



ANDROID-BASED TOURISM DIGITAL INFORMATION SYSTEM, WEATHER FORECAST, AND E-COMMERCE "SiPaKu KRETEK" SUPPORTS THE SDGs (SUSTAINABLE DEVELOPMENT GOALS) PROGRAM TOWARDS PANDANSARI INTEGRATED TOURISM VILLAGE

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Abstract. Kretek Village is one of the villages that has good natural tourism potential and local culinary. Natural tourism with natural potential that is beautiful, cool, and located at the foot of Mount Slamet provides great opportunities for natural tourism, such as those that have been established in the Kretek Village area of Teras Padi and Walicung tourism. In addition, the potential of local culinary in the village is quite developed, especially located on tourist routes to Kaligua-Pandansari tourism with beautiful views from an altitude of 268 meters above sea level. However, this potential has not been maximally explored for the welfare of the surrounding village community, especially in supporting Kaligua's main natural tourism in Pandansari Village. In addition, it supports the SDGs (Sustainable Development Goals) Program as a sustainable government program for the welfare of rural communities. Several things have caused the lack of optimal utilization of natural tourism potential and local culinary, one of which is that there is no information system that can be accessed by the community in presenting village information. Therefore, as a solution, an integrated information system is needed that can be accessed by the wider community without space and time limitations, namely SiPaKu Kretek (Tourism and Culinary Information System of Kretek Village, Paguyangan District, Brebes Regency), Tourism Digital Information System, Weather Forecast, and E-commerce "SiPaKu Kretek" Based on Android. This information system as an android application is useful to help the wider community in accessing tourism information and local culinary Kretek Village in particular. It is hoped that this application can improve the standard of living of the people of Kretek Village as a liaison for Pandansari tourism village.

Keywords: SiPaKu Kretek, Information system, Android application

1. Introduction

In the current digital era, the processing of village assets such as tourism potential, local potential of superior products, and other information as the superior potential of villages with conventional processing is considered less optimal to be applied in this era [1]. Therefore, good data management is needed so that people can easily access without time and place constraints by the way the village

government provides village services by accessing the village database [2]. Database is a data storage application in accordance with its designation. Each database has a specific API (Application Programming Interface) to create, access, organize, search, and copy the data contained in it [3]. The database system is very suitable to be applied during and after Covid-19, where accessing and processing databases does not need to be done conventionally, but can be done digitally online using an application [4]. This application helps villagers to access and conduct transactions digitally and virtually.

The Covid-19 pandemic in early March 2020 began to be detected throughout Indonesia as a global disaster. The disaster has had an impact not only on the health sector but also on economic aspects that actually have a wider influence on social life of communities such as rural communities [[5], [6]. Kemendes PDTT programs Village SDGs which contain 18 points which are the embodiment of National SDGs [7]. The targets set by the center include villages without poverty, without hunger, villages with women's involvement, villages with clean water and sanitation, and equitable village economic growth in various regions [8].

One of the villages in Brebes Regency is Kretek Village as a village that is passed if heading to Kaligua-Pandansari Agrotourism. Kretek Village is also one of the villages that has strategic potential to be developed. After Covid-19, it has become an encouragement to continue to rise and improve in all fields. Kretek Village has the strategic potential of natural tourism with beautiful scenery and the potential of UMKM local wisdom of the village.



Figure 1. Some natural attractions and UMKM in Kretek Village
(Source: Personal documents and www.kretek.my.id)

Information on natural tourism potential data and some of the potential superior local products of Kretek Village are still managed conventionally obtained from unofficial social media owned by Kretek Village residents. The information data becomes difficult to access and becomes incomplete information to be given to the public as a means of promotion. The accuracy and thoroughness of the results obtained depends on the accuracy and thoroughness of the data collected, the skills, and thoroughness of the person processing the data [9]. The use of computer technology results in data processing can be completed faster with high accuracy results [10]. The advantage is that data processing is easier and faster, if an error occurs at the time of data input, it is easy to update. If you need previous data, it is easy to search, data is safer because it is locked with code, data storage is more efficient and compact, easy to carry or move and relatively cheap. To facilitate digital data processing, applications are needed to be used for data processing so that it is more effective and efficient [11]. Smart villages for tourism and culinary are innovative solutions to develop villages while preserving local wisdom and the



environment. This concept creates a win-win situation by increasing village income and providing valuable experiences for tourists, while maintaining authenticity and sustainability [12].

