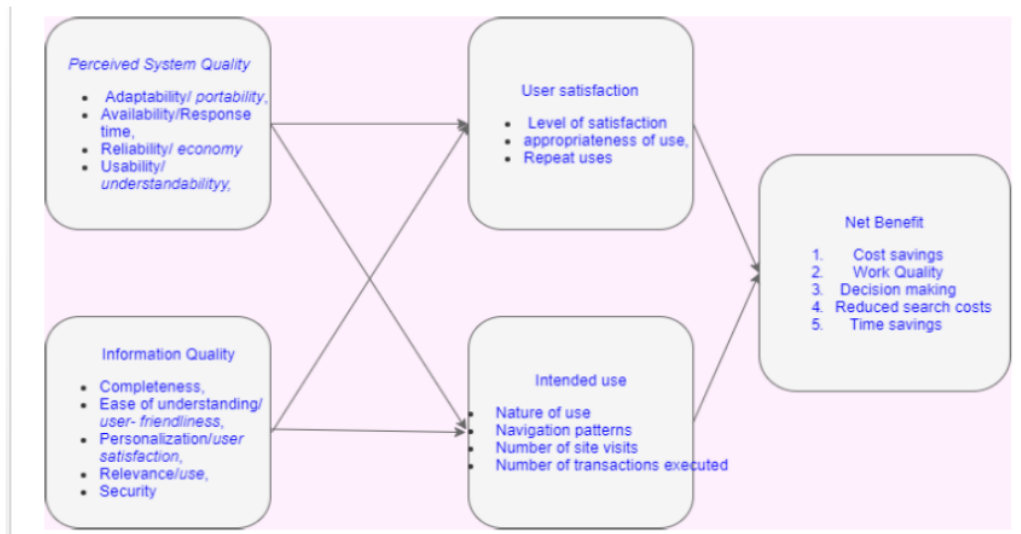
Literature Review

- Theoretical background and conceptual framework

The basic concept of this research related to intangible benefits proposed by (Gibson et al., 2004). According to Gibson et al., 2004, stated intangibles are difficult, sometimes impossible to quantify. Although many evaluation techniques are able to measure the tangible benefits of an investment, many have difficulty evaluating soft, or intangible benefits. In other words intangible economic benefits are interpreted as economic benefits that are felt but are difficult to measure in a monetary value, such as the increasing of accuracy and speed in decision making. The intangible benefits are not taken into account in the cash flow, but will indirectly affect the economic value of an object which benefits are measured. This statement is reinforced by the definition of intangible benefits (Laudon and Laudon, 2006), i.e benefits are difficult or impossible to measure in terms of value for money.

6
The conceptual framework of intangible benefit is based on the information system success model by the DeLone and McLean Information Value model (McGill et al., 2003). The reasonable consideration for choosing this model is that remote sensing is one type of information, so this model is very appropriate to use. In this model, system quality is measured using perceived System Quality and Information Quality. Indicators of Perceived System Quality are adaptability / portability, availability/response time, reliability / economy and usability / understandability. While indicators of Information Quality consist of completeness, user-friendliness, user satisfaction, relevant/use and security. Both constructs of quality will affect user satisfaction and intended used of the systems. Furthermore these condition has an impact on their performance (net benefit) both individually and ultimately has an impact on the organization.

Figure 1: Research Concept



Source: DeLong and McLean modified Information Value models (1992/2003)

- Empirical Review and Hypothesis development

Previous study stated that with the help of remote sensing technology, one can get geo-information quickly, accurately, efficiently and comprehensively (Wu and Li, 2009). Activities using remote sensing have been started since 1990s (Mulyadi, 2009). The use of remote sensing from the results of research Acil Tasman, 2013; USGS, 2013; Space.tec partners, 2012; EARSC, 2016 showed that there were high benefit from the use of remote sensing data and information. Specifically, remote sensing technology is also useful in many sectors. In the plantation sector, remote sensing technology through SPOT-6 imagery can be used to estimate productivity value of oil palms (Diana et al., 2019).

