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Participatory Communication in Rural Data Collection (Case: Data Desa Presisi Program in Watunohu District)

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ABSTRACT: The Precision Village Data (DDP) Program is a program that emphasizes the importance of village community participation in collecting their own data. In this program, residents are the subjects of collecting data, in other words, the DDP program emphasizes participatory communication in collecting data for sustainable development. This research aims to explore how the principles of participatory communication are related to the success of bottom-up village data collection in the DDP program. The research results show that participatory communication in the DDP program in Watunohu District is at a medium/marginal level where Functional Participation occurs. Furthermore, from the research results it is recommended that there is a need to increase the application of participatory communication principles so that the level of community participation can reach the Empowered Participation level.

KEYWORDS: Effectiveness, Functional Participation, Participatory Communication, Precisionata, Village Data

I. INTRODUCTION

Generally, the success of development programs depends on two main components, namely: communication and community involvement (Servaes 2008). For this reason, participatory communication as a method can increase community involvement in development projects. The aim is to build two-way communication between beneficiaries and program owners, like a data development program that uses a sender-and-receiver paradigm.

Over the last 25 years or so, there has been a significant increase in participatory mapping and data collection programs throughout the world, as revealed by Brown and Kyttä (2014) and Cochrane et al. (2014). Going forward, it is important to ensure that village data in Indonesia is collected efficiently, effectively and precisely (Sjaf et al., 2020). According to Couldry's (2014) perspective, effective government management increasingly relies on the analysis of dynamically collected individual data, which emphasizes the need for a bottom-up approach in development policy making.

Participatory data collection, which has developed into an independent field of practice and study since the late 1980s, emphasizes the importance of communication in sustainable development. This approach facilitates interaction between development factors, strengthens the exchange of information and knowledge, and encourages active community participation. In the context of digital development, methods such as participatory mapping and data collection are becoming increasingly important. A significant example of this approach is the implementation of Precision Village Data (DDP) in Indonesia, which involves village residents directly in data collection to ensure accurate and relevant results. According to Sjaf et al. (2022), DDP has been successfully implemented in various regions in Indonesia and continues to be adopted at various levels of government, showing the importance of a bottom-up approach in the digital era.

Participatory communication plays a central role in making DDP programs effective and efficient. Universities play an important role as a link between scientific methods and community needs to build village data that is accurate, relevant, and can be used for better development planning. Good and participatory communication allows the information collected to truly reflect field conditions, so that the results are more useful for the community.

For this reason, Servaes (2021) highlights key concepts in participatory communication, namely: dialogue, empowerment, identity, collaboration and consensus. Dialogue allows community members, change agents, and stakeholders to engage in a

continuous two-way communication process, creating a deeper understanding and collective awareness of their problems and needs. Participatory communication in development programs is more effective with a group approach. Furthermore, Bessette (2006) added that the existence of local groups is important in facilitating the identification of the priorities and needs of their members. The group facilitates coordination in finding and implementing mutually agreed priority solutions. Local groups not only function as a vehicle for communication, but also as a mechanism to strengthen a sense of togetherness and solidarity among their members.

The focus of this research is to explain the position of higher education institutions in relation to local communities, identify community needs, and involve them actively in the data collection process as data collection facilitators. With active community participation, it is hoped that not only will the village data collected be more accurate and relevant, but it will also give people more confidence in the results. It is hoped that this research will provide insight into how to increase community participation in participatory data collection, produce better village data, and overcome various development challenges and provide real benefits for the welfare of village communities.

II. RESEARCH METHODS

To explain participatory communication in the DDP program, this research uses quantitative methods and correlational descriptive techniques. According to Bungin (2017), quantitative methods can be used to measure social behavior that can be seen and occurs directly. Creswell (2013) added that this method examines the relationship between the variables being measured. In this research, a census approach was used to invite 46 DDP program data collection facilitators in Watunohu to provide their views. Summative evaluation is used to assess program achievements (Effendi & Tukiran, 2014), and data is collected by distributing questionnaires to the entire population of data collection facilitators to assess the level of participatory communication (Muljono 2006). Spearman rank correlation analysis and descriptive statistical analysis are two tools used to analyze data. Descriptive analysis uses frequency distribution tables and percentages from questionnaires, while Spearman's rank correlation analysis looks at how variables such as individual characteristics, participatory communication principles, and development communication models relate to the success of the DDP program.

