The Journal of Society and Media, October 2022, Vol. 6(2) 566-590
https://journal.unesa.ac.id/index.php/jsm/index
E-ISSN 2580-1341 and P-ISSN 2721-0383
Accredited *KEMENRISTEK/ BRIN No.148/M/KPT/2020*
DOI: 10.26740/jsm.v6n2.p566-590

The Development of Village Data and Information Management through the Innovation Diffusion

Galih W. Pradana[1*], Indah Prabawati[2], Muhammad Farid Ma'ruf[3], Badrudin Kurniawan[4], Deby Febriyan Eprilianto[5], Tolentino de Araujo[6]

[1]Universitas Negeri Surabaya, Indonesia
[6]Universidade Nacional Timor Lorosa'e (UNTL), Timor Leste

Abstract
Public services, including in villages, have begun to be directed and adjusted to the concept of data services based on information, communication, and technology (ICT). E-Monografi Desa is expected to be able to present village data profiles used to determine the characteristics of potential resources, the development of all development sectors, as well as development problems in each village and sub-district. The research was conducted in Kedung Peluk Village, Candi District, Sidoarjo Regency, using a qualitative approach. The data collection techniques used by the researcher include interviews (interviews), Focus Group Discussions (FGD), and Literature Studies. We used Rogers' Diffusion of Innovation theory to analyze the phenomena and issues discovered. Based on the results of the FGD, there are also inputs to improve the design of the E-Monografi Desa application for users.

Keywords: *e-monografi desa, diffusion, innovation.*

Paper type: *Research paper*

***Corresponding author**: galihpradana@unesa.ac.id
Received: 30 August 2022; Received in revised from: 16 September 2022; Accepted: 30 October 2022; Available online: 31 October 2022

Cite this document: Pradana, Galih W. dkk. (2022). The Development of Village Data and Information Management through the Innovation Diffusion. *The Journal of Society and Media*, 6(2), 566-590. DOI: 10.26740/jsm.v6n2.p566-590

© 2022 The Author(s). Published by The Journal of Society and Media. This is an open access article under the CC BY license (https://creativecommons.org/licenses/by/4.0/)

INTRODUCTION

The demands on regional government administration have become increasingly complex since the era of globalization and regional autonomy began. Local governments are required to prepare an efficient bureaucratic system by developing information technology to improve institutional performance, which, of course, with the support of quality human resources. With the establishment of e-government, it is expected to increase public service transactions that are not limited by time and location barriers, and at affordable costs by the community. In developing a management system and utilizing advances in information and communication technology, the government must immediately implement the transformation process towards e-government (Supriyanto, 2016).

The government's policy to oversee equitable development since the implementation of regional autonomy (Law No. 22/1999, amended to become Law No. 32/2004 on regional provincial) through the Minister of Home Affairs Regulation No. 13. the Year 2012 (Permendagri No.13/2012) concerning monographs on villages and Permendagri No.12/2007 concerning guidelines for compiling and utilizing village profile data. To know an accurate, comprehensive, and integral description of the potential and level of village development, it is necessary to prepare village and sub-district profiles da; village and sub-district profile Data needs to be utilized to encourage the development of self-help and self-help villages to become self-sufficient villages. Villages that can carry out development management independently are not only able to mobilize all resource assets owned by the village, but the village will also be able to improve the basic needs of citizens, livelihood needs, fight for citizens' rights and manage sustainable life (Mukhsin, 2020).

The utilization of village profile data is used to determine the characteristics of potential resources, the development of all development sectors, and development problems in each village as a guide in determining the direction of the village's growth following the typology of potential and community development. The existence of a Profile and Monograph Data Management System can provide a comprehensive picture of the town and the potential that exists in the area to make

it easier for all interested parties who need data. The speed of economic development, education, health, security and order, political sovereignty, community participation in development, community institutions, village government performance, and guidance and supervision are used to determine the level of village development that reflects the success of growth every year and every five years. The evaluation of the success of development activities every year will determine the rate of village development in the categories of fast developing, developing, slow developing, and less developed. Furthermore, the analysis results of the village development rate every year are used to measure the level of village development every five years in the classification of self-sufficient, self-reliant, and self-help villages.

The government is increasingly intensifying the use of digital technology in village information systems due to the acceleration of the pace of globalization affecting all lines, including the use of the internet and technology that is becoming easier and more sophisticated. Davis (1989) also said in his research that a sound system is one where we can access information or websites easily without putting a lot of effort into it. Therefore, the development of digital village information is vital. Unfortunately, the current processing of village profile data and monographs in local governments is not optimal, computer equipment is limited to data processing with existing standard applications, and online use is used when looking for information or sending emails on the internet. In addition, limited IT resources and the collection of up-to-date data in management will hinder the reporting of village profiles and monographs. At the same time, the government is trying to implement the information technology-based village information management transformation process. It is directed to develop an information culture toward realizing an information society. Through this transformation process, it is possible to optimize the use of information technology advances to eliminate bureaucratic organizational barriers in the data collection process and to form a network of management systems and work processes that enables local government agencies to work in an integrated manner.