This study will continue the previous research above, with a hypothesis that remote sensing activities in Indonesia conducted by Indonesia space agency provides intangible economic benefits

Methodology

This paper use qualitative technique to accomplish the purpose of this research that are descriptive and exploratory studies. Qualitative method allows the researcher to explore and better understand the complexity of a phenomenon (Haradhan, 2018). Descriptive study is undertaken in order to ascertain and to describe the characteristics of variable of interest in a situation (Sekaran and Roger, 2009) with considering the data in the form of questionnaires. Suryana et al. (2013) argue that, descriptive method is a method that describes what currently prevails in which there is an attempt to describe, record, analyze and interpret the current conditions. An exploratory study is undertaken when not much is known about the situation at hand or no information is available on how similar problems have been solved in the past (Sekaran and Roger, 2009) therefore the data taken form in-depth interview.

Data

Data collection technique in this paper is carried out through questionnaire results and indepth interviews. The intangible benefit questionnaire for remote sensing information is based on the DeLone and McLean

model mentioned above. Data collected from respondents whose get remote sensing data or information from LAPAN. The questionnaires were submitted to explore the benefit from utilizing remote sensing system.

1. Questionnaire

- Questionnaire instruments of Perceived System Quality and Perceived Information Quality were designed not only to be suitable for end user of remote sensing, but also to be sufficiently to capture their perceptions of components of quality. These perception were scored on a Likert scale of 1 was labeled strongly agree to 5 was labeled strongly disagree. Indicators of Perceived System Quality are adaptability/portability, availability/response time, reliability/economy and usability/understandability. While indicators of Information Quality consist of completeness, user-friendliness, user satisfaction, relevant/use and security. Both constructs of quality will affect user satisfaction and intended used of the systems.
- Furthermore, Questionnaire instruments were formed to catch up these perception in creating user satisfaction and intending to use repeatedly. Indicators of user satisfaction were Level of satisfaction, appropriateness of use, and Repeat uses, while intended used of the systems indicators were nature of use, navigation patterns, number of site visits and number of transactions executed. These questionnaire would give information about how effective quality system and information quality in built user satisfaction and made them reused the remote sensing in their activities. These condition has an impact on their performance (net benefit) both individually and ultimately has an impact on the organization.
- The last questionnaire instrument would measure benefit for both individually and institutionally benefit caused by user satisfaction and intended use. Indicator of these instruments were Cost savings, Work Quality, Decision making, Reduced search costs, Time savings

Samples for questionnaires in this study were the end user beneficiary of remote sensing information released by LAPAN in Indonesia especially in Agriculture and Palm Oil sectors. Respondents were 2017 data users. From the number of Remote Sensing Users 373 people, 159 respondent were Traceable Email Addresses, 36 respondent were failed to send, and 123 respondent sent.

The benefits are measured based on the answers given by respondents using Likert scale method. Criteria for taking samples using the Purposive Sampling method, with the following criteria:

- Respondents are users of LAPAN Indonesia's remote sensing data and information;
- Respondents are users of Remote Sensing Data in the Deputy of Remote Sensing LAPAN (Center for Remote Sensing Utilization and Center for Technology and Remote Sensing Data);

