

Integrating Education, Research, and Service: A Participatory Action Research (PAR) Model for University-Led Community Empowerment in Rural Indonesia

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Abstract: This study examines the implementation of the Tri Dharma of Higher Education through the Community Service Program (KKN) of the State Islamic University of North Sumatra in Bahbutong I Village, Simalungun Regency, using a Participatory Action Research (PAR) approach. The program focuses on sustainable community empowerment by positioning students as partners who collaborate with residents in identifying potential, formulating solutions, and implementing real programs. Research data were obtained through observation, interviews, focus group discussions, participatory documentation, and joint evaluation. The results indicate that the KKN activities successfully integrated the aspects of education, research, and community service. In terms of education, students play a role in enhancing literacy, health awareness, and strengthening religious values through the teaching of fardhu kifayah. In terms of research, village potential mapping is conducted to reveal opportunities for the development of micro, small, and medium enterprises (MSMEs) as well as various challenges faced by the community. Meanwhile, in terms of service, students implement concrete programs such as providing waste management facilities, organizing MSME bazaars, and village festivals that promote economic growth, cultural preservation, and social solidarity. Overall, these findings affirm that PAR-based community service not only enriches students' learning experiences but also provides tangible benefits to village communities, while serving as a strategic model for other universities to sustainably optimize the Tri Dharma.

Keywords: Community Empowerment, Community Service Program, Tri Dharma of Higher Education

A. Introduction

The Tri Dharma of Higher Education is the main pillar that forms the foundation for the operation of universities in Indonesia. Its three main aspects education, research, and community service require universities not only to focus on the transfer of knowledge but also to ensure that this knowledge provides tangible benefits to society. Balanced implementation makes the existence of universities measured not

only by academic achievements but also by their social contributions in improving public welfare. Within this framework, the Community Service Program (KKN) emerges as a concrete manifestation of student service as well as a field-based learning tool that integrates education and research into community empowerment practice (Nasution, et al., 2025).

As a form of implementing the Tri Dharma, it has long been viewed as strategic in bridging the academic world with community life. Students equipped with knowledge are sent to villages to explore potential, identify problems, and offer practical, science-based solutions (Iskandar, 2021). Research shows that it not only has a positive impact on rural communities, but also develops students' social skills, leadership, and sensitivity to complex social realities (Yunita, Hartanto, Daud, & Shalahuddin, 2025). Thus, it serves as a means of character education for students as well as an instrument for community empowerment.

In practice, the program is aimed at addressing various actual issues in the village, such as limited access to education, low economic capacity, environmental management, and health literacy. (Rachmawati, Fitri, & Octaviana, 2025) Emphasizing effectiveness when accompanied by a participatory approach that involves the community from planning to evaluation. In this way, it goes beyond formal programs and presents contextual solutions according to local needs.

UIN Sumatera Utara (UINSU), as a state Islamic university, has a moral and academic responsibility to consistently implement the Tri Dharma. Based on Islamic and Indonesian values, it emphasizes religious moderation, nationalism, and local wisdom in all its activities, including KKN. This program not only highlights academic aspects but also integrates religious and cultural values into community empowerment practices, in line with UINSU's mission to produce graduates who are excellent, have strong character, and are socially aware.

One of the community service locations is Bahbutong I Village, which has both potentials and challenges. Its potentials include the sense of community among the residents and the presence of thriving traditional SMEs. However, the village also faces limitations in digital information access, suboptimal environmental management, as well as the need to improve basic and religious education capacity. These conditions require the contribution of KKN students through targeted and sustainable empowerment programs (Wang & Zheng, 2025).

The presence of UINSU students in Bahbutong I is focused on optimizing the Tri Dharma through a series of integrated activities. In the field of education, they teach in schools, provide tutoring, and introduce digital literacy. In the realm of research, the students conduct simple studies to map the village's potential, such as the development of local MSMEs and a waste management system based on community participation. Meanwhile, in community service, concrete programs implemented

include the creation of trash bins, training in processing local products, promoting MSMEs through bazaars, as well as health and environmental education. Thus, these activities not only fulfill academic obligations but also provide tangible benefits to the community.