Based on the preliminary presentation related to the problems faced by Kretek Village for the development of natural tourism potential and the potential of local superior products Kretek Village, a solution is needed that is always up to date following the times [13]. One of them is by utilizing technological developments through digital villages without access limits. The role of technology is needed to preserve and market MSME products and the natural potential of Kretek Village [14]. One of them is an integrated information system between natural tourism information and village online store e-commerce, the system is accompanied by weather forecast information to support the development of integrated natural tourism Kretek Village to Pandansari Village. Through e-commerce, the sales of MSMEs in Kretek Village will be better known by local and national audiences. Through the role of technology in the era of the industrial revolution 4.0 towards the era of the industrial revolution 5.0 and the Covid-19 pandemic in the form of making the SiPaKu Kretek application (Kretek Village Tourism and Culinary Information System). This system as a digital information system for tourism, weather forecasts, and e-commerce "sipaku kretek" based on android supports the SDGs (sustainable development goals) program towards the integrated tourism village of Pandansari.

2. Methods

The implementation method of the "SiPaKu Kretek" program is as follows.

2.1 Pra-Program

The pre-program includes the following activities:

- a) Preparation of Proposals by first conducting hearings with the kretek Village Government and Observation to the location.
- b) The next step is in the form of Exploring Cooperation and submitting proposals.
- c) After the proposal is declared to have passed the funding, it is continued with the step of signing a cooperation (MoU) with the kretek village government and IT Development Partners.
- d) The MoU with the Kretek Village Government involves related parties such as the Kretek Village Bumdes and local business actors.

2.2 Application and Socialization

- a) At this stage, the team carried out design design and application development activities, MSME assistance, and FGD (*group discussion forum*) with local tourism entrepreneurs. Application design is needed to see the initial design of a system before *it is built* into a ready-to-use application. The application design process begins with an analysis of application system needs so that later applications can be produced that match your needs. After completing the application test, to see whether the application can run as expected or still need to be made additional improvements and analysis of the possibility of bugs and system modules that have not run properly.
- b) After the application is completed, the next process is in the form of Socialization of Application Use as well as **Village Admin Training** with village economic actors to collect a database of local MSME products and a Kaligua-Pandansari Agrotourism Support Tourism Industry Database.
- c) The next step is to assist the use of the "SiPakuKretek" application for marketing purposes through *e-commers*.
- d) Additional stunting handling program by coordinating with the village to improve the nutrition of the Kretek Village community through the establishment of a chicken farmer association which will be coordinated by the village Bumdes and the next implementation mechanism by coordinating with PKK mothers in Kretek Village.

2.3 Pasca Program

At this stage, maintenance is carried out after the program runs as well as system repairs are carried out if needed or obstacles are found that lead to application system disruption.