Kedung Peluk Village, which is one of the villages in Candi District, Sidoarjo Regency, always experiences problems in the formulation and preparation of village monographs every year due to the lack of maximum data input power, which results in slow data updates, lack of infrastructure, and the display format of

the Building Village Index currently available. The villages are still less attractive, so the level of readability of information related to them is still low. For this reason, the innovation of utilizing and processing primary village data through E-Monografi Desa in Kedung Peluk Village is an effort of the village government to carry out a transformation process to develop an information culture and provide convenience for village officials, residents, and the community to get village information quickly and accurately updated at any time. Innovation may be an idea, practice, or object that is perceived as new by potential adopters and shoud be considered as desirable to adapt (Dibra, 2015). For this innovation to be accepted and adopted, it requires the diffusion of innovation in socializing and communicating ideas well and clearly to the community, village heads, and their apparatus. This is related to the importance of the capabilities of village officials in managing a district or region (HM & Senjaya, 2021).

This study aims to explain how the decision-making process for the adaptation of monograph information management innovation in Kedung Peluk Village uses an innovation diffusion decision-making model that starts from the stage of disseminating information on an innovation (knowledge), the location of convincing to approve the invention (persuasion), and the step of adopting a decision-making stage. The stages of creation (decision), the measure of implementing the innovation (implementation), and the set of evaluating and deciding on the sustainability of the invention (confirmation). This research hopes to produce knowledge and descriptions of how the decision-making process for E-Monografi Desa innovation in the village of Kedung Peluk works. This research is also expected to make a contextual learning model for students of the Public Administration Science Study Program, where students can learn directly about the communication process of decision-making. Innovation decisions in the public sector through the E-Monografi Desa application used by partners, and can help the Kedung Peluk Village government improve and develop the village monograph application following current and future needs and conditions.

This study focuses on the diffusion of the innovation process in the E-Monografi Desa application in Kedung Peluk Village. The research was conducted by collecting field data and comparing conventional village monographs and the E-

Monografi Desa application. It is focused on finding out how far the diffusion of innovation is at the village level through the use of applications in monograph recording. It is hoped that the application of E-Monografi Desa can improve the quality of service and the accuracy of data recording in the village.

METHODS

The research method used is a qualitative approach. According to John W. Creswell, *A qualitative approach is one in which the inquirer often makes knowledge claims based primarily on constructivist perspectives (i.e., the multiple meanings of individual experiences, meanings socially and historically constructed, to develop a theory or pattern) or advocacy/participatory perspectives (i.e., political, issue-oriented, collaborative or change-oriented) or both* (Creswell & Creswell, 2018). So qualitative research is an approach to building knowledge statements based on a constructive perspective. By using this method, researchers can better describe social reality by presenting words and coherent/descriptive explanations of the decision-making process of the innovation diffusion method. Moreover, a descriptive qualitative research approach uses data collection techniques, field research with in-depth interviews, content analysis, and historical research.

This research was conducted in Kedung Peluk Village, one of the villages included in the administrative area of Candi District, Sidoarjo Regency. Kedung Peluk Village has an area of 1,1286.65 km2 with 3,512 people. One of the characteristics of Kedung Peluk Village is a "fishpond area" because most of the surrounding community has ponds. With the characteristics of the aquaculture area, Kedung Peluk Village is one of the centers for producing shrimp, milkfish, mujair, and other seafood in the Sidoarjo Regency. Since 2013, the Sidoarjo Regency Government has designated Kedung Peluk Village as a minapolitan area. This potential has contributed to the growth of fish-based culinary delights such as Otak-otak, presto milkfish, and fishing pond tours, which the Kedung Peluk Village Owned Enterprise is currently developing.

In qualitative research, the data collection techniques used by the researcher include interviews, focus group discussions (FGD), and literature studies. Because the data obtained is qualitative, it consists of both primary and secondary sources. The preliminary data were obtained through interviews, direct observation, and

focus group discussions. In contrast, the rest was obtained through documents or archives from the Kedung Peluk village apparatus. And by using data analysis techniques, Interviews and discussions were carried out to get more in-depth information from several research subjects to find out their opinions and views regarding the implementation or adoption of village information management innovations, namely village E-Monografi Desa, starting from the introduction of inventions, the possibility of adoption, and decisions for the implementation of innovation. The subject of this research has a vital role in the successful adaptation of E-Monografi Desa innovation in Kedung Peluk Village. For this reason, the researcher chose several suitable research subjects, namely the Head of Kedung Peluk Village and several village officials, the Head of the Neighborhood and the Head of Hamlet, and representatives of the residents.

According to Miles and Huberman in Sugiyono (Sugiyono, 2017), the data analysis technique uses an interactive model, which consists of data reduction, data presentation, and concluding/verification. The three flows are activities in the form of interactions in the data collection process when in the field as a cyclical process. The process of data reduction is a process in which researchers summarize, select the main things, focus on the things that are important and sought after, and the main themes, as well as the simplification of the data that emerges from the field results. Furthermore, the data presentation section is a process where the collection of information obtained is arranged in such a way as to serve as a basis for drawing conclusions and taking action. And for the last process is concluding/verifying data that has been obtained or passed from the first to the second stage. At this stage, the author will produce temporary conclusions and can change them if the evidence is found to support the future (verification).

RESULTS AND DISCUSSION

Process Innovation in Village E-Monografi Desa

Innovation is an idea or something new that exists in the community, be it a product, service, or technology that has just been discovered and has never existed before (Sururi, 2017). Amabile (1996) also said that innovation is making a change or introducing a new idea, object, service, or new and more helpful way. Innovation

also doesn't have to be expensive; it can be done by anyone, anytime, and anywhere. From this explanation, it can be concluded that innovation can provide changes to the community environment in a positive direction and provide answers to several existing problems, including in the scope of village government.