Sugiyono (2012), emphasized that the correlation coefficient can be interpreted based on the following scale: a value of 0.00 to 0.199 indicates a "very low" level of correlation. Values of 0.20 to 0.399 are considered “low.” Furthermore, a "medium" correlation is indicated by a value of 0.40 to 0.599, while a value of 0.60 to 0.799 indicates a "strong" correlation. Values from 0.80 to 1.000 indicate a “very strong” correlation. Based on the Taxonomies of Participation model (Mefalopulos 2008) this scale can be translated into levels of participation, where "very low" and "low" indicate passive participation, "medium" means participation through consultation, "strong" indicates functional participation, and “very strong” reflects empowering participation.

III. RESULTS AND DISCUSSION

A. Principles of Participatory Communication

The DDP program in Watunohu District is implemented with the principles of participatory communication through four key pillars: dialogue, empowerment, collaboration, and context. Dialogue is assessed based on the frequency and effectiveness of meetings held as well as the level of active involvement of the local community. Empowerment is determined through the effectiveness of training provided to facilitators to improve their ability to manage and utilize data efficiently. Collaboration is measured by the dynamics of the work team between supervisors, facilitators, the community and local government, the emphasis on synergy and the results of effective collaboration. Finally, the context is evaluated through the quality of interactions in discussions and negotiations, which reflects the quality of the resulting decisions and the level of satisfaction of all parties involved in the process.

Most respondents (82.61%) reported that the level of dialogue in Watunohu District was moderate, indicating that the twoway interaction between facilitators and village communities was quite effective, but there were still opportunities for improvement so that communication could be more optimal. Improving more intensive and open communication will facilitate more active community involvement in discussions and decision-making, which in communication will increase the sense of ownership and responsibility for the program. In addition, 63.04% of respondents thought that the level of empowerment was also in the medium category, indicating that there had been significant efforts to improve the capacity of village communities, but it was still not optimal. More effective empowerment through training and education will equip citizens with the skills and knowledge necessary to participate more actively in programs. This will also help village communities become more independent and proactive in development activities.

Table 1. Participatory communication principles categories based on data collection facilitator responses to the DDP program

Principles of Participatory Communication	Category	Number of Respondents	
		People	%
Dialogue	Low	8	17,39
	Medium	38	82,61
	Height	0	0
Empowerment	Low	6	13,04
	Medium	29	63,04
	Height	11	23,91
Collaboration	Low	9	19,57
	Medium	37	80,43
	Height	0	0
Consensus	Low	8	17,39
	Medium	38	82,61
	Height	0	0

n=46

Most respondents (82.61%) evaluated the level of dialogue in the DDP Program as moderate, indicating that the two-way interaction between facilitators and village communities was quite effective, but there were still opportunities for improvement so that communication could be more optimal. Improving more intensive and open communication will facilitate more active community involvement in discussions and decision-making, which in turn will increase the sense of ownership and responsibility for the program. Apart from that, 63.04% of respondents thought that the level of empowerment was also in the medium category, indicating that there had been significant efforts to improve the capacity of village communities, but it was still not optimal. More effective empowerment through training and education will equip citizens with the skills and knowledge necessary to participate more actively in this program, for a longer duration. This will also help village communities become more independent and proactive in development activities.

Collaboration, rated as moderate by 80.43% of respondents, indicates that cooperation between various parties, including supervisors, village government, data collection facilitators, and residents, is going well but still needs to be improved. Increasing stronger and more structured collaboration will maximize the use of existing resources and expertise, and facilitate the achievement of shared goals more effectively.