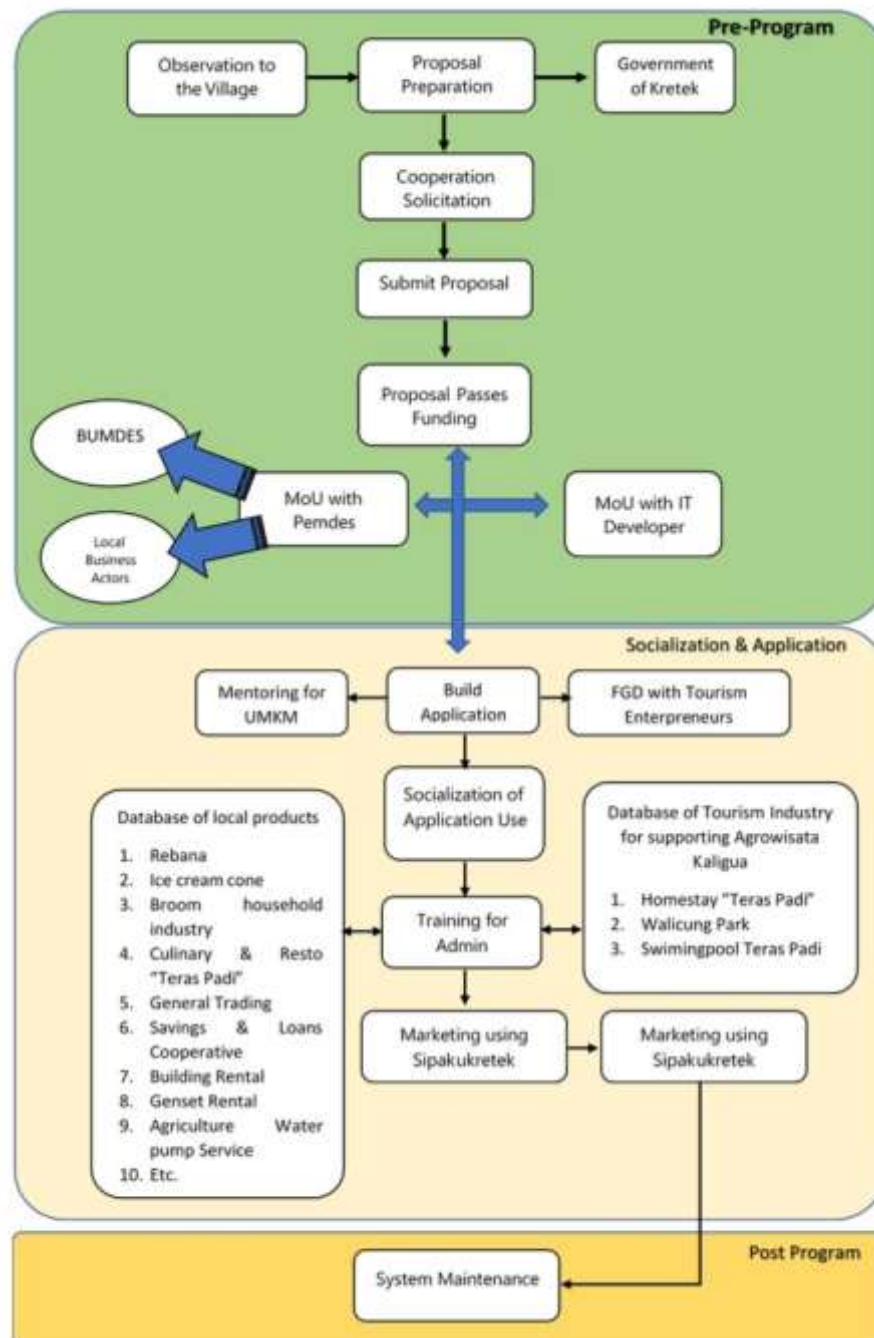


Figure 2. SiPaku Kretek program implementation flowchart

3. Result and Discussion

Results of SiPaKu Kretek activities (Tourism and Culinary Information System of Kretek Village) Tourism Digital Information System, Weather Forecast, and E-commerce "SiPaKu Kretek" Based on Android Supporting the SDGs (Sustainable Development Goals) Program towards Pandansari Integrated Tourism Village.

3.1. Pra-Program

The *Pr-Program stage* has been completed by carrying out several activities such as: initial observation to Kretek Village to find out the potential and obstacles faced by Kretek Village. This observation was also conducted by interviews with several Kretek village officials regarding what information is contained in Kretek Village. After the data from observations and surveys were collected, proposals were continued and the signing of cooperation with the Kretek Village government. The proposal that has been made contains the background of the problem, benefits and objectives of the program, methods of activities and expected outcomes. Furthermore, establishing IT partners for the work on the program to be implemented.