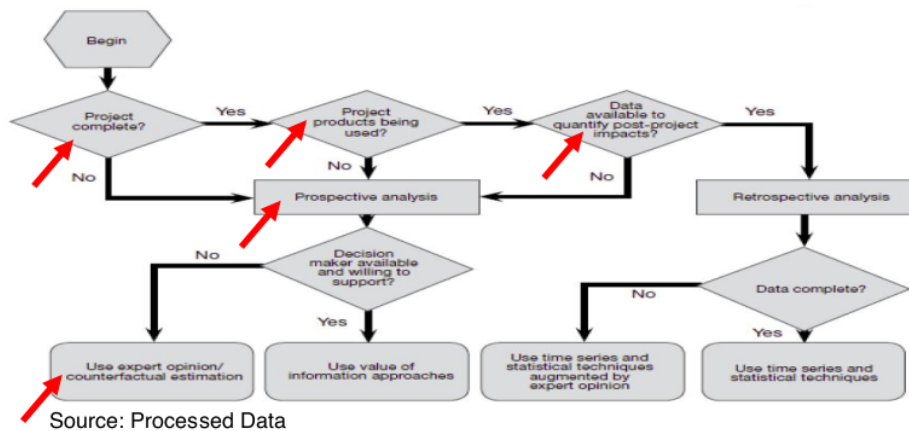
2. In depth interview

In depth interview is a survey method by conducting interviews with end users. This method is used to explore deeply the problems that occur, with the aim to sharpen the intangible benefits obtained. In depth interviews are conducted on end users who's experienced the intangible economic benefits of remote sensing from:

- Agricultural Land Resources Center Ministry of Agriculture of Indonesia
- Research and development Center Palm Oil Ministry of Agriculture of Indonesia

The basic approach of in depth interview intangible economic benefits remote sensing by considering the following flowchart:

Figure 2: Flowchart in Choosing a Research Approach



Notes:

- If the Project is complete then remote sensing activities already exist in Indonesia.
- If the Project products being used, the activity has been applied and used and even utilized by many users in various sectors.
- If not all data is available to quantify the post, then the project will conduct a prospective analysis.
- If Decision Maker is not Available and not willing to support, then Use expert opinion / counterfactual estimation (there are qualitative data to be quantified).

Result and Discussion

1. Descriptive questionnaire results

Based on the questionnaire that has been disseminated the level of user satisfaction remote sensing information can be stated as follows:

System and Information quality

The results of the questionnaire distributed as attached show that the users of remote sensing felt its benefits. Data shows 54.5% the use of data and information is used for spatial planning, 27.3% for agriculture and the rest for others. Most use of remote sensing is for very high and high resolution images. After obtaining the remote sensing data, most users directly use it, while 45.5% of respondents use it after going through the data processing first. Most respondents need to get the assistance of consultants to process it. The results of the interviews also showed savings in terms of time, labor and other costs.

Satisfaction and intended use

Respondents' responses to the quality of remote sensing information that is reflected by user satisfaction and intended use, are as follows: 100% of respondents are satisfied in using remote sensing information; 80% said it was very easy to use and provided benefits; 100% of respondents dared to pay for remote sensing respondent's benefit, even 23% strongly agreed; 80% of respondents more often use remote sensing data and information; 100% of respondents stated that they would upgrade the remote sensing to produce the latest information for helps their services process; 80% of respondents stated that sensory information can be organized and grouped together with other data logically and easily, also has a unique function (specificity); 100% of respondents stated using remote sensing information maximally to complete their work; 90% of respondents said that it was easy to make improvements in the system.

There are item need to pay attention to the level of satisfaction of using remote sensing information including: only 60% of respondents stated that it was easy to implement to the sub-organization or to the field they work without much modification and even 40% disagreed. In the other word the data difficult to be implemented; 60% stated the terminology used for sensory information was not the same for all systems, only 40% stated the same; 70% of respondents stated that sensory information cannot be implemented separately and independently without the need for other information. In means user still need effort to gather other information while running remote sensing; 50% stated that the sensory information documentation did not provide all the required information and did not explain the function of a fieldwork as a whole; only 50% of respondents agree with the statement that sensory information can easily to query.

From the description above, it can be concluded that respondents are very satisfied with the quality of remote sensing information and also tend to be intend to use it in completing their tasks. But these data and information still needs attention in terms of further utilization of the information, such as need to be made easier to further data processing and should have the same terminology for whole data.

