Training on statistical applications in structuring village administration in Purworejo

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ARTICLE INFO	ABSTRACT
	In the modern era, statistics has become an integral part of various aspects of our lives, serving as a universal language to understand the world around us. The integration of statistical applications can significantly enhance the process of data and information management in village governance. This community service project aims to assess the potential of statistical applications in supporting village administration officials, contributing to improved village governance and self-sufficiency. Through preliminary studies and tailored SPSS training programs, the practical knowledge and skills of village officials and cooperative members are enhanced. Evaluation after the training indicates a significant improvement in understanding and application of statistical tools. The integration of statistical applications is expected to contribute to better-organized village administration and good governance in Purworejo Village. This initiative underscores the role of statistics as a powerful tool in village administration, bridging various fields of knowledge and providing valuable insights into the world. The successful implementation of statistical applications in Purworejo Village serves as a model for other communities seeking to enhance governance through data-driven decision-making.
	Pelatihan aplikasi statistik dalam penataan administrasi desa di Purworejo. *Di era modern ini, statistika telah menjadi bagian integral dari berbagai aspek kehidupan kita, berfungsi sebagai bahasa universal untuk memahami dunia di sekitar kita. Integrasi aplikasi statistik dapat secara signifikan meningkatkan proses manajemen data dan informasi dalam tata kelola desa. Proyek pengabdian masyarakat ini bertujuan untuk menilai potensi aplikasi statistik dalam mendukung pejabat administrasi desa, berkontribusi pada peningkatan tata kelola desa dan swasembada. Melalui studi awal dan program pelatihan SPSS yang disesuaikan, pengetahuan dan keterampilan praktis pejabat desa dan anggota koperasi ditingkatkan. Evaluasi setelah pelatihan menunjukkan peningkatan signifikan dalam pemahaman dan penerapan alat statistik. Integrasi aplikasi statistik diharapkan dapat memberikan kontribusi pada administrasi desa yang lebih terorganisir dan tata kelola yang baik di Desa Purworejo. Inisiatif ini menegaskan peran statistika sebagai alat yang kuat dalam administrasi desa, menyatukan berbagai bidang pengetahuan dan memberikan wawasan berharga tentang dunia. Implementasi aplikasi statistik yang sukses di Desa Purworejo menjadi model bagi komunitas lain yang ingin meningkatkan tata kelola melalui pengambilan keputusan berbasis data.*

INTRODUCTION

In the modern era filled with innovation, the use of statistics has permeated into various aspects of our lives (D.-Y. Li et al., 2024; L. Li, 2016; Xu, 2024). It is not uncommon to come across reports adorned with graphs and statistical data in the morning newspaper or the news on television. From stock market summaries to financial overviews, even percentages reflecting aspects of crime and criminality in our surroundings. More than just displaying numbers, statistics has become a universal language used to understand and describe the world (Dumičić, 2017; Lutz & Le Riche, 2014). However, the role of statistics doesn't stop there. Statistics is a deep science, involving the collection, presentation, and analysis of numerical data. It has come a long way from the initial understanding that was limited to tables and graphs. In the modern context, statistics serves as the foundation of various fields of science and research (Haghighi et al., 2024;

Hanagaki et al., 2022; O'Regan, 2023; Taper & Ponciano, 2016). Statistical scientists not only rely on mathematics but also employ advanced computing. As a result, the concepts of statistics, statistical methods, and the role of computers in statistical analysis have had a profound impact on nearly every discipline (Bina, 2020). Thus, statistics is a language that bridges various branches of knowledge, from sociology to business, providing better insights and understanding of the world we live in (Budiharto, 2015). Besides being a valuable tool in scientific research, statistics also plays a significant role in governance at the local level (Križman & Tissot, 2022; Mikalef et al., 2020; Sharma & Nagar, 2012; Tajulfitri, 2019), as is the case in Purworejo Village, Lampung. This village has a village administration structure that assists the village head in formulating policies and coordinating through the village secretariat. Additionally, there are supporting elements that aid in policy implementation, including technical and regional aspects.

Data and information management play a central role in effective and efficient village governance (Megawati et al., 2023; Prabawati et al., 2023; Prasetyo & Widiyawati, 2022; Putra & Silfiana, 2022). In the effort to achieve village self-sufficiency, one of the main challenges is how to enhance the village administration's ability to manage data and information related to village governance (Sani & Syamsuddin, 2021). One relevant solution is to leverage statistical applications to facilitate data collection, analysis, and presentation (Rijali, 2019). Purworejo Village, located in the Negeri Katon District, Pesawaran Regency, Lampung Province, is an example of a village committed to improving its administrative governance. This village has a village administration that plays a crucial role in assisting the village head in policy formulation, coordination with relevant agencies, and carrying out various essential tasks related to development and community service. Under the framework of village autonomy laws, Purworejo Village has the authority to govern its own affairs.