Based on the results of surveys and initial observations related to the problems faced by Kretek Village for the development of natural tourism potential and the potential of local superior products, Kretek Village needs a solution that is always *up to date* following the times. One of them is by utilizing technological developments through digital villages without access limits. The role of technology is needed to preserve and market MSME products and the natural potential of Kretek Village. One of them is an integrated information system between natural tourism information and village online store *e-commerce*, the system is accompanied by weather forecast information to support the development of integrated natural tourism Kretek Village to Pandansari Village. Through e-commerce, the sales of MSMEs in Condongsari Village will be better known by local and national audiences. Through the role of technology in the era of the industrial revolution 4.0 towards the era of the industrial revolution 5.0 and the Covid-19 pandemic in the form of making the *SiPaKu Kretek application* (Kretek Village Tourism and Culinary Information System). This system as a digital information system for tourism, weather forecasts, and *e-commerce* "sipaku kretek" based on android supports the SDGs (*sustainable development goals*) program towards the integrated tourism village of Pandansari.

Table 1. Mapping Potential and Problems, Solutions and Sustainability for Programs "SiPaKu Kretek"

No.	Potential and Problem Analysis	Solutions Offered	Results and Sustainability
1.	a. Data digitization as an integrated village information system that has not been maximally utilized by the village government, b. The natural potential of Kretek Village is beautiful with cool air and a large area	Integrated village tourism information system to manage village tourism as a potential village	Digital-based integrated information system application as a form of information services and data management to the community accompanied by weather forecasts for tourism destinations
2.	MSMEs in Kretek Village are not optimal in product marketing	Optimizing the marketing of MSME products in Kretek Village digitally	Village online store <i>e-commerce</i> application for marketing village MSME products
3.	Strengthening the economic sector to make it more stable	Mengoptimalkan peran Bumdes Desa Kretek sebagai admin desa untuk sistem informasi terpadu desa bidang pariwisata dan produk lokal UMKM Desa Kretek	The results of the development of <i>village online store e-commerce</i> can improve the economy of Kretek Village

The linkage of the "SiPaKu Kretek" program with various institutions in the implementation of the program is as follows.

- a. Kretek Village Apparatus, the village apparatus acts as a village admin who coordinates all tourism information databases and MSMEs in Kretek Village as well as an institution that socializes to residents of Kretek Village and its surroundings. The benefit is that the Kretek Village government has an integrated information system to help improve village development in tourism, economy and other fields.
- b. Unsoed higher education institution, PT Unsoed as an educational institution that helps planning, designing and developing programs to be better and dynamic in accordance with the development of science and technology in the Era of Revolution 4.0 and SDGs of the Ministry of Villages. For partner PT institutions, this program is a form of implementation of the tri dharma of higher education, namely Community Service (PkM).
- c. IT development partners "SiPaKu Kretek" applications, IT development partners help *support* systems starting from designing system needs, designing systems, and creating web-based applications as needed. The development partner is responsible for system *maintenance*. The IT development team will get the agreed salary.

3.2. Application and Socialization

The second stage in the implementation of the "SiPaKu Kretek" program in the application and socialization stages is as follows:

a. App Development

Making the Tourism Digital Information System, Weather Forecast, and *E-commerce* application "SiPaKu Kretek" based on Android Supporting the SDGs (*Sustainable Development Goals*) Program towards Pandansari Integrated Tourism Village is carried out in several stages as follows.

- The initial design of an integrated information system containing tourism information for Kretek Village and its surroundings, weather forecasts with the longitude and latitude of the area, and MSMEs of Kretek Village,
- Determination of information system hosting with dot id (.id) domain,
- Creating a database of natural tourism data and MSMEs in Kretek Village from secondary data of digital information. Primary data obtained from survey results and data from the kretek village government. Some MSMEs and tourism in Kretek Village can be shown in Table 2.

