



## INTEGRATION OF DIGITAL TECHNOLOGY AND LOCAL WISDOM: THE ABCD APPROACH IN IMPLEMENTING SMART VILLAGE IN BUKIT TINGGI VILLAGE, BATU PUTIH, NORTH KOLAKA

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### Abstract :

*The Smart Village Community Service Program (KKN) aims to analyze the application of the Asset Based Community Development (ABCD) approach in supporting the transformation of Bukit Tinggi Village into a Smart Village based on local wisdom. Community service activities were carried out over 45 days through the stages of discovery, design, implementation, and reflection, with the active participation of the community, village officials, and local organizations. Data collection was conducted through observation, in-depth interviews, and documentation to identify the village's human, social, cultural, and economic resources. The results of the activities showed that the ABCD approach was effective in optimizing the role of the community in the village digitalization process, particularly through the development of a DIGIDES-based village website, management of official social media, preparation of public service infographics, and production of digital educational content. This program contributed to improving digital literacy, transparency of public services, and strengthening local identity amid the development of digital technology.*

**Keywords :** Smart Village, Local Wisdom, Community Empowerment, ABCD

### INTRODUCTION

Community service programs (KKN) are community service initiatives that serve as practical applications of the Tri Dharma Perguruan Tinggi (Three Pillars of Higher Education), which focus on community service. This initiative enables students to act as agents of change, helping rural communities to explore their potential while overcoming development challenges. In today's digital age, it is important for villages to develop into smart villages that are able to utilize information technology while maintaining their local cultural identity (Del Soldato & Massari, 2024). Bukit Tinggi Village, which was designated as the location for this program, has significant human, social, and cultural resources. However, these resources have not been fully utilized to promote digital technology-based development.



Various studies and community service activities show that the success of village development does not only depend on external intervention, but also on the extent to which local assets can be optimally utilized. The Asset-Based Community Development (ABCD) approach, which places local strengths and assets at the center of development rather than community weaknesses (Denning, 2023; García, 2020). Therefore, community service activities should not only be oriented towards creating new programs, but also directed towards developing existing assets to ensure sustainability.

The implementation of the Smart Village Community Service Program in Bukit Tinggi Village uses the ABCD approach through the stages of discovery, design, implementation, and reflection, carried out together with the community. This article focuses on how the ABCD-based Smart Village Community Service Program can strengthen the local identity of the community in the digital era while also serving as a model for sustainable village empowerment. The objective of this service is to develop local potential through the ABCD approach to support the realization of smart villages based on local wisdom.

Although many studies in Indonesia on Smart Villages focus on digital infrastructure development and village administration management, there are still very few studies that explore in depth the integration of local wisdom and community empowerment approaches. Research by (Susilowati et al., 2024) identifies that smart villages in Indonesia still largely focus on expanding access to technology and improving basic services such as education, health, and the economy, rather than on cultural aspects and village needs.

Recent studies further reinforce this gap by highlighting that the digitization process at the village level is still hampered by social aspects, particularly related to low technological literacy among the community and minimal participation in community-based innovation development (Ismayadi et al., 2023). In line with these conditions, this study was designed to fill the existing gap through the integration of digital technology and local wisdom by applying the Asset-Based Community Development (ABCD) approach as a framework for smart village development oriented towards the principles of inclusiveness, active community participation, and sustainable development (Zulfiana T et al., 2024).

This Community Service activity aims to encourage the transformation of Bukit Tinggi Village into a Smart Village by strengthening the capacity of village officials and the community, with an emphasis on optimizing the use of digital technology, improving digital literacy, and developing local wisdom as a foundation for independent and sustainable village development.

## **RESEARCH METHOD**

This community service activity was carried out in Bukit Tinggi Village, Batu Putih Subdistrict, North Kolaka Regency during the period of July 7-August 20, 2025 using the Asset-Based Community Development (ABCD) approach. This approach was chosen because it was in line with the program's objective, which was to optimize the assets and potential of the local community. In its

implementation, students and the community carried out several stages, namely: (1) discovery, identifying assets and potential in Bukit Tinggi Village; (2) design, developing a program plan based on the results of the identification; (3) define, determining the priorities of activities relevant to community needs; and (4) reflection, evaluating the achievements, obstacles, and sustainability of the program.

This development strategy places residents as the main actors in the development process, not merely as beneficiaries, so that the approach used does not focus on the problems or limitations of the village, but rather emphasizes the process of identifying and developing various assets owned by the community, including human resource potential, natural wealth, cultural heritage, social networks, and the availability of facilities and infrastructure that can be optimally utilized (Adinugraha et al., 2024; Nel, 2020).