The village government has been regulated by Law Number 6 of 2014 concerning villages, which states that villages are villages and typical villages, or what is called by another name after this referred to as a "village," is a legal community unit that has territorial boundaries that are authorized to regulate and manage government affairs and the interests of the local community based on community initiatives, original rights, and traditional rights that are recognized and respected in the government system of Indonesia. Given the increasingly strong position, authority, and village finances, the implementation of the Village Government is expected to be more accountable, supported by a system of supervision and balance between the Village Government and Village institutions. Therefore, it is necessary to innovate policies to improve information management in the village so that it is more easily accessible to various parties and used for multiple things.

Village monographs are village profile data containing various types of data. The types of data in question include (1) village identity; (2) demographics; (3) social (health, education, social capital, housing, sanitation, access to electricity); and (4) economy; (5) village community activities. Village monograph data is dynamic because the changes take place quickly. Every time a change is reported by the village apparatus, which usually consists of heads of affairs, the data is changed with new data. For example, when there are residents who report the birth of their child, or the death of someone, the increase in immigrants and residents who move; not only that, data in agriculture, such as land area, planting area, and harvest yields, provides data on the livelihoods of each villager. Initially, this data was written on an information board on the wall of the village office. But over time, this board will be complete and must be replaced. This also makes information management ineffective and inefficient in the village.

Regulations have regulated the management of village monograph data. Village profile data presents primary family data, village potential, and village development levels as held in the Minister of Home Affairs Regulation No. 12 of 2007 concerning Guidelines for Compilation and Utilization of Village and Sub-

District Profile Data. In addition, to realize an effective and efficient village government, the role of village monograph data is regulated in the Minister of Home Affairs Regulation Number 13 of 2012 concerning Village and Village Monographs. The regulation stipulates that data must be integrated and accurate to minimize errors and maximize the functionality of existing data. Village monographs are currently conventionally recorded in a book or stored offline on a computer. This is one of the reasons why the use of village monograph data is not optimal. Therefore, innovation is needed to increase the value of the benefits of this village monograph data.

The development of village monograph innovations is felt to be very necessary to do. This village monograph innovation can be done by developing a digital-based village monograph. This can potentially increase the value of the benefits of village monograph data. Digital innovation development is carried out on products and business processes using digital technology platforms, either as a means or a goal within or across organizations (Ciriello et al., 2018). One of these platforms is known as an application. The following are standard application system requirements that must be met by every application system in village e-government: 1) Reliable Ensuring that the application system will be able to run reliably, robustly against data entry errors, operating system .changes and bug-free. 2) Integrateable Ensuring that the application system has features to be easily integrated with other application systems, especially for transaction activities. 3) Scalable Ensuring that the application system can be easily upgraded, especially the addition of new features, additional users and greater data management capabilities. 4) User Friendly Ensuring that the application system is easy to operate with a user interface commonly used in government (Fitri et al., 2017).

One of the villages in Candi Subdistrict, Sidoarjo Regency, namely Kedung Peluk Village, adopted a digital-based village monograph innovation. The making of this village monograph uses village E-Monografi Desa. This app is a technological innovation that makes it easier for village governments in terms of data input and presentation. The Kedung Peluk Village Government adopted this technology to improve data management to be more effective and efficient. Village data, which has been the basis for the formulation of all kinds of community

policies, has its own set of problems, both at the village government level and the government levels above it (sub-district government, district/city government, government, and up to the central government) (Prabawati et al., 2021). The following is a table of technological innovations in village E-Monografi Desa.

Table 1.

Technological Innovations in E-Monografi Desa

Category	Village Monograph (Conventional Form)	E-monografi Desa
Data Integration	It is not easy to move data into other apps because data can only be opened at the Village Government Office	Data is easy to transfer to other apps because it can be opened from anywhere (online) and can be downloaded in excel format
Database	Lack of efforts to develop a database according to the needs of the community and village government	Development of E-Monografi Desa based on the needs of the community and village government so that the type of data stored is dynamic and more complete
Process of Data Input	The data is inputted offline, so it cannot be done from anywhere	Data can be inputted from anywhere because it is done online
Data Presentation	The information is difficult to read and understand	The data is easier to understand because it can be presented in the form of diagrams, is easy to access, and is easy to update

Source: Research Outcome, 2022

Based on Table 1, this Village E-monograph has several advantages. These advantages can be grouped into several categories: data integration, database, data input process, and data presentation. In the data integration category, it is easy to transfer it to E-Monografi Desa because it can be opened from anywhere and

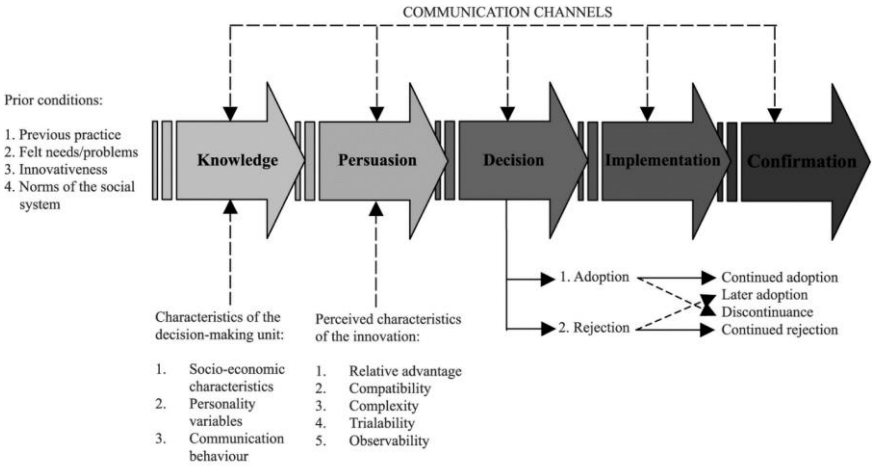
downloaded in excel format. In addition to the database aspect, the development of "E-Monografi Desa" is based on the needs of the community and village government so that the type of data stored is dynamic and more complete. In the aspect of the data input process, data can be input from anywhere because it is done online. Finally, data is easier to understand in the data presentation category because it can be presented in the form of diagrams, is easy to access, and is easy to update.