Table 2. List of MSMEs, businesses, residents and tours of Kretek Village

Village Entrepreneurship Unit	Nature tourism
1. Tambourine	1. Homestay Teras Padi
2. Ice cream cones	2. Walicing Park
3. Sapu ijuk	3. Villa Pesanggrahan
4. Culinary of villagers	4. Teras Padi Swimming Pool.
5. Kretek Village Bumdes Business (building rental, generator rental, agricultural water suction services).	

- Test drive the app over the web with URL address: sipakukretek.id.
 - Making android system applications on the *Play Store*, but this activity is still ongoing.
- The following Sipaku Kretek application can be accessed at: **www. sipakukretek.id** as follows.

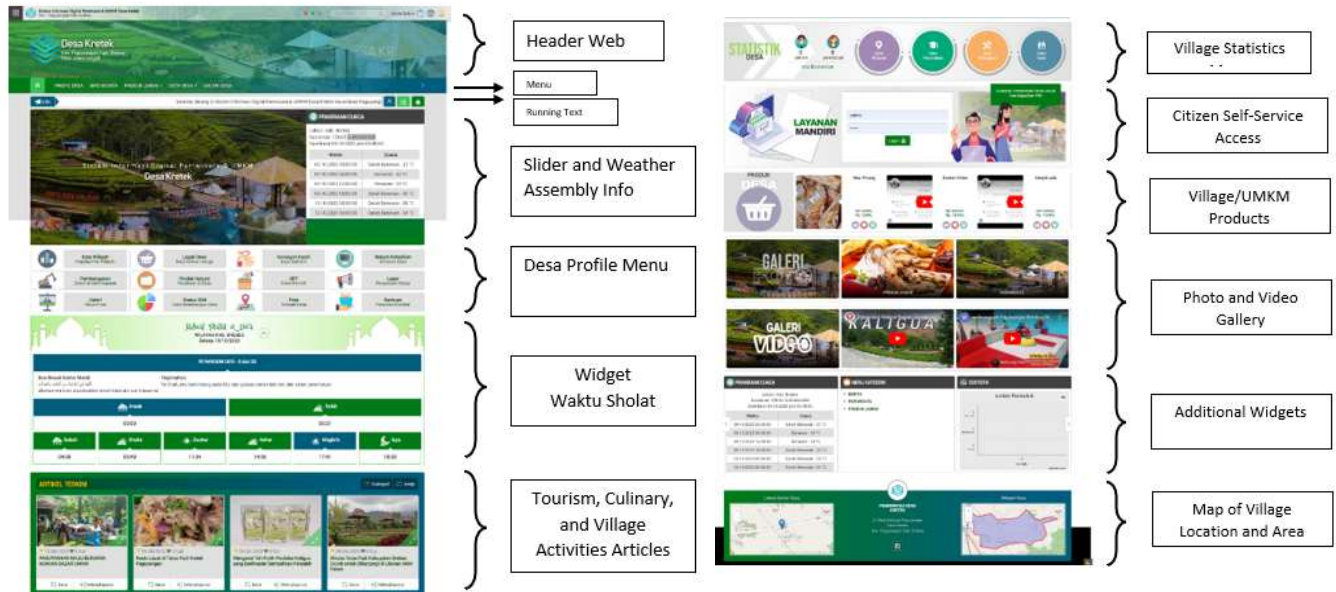


Figure 3. SiPaku Kretek application page

Figure 3 shows the display of the Sipakukretek application by displaying several MSMEs and natural attractions around Kretek Village which are equipped with weather forecast features around Kretek Village. This application can be accessed on the android application and can also be installed in the *Play Store application*. This application can run a buying and selling system and also ordering products presented in MSMEs which are recorded in the application database. The general public can access this application and can make buying and selling transactions with the help of village admins.