**Table 1. Stages of PKM Activity Implementation**

| No. | Step                     | Activity                                                                          | Objective                                                                             |
|-----|--------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1.  | Incultration - Discovery | Asset Mapping                                                                     | Build trust and explore local assets owned by the community.                          |
| 2.  | Design                   | Program Planning                                                                  | Design programs that are in line with the potential and needs of the community.       |
| 3.  | Define                   | Set program priorities based on discussions with the community..                  | Select the most relevant, focused, and measurable programs.                           |
| 4.  | Reflection               | Evaluate achievements, obstacles, and lessons learned from program implementation | Identify improvements and support the sustainability of community service activities. |

The data collection methods used in this study are as follows:

1. Observation

Observations were made by directly observing the activities of the Bukit Tinggi Village community, particularly in the use of information technology, social interaction patterns, and local policy practices that are still preserved. Through observation, a realistic picture was obtained of the local assets and potential that can be developed within the framework of an ABCD-based smart village.

2. Interview

In-depth interviews were conducted with village officials, community leaders, and local residents. The aim was to explore their views, experiences, and expectations regarding local identity and the transformation of villages into the digital age. This method enabled researchers to gain a more comprehensive understanding of the community's perspective.



Figure 1: Observation to identify assets owned by the village.

### 3. Documentation

Documentation was carried out by collecting various written data, photos, and archives related to the Smart Village Community Service Program activities in Bukit Tinggi Village. This documentary evidence served to reinforce the results of observations and interviews, as well as support the validity of the research data.

## FINDINGS AND DISCUSSION

The approach used in implementing this Community Service Program (KKN) is Asset-Based Community-Driven Development (ABCD), a development method that emphasizes the empowerment of assets and potential already possessed by the village community. In the initial stage, systematic mapping and identification of various assets in Bukit Tinggi Village were carried out, including human resources, such as digital capacity and knowledge, physical and economic assets that support empowerment activities, as well as social assets in the form of networks and relationships between residents in community life.

Through active community involvement, this approach aims to optimize the role of the community in designing and implementing various initiatives to create a village environment that is adaptive to digital developments. After the asset mapping process is complete, empowerment activities are carried out in the form of village website management training, which aims to improve the ability of village officials to manage and store village data digitally. These activities are carried out collaboratively by involving KKN students, village officials, community leaders, and villagers, so that the process of developing a smart digital-based village can be carried out in a participatory and sustainable manner.

### 1. Discovery: Identification of Village Assets

At this stage, KKN Posko 66 students worked with the community to map village assets through field observations, area transects, and focus group discussions (FGD). The results of this activity identified various village potentials, including natural resources such as rice fields, patchouli, cocoa, and clove crops, as well as chicken and buffalo livestock; human resources with expertise in agriculture, animal husbandry, and small businesses; and

social capital reflected in the existence of local organizations, including Karang Taruna, PKK, Majelis Taklim, and posyandu cadres. These findings indicate that Bukit Tinggi Village has relatively strong basic capital as a foundation for digitalization and village development based on local wisdom.



Figure 2: Observation to identify assets owned by the village.

## 2. Dream: Formulating a Shared Vision

Discussions involving village officials, community leaders, and local organizations revealed a collective vision to develop Bukit Tinggi Village as a Smart Village based on local wisdom. The community's aspirations include the realization of a more transparent public service system, easier access to information, and the expansion of promotion of the village's potential through the use of digital media. This mutual agreement was then directed to be realized through collaborative synergy between KKN Posko 66, village officials, and the DIGIDES (Digital Desa) platform.



Figure 3: Assistance in Using the DIGIDES Platform

## 3. Design: Program Design

Based on the agreed vision, a number of work programs were designed that combine digital technology with local village assets. The main programs designed are:

- a. Creation of a DIGIDES-based village website to manage village administration and profiles.
- b. Creation of official village social media accounts as a means of public communication and promotion of the village's potential.
- c. Creation of village maps and infographics of services at the village office.
- d. Creation of digital educational videos.



Figure 4: Documentation of several main programs

4. Define: Program Prioritization

Based on various planning alternatives that have been prepared, a number of realistic program priorities have been set that can be implemented during the KKN period. The main priorities include developing a village website and managing social media as strategic tools in realizing Smart Village, as well as compiling infographics and educational videos as supporting media to improve community literacy. These program priorities were determined by considering the availability of resources, the urgency of village needs, and the potential for active community participation in the implementation process.

5. Destiny/Delivery: Program Implementation

During the implementation of the Community Service Program (KKN), all priority programs were successfully realized optimally. The village website was successfully developed and integrated with the DIGIDES system as a platform to support digital village services. In addition, the village's official social media accounts were launched and began to be filled with various content covering community activities, local economic potential, and public service information. Infographics and service flowcharts were displayed at the village office and health center in an effort to improve public service literacy. Meanwhile, digital educational videos were published as learning media on the use of social media as a learning medium. The implementation of these programs received broad support from village officials, youth, and local organizations, reflecting the high level of community participation in the Smart Village development process.