Consensus, which was also rated as moderate by 82.61% of respondents, indicated that although joint decisions were reached quite often, the process was not optimal. Improving the consensus process by involving all parties in more inclusive and constructive discussions will strengthen community support and commitment to the decisions made, as well as increase community participation in program implementation.

In the end, in Watunohu District, the DDP program is at a medium level in implementing the principles of participatory communication. While this represents progress, there remains great opportunity for improvement in all aspects of participatory communication. Programs will be more effective and produce better results if elements of discussion, empowerment, collaboration and consensus are enhanced. To achieve this goal, the DDP Program must increase interaction between data collection facilitators and supervisors, improve empowerment programs through more comprehensive training, improve collaboration mechanisms between all parties involved, and ensure that the process of achieving consensus is more inclusive and involved. In this way, future DDP will not only improve the quality of the data produced, but will also help village communities become active participants in inclusive and sustainable data development.

B. Development Communication Model in the DDP Program

Communication plays a vital role in realizing effective and sustainable village development. Development communication models, whether dialogic, which emphasizes two-way participation, or monologic, which is one-way, have different implications for community involvement and the effectiveness of DDP programs.

The dialogic communication model consists of two main components: Communication to Assess (CTA) and Communication to Empower (CTE). The research revealed that 60.86% of respondents considered CTA to be at a moderate level, indicating an urgent need to improve the evaluation process and increase community involvement in each phase of program implementation. Then, 80.43% of respondents placed CTE at a medium level, indicating the need to strengthen community empowerment efforts so that they are not only beneficiaries but also active participants in village development. In the monologic communication model, which includes Communication to Inform (CTI) and Communication to Persuade (CTP), 58.69% of respondents assessed CTI to be at a medium level, indicating that information dissemination needs to be improved so that it is more effective and can be understood

by the public. Furthermore, 84.78% of respondents gave a moderate rating to CTP, revealing that the persuasion techniques currently used are not adequate to convince the public of the importance of their active participation in this program.

Table 2. Category of level of use of development communication models in the DDP

Development Communication Model	Category	Number of Respondents	
		People	%
Dialogue Communication Model			
Communication to Assess	Low	7	15,21
	Medium	28	60,86
	Height	11	23,91
Communication to Empower	Low	9	19,56
	Medium	37	80,43
	Height	0	0
Monological Communication Model			
Communication to Inform	Low	9	19,56
	Medium	27	58,69
	Height	10	21,73
Communication to Persuade	Low	7	15,21
	Medium	39	84,78
	Height	0	0

n=46

In the context of the DDP Program in Watunohu District, the findings of this research confirm that increasing the quality and intensity of dialogical communication is very important. More dialogic communication will allow communities to feel more involved and empowered, which in turn will increase the effectiveness of the program. When involving the community more actively, the DDP program will not only produce more accurate and precise data, but will also create a sense of shared ownership and responsibility for the success of the program. Two-way interaction and active community participation are more effective in encouraging the success of inclusive and sustainable development programs. By adopting a more dialogic communication model, the DDP program can better achieve its main goal, namely empowering village communities to actively participate in collecting and utilizing accurate data for better development planning.

Therefore, it is recommended that the DDP Program in Watunohu District place more emphasis on increasing dialogic communication. This can be done through training facilitators in more inclusive and interactive communication techniques, as well as by developing communication strategies that are able to accommodate the needs and views of village communities. In this way, this program will not only be more effective and efficient, but also more meaningful for all the village communities involved.

C. Correlation Analysis

The relationship between the principles of participatory communication in the DDP program

In the context of the DDP Program in Watunohu District, participatory communication principles such as dialogue, empowerment, collaboration and consensus play a crucial role in various activities, with correlations showing varying levels of participation.