Diffusion Process of E-monograph

According to Everet M. Rogers, the diffusion of innovation is a process of conveying or communicating an innovation program through channels from time to time to members of a social system that has begun to be implemented. To equalize perceptions, it is necessary to know the definition of communication (Rogers, 1983) "as the process by which participants create and share information to reach a mutual understanding." each other so that there is a common perception. The most crucial thing in diffusion is exchanging information between one or more people to communicate a new idea.

Figure 1.

Model Stages of the Innovation Decision-Making Process



Source: After Rogers (1995)

Rogers (Rogers, 1983) mentions that there are stages in the diffusion of innovation; this stage is called The Innovation-decision process, namely the steps of knowledge, persuasion, decision, implementation, and confirmation. This

process consists of several actions and choices over time by which a person or organization evaluates an idea and determines whether this idea will be used or not. One of the most important things in the innovation process is the decision-making stage which determines whether the innovation is continued or discontinued. At this stage in determining the type of innovation it is very important to consider open innovation awareness (Yildirim, et.al., 2022). The explanation of the five stages of the village e-monograph diffusion process in Kedung Peluk Village is as follows:

Knowledge Stage

The knowledge stage is disseminating information about innovations; in this stage, the individual's awareness will seek or form an understanding of innovation and how the innovation functions. Rogers also said that people seek knowledge in this stage: attention that innovation exists, knowledge of the use of innovation, and knowledge that underlies how the innovation functions. People recognize the existence of this innovation can be due to chance or the result of a deliberate effort to find innovations based on their needs (Seligman, 2006). So far, the Kedung Peluk Village Government assesses that data input cannot be done quickly and has not been able to optimize the function of village monograph data. They have to input data regularly but have not understood the meaning of the data well. They wish to increase the value of the benefits of village monograph data.

The Kedung Peluk Village Government, in collaboration with academics from the State University of Surabaya, is trying to face the challenges of village monograph data management. Both parties organize. Focus Group Discussion to analyze the village government's and communities' needs regarding relevant village monograph innovations. The village e-monograph technology developed by academics from the State University of Surabaya has been upgraded to suit the needs of the village government and the community. Village governments are also trained to be able to use Village E-Monography. This is nothing done so that the village government can use this technology optimally.

Persuasion Stage

If the response from the residents looks positive and exciting, then the persuasion stage is carried out. Wolfe (Wolfe, 1994) states that the contradictory nature of innovation studies is mainly associated with the failure to recognize the

antecedents of innovation and can be perceived very differently according to the specific organizational conditions involved. Therefore, the persuasion stage becomes integral to identifying the antecedents of innovation. At this stage, individuals will find out more information about the invention and the advantages of using it. In contrast to the knowledge stage, which prioritizes mental activity on cognitive or scientific matters, the persuasion stage prioritizes mental activity to influence affective or feeling functions. The persuasion stage can be divided into five characteristics: relative advantage, compatibility, complexity, trialability, and Observability.

The literature claims that only selected (main characteristics of Rogers) characteristics have had impacts on the adoption of innovation (Oturakci & Yuregir, 2018). At the same time, relative advantage captures the extent to which the adopters perceive the innovation as a solution that offers benefits over previous ways of doing the same task (Agarwal & Prasad, 1998). Another thing that also affects the acceptance of an innovation in the persuasion stage is by considering six variables such as social influence, technology anxiety, trust, perceived risk, perceived physical condition, resistance to change (Rajak and Shaw, 2021).

E-monografi Desa provides convenience in the village data collection process compared to the last monographic data collection system, where the data is carried out manually and requires a long time. The presence of E-Monografi Desa is expected to be able to present an administrative process that is faster, easier, and more valid. In addition, online-based data storage makes village apparatus easy to access anywhere, as long as an internet network is available. Information disclosure and transparency can also be created through E-Monografi Desa. Compatibility can be seen from how good, and suitable E-Monografi Desa is in the technical and organizational processes in the village adopting innovations (Chong, 2008). E-Monografi Desa is a refinement of the monograph data collection method usually carried out by village officials. The consistency of the overall values and the need for data collection are considered very suitable for using E-Monografi Desa, so using E-Monografi Desa will not interfere with work processes or government processes at the village level for innovation users.

The complexity of an innovation is defined as "the degree to which an innovation is perceived as relatively difficult to understand and use (Rogers, 1983). In implementing E-Monografi Desa, tiny organizations may perceive E-Monografi Desa as complex, and perhaps the resources in the village using the innovation do not have the technical capacity to develop it. They may not know the interconnection arrangements of individual hardware and software components to integrate the system, thus failing to achieve significant benefits. Hence, technologies – also relatively complex ones–can be imported and deployed in new contexts regardless of where they are produced and without much producer involvement (Palm, 2022). The complexity of innovation is a major barrier for E-Monografi Desa, as it demonstrates the substantial technical knowledge required to successfully implement and operate E-Monografi Desa (Lee & Kim, 2007). But basically, E-Monografi Desa is designed with a simple user interface and menu functions tailored to innovative users' needs. Through regular assistance and training, we believe that village officials who use innovation will be able to adapt and, in the end, can easily operate E-Monografi Desa. The next characteristic in the persuasion stage is trialability. The characteristics of this persuasion stage are more focused on how the process of testing the E-Monografi Desa works. Before innovation users decide to adopt E-Monografi Desa innovation, we first conduct offline and online socialization and simulation of E-Monografi Desa. This is done so potential users can recognize and understand the benefits of E-Monografi Desa. Observability can be defined as "the extent to which the results of an innovation are visible to others" (Rogers, 1983).