Figure 5: Installation of Infographics at the Village Office

6. Reflection: Reflection and Evaluation

The program evaluation results show that the community has responded positively to digitization efforts through the DIGIDES platform. Village officials have felt the tangible benefits in terms of increased

administrative efficiency and more optimal public communication, while village youth have shown active involvement in managing the village's social media. However, a number of challenges remain, particularly related to the low digital literacy of some community members and the lack of stable internet access. Nevertheless, the results of joint reflection show that this program has succeeded in raising collective awareness of the urgency of developing Smart Villages based on local wisdom, while emphasizing the importance of consistent program sustainability after the implementation of the Community Service Program (KKN).



Figure 6: Documentation of the Welcome Dinner

**Table 2. Findings**

| <b>No.</b> | <b>Findings</b>                               | <b>Explanation</b>                                                                                                                                                                  |
|------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.         | Asset mapping                                 | Mapping of village assets (human resources, natural resources, socio-cultural resources) using the ABCD method successfully identified local potential.                             |
| 2.         | Youth involvement in digital transformation   | Karang Taruna and village officials actively manage village social media accounts to promote potential and public communication.                                                    |
| 3.         | Improvement of digital literacy among village | Officials DIGIDES training improves the skills of village officials in digital administration. It also determines who will manage the village website to ensure its sustainability. |
| 4.         | Public Service Infographics                   | Infographics and service flowcharts improve residents' access to public information.                                                                                                |
| 5.         | Digital education for the younger generation  | Digital education videos improve children's and teenagers' understanding of the use of social media as a learning medium.                                                           |

## Discussion

The implementation of the Smart Village Community Service Program in Bukit Tinggi Village shows that the Asset-Based Community Development (ABCD) approach can be a relatively effective strategy in encouraging village transformation towards more modern and inclusive governance. The asset mapping conducted in the initial stage successfully identified various strengths of the village, including community skills in the agriculture, livestock, and small business sectors, as well as the existence of social capital reflected through local organizations such as Karang Taruna, PKK, School Teachers, and Majelis Taklim. These findings indicate that Bukit Tinggi Village has sufficient basic capacity to develop the Smart Village concept, especially if supported by increased digital literacy and optimized use of technology.

The Asset-Based Community Development (ABCD) stages, from the discovery phase to implementation, encourage communities to actively participate in formulating the direction and priorities of village development. Through focus group discussions (FGDs), residents and village officials reach agreements on strategic programs to realize Smart Villages based on local wisdom. The agreed programs include the development of a DIGIDES-based village website, management of the village's official social media, preparation of village maps and public service infographics, and the production of digital educational videos. The implementation of these programs has proven to contribute to increasing the capacity of village officials in digital administration while expanding community access to public information in a more effective and transparent manner.

Youth involvement is also an important factor in the success of this program. The active role of Karang Taruna in managing social media and documenting activities shows that the younger generation can be the driving force behind digital transformation in villages. Digital literacy education for children and teenagers also increases their understanding of social media as a learning tool and their ability to produce positive content.

However, the implementation of this program still faces a number of challenges, particularly low levels of digital literacy in some communities and limited internet network quality in some rural areas. This situation highlights the importance of ongoing assistance and strengthening of supporting infrastructure so that the village digitalization process can proceed consistently and sustainably. Despite these obstacles, the high enthusiasm of the community and the strong commitment of village officials are strategic social assets for continuing and strengthening the digital transformation of villages in the future.

Overall, the implementation of the Asset-Based Community Development (ABCD) approach in Bukit Tinggi Village shows that the synergy between the use of digital technology and the strengthening of local wisdom can improve the quality of public services, strengthen the transparency of village governance, and encourage participatory community empowerment. The implementation of this Community Service Program (KKN) proves that the development of a Smart Village requires strong collaboration among stakeholders, optimization of local assets owned by the village, and continuous efforts to improve digital literacy.

## CONCLUSION

The Smart Village Community Service Program (KKN) in Bukit Tinggi Village shows that the Asset-Based Community Development (ABCD) approach can be an effective strategic framework for encouraging village transformation towards smart, participatory, and sustainable governance. This approach places the community as the main actor in development by emphasizing the optimization of local assets, including human, social, cultural, and economic resources, so that the village digitalization process does not deviate from its deep local identity and wisdom. The implementation of digital technology-based programs, such as the development of village websites, social media management, the preparation of public service infographics, and the production of digital educational content, has been proven to increase the capacity of village officials, expand access to information, and encourage more systematic transparency in public services. Therefore, synergy between digital technology, empowerment of local assets, and multi-stakeholder collaboration is a key prerequisite for realizing an inclusive Smart Village that is oriented towards sustainable village development.

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