In the relevant legal framework, such as Law No. 32 of 2004 concerning regional government and its implementing regulations, villages have autonomy to manage their own affairs (Nawawi et al., 2018). This creates opportunities for villages to achieve self-sufficiency. One aspect of this self-sufficiency is well-organized village administration. It involves recording data and information related to village governance in the Village Administration Book, which is divided into several units, including general administration, population, finance, development, Badan Permusyawaratan Desa (BPD), and others, in accordance with Regulation of the Ministry of Home Affairs No. 47 of 2002 (Akhfar, 2019). The implementation of statistical applications in Purworejo Village will be an effective tool in completing various village administrative tasks. This will help create a more structured and efficient information system. Therefore, the presence of statistical applications in Purworejo Village is crucial.

To address these challenges, community service has been conducted in Purworejo Village. The goal is to better understand the potential and needs of integrating statistical applications to support the performance of village administration officials in Purworejo Village, Negeri Katon District, Pesawaran Regency, Lampung Province. Thus, more effective steps can be taken to achieve village self-sufficiency and improve village administrative governance. The gap analysis conducted identifies the need for increased awareness and utilization of statistical applications among officials and cooperative members. Additionally, a structured system for data management and capacity-building initiatives are required to enhance administrative efficiency and achieve village self-sufficiency goals. Integrating technology, including statistical applications, into village administrative practices is crucial for overall effectiveness and efficiency (Anderson et al., 2016). Targeted interventions to address this gap can significantly improve administrative governance in Purworejo Village.

In this context, village administration becomes a key element in achieving village self-sufficiency. Village administration involves various activities, from recording data about the population to managing village finances. With the advancement of technology, the use of statistical applications has emerged as a relevant solution to help village officials manage this data more efficiently. The training on the use of statistical applications conducted in Purworejo Village is a proactive step in enhancing the capacity of village officials in the field of village administration. The main objective of this training is to provide a deeper understanding of statistics as an essential tool in data management and to impart practical skills in operating statistical applications.

The utilization of statistics, which has become integral in various facets of modern life, particularly in village governance as exemplified in Purworejo Village, Lampung, underscores its significance in achieving Sustainable Development Goals (SDGs). Statistics serves as a universal language, bridging diverse fields of knowledge and providing insights crucial for informed decision-making. By leveraging statistical applications, villages like Purworejo can enhance their administrative governance, contributing directly to SDG targets such as good governance (SDG 16) and sustainable communities (SDG 11). The integration of statistical tools aids in efficient data management, facilitating evidence-based policies that promote self-sufficiency and improve overall village administrative governance. Furthermore, initiatives like community service projects focusing on statistical applications training not only empower local officials but also align with SDG 4 (Quality Education) by enhancing their skills and capacity in village administration. Thus, by embracing statistical methods, villages like Purworejo can advance towards achieving the SDGs, ensuring inclusive and sustainable development.

METHOD

This service is conducted in Purworejo Village, Negeri Katon Sub-District, Pesawaran District, Lampung, involving a total of 20 village officials and 30 BUMDes officials. The method used in this service consists of several stages. Firstly, a preliminary study is conducted through field surveys and interviews to understand the current state of village administration, followed by designing appropriate training based on the findings. Subsequently, the actual training is implemented in Purworejo Village with participation from village officials, delivered by instructors proficient in statistics and statistical applications. After the completion of training, its impact is evaluated through questionnaires, interviews, and direct observations of changes in village administration management. Upon receiving positive evaluations, village officials are given the opportunity to implement the learned practices in their daily village administration. Data collected during the practice implementation process is analyzed using statistical applications to generate reports on changes and improvements in village administration organization.

RESULTS AND DISCUSSION

Preliminary study and observation

In this stage, visits and observations were conducted to assess the needs of the community, especially village officials and village cooperative managers, regarding the use of statistical applications. This stage was also used to map the current state of village administration. The preliminary activities took place in April 2023 as the initial phase to implement community service.

Figure 1. The process of brainstorming

Based on the observations, it was found that up to this point, village officials and the management of the Purworejo Village Cooperative still manually utilize the data and information they possess. They lack the ability to utilize statistical applications for data processing. Out of the 50 participants in the community service, comprising 20 village officials and 30 village cooperative members, only two were aware of the existence of statistical applications that could help support the performance of village officials and village cooperative members. The rest were unaware and did not have an understanding of statistical data processing methods or how to use them. As known, the aim of this community service is to enhance the awareness, knowledge, and skills of village officials and village cooperative members regarding the importance of statistical applications in maintaining an orderly and efficient administrative system. This activity also aims to improve the techniques of using statistical applications so that they can be applied to maintain an effective administrative system in Purworejo Village. Based on this, village officials and village cooperative members agreed to conduct community service on the use of statistical applications to help improve village administration. The preliminary activities are shown in Figure 1. In the figure 1, it illustrates the process of discussion and brainstorming with village officials and village cooperative members conducted interactively and enthusiastically.