Net Benefit (Impact on individuals and organization)

Impact on individuals

Respondents perception to the impact of using remote sensing information for the individual are as follows: 100% of respondents said remote sensing provided important and valuable assistance to improve performance and service quality in carrying out their tasks, increasing work effectiveness, increasing quality and quantity (volume / results) product; 100% of respondents agreed with the use of remote sensing led to an increase in the effectiveness of the work done and also an increase in work completion; 100% said it was easy to implement into the currently system in use even 20% said it was very easy; 90% of respondents stated that information has a large and positive impact on effectiveness and productivity in carrying out tasks; 50% of respondents stated that it was easy to make modifications / improvements to the data, while 50% still felt difficulties; 70% stated that sensory information contained enough information to understand the function of fieldwork.

Impact on organization

Respondent perception to the impact of using remote sensing information for the organizational are as follows: 90% of respondents said they could save labor and costs; 80% of respondents said that unknown access can be controlled well by using sensory information. Thus we can be concluded that overall there are intangible economic benefits felt by respondents both for individuals and organizations.

10
Based on the results of the questionnaire, it can be seen that remote sensing is beneficial both for individuals and for the organization of end users. Thus we can say that hypothesis was proven and showed the success of LAPAN in providing economic value for the activities of remote sensing information, also shows the importance of the tasks and functions of the LAPAN institution.

2. A descriptive study of the in-depth interview results

17
The in-depth Interview toward end user in: (i) Indonesian Center for Agricultural Land Resources Research and Development (ICARD) Ministry of Agriculture; (ii) Indonesian Sustainable Palm Oil, found the data account as follows:

- 1) ICARD used the data generated from SPOT 6, Modis, LANDSAT 8, TERRASAR satellites. The data were utilized to observe rice plants growth phases, to construct a soil map, and to monitor a crop. Remote sensing utilization to monitor rice plant growth phases can save time efficiently. Other benefits of remote sensing, such as:
 - a) Reducing surveys costs and supporting the policy makers in taking policies faster and effectively;
 - b) Monitoring an area efficiently in terms of food self-sufficiency;

- c) Faster, effective, and low-cost soil mapping through remote sensing rather than traditional soil mapping using aerial photography;
 - d) Effective fertilizer distribution strategies by observing through remote sensing data in classifying of the land into vegetative or generative characters as well as in distributing tools and machine facilities, water supply, plant seeds, etc.;
 - e) Agricultural land mobilization;
 - f) Estimating endemic drought areas;
 - g) Reliable and valid information used as a reference for other directorate-generals within the cluster of the Ministry of Agriculture in making an effective policy;
 - h) Monitoring the agricultural extensification;
 - i) Refraining or minimizing crop insurance fraud and misinterpretation.
- 2) Indonesian Sustainable Palm Oil utilizes the remote sensing data and information for pre-development service, including land suitability evaluation and plantation design, stocktaking, and monitoring as well as plantation area monitoring and tree census. Specifically, the utilization of remote sensing accounted as follows:
- a) Estimating palm oil production from one plantation, calculating chlorophyll content and nutrients in palm leaves. This statement is in synergy with the results of research by (Diana et al., 2019); (Wiratmoko et al., 2016), and (Carolita et al., 2015);
 - b) Estimating the potential of labor termination in a palm plantation;
 - c) Developing a strategy to shorten the working time, to reduce labor demand, and to cut down expenditure up to 50% through conventional methods;
 - d) Reducing manual estimation errors;
 - e) Problem-solving to occurred obstacles, for instances: providing temporal information on flood potential on a certain area within palm plantation;
 - f) Assisting a plantation in monitoring the recent condition of the plants, including plant diseases and pests attack.

Below is an expenditure comparison before and after remote sensing utilization, which results in a 64% cut of expenditures.