Various previous studies have proven the effectiveness of KKN in improving the quality of life of rural communities. For example, digital entrepreneurship training has been shown to increase the income of MSME actors in West Java (Moharrak & Mogaji, 2025), and the KKN program in Sumatra has increased environmental awareness through education and the provision of waste management facilities (Ahyani & Dhuhani, 2024). However, most of these studies focus more on the practical outcomes of community service, without deeply examining the integration of the Tri Dharma of Higher Education education, research, and community service into a single program.

Based on the above description, the optimization of Tri Dharma through UINSU KKN in Bahbutong I is relevant to study. This study is expected not only to illustrate the role of students in community empowerment but also to emphasize the contribution of higher education institutions in strengthening Tri Dharma through education- and research-based service activities. Thus, this research is not only beneficial for the village community but can also serve as a development model for other regions.

This research is important because it serves as a key instrument for implementing the Tri Dharma. Although various studies have demonstrated the success of this program in many places, research focusing on the integration of education, research, and community service in UINSU's KKN is still limited. Therefore, the study at Bahbutong I not only documents student activities but also demonstrates how universities can comprehensively optimize the Tri Dharma. The results are expected to become a model for an effective KKN in the future.

B. Methods

A qualitative case study design was employed, utilizing a Participatory Action Research (PAR) framework. This framework was chosen because it emphasizes collaboration between researchers and community members in identifying problems, designing solutions, and implementing actions collectively (Sugiyono, 2022). In the context of the KKN program, the PAR approach enables students and villagers to act as co-researchers, ensuring that the intervention is both participatory and empowering.

This study was conducted in Bahbutong I Village, Simalungun Regency, North Sumatra. The village has approximately 1,200 residents, with livelihoods mainly in agriculture (paddy fields, corn, and horticulture), small-scale trading, and livestock farming. The demographic profile shows that the majority of residents are in

productive age groups, with a mix of primary to secondary education levels, and a relatively strong social capital through active community organizations.

The KKN team consisted of 12 undergraduate students from UINSU, representing disciplines such as Education, Islamic Economics, Communication Studies, Agricultural Extension, and Social Work. They were supervised by one Field Lecturer who provided academic and methodological guidance throughout the program. The diversity of disciplines in the team allowed for a multidisciplinary intervention that addressed educational, economic, and social aspects of the village.

Table 1. Data collection techniques and interventions

Stage	Data Collection Methods	Intervention/Program Implemented
Initial Assessment	Observation, informal interviews, demographic survey	Identification of community needs and potentials
Program Design	Focus group discussions with villagers & key leaders	Drafting programs on digital literacy, entrepreneurship, and village data
Implementation	Field notes, participatory observation, documentation	- Digital literacy training for youth - Entrepreneurship training for mothers - Data collection for village development planning
Reflection & Evaluation	Joint reflection meetings, participatory evaluation	Review of program outcomes, challenges, and sustainability strategies

During the program, systematic documentation and participatory observation were carried out to capture dynamics of interaction, challenges, and community engagement. The evaluation stage was conducted collaboratively, involving the KKN team, the supervising lecturer, and village representatives, ensuring transparency and joint ownership of results. This process reflects the essence of PAR, where reflection and action occur cyclically, fostering continuous improvement (Creswell, 2020). Thus, the KKN UINSU program in Bahbutong I not only fulfilled the Tri Dharma of Higher Education education, research, and community service but also created a sustainable collaborative learning process that strengthens community empowerment.

C. Results and Discussion

Optimization of the Tri Dharma of Higher Education through the Implementation of Community Service Programs

The implementation of UINSU Medan's KKN in Bahbutong I Village presented various findings showing how students actively engaged in carrying out the Tri Dharma of Higher Education. The activities conducted were not only formal in nature but truly touched the daily lives of the community, so their benefits could be directly felt.