It should be noted that the visibility of an innovation may be more accessible by observing the results than the product of the invention itself (Hashem & Tann, 2007). E-Monografi Desa Judging from the characteristics of Observability, it will provide a lot of conveniences for users (village government) and the community. The convenience offered is in terms of data processing and transparency to the public. Through E-Monografi Desa, not only can users (village government) observe, but the community can also take part in monitoring and observing the performance of village monograph data collection through E-Monografi Desa.

Decision-Making Stage

After conducting the FGD and getting the possible results to answer the community's needs through innovation, the next stage that must be done is the decision-making stage (Decision). At this stage, individuals or groups engage in activities that lead to a choice to adopt the innovation or not (Roger, 1987). Adoption is a decision to make full use of a new idea as the best course of action, whereas rejection is a decision not to adopt an innovation. Lee, et al (2020) argue that a consensus among member of organization is very important in order to they are willing to carry out the innovation. According to Everett Roger (1987), most individuals or groups will not adopt an innovation before trying it first by using a trial or prototype period to determine the usefulness and consequences of the invention in their situation. This trial period is often part of the decision-making before adopting the innovation; it is essential to reduce the feeling of uncertainty about the invention. At the decision-making stage, it is influenced by several factors, including environmental factors, economic factors, and technological factors (Jahromi and Manteghi, 2012).

At this stage, the village government of Kedung Peluk decided to accept the proposed village e-monograph application design and implement the village e-monograph application. Village e-monographs can also be called media which can later provide information about village monographs that the community can access. This is in line with the diffusion theory, which explains how innovation is conveyed (communicated) through specific channels over time to a group of members of the social system (Kartikawati, 2019). After the village officials decided to accept the village e-monograph, the researchers developed a prototype of the village e-monograph so that it could be tested directly by village officials. After the prototype has been made, the researcher conducts testing to see how far the village e-monograph application that has been made can run according to its respective features or not. If the test results show that the application/prototype can run well according to its designation, then the application is ready for public trials in Kedung Peluk Village.

The public test was carried out to test the prototype that had been developed and whether it could run well and follow the needs and problems in Kedung Peluk

Village. In addition, this public test activity is to introduce and improve the understanding of village officials (especially village admins) who will manage this application related to the features/menus in the E-Monography application/prototype of Kedung Peluk Village Village. The public test activity on the prototype of the E-Monography of the Kedung Pelukan Village was conducted at the Kedung Peluk Village apparatus, attended by eight village officials. The first activity is the introduction of the application/prototype of the E-Monography of the Village of Kedung Peluk Village to all Kedung Peluk Village officials. In this activity, village officials were also facilitated with laptops from the team that could be used to access the Village E-Monography prototype. The introduction relates to the postal address for the E-Monography prototype of the Village of Kedung Peluk Village, the display of the prototype of the E-Monography of the Village of Kedung Peluk Village, and the features/menus that exist in the prototype of the E-Monography of the Village of Kedung Peluk Village.

Furthermore, the activities carried out in this public test activity are training for village officials who will become village admins in managing the E-Monography prototype of Kedung Peluk Village Village. The Kedung Peluk Village Government has determined a village apparatus control the Kedung Peluk Village E-Monography prototype. In this training activity, besides focusing on village admins, village officials who participated in this public test activity also attended. E-Monography prototype training in Desa Kedung Peluk Village, namely team assistance to village admins related to how to access, input, process, present, and update data on features/menus in the Village E-Monography prototype.

The last activity in this public test activity is filling out the general feasibility test instrument for the prototype of the E-Monography of the Village of Kedung Peluk Village by all village officials participating in the public test activity. The team prepared the public test instrument for the village E-Monography prototype service to be filled out by village officials. The filling of the general feasibility test instrument for the Kedung Peluk Village E-Monography prototype aims to assess/measure whether the Village E-Monography prototype is feasible. From the results of filling out this instrument, it is known that all village officials agreed that the Kedung Peluk Village E-Monography prototype was possible or was ready to be applied to assist the implementation process of the Kedung Peluk Village government.

Implementation Stage

The implementation stage is where an individual or other decision-making unit determines the use of innovation (Jin et al., 2022). This stage is the continuation stage of village e-monograph innovation diffusion processes in Kedung Pelukan Village, Candi District, Sidoarjo Regency. After the village government decided to accept the village e-monograph prototype that had been developed at this stage, the village government applied the prototype to manage the village monograph data. At this stage, the target group's behavior change (in this case, the Kedung Peluk Village Government) will be seen in utilizing the village e-monograph application in daily activities. Village data management, originally done manually/conventionally, has shifted to digital-based. This has resulted in many changes to village officials' actions, especially those related to managing village monograph data collection. The usefulness of the village e-monograph application is an important point and will be proven at this implementation stage. Will this village monography application be practical, or will it become a new burden for the village government? This is an essential point in the innovation diffusion process, where the proof of added value or the usefulness of innovation will be proven in this implementation stage (Eprilianto & Eka, 2022). In various studies on the implementation of the invention, it turns out that many things significantly affect the success of its performance. One factor that influences innovation success is the innovation strategy, organizational structure, and skill development (Füller et al., 2022). Furthermore, it is also necessary innovative leadership capacity which can be measured through the extent of commitment and political will of the village head in providing public service and providing public goods to their citizens (Sukendar & Hasanah, 2020).