b. Village Admin Socialization and Training

The implementation of socialization and training of village admins has only been carried out in the communication stage with the village government. Admin training and socialization activities will be held on Monday, November 6, 2023 at the Kretek Village Hall with the village government represented by Mr. Lita'arofu, the head of Kesra. The activity was attended by 27 MSME participants and residents from 37 invitations. Meanwhile, the admin training is represented by the Kretek Village Bumdes management who will run the SiPaku Kretek application. Admin training and socialization activities were assisted by IT partners Mr. Imam Fadli, M. Kom as partners in making the SiPaku Kretek application from PT Protechno Edukasi Indonesia. The socialization activity contains how to install, use, and benefit the application for community residents, especially tourism information and advice on local MSMEs in kretek village. As for the SiPaku Kretek application admin as an admin to encourage local MSME players to market and promote their products through the application. The SiPaku Kretek application will record all residents of Kretek Village through the database registered in the application. For residents who will sell through the application by registering and providing a description of the product to be marketed to the village admin. The application provides communication services between sellers and buyers through *WhatsApp communication*, so that buyers can get complete product information from the seller of their products. Every seller registered in the application must be a resident of Kretek Village registered in the application database. Figure 4 and Figure 5 show socialization of the SiPaku Kretek application and village admin training.



Figure 4. Socialization of the Si Paku Kretek application to residents of Kretek Village



Figure 5. Village Admin Training for the Si Paku Kretek application

3.3. Pasca-Program

Post creation program Development of Tourism Digital Information System, Weather Forecast, and *E-commerce* application "SiPaKu Kretek" Based on Android Supporting the SDGs (*Sustainable Development Goals*) Program towards Pandansari Integrated Tourism Village with system maintenance or *maintenance*. This stage is carried out within a period of 1 year.

4. Conclusion

The Android-based Si PakuKretek Application (Kretek Village Tourism and Culinary Information System) as a Digital Information System for Tourism, Weather Forecast, and E-commerce "SiPaKu Kretek" Based on Android Supports the SDGs (Sustainable Development Goals) Program towards Pandansari Integrated Tourism Village in Kretek Village, Paguyangan District, Brebes Regency. This program provides an integrated information system regarding tourist information in Kretek Village and its surroundings along with local weather forecasts. In addition, this program also seeks to increase economic value through e-commerce, local home industry, kretek village as a supporter or supporter in the field of tourism. The Community Potential Development Program through the SiPakuKretek application for community members resulted in positive programs, including after village admin training and socialization about the SiPakuKretek Application, the people of Kretek Village became aware of the importance of using the internet in the era of digitization, marketing of Kretek Village MSME products. The SiPakuKretek system with an integrated information system and through e-commerce is expected to increase the economy of the people of Condongsari Village, make it easier for the community to make administration independently because it can be accessed anywhere and anytime, training and product innovation workshops provide new education and creativity in processing products to the community, especially MSMEs and BumDes in Kretek Village. The SiPakuKretek information system application can be accessed by the general public to support economic improvement through local MSME products in local villages, making Kretek Village a Digital Smart Village with an advanced economy in order to support Pandansari Village tourism.