The results of the correlation test in the Participatory Drone Mapping aspect, found that the relationship between this activity and the dialogue aspect only reached a value of 0.3741, which was categorized as "low". This shows that participation in the context of dialogue is still passive, where the community is less actively involved in the communication and discussion process during mapping. Their participation is more as recipients of information than as active contributors. Meanwhile, the correlation values for empowerment, collaboration, and consensus are in the "medium" category with values of 0.5319, 0.4439, and 0.5348 respectively. This indicates that the level of participation in these three aspects is higher than dialogue, but is still limited to the consultation level. This means that even though the community is involved in providing input and discussing, their involvement has not yet reached the stage of controlling or making major decisions. They participate in shaping discussions and may influence some aspects of participatory drone mapping.

Table 3. Correlation coefficient test results between participatory communication principles and the DDP Program

The DDP Program	Principles of Participatory Communication			
	Dialogue	Empowerment	Collaboration	Consensus
Mapping				
Participatory Drones	0,3741	0,5319*	0,4439	0,5348*
Participatory Census Data Collection	0,4157	0,5627*	0,5342*	0,6615*
Participatory Rural Appraisal	0,4687	0,6295*	0,5124*	0,5503*

Notes:
*"Medium" correlation or participation through consultation
**"Strong" correlation or functional participation

Furthermore, in Participatory Census Data Collection, the correlation values for dialogue, collaboration, and consensus, which are 0.4157, 0.5124, and 0.5503 respectively, place participation in the "medium" category, indicating that community participation is limited to consultation with providing input and participating in discussions, but has not yet reached the level of independent decision making. Meanwhile, the "strong" correlation value for empowerment (0.6295) indicates the level of functional participation, with the community actively involved not only as consultants but also as main actors, which shows an increase in local capacity as well as skills and knowledge. Finally, for Participatory Rural Appraisal (PRA) activities, the relationship with dialogue, collaboration, and consensus shows "medium" correlation values (0.4687, 0.5124, and 0.5503), indicating limited participation at the consultation level where the community provide input but have not taken an active role in decision making. Meanwhile, the "strong" correlation value for empowerment (0.6295) indicates PRA's success in functionally activating community capacity, giving them a greater role in implementing activities. This underscores the need for increased dialogue and collaboration to achieve deeper and more empowered participation.

The conclusion from the correlation test on three participatory activities shows that community participation tends to be passive in dialogue, indicated by Participatory Drone Mapping showing the lowest relationship with this principle. Meanwhile, empowerment in Participatory Census Data Collection and PRA shows a strong correlation, indicating more active functional participation. Collaboration and consensus on all activities were generally at a moderate level, indicating that participation was limited to consultation without significant decision-making from the community.

The relationship between the development communication model and the DDP program

Correlation test results in Participatory Drone Mapping activities with the Dialogical Communication Model, which consists of Communication to Assess (CTA) and Communication to Empower (CTE), as well as with the Monological Communication Model, which includes Communication to Inform (CTI) and Communication to Persuade (CTP), all showed values that were in the “medium” relationship category. This shows that the level of community participation in this activity is limited to the consultation level, characterized by the community only being involved in providing feedback without having a significant role in decisionmaking or program implementation. The same thing also happened in Participatory Census Data Collection activities, interactions both through the Dialogic and Monological Communication Models again showed a "medium" correlation. This indicates that, although there are efforts to involve the community, this involvement is still limited to providing input and does not move to more in-depth or influential participation.

Meanwhile, in Participatory Rural Appraisal (PRA) activities, the correlation test results show variations, for CTA from the Dialogic Communication Model it has a "low" correlation value, depicting passive participation where people are less actively involved, more as recipients of information than as creators. decision. However, the correlation values for CTE and CTI, also from the Dialogic and Monological Communication Models, are respectively in the "medium" category, which again illustrates that participation is limited to the consultation level. In contrast, CTP from the Monological Communication Model reaches the "strong" category, which indicates that the activities of the monological communication model have succeeded in facilitating more functional participation, the community is not only involved in providing feedback, but is also active in implementing decisions and actions resulting from these activities.