From an educational aspect, students initiated various programs involving children,

teenagers, and adults. They provided literacy and numeracy training, conducted health education about clean living habits, environmental sanitation, and the importance of balanced nutrition for mothers and children. On the other hand, teaching fardhu kifayah at the madrasah became one of the most memorable activities. Children not only learned the procedures of worship, but also developed awareness of social responsibility. Positive responses from parents and madrasah administrators showed that the presence of students brought a new, more interactive and enjoyable learning atmosphere, while also strengthening solidarity among community members.

In terms of research, students conduct a comprehensive mapping of the village conditions. They explore the potential of natural resources, identify local superior products such as culinary items and handicrafts, and investigate social and economic issues faced by the community. The findings show that the village has local wealth that can be developed, but its management is still limited. This data provides a real portrait of the potentials and challenges present, as well as important material for designing targeted community empowerment strategies.

Meanwhile, in terms of community service, students not only participate as companions but also act as agents of change. Renovating the village hall and improving worship facilities provide tangible benefits in the form of increased comfort for public spaces and the community's spiritual well-being. Furthermore, intensive mentoring for MSME actors opens new insights into packaging, branding, and marketing strategies. The MSME bazaar organized also serves as a real platform for business actors to expand their market, introduce products, and foster local entrepreneurial spirit.

Overall, the findings of this study show that the implementation of KKN in Bahbutong I Village is not merely a learning experience for students, but also brings tangible impacts felt by the community. Education produces a generation more aware of knowledge and social values, research provides data to design the future of the village, and community service delivers direct outcomes that drive positive change. The synergy of these three aspects makes KKN a strategic means to build a more empowered, independent, and sustainable village. The forms of activities in this implementation are presented below.



Figure 1. Implementing the Fardhu Kifayah Practice at Mts.
Source: KKN Documentation 2025

In addition to religious education, activities such as organizing village festivals are also found, serving as a means of non-formal education. These festivals not only provide entertainment for the community but also serve as a platform to foster cultural literacy, develop leadership skills, and strengthen intergenerational cooperation. Through the series of arts and cultural events presented, the community gains collective learning experiences that unite educational values, tradition preservation, and village community empowerment.



Figure 2. The organization of the Islamic Art Festival in Bah Butong I Village.
Source: KKN Documentation 2025

Research as an Empirical Foundation

Research findings on the implementation of the program in Bahbutong I Village also include the implementation of the second pillar of Tri Dharma, namely research activities. Through a simple yet focused approach, students conducted a mapping of

the village's potential by identifying various superior products, such as local culinary items and community handicrafts. The results of this mapping were then used as a basis for organizing micro, small, and medium enterprise MSME bazaars, ensuring that the community service activities could run in accordance with the real needs of the community.

In addition, the research also focuses on identifying various challenges faced by MSME actors in villages, such as limited market access, minimal product innovation, and a lack of understanding of digital marketing. The information obtained from the research results becomes an important foundation for designing more targeted community assistance and economic empowerment programs. Thus, the research activities not only produce data and information but also serve as a basis for concrete actions to sustainably enhance the economic competitiveness of villages.



Figure 3. Improving Local MSMEs by Organizing a Bazaar.

Source: KKN Documentation 2025

Synergy of Education, Research, and Community Service in Community Empowerment

The third aspect of Tri Dharma, namely community service, is clearly reflected in various activities that directly address the needs of the residents of Bahbutong I Village. One notable activity is the organization of the MSME bazaar, which provides a space for small business actors to market their local products. Through this activity, the community not only gains opportunities to expand their market, but also learns about packaging, branding, and more attractive sales strategies.

In addition to bazaars, village festivals also serve as a form of community service with significant social impact. These festivals are not only a means of entertainment but also a way to strengthen local cultural identity while creating opportunities for the growth of the creative economy. The involvement of multiple generations in the

festival makes it a collaborative platform that strengthens social solidarity and enriches the community's experiences.

The fardhu kifayah teaching program also becomes part of ongoing community service. Children at the village madrasah receive practical religious education that they can apply in their daily lives and pass on to the next generation. This shows that community service is not only focused on economic aspects but also on strengthening spiritual and moral values.

These findings show the presence of synergy between education, research, and community service. Education is manifested through religious teachings and village festivals, research is realized in the mapping of MSME potentials, while community service is implemented through bazaars and other social activities. These three aspects reinforce each other: research provides data, education enhances community capacity, and community service delivers direct benefits experienced by residents.