The implementation of village e-monographs in Kedung Peluk Village, which village officials have implemented, has provided benefits that can be felt in managing village monograph data. There are essential things in the innovation implementation stage: strategies to support successful implementation. Aspects that must be considered when deciding innovation implementation strategies include objectives, scope, advantages, and flaws that affect public acceptance of disruptive, modular, or enabling (Sheth & Sinfield, 2022). This can be seen from the village

monograph data input process, which is done digitally using this village e-monograph application. The data input process can be done faster than the previous process, which was done conventionally/manually. The process is usually carried out through enumerators who go to residents' homes to input data or residents who come to the village government office to provide monograph data for their village. The data below is the amount of data recorded in the village e-monograph in Kedung Peluk Village.

Table 2.

Data on Recap Monographs of Kedung Pelukan Village on Village E-Monography

Demografi Umum	Hasil Data
Jumlah Penduduk	3
Jumlah Penduduk Laki-Laki	2
Jumlah Penduduk Perempuan	1
Jumlah Penduduk Pendatang	0
Jumlah Penduduk Pergi	1
Jumlah Kepala Keluarga (L/P)	1
Jumlah Keluarga Miskin	0

Kategori Umur	Hasil Data
Umur < 1 Tahun	0
Umur 1 - 4 Tahun	0
Umur 5 - 14 Tahun	0

Source: E-Monography of Kedung Peluk Village, 2022

The data above shows that the implementation of village e-monographs in Kedung Pelukan, although it has been implemented, has not been optimized properly. This is shown from the updated data on village e-monographs that have not been appropriately updated. The data is sufficient to explain that the process of managing village monograph data using village e-monographs that have been developed has not been carried out optimally. Implementing the village e-monograph has been running for almost 1 (one) year, but Data updates have not been carried out significantly. It can be seen that the Data that has been successfully inputted using village e-monographs is very minimal. The data in the field shows that the village e-monograph has not been implemented optimally due to the limitations of village officials in managing village monograph data. This limitation

is also supported by requests for village data from other agencies (e.g., ministries, and so on) that use others, which should use the data requests that exist in the village e-monograph that has been implemented. Another challenge in implementing technological innovation is related to the security of data privacy for the public (Roe et al., 2022). This is also a doubt for village officials to be able to carry out e-monographs optimally.

Therefore, in this implementation stage, the development of village e-monographs is also carried out so that it is more in line with the needs of the Kedung Peluk Village Government. This development was carried out based on an analysis of the readiness of the Kedung Peluk Village Government, which was seen from the aspect of legal readiness factors, parts of human resource readiness, and elements of technological infrastructure readiness (software and hardware) (Prabawati et al., 2021). The follow-up from this stage is to develop by adding several menus/features according to the requests and needs of the village government and the community, such as the menu for uploading e-KTP files and KK files (family cards), menus for BPJS participants, or not, and so on. The addition of the menu can provide proper values. It can be applied optimally so that managing village monograph data can be carried out effectively and efficiently digitally. All aspects of change do not always have to depend on the government, but it will also be better if it is initiated and supported by the local community. With a good empowerment system, it will have an impact and a strong sense of ownership from the community, because something initiated by itself is likely to be maximized to maintain it (Rohimah & Novaria, 2019).

Confirmation Stage

In the confirmation stage, someone will evaluate and decide whether to continue using the innovation or end it. (Schallmo et al., 2018). Ahmad & Hardianti (2020) revealed that digitalization in public service able to promote population data collection, transparency, fast service and to limit the need for direct interaction between people. The Village E-Monography application developed in Kedung Peluk did not show any resistance from the village community (village officials and users). Even the Kedung Peluk Village apparatus strongly supports the existence of

this Village E-Monography application. This can be seen from village officials' enthusiasm to assist development by providing input on the work process of the e-monograph application in Kedung Peluk Village.

Even so, according to the explanation (Rogers, 1983), After a decision is made, someone will then look for justification for their decision, so someone can change the previously rejected decision to accept the innovation after an evaluation. The possibility of the village party's conclusion denying the creation of the Village E-Monography application still exists, mainly if problems occur in the Kedung Peluk village government structure, which makes innovative decisions that can change. For example, employees' thoughts change HR problems or facilities in running applications and others**.**

CONCLUSION

From the analysis above, the writer can conclude that the process of diffusion of village e-monograph innovations in Kedung Peluk Village, Candi District, Sidoarjo Regency, has been carried out correctly. The village e-monograph diffusion stage starts from the knowledge stage through the collaboration between the Kedung Peluk Village Government and the Surabaya State University about the importance of digital-based village monograph data management. The persuasion stage continued through the relative advantage, compatibility, complexity, trialability, and Observability that the Kedung Peluk Village Government could feel the benefits of the village e-monograph. The next stage is the decision-making stage through the agreement agreed by the Kedung Peluk Village Government to implement village e-monography, followed by the implementation stage through e-monographs in village monograph data management activities. However, the village e-monographs have not been used optimally at this stage. Finally, the confirmation stage is through an agreement to optimize the implementation of the village e-monograph by improving/adding menus/features that exist in the village e-monograph according to current needs. From the conclusions above, the suggestions given by the researcher are as follows: (1) The Kedung Peluk Village Government must be committed to implementing village e-monographs. (2) The Kedung Peluk Village Government should align and socialize with village officials and the community for a common perception of the importance of implementing village e-monographs. (3) The village government of Kedung Peluk should update

the Data on an ongoing basis on the village e-monograph so that the village e-monograph is not considered a burden by the village apparatus. (4) The Government of Kedung Peluk Village should coordinate with Surabaya State University steadily and sustainably.