Table 4. The correlation coefficient value between the development communication model indicators and the implementation of the DDP program

The DDP Program (Y)	Development Communication Model			
	Dialogue Model		Monological Model	
	CTA	CTE	CTI	CTP
Participatory Drone Mapping	0,4257*	0,5270*	0,4598*	0,5789*
Participatory Census Data Collection	0,4568*	0,5701*	0,4192*	0,5948*
Participatory Rural Appraisal	0,3598	0,5356*	0,5787*	0,6429**

Notes:
*"Medium" correlation or participation through consultation
**"Strong" correlation or functional participation

Therefore, these results underscore the importance of strengthening all communication models in participation programs in order to increase the level of community involvement from mere consultation to more powerful and functional participation. A combination of dialogic and monologic approaches to communication can be the key to achieving more effective and inclusive outcomes, enabling communities to not only participate in discussions, but also play an active role in decision-making and implementation.

D. Participatory communication index in the DDP program

The calculation of the participatory Communication Index level in the DDP Program is based on the calculation of the PPI (People Participation Index) equation developed by Bagdi (2002) in Bagdi and Kurothe (2014). In the context of looking at the Participatory Communication Index (IKP), the first thing to do is determine categories based on the geometric (geomean) average value and standard deviation of the data collected, as in Table 5.

Table 5. Categorization of participatory communication based on normal distribution curve values

The range of the normal distribution curve	IKP value range	Category
<Geomean – S.D.	0 – 0,786	Low
Geomean – S.D. to Geomean + S.D.	0,786 – 0,871	Medium
>Geomean + S.D.	0,871 – 1	Height

S.D.: Standard Deviation

Table 5 shows that provides clear categories on how to classify the level of participatory communication based on geomean and standard deviation.

Table 6. Participatory Communication Index (IKP)

Participatory Communication *(K)*	Sub-Index	Category	Participation Category
Dialogue	0,823	Medium	
Empowerment	0,825	Medium	**Intermediate/Marginal**
Collaboration	0,820	Medium	**(0,786-0,871)**
Consensus	0,850	Medium	
IKP	0,829	**Medium**	

n=46

Table 6 provides an overview of the level of the Participatory Communication Index (IKP). IKP does not measure correlations or relationships, but rather assesses the overall quality of participatory communication. In the table it can be seen that the overall level of participatory communication of data collection facilitators, in this case as community representatives who contribute to the development of precision village data, shows a medium/marginal level because the calculated IKP is 95.83 percent. Based on the results of these scores and also the categories concluded, based on the opinion of Mefalopulos (2008) regarding Taxonomies of Participation Models that the middle/marginal level of participation is included in the functional participation typology.

In this DDP program, it was concluded that the participation that occurred was functional participation, the community involved as data collection facilitators was given the opportunity but their contribution was limited according to the context of their involvement in the DDP program data collection methodology.

IV. CONCLUSIONS AND RECOMMENDATION

Understand the extent to which participatory communication principles contribute to the implementation of the DDP Program and see how elements such as dialogue, empowerment, collaboration and consensus interact in the various activities of this program. Evaluation of communication participation levels, as well as the relationship between dialogic and monological communication models, provides valuable insight into program effectiveness and areas requiring improvement.

A. Conclusions

1. **Participatory Communication in the DDP Program**

   The DDP program in Watunohu District shows a moderate level of participatory communication. Even though there has been progress, there is still great opportunity for improvement in discussion, empowerment, collaboration, and achieving consensus for DDP programs in other regions.

2. **Appropriate Development Communication Model**

   The ideal communication model for the future DDP program is a combination of dialogic and monologic approaches. The dialogic approach allows for more active and inclusive participation from the community, while the monologic approach is effective for conveying information efficiently.

3. **Participatory Communication Index in the DDP Program**

   Community participation in the DDP program is primarily functional, where communities are involved as data collection facilitators but their contribution is limited according to the context of the data collection methodology applied.

B. Recommendation

1. **Participatory Communication**

   The DDP program must increase interaction between data collection facilitators (citizens) and supervisors (universities), provide more comprehensive training for community empowerment, improve collaboration mechanisms between all parties involved, and ensure that the process of achieving consensus is more inclusive and collaborative.