To ensure sustainability, strategic steps are needed, such as forming village action groups capable of regularly managing festivals, establishing MSME cooperatives as a platform for joint marketing, and collaborating with religious institutions to continue educational programs. Thus, the activities that have been carried out do not stop at temporary interventions but evolve into a sustainable movement that truly empowers village communities.

Optimization of the Tri Dharma of Higher Education through the Implementation of Community Service Programs

The findings of the UINSU Medan KKN in Bahbutong I Village show a tangible integration of education, research, and community service as an implementation of the Tri Dharma of Higher Education. These findings are in line with research (Mwangi, Kaaria, & Kiambarua, 2025) which emphasizes that the success of community service programs will be more optimal if students are able to integrate aspects of education, research, and real action in a single series of activities.

In terms of education, literacy, numeracy activities, and health counseling conducted by students demonstrate that non-formal learning can raise public awareness of the importance of knowledge in daily life. This is in line with the research results (Desriani, Putra, BR, & Wulan, 2025) which shows that community-based literacy activities are able to strengthen a lifelong learning culture and increase community participation in village development. Furthermore, the practice of fardhu kifayah teaching not only enhances children's religious competencies but also fosters social awareness, as explained by (Yusuf, Sulistyorini, & Sujianto, 2025) that value-based religious education is capable of building a collective character oriented towards social solidarity.

In terms of research, the mapping of village potential conducted by students yielded important data on local flagship products and the obstacles faced by MSMEs. These findings are consistent with studies conducted by (Jeyaraj & Gandolfi, 2022), which asserts that research based on local potential is very necessary as a foundation in formulating community economic empowerment strategies. The data produced by students, such as limited market access and minimal product innovation, also align with the findings (Uleanya, Adamu, & Yassim, 2025) which states that MSME actors in rural areas need support for marketing digitalization in order to be able to compete in the global era. Thus, the results of students' field research not only serve as academic information but also as a basis for recommendations for sustainable village development strategies.

Meanwhile, in terms of community service, activities such as renovating the village hall, improving worship facilities, and assisting MSMEs demonstrate the students' tangible contribution to enhancing the quality of community life. This aligns with research (Seilkhan, et al., 2024) which explains that community service based on the real needs of the village can create faster and more sustainable social change. In addition, organizing village festivals as a means of non-formal education shows how art and culture can be effective instruments for strengthening social identity and cross-generational solidarity. These findings reinforce research results (Heffernan, Shearing, Sanderson, & Sisto, 2025) which states that community-based festivals are able to enhance cultural literacy while also serving as a space for community empowerment.

Thus, the implementation of the KKN in Bahbutong I Village not only serves as a learning platform for students but also brings multidimensional impacts to the community. The synergy between education, research, and community service creates a space for social transformation oriented towards empowerment, self-reliance, and village sustainability.

Research as an Empirical Foundation

Research findings in the implementation of the KKN in Bahbutong I Village indicate that the research pillar of the Tri Dharma of Higher Education can be applied practically through village potential mapping. Students successfully identified flagship products, such as local culinary foods and handicrafts, which were then used as the basis for organizing an MSME bazaar. This step is in line with research (Omotosho, Yassim, Uleanya, Mkwizu, & Mhlanga, 2025) which emphasizes the importance of research based on local potential as the main foundation in rural economic development. The mapping of potential carried out by students shows that research does not only stop at data collection but can also be directed into practical strategies to meet community needs which emphasizes the importance of research based on local potential as the main foundation in rural economic development. The mapping of potential conducted by students shows that research does not only stop at data collection but can also be directed toward practical strategies to meet

community needs. (Chanchaivong, Wongsapan, & Chano, 2025) states that the competitiveness of rural MSMEs largely depends on the ability of business actors to adopt digitalization strategies. This condition shows that student research can provide a concrete picture of the structural problems faced by rural communities, so that assistance programs can be designed more effectively. Thus, the field data obtained serves not only as academic information but also as an instrument for local economic development planning.