Table 1: The Significance of Remote Sensing Generated-Data and Information in Palm Oil Research And Development Department

Activity	Unit of area (ha)	Point(s)	Working time (IDR)	Team Cost (IDR)	Soil test costs (per 10% sample) (IDR)	Total cost (IDR)	Annotation
A survey without remote sensing	10.000	400	33,33	900.000	16.000.000	31.000.000	- Survey to a 10.000 ha area - Assuming the grid soil sampling for 500x500 m with each grid is sampled - The worker cost for one team is IDR 450.000,- - The workers can only make 12 points per day
A survey with remote sensing Free Download	10.000	250	16,67	900.000	10.000.000	17.500.000	- Assuming that there is no grid with a unit of area, assuming a 600 ha area coverage in a day - The worker cost for one team is IDR 450.000,-
Cost reduction	-	150	16,67	-	6.000.000	3.500.000	
		60%	100%	0%	60%	77%	

Source: Processed Data

Activity	Unit of area (ha)	Point(s)	Worker's Day Needs (IDR)	Team Cost (IDR)	Remote sensing costs (IDR)	Total costs (IDR)	Annotation
Field census without remote sensing	6.000	200	500	43.000.000	0	43.000.000	- Assuming a 6.000 ha plantation - Assuming a 30 ha areas need 2.5 HOK labors - Costs per day IDR 86.000,-
Field census with remote sensing	6.000	200	100	15.000.000	13.500.000	28.500.000	- Field census with high-res remote sensing archives - Assuming that three blocks can be measured within a day - Assuming that the costs of professional service are IDR 150.000 per day - The costs of remote sensing archives USD 15 - 1 USD = IDR 15.000,-
Cost reduction	-	-	400	28.000.000	13.500.000	14.500.000	
			400%	187%	-100%	51%	

Source: Processed Data

Implication

Based on the questionnaire and in-depth interview give the result that remote sensing utilization provide the intangible economic benefits within the agricultural sector and palm plantation sector. Thus, remote sensing provided by the Indonesian National Institute of Aeronautics and Spaces (LAPAN) has been proven economically benefit and as an institution has fulfilled their duties in improving social welfare and Indonesian productivity.

From the questionnaires result description and indepth interview result, writer can interpret that remote sensing activities conducted by LAPAN provide intangible economic benefit. The above results illustrate that the system quality measured using Perceived System Quality and Information Quality as proxies gets a good rating from respondents indicated by a high percentage (in the range of 80-90%) of almost all of these variables (adaptability/ portability, availability/Response time, reliability/economy and usability / understandability) and (completeness, user-friendliness, user satisfaction, relevant / use and security). System quality affect their satisfaction and intensity of use remote sensing information. It means respondent get the benefit from these activities. Nevertheless in those system quality proxies, there are indicators that needs attention to be fixed (54%), namely the timeliness of the receipt of sensory data or information and the adequacy of the amount.

The results above are strengthened by in-depth interview. It method provide the intangible economic benefits of remote sensing utilization within the agricultural sector and palm plantation sector. In these sectors the expenditures 64% cut of comparison before and after remote sensing utilization. These results reinforce previous research using NPV to measure the economic value of remote sensing, which gets NPV of positive sensing remote sensing activities. It means remote sensing provides economic beneficially and feasible to be continued (Diana et al, 2019). Thus LAPAN has succeed in providing economic value for the activities of

remote sensing information and in carrying out their duties and functions in improving the welfare as well as Indonesian productivity.

Conclusions

Based on the findings show that hypothesis was proven. This study show that remote sensing activities in Indonesia conducted by Indonesia space agency provides intangible economic benefits. Based on the results of the questionnaire, it can be seen that remote sensing is beneficial both for individuals and for the organization of end users. It proven by the results of the questionnaires displaying remote sensing quality gets a good rating from respondents. Perception of quality effect their satisfaction and intencity of use remote sensing information. It means respondent get the benefit from these activities. Thus we can say that hypothesis was proven and showed the success of LAPAN in providing economic value for the activities of remote sensing information, also shows the importance of the tasks and functions of the LAPAN institution. The results are supported by the data from the in-depth interviews, which show economical benefits in the agriculture and palm oil sectors activities with an average efficiency of 64% rather than without remote sensing. Thus, the Indonesian National Institute of Aeronautics and Spaces has succeeded in carrying out its duties and functions in improving the welfare as well as Indonesian productivity. Based on the result we recommend lapan, which is The Indonesian National Institute of Aeronautics and Spaces plays a vital role in conducting aeronautics and spaces matters, to continue the use and development of remote sensing for a wider range of activities that offers benefits to society technically (previous research) and also economically. We also give a suggestion for further research is to quantify the intangible benefits of remote sensing activities and increase the national data sampling by comparing the quantification results with the global tangible benefits of remote sensing.