2. **Development Communication Model**

   The DDP programs should adopt a more dialogic communication approach to strengthen shared decision-making and community-based policy development, while utilizing a monologic approach to convey specific information in an efficient and measurable manner.

3. **Increasing Community Participation through Communication**

   It is important to strengthen community involvement in the DDP program, changing their involvement from merely functional to more empowering. This involves increasing training and mentoring for data collection facilitators (citizens), as well as expanding opportunities for them to actively contribute to decision-making and implementation.

REFERENCES

1) Bagdi GL, Kurothe RS. 2014. *People's Participation in watershed management programmers: evaluation study of vidarbha region of maharashtra in india.* International Soil and Water Conservation Research. 2(3):57-66. Doi:10.1016/S20956339(15)30023-X.
2) Bungin, Burhan. 2017. *Metodologi Penelitian Kuantitatif: Komunikasi, Ekonomi, dan Kebijakan Publik Serta Ilmu-Ilmu Sosial Lainnya (Edisi Kedua).* Jakarta: Kencana.
3) Brown G, KyttäM. 2014. Key issues and research priorities for public participation GIS (PPGIS): asynthesis based on empirical research. Appl Geogr 46:122–136
4) Effendi S, Tukiran. 2014. *Metode Penelitian Survei*. Jakarta (ID): LP3ES.
5) Couldry, N., & Powell, A. 2014. Big Data from the bottom up. In Big Data and Society (Vol. 1, Issue 2, pp. 1–5). SAGE Publications Ltd. https://doi.org/10.1177/2053951714539277
6) Creswell J W. 2013. *Research Design Pendekatan Kualitatif, Kuantitatif, dan Mixed*. Yogyakarta : Pustaka Pelajar.
7) Creswell, J W. 2015. *Penelitian Kualitatif dan Desain Riset: Memilih Diantara Lima Pendekatan*. Yogyakarta (ID): Pustaka Pelajar
8) Kelly, W.D., Ratliff, T.A., and Nenadic, C. 1992. *Basic Statistics for Laboratories,* John Wiley and Sons, Hoboken, NJ.
9) Ibuot UP, Majemu SA, Nwantah M. 2021. *Participatory Communication: An Audience-Centric Iniciatives.* Journal of Humanities and Social Sciences. Nigeria. Lagos State University.

10) Mefalopulos, P. 2008. *Development Communication Sourcebook. Broadening the Boundaries of Communication.* Washington, D.C.: The World Bank
11) Muljono P. 2006. *Pengukuran dalam Bidang Sosial*. Bogor (ID): Pustaka Wirausaha Muda.
12) Servaes J. 2008. *Communication for Development and Social Change*. Edited by Servaes. New Delhi (IN): Sage.
13) Servaes J. 2021. *Handbook of Communication for Development and Social Change*. Edited by Servaes. Hongkong: Kowloon.
14) Sjaf S, Elson L, Hakim L, Godya IM. 2020. *Data Desa Presisi.* Bogor (ID): IPB Press.
15) Sjaf S, Sampean, Arsyad AA, Elson L, Mahardika AR, Hakim L, Amongjati SA, Gandi R, Barlan ZA, Aditya IMG, et al. 2022. Sep. *Data Desa Presisi: A New Method of Rural Data Collection.* MethodsX.
16) Sjaf S, Arsyad A, Mahardika A.R, Gandi R, Elson L, Hakim L; Barlan Z.A; Utami R.B; Muhammad B; Amongjati S.A; Sampean; Nugroho D.A. *Partnership 4.0: smallholder farmer partnership solutions*, Heliyon, Vol. 8, Issue 12. Doi.org/10.1016/j.heliyon.2022.e12012.
17) Tufte T, Mefalopulos P. 2009. *Participatory Communication A Practical Guide.* Washington D.C: The International Bank for Reconstruction and Development.