Funding Acknowledgement

The research was funded by Universitas Negeri Surabaya through the Faculty of Social Sciences and Law Policy Research Fund.

About the Authors

Indah Prabawati is a senior lecturer in the Department of Public Administration, Faculty of Social Sciences and Law, State University of Surabaya. Indah teaches Public Policy, Policy Analysis, Implementation Studies, Policy Formulation, and Village Governance Innovation. Indah has produced dozens of scientific publications in journals and textbooks. Indah's research focus is public policy and sustainable development. Her role in this research is coordinating all stages of the study, including data collection and coordination with the village as the research site.

Muhammad Farid Ma'ruf is a senior lecturer in the Department of Public Administration, Faculty of Social Sciences and Law, State University of Surabaya. He teaches Decentralization and Local Government, Collaborative Governance, Rural Empowerment, and Fiscal Decentralization. Farid's research focus is Regional Authonomy and Collaborative Governance. His role in this research is to determine research instruments and develop research methods.

Badrudin Kurniawan is a senior lecturer in the Department of Public Administration, Faculty of Social Sciences and Law, State University of Surabaya. He teaches Public Policy, Public Policy Analysis, Policy Implementation, Policy Evaluation, and Environmental Policy. His research focus is Environmental Policy. His role in this research is application development, data retrieval, and data analysis.

Galih W. Pradana is a senior lecturer in the Department of Public Administration, Faculty of Social Sciences and Law, State University of Surabaya.

Galih teaches Bureaucracy and Public Governance, Digital Governance, Local Government, and Fiscal Decentralization. Galih's research focus is local government and electronic government. His role in this research is to collect data and assist in data analysis.

Deby Febriyan Eprilianto is a senior lecturer in the Department of Public Administration, Faculty of Social Sciences and Law, State University of Surabaya. He teaches Digital Governance, e-government, Public Service Management, Village Governance Innovation, Strategic Management, and Organizational Theory. His research focus is Digital Governance and Public Innovation. His role in this research is to collect data and assist in data analysis.

Tolentino De Araujo is a senior lecturer in the Department of Public Administration, Universidade Nacional Timor Lorosa'e (UNTL), Timor Leste. His research focus is Global Governance. His role in this research is to conduct studies related to innovation through the application of e-monografi desa and provide input related to research data analysis.

REFERENCES

Agarwal, R., & Prasad, J. (1998). The antecedents and consequents of user perceptions in information technology adoption. *Decision Support Systems*, *22*(1), 15–29. https://doi.org/10.1016/S0167-9236(97)00006-7

Ahmad, J., & Hardianti. (2020). Adopting incremental innovation approaches in the digitalization of village government services. JKAP (Jurnal Kebijakan dan Administrasi Publik), 24 (2), 145-162. https://doi.org/10.22146/jkap.54028

Chong, S. (2008). Success in electronic commerce implementation: A cross-country study of small and medium-sized enterprises. *Journal of Enterprise Information Management*, *21*(5), 468–492. https://doi.org/10.1108/17410390810904247

Ciriello, R. F., Richter, A., & Schwabe, G. (2018). Digital Innovation. *Business and Information Systems Engineering*, *60*(6), 563–569. https://doi.org/10.1007/s12599-018-0559-8

Creswell, J. W., & Creswell, J. D. (2018). *Research design: qualitative, quantitative, and mixed* methods approaches (5th ed.). Sage Publication. https://cmc.marmot.org/Record/.b57516595

Dibra, M. (2015). Rogers Theory on Diffusion of Innovation-The Most Appropriate Theoretical Model in the Study of Factors Influencing the Integration of Sustainability in Tourism Businesses. Procedia - Social and Behavioral Sciences, 195, 1453–1462. https://doi.org/10.1016/J.SBSPRO.2015.06.443

Eprilianto, D. F., & Eka, Y. S. K. (2022). Inovasi Digital Dalam Sektor Publik : Studi Deskriptif Tentang Value Added Inovasi Pelayanan Kesehatan. *El-Riyasah*, *13*, 33–49.

Fitri, R., Asyikin, A. N., Setiyo, A., Nugroho, B., D3, P., Informatika, T., Banjarmasin, N., & Id, R. A. (2017). Pengembangan Sistem Informasi Desa Untuk Menuju Tata Kelola Desa Yang Baik (Good Governance) Berbasis Tik. POSITIF : Jurnal Sistem Dan Teknologi Informasi, 3(2), 99–105. https://doi.org/10.31961/POSITIF.V3I2.429

Füller, J., Hutter, K., Wahl, J., Bilgram, V., & Tekic, Z. (2022). How AI revolutionizes innovation management – Perceptions and implementation preferences of AI-based innovators. *Technological Forecasting and Social Change*, *178*(March), 121598. https://doi.org/10.1016/j.techfore.2022.121598

Hashem, G., & Tann, J. (2007). The adoption of ISO 9000 standards within the Egyptian context: A diffusion of innovation approach. *Total Quality Management and Business Excellence*, *18*(6), 631–652. https://doi.org/10.1080/14783360701349435