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Appendices

The questionnaire full-list

1. Perceived System Quality

- a. Adaptability/ portability
 - It is accessible for the remote sensing data/ information users to modify/ fix the data
- b. Availability/ Response time
 - Remote sensing utilization has improved my work
 - The information provided by the remote sensing is always sent at the desired-time (1)
 - The remote sensing helps me finish my work faster
- c. Reliability/economy
 - The remote sensing utilization has improved the quality of my work
 - The remote sensing can provide accuracy to carry out my work
 - The information provided by the remote sensing is accurate to my needs
- d. Usability/ understandability
 - The information provided by the remote sensing is in line with my needs
 - The data/ information from the remote sensing are easy to be fixed within the system
 - The terminology used within the information from the remote sensing is similar to all system

2. Information Quality

a. Completeness

- The information provided by the remote sensing pretty thorough

b. Ease of understanding/ user-friendliness

- The information provided by the remote sensing is accessible and understandable
- The information provided is easy to be implemented to the currently-used system
- The information provided by the remote sensing can be organized along with other data in consecutively

c. Personalization/user satisfaction

- The remote sensing helps me finish my work faster
- Each of the information provided by the remote sensing has a distinctive function

d. Relevance/use

- The information provided by the remote sensing is accurate to my needs
- The information provided by the remote sensing can be implemented separately and independently without any support from other information
- The reliability of the data provided by the remote sensing is effective in completing my work

e. Security.

- Unrecognized access can be well-monitored through the remote sensing

3. User satisfaction

a. Level of satisfaction

- I generally feel satisfied with the information provided by the remote sensing
- I utilize the remote sensing service to its maximum potential

b. Repeat uses

- I often use the high-quality remote sensing service because the generated information is accurate

c. Appropriateness of use,

- The information provided by the remote sensing provides a positive impact on my effectiveness and productivity in completing my work

4. Intended use

a. Nature of use

- The information provided by the remote sensing depicts my work thoroughly
- I feel comfortable with the information provided by the remote sensing

b. Navigation patterns

- The information provided by the remote sensing as fulfilled the requested-needs
- The information provided by the remote sensing is easier to be queried
- The information provided by the remote sensing is easy to be used

c. Number of site visits

- The upgraded methods of remote sensing produce updated information to assist me in doing the service

d. Number of transactions executed

- The information provided by the remote sensing can enhance the quantity of the product
- I dare to pay more for the information provided by the remote sensing

5. Net Benefit

a. Cost savings

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- The utilization of remote sensing can help in reducing the use of labors
 - The utilization of remote sensing can reduce the expenditures
- b. Work Quality
- The utilization of remote sensing can enhance the quality of the product
 - Every information provided the remote sensing contains adequate information in understanding my field-project
 - The utilization of remote sensing can enhance the quality of my work
 - I feel confident that the remote sensing service can improve the quality of my work.
- c. Decision making
- The utilization of remote sensing provides quick results to help me in making a decision
 - The utilization of remote sensing is really beneficial
 - The information provided by the remote sensing provides essential and valuable assistance in improving the quality of my work
- d. Reduce search cost
- The information provided by the remote sensing is easier to be implemented to the sub-organization/ fieldwork without any unnecessary modification
- e. Time savings.
- Results of remote sensing data / information implemented.

Intangible Economic Benefit of Remote Sensing Data in Indonesia

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