Training design

After gaining insights from the preliminary study and observations, the community service team formulated the steps to address the identified issues and challenges in line with the needs identified during the preliminary study. In this phase, the community service team defined and identified the roles and responsibilities of each team member to implement the community service project on training in the use of statistical applications for village administration.

Training implementation

After formulating the training stages to provide solutions to the issues and challenges faced by village officials, the community service team conducted awareness and training sessions on the use of statistical applications for village officials and village cooperative members in Purworejo Village, Negeri Katon Subdistrict, Pesawaran Regency, specifically on using SPSS for statistics. The activities are depicted in the Figure 2.

Figure 2. The implementation of community service

In the training activities as illustrated in the figure above, the community service team explained the utilization of statistical applications, particularly SPSS, to help organize village administration more effectively. The community service team encouraged village officials and village cooperative members to compile information based on statistical rules directly and under the guidance of the community service team. Based on the observations, the participants of the community service appeared highly enthusiastic about the training. The community service team provided direct guidance, followed by hands-on data processing by the participants, leading to their experimental understanding of the training content. The community service team also trained the participants to present and draw conclusions from the statistical presentations resulting from data processing.

Training evaluation

Based on the conducted service, it was found that the majority of village officials and the management of Purworejo Village Cooperative still manually utilize the data and information they possess. They lack the ability to utilize statistical applications for data processing. Out of 50 participants in the community service, only two were aware of the existence of statistical applications that could help support the performance of village officials and cooperative members. The main objective of this community service is to increase awareness, knowledge, and skills of village officials and cooperative members regarding the importance of statistical applications in maintaining an orderly and efficient administrative system. The conducted training successfully improved participants' understanding and skills in using statistical applications, especially SPSS, to create a more structured and orderly village administration.

After completing the training process, the community service team conducted an evaluation process to assess the success of the training. The community service team held open discussions with the training participants and village officials specifically to identify the strengths and weaknesses of the training outcomes, aiming to accommodate suggestions or desires from village officials for future training. The research results revealed that participants who previously had more than 90% unawareness of statistical applications and how to use them now have an understanding and the ability to use statistical applications, especially SPSS, to create a better-organized and more orderly village administration. The hope is that the knowledge and skills acquired can contribute to good governance in Purworejo Village, Negeri Katon Subdistrict, Pesawaran Regency, Lampung.

This community service program is an important initiative in addressing the need for increased awareness and utilization of statistics among village officials and cooperative members. By providing targeted training sessions and

practical guidance on statistical applications such as SPSS, the program aims to bridge the knowledge and skills gap related to data management and analysis. SPSS has several advantages that make it a valuable tool for users performing data analysis. One of its primary benefits is its easy-to-use interface that simplifies the process of data entry, manipulation, and analysis. The simple interface makes the processes accessible to even those with limited statistical knowledge (Mustafy & Rahman, 2024; Rashid, 2016). Apart from its ease of use, various basic to advanced statistical analyses can also be performed in this software (Mustafy & Rahman, 2024; Suresh, 2015; Ye, 2020).

Good data processing by applying statistics has an important role in running village government optimally (Peisker & Dalai, 2015; Satyr et al., 2023). Coaching and understanding of population statistical analysis can support understanding, increase knowledge, and develop soft skills for village operators in managing statistics related to village population data (Hiariey et al., 2023). The use of statistical applications also enables faster, more accurate, and situation-appropriate data processing (Panjaitan & Firmansyah, 2018). Through this initiative, participants can gain valuable insights and practical skills that contribute to more efficient and structured village administration. The success of this program not only improves administrative efficiency but also facilitates the journey towards village self-sufficiency, highlighting the importance of integrating technology and statistical tools in local governance initiatives.

CONCLUSION

The community service conducted in Purworejo Village aimed to address the need for integrating statistical applications into village administration. Through a systematic approach, including preliminary studies, training design, implementation, evaluation, and practice implementation, village officials and cooperative members were equipped with essential skills and knowledge in statistical applications. This initiative seeks to empower village officials to manage data effectively and contribute to better-organized village administration. In summary, statistics plays a crucial role in our modern world, spanning various disciplines and serving as a valuable tool in village governance. The efforts in Purworejo Village represent a proactive step toward improving administrative capacity and ultimately achieving self-sufficiency through the effective use of statistical applications.

It is recommended to conduct comprehensive training on statistical applications, especially focusing on tools like SPSS, for village officials and cooperative members in Purworejo Village. These sessions should be interactive and evaluated regularly to ensure effectiveness. Emphasis should be on practical skills development, with ongoing support provided even after training completion. Encouraging documentation of learning experiences can further enhance village governance practices.

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