HM, P., & Senjaya, B. (2021). Implementation of the Policy for Capacity Building of Village Apparatus in Merangin Regency, Jambi. *The Journal of Society and Media*, *5*(1), 218. https://doi.org/10.26740/jsm.v5n1.p218-238

Jahromi, Mohmmad Jafar Haddadpour, and Manteghi, Nikzad. (2012). Innovation Process In Decision Making Model To Choose An Appropriate Power System. *Procedia Technology Volume 1 2012* https://doi.org/10.1016/j.protcy.2012.02.107

Jin, P., Mangla, S. K., & Song, M. (2022). The power of innovation diffusion: How patent transfer affects urban innovation quality. *Journal of Business Research*, *145*, 414–425. https://doi.org/10.1016/J.JBUSRES.2022.03.025

Kartikawati, D. (2019). Implementasi Difusi Inovasi pada Kemampuan Media Baru dalam Membentuk Budaya Populer (Kajian pada Media Youtube di Kalangan Remaja). *Ekspresi Dan Persepsi : Jurnal Ilmu Komunikasi*, *1*(01), 83–102. https://doi.org/10.33822/jep.v1i01.447

Lee, S., & Kim, K. jae. (2007). Factors affecting the implementation success of Internet-based information systems. *Computers in Human Behavior*, *23*(4), 1853–1880. https://doi.org/10.1016/j.chb.2005.12.001

Lee, H. et al. (2020). Research on innovation in the way of working of local governments. Journal of Digital Convergence, 18(12), 21-28. https://doi.org/10.14400/JDC.2020.18.12.021

Mukhsin, M. (2020). Peranan Teknologi Informasi Dan Komunikasi Menerapkan Sistem Informasi Desa Dalam Publikasi Informasi Desa Di Era Globalisasi. Teknokom, 3(1), 7–15. Https://Doi.Org/10.31943/Teknokom.V3i1.43

Oturakci, M., & Yuregir, O. H. (2018). New approach to Rogers' innovation characteristics and comparative implementation study. Journal of Engineering and Technology Management - JET-M, 47(201), 53–67. https://doi.org/10.1016/j.jengtecman.2017.12.004

Palm, A. (2022). Innovation systems for technology diffusion: An analytical framework and two case studies. Technological Forecasting and Social Change, 182(February), 121821. https://doi.org/10.1016/j.techfore.2022.121821

Prabawati, I., Farid Ma, M., Kurniawan, B., Wahyu Pradana, G., & Febriyan Eprilianto, D. (2021). *Analysis of Village Governments' E-Readiness in Developing Villages E-Monografi Desas*. *603*(147), 91–98.

Rajak, Manindra, and Shaw, Krishnendu. (2021). An Extension of Technlogy Acceptance Model for mHealth User Adoption. *Technology in Society Volume 67* https://doi.org/10.1016/j.techsoc.2021.101800

Roe, M., Spanaki, K., Ioannou, A., Zamani, E. D., & Giannakis, M. (2022). Drivers and challenges of internet of things diffusion in smart stores: A field exploration. *Technological Forecasting and Social Change*, *178*, 121593. https://doi.org/10.1016/J.TECHFORE.2022.121593

Rogers, E. M. (1983). *Diffusion of innovations third edition.* (3rd ed.). The Free Press.

Rohimah, A., & Novaria, R. (2019). Komunikasi "Social Marketing" Dalam Proses Difusi Inovasi Revitalisasi Masyarakat Desa Wisata "Kampung Lawas Maspati." LINIMASA: JURNAL ILMU KOMUNIKASI, 2(1). https://doi.org/10.23969/LINIMASA.V2I1.1383

Schallmo, D. R. A., Brecht, L., & Ramosaj, B. (2018). *Process Innovation: Enabling Change by Technology Basic Principles and Methodology: A Management Manual and Textbook with Exercises and Review Questions*.

Seligman, L. (2006). Sensemaking throughout adoption and the innovation-decision process. *European Journal of Innovation Management*, *9*(1), 108–120. https://doi.org/10.1108/14601060610640050

Sheth, A., & Sinfield, J. V. (2022). An analytical framework to compare innovation strategies and identify simple rules. *Technovation*, *115*(August 2020), 102534. https://doi.org/10.1016/j.technovation.2022.102534

Sugiyono. (2017). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. cv alfa beta.

Sukendar , & Hasanah, B. (2020). Capacity and service innovation in implementation government of village in serang district, indonesia. Indonesian

Journal of Social Science Research, 1(1), 1-9. http://dx.doi.org/10.11594/ijssr.01.01.01

Supriyanto, Eko Eddya. (2016). Kebijakan Inovasi Teknologi Informasi (TIK) Melalui Program Elektronik Government dalam Meningkatkan Kualitias Pelayanan Publik di Indonesia. *Jurnal Ilmu Pemerintahan : Kajian Ilmu Pemerintahan dan Politik Volume 1* https://doi.org/10.24905/jip.1.1.2016.141-161

Sururi, A. (2017). Inovasi Kebijakan dalam Perspektif Administrasi Publik Menuju Terwujudnya Good Public Policy Governance. *Spirit Publik: Jurnal Administrasi Publik*, *12*(2), 14. https://doi.org/10.20961/sp.v12i2.16236

Wolfe, R. A. (1994). Organizational innovation: review, critique and suggested research directions. *Journal of Management Studies*, *13*(May), 11.

Yildirim, Ercan., et.al. (2022). A Multi-Stage Decision Making Model For Determining A Suitable Innovation Structure Using An Open Innovation Approach. *Journal of Business Research Volume 147 Page 379-391* https://doi.org/10.1016/j.jbusres.2022.03.063