Furthermore, the results of this study also show consistency with other studies (Belcher, Claus, Davel, & Jones, 2022) which emphasizes that the success of community empowerment requires synergy between research and real-world action in the field. Organizing an MSME bazaar based on student research results serves as a concrete example of how research can be transformed into sustainable empowerment activities. This not only enhances the entrepreneurial skills of the community but also expands market networks, while simultaneously fostering a spirit of collaboration among residents.

Thus, research activities during the KKN in Bahbutong I Village demonstrate that research conducted in a simple yet focused manner can make a significant contribution to strengthening the village economy. The data produced is not merely an academic record, but a foundation for concrete actions to enhance the competitiveness of SMEs, strengthen community capacity, and promote sustainable village development.

Synergy of Education, Research, and Community Service in Community Empowerment

The findings from the implementation of the KKN in Bahbutong I Village indicate that the aspect of community service can directly impact residents through various activities. The organization of an MSME bazaar, for example, has proven to be a strategic space for small business actors to introduce local products while also learning about packaging, branding, and marketing strategies. This aligns with research (Borron, 2025) which emphasizes that community-based bazaars play an important role in expanding market access for MSMEs as well as enhancing the managerial skills of business actors. Thus, this activity not only provides short-term economic benefits but also equips the community with sustainable entrepreneurial skills.

In addition to bazaars, the organization of village festivals shows another dimension of service, namely the strengthening of local cultural identity and the development of the creative economy. A study by (Anas & Nafisa, 2024) stating that cultural festivals serve as a medium to preserve traditions, strengthen social cohesion, and create economic opportunities based on community creativity. This finding is consistent with the results in Bahbutong I Village, where cross-generational involvement in the

festival not only strengthens social solidarity but also opens up space for collaboration among residents in revitalizing local culture as a social and economic resource.

Furthermore, the teaching of *fardhu kifayah* in madrasahs emphasizes that community service is not limited to material or economic aspects, but also touches on spiritual dimensions. Research (Fadjarenie, et al., 2024) It is expressed that practical religious education is able to strengthen moral values, increase social awareness, and serve as a means of regenerating Islamic values in village communities. The presence of KKN students in this activity becomes an important stimulus for the formation of a stronger religious culture, while also enriching the role of non-formal education in strengthening the identity of the community.

These findings show the existence of synergy among the three pillars of Tri Dharma. Education is present through religious teaching and socio-cultural literacy, research forms the basis for mapping economic potential, and community service is manifested through bazaars, festivals, and religious programs. In line with the study (Wahyuni, 2025), The integration of these three aspects is believed to be able to create more comprehensive community empowerment, as each pillar complements the others in delivering tangible benefits.

Thus, the implementation of community service in the KKN program at Bahbutong I Village does not stop at temporary interventions, but opens up space for sustainability. Strategic efforts such as the formation of village driving groups, the establishment of MSME cooperatives, and partnerships with religious institutions are important steps to ensure that these activities can evolve into a collective movement that is effective and sustainable.

D. Conclusions

The implementation of UINSU's KKN in Bahbutong I Village successfully integrated the Tri Dharma of Higher Education through activities in education, research, and community service that provide tangible benefits for the community. Education fosters literacy, health, and spiritual values; research produces data on the village's potential and challenges; while community service brings direct changes through MSME bazaars, village festivals, and religious programs. This synergy demonstrates that KKN can serve as a strategic means of sustainable community empowerment. These findings imply that the KKN program not only functions as a medium for student learning but also as an instrument for village development. Research data can serve as a basis for formulating local policies, whereas community service activities can strengthen the economy, culture, and spiritual values of the community. Although it provides positive impacts, the implementation of KKN (Community Service Program) still has limitations, such as the short duration of the program, the uneven coverage of activities across all layers of society, and reliance on student initiatives without strong sustainability support from village institutions. For sustainability, it is

necessary to establish village mobilization groups, MSME cooperatives, and partnerships with educational and religious institutions. In addition, future KKN programs should be designed with long-term mentorship and periodic evaluations, so that the benefits experienced by the community do not end with the program period but continue to develop into an independent collective movement.

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