References

- [1] I. Afrianto, T. Suryana, and S. Atin, "Pendampingan Sistem Layanan Publik Desa Digital Desa Ciwaruga Dan Desa Cigugur Girang," *J. Pengabd. Masy. TEKNO*, vol. 3, no. 2, pp. 84–90, 2022.
- [2] A. N. Rahmadi and S. Supriyanto, "Implementasi Sistem Informasi Manajemen Dalam Pelayanan Adminduk Berbasis Digital," *J. Sos. dan Humanis Sains*, vol. 8, no. 1, pp. 18–30, 2023.
- [3] E. Sutanta, "Model Integrasi Database Penduduk Indonesia Dengan berbagai Sitem Informasi Berbasis Komputer," *J. Inform.*, vol. 5, no. 2, pp. 542–553, 2011.
- [4] I. B. M. Astawa and I. P. G. Wirata, "Studi Pengembangan Sistem Pendataan Penduduk Nonpermanen Berbasis Digital Di Kabupaten Buleleng," *Sar. J. Kelitbangan Kabupaten Buleleng*, vol. 1, no. 2, pp. 1–18, 2022.
- [5] P. H. Livana, R. H. Suwoso, T. Febrianto, D. Kushindarto, and F. Aziz, "Dampak pandemi COVID-19 bagi perekonomian masyarakat desa," *Indones. J. Nurs. Heal. Sci.*, vol. 1, no. 1, pp. 37–48, 2020.
- [6] S. Rosyadi, P. I. Setyoko, D. Kurniasih, W. Ramadhanti, A. S. Kusuma, and Z. R. Atika, "Penguatan kapasitas peran sosial BUMDes dalam penanggulangan dampak ekonomi covid-19," *Wikrama Parahita J. Pengabd. Masy.*, vol. 5, no. 1, pp. 27–32, 2021.
- [7] H. K. Adiningtyas and D. Gunawan, "Evaluation of the Effectiveness of E-Commerce in The Digital Village Program in West Java Province," in *2021 2nd International Conference on ICT for Rural Development (IC-ICTRuDev)*, 2021, pp. 1–6.
- [8] R. Nugroho, G. D. Lestari, S. Sujarwo, and N. Kiettikunwong, "Increasing Educational Capacity as an Effort to Achieve SDGs 2030 for Village Association Personnel," *J. Nonform. Educ.*, vol. 9, no. 2, 2023.
- [9] N. Saidah, L. Khasanah, and S. Ridloah, "Analisis Strategi Kesuksesan Kampung Digital Krandegan dalam Mendukung Program Smart Village," *J. Reg. Rural Dev. Plan. (Jurnal Perenc. Pembang. Wil. dan Perdesaan)*, vol. 6, no. 2, pp. 123–135, 2022.
- [10] F. Lutfiantoro, "TANTANGAN DAN MANFAAT TEKNOLOGI KOMPUTER DALAM MEMPERKUAT INKLUSI DIGITAL MASYARAKAT PEDESAAN: TEKNOLOGI KOMPUTER," *J. SIGN J. Ilm. Sist. Inf. dan Inform.*, vol. 2, no. 2, pp. 1–7, 2023.
- [11] A. Asmuni, A. Nugroho, and L. Laila, "Mendekatkan Layanan di Tingkat Desa: Transformasi Digital Pelayanan Administrasi Kependudukan Melalui Aplikasi J-Lahbako," *J. Pengabd. Kpd. Masy. Nusantara*, vol. 4, no. 4, pp. 3711–3718, 2023.
- [12] J. E. Aryansah, R. Putra, and D. Dedeng, "SOSIALISASI DAN PENGENALAN KONSEP SMART VILLAGE DI DESA SUNGAI PINANG KECAMATAN RAMBUTAN KABUPATEN BANYUASIN," *J. Pengabd. Mandiri*, vol. 1, no. 11, pp. 2077–2082, 2022.
- [13] N. Rohmantika, E. Yulyanti, H. Wahyuni, and U. Pratiwi, "Pelatihan Digitalisasi Data Desa bagi Perangkat Desa Condongsari untuk Mengoptimalkan Layanan Administrasi Desa," *J. TEPAT Teknol. Terap. untuk Pengabd. Masy.*, vol. 5, no. 2, pp. 310–322, 2022.
- [14] L. Wahyuningsih *et al.*, "Sistem sMART Condongsari 'Si MaCo' sistem digitalisasi desa untuk penguatan ekonomi warga boom industri desa Condongsari, Banyuurip, Kabupaten Purworejo," *IJECS Indones. J. Empower. Community Serv.*, vol. 3, no. 1, pp. 35–41, 2022.
- [15] www.kretek.my.id