

Revitalising the Role of Higher Education in Encouraging Social Transformation through Sustainable Innovation-Based Services

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Abstract

This research aims to examine in depth how universities can revitalise their role in encouraging social transformation through community service based on sustainable innovation. Using a qualitative approach in the form of literature review and descriptive analysis, this research analyses 19 selected articles from Google Scholar and other credible online sources published between 1996-2025. The findings show that sustainable innovation in community service programmes has great potential in empowering communities, increasing local capacity, and creating systemic social impact when developed through collaboration between actors, participatory approaches, and the use of science and technology. This study is based on the Triple Helix, Diffusion of Innovations, and engaged scholarship theories that emphasise the importance of synergy between academia, community, industry, and government. Case studies in various parts of Indonesia show the success of innovation-based service models in improving community welfare in a sustainable manner. Therefore, revitalising the role of universities through innovative service not only supports the national development agenda, but also reaffirms the social function of universities as agents of change.

Keywords: Community Service, Social Transformation, Sustainable Innovation, Higher Education

Revitalisasi Peran Perguruan Tinggi dalam Mendorong Transformasi Sosial melalui Pengabdian Berbasis Inovasi Berkelanjutan

Abstrak

Penelitian ini bertujuan untuk mengkaji secara mendalam bagaimana perguruan tinggi dapat merevitalisasi perannya dalam mendorong transformasi sosial melalui pengabdian masyarakat yang berbasis inovasi berkelanjutan. Dengan menggunakan pendekatan kualitatif dalam bentuk tinjauan pustaka dan analisis deskriptif, penelitian ini menganalisis 19 artikel terpilih dari Google Scholar dan sumber daring kredibel lainnya yang diterbitkan pada rentang 1996–2025. Temuan menunjukkan bahwa inovasi berkelanjutan dalam program pengabdian masyarakat memiliki potensi besar dalam memberdayakan komunitas, meningkatkan kapasitas lokal, dan menciptakan dampak sosial yang sistemik apabila dikembangkan melalui kolaborasi antaraktor, pendekatan partisipatif, serta pemanfaatan ilmu pengetahuan dan teknologi. Kajian ini didasarkan pada teori Triple Helix, Diffusion of Innovations, dan engaged scholarship yang menekankan pentingnya sinergi antara akademisi, masyarakat, industri, dan pemerintah. Studi kasus di berbagai wilayah Indonesia memperlihatkan keberhasilan model pengabdian yang berbasis inovasi dalam meningkatkan kesejahteraan masyarakat secara berkelanjutan. Oleh karena itu, revitalisasi peran perguruan tinggi melalui pengabdian inovatif tidak hanya mendukung agenda pembangunan nasional, tetapi juga menegaskan kembali fungsi sosial universitas sebagai agen perubahan.

Kata kunci: Pengabdian Masyarakat, Transformasi Sosial, Inovasi Berkelanjutan, Perguruan Tinggi

INTRODUCTION

The background of this research stems from the urgency to reinforce the strategic role of higher education institutions as agents of change in society, particularly in the context of inclusive and sustainable social transformation. Over the past few decades, the role of universities has evolved beyond being mere centers of education and research into becoming active agents of transformation that address social problems at both local and national levels. In Indonesia, challenges such as social inequality, structural poverty, environmental degradation, and limited access to education and healthcare remain central issues that require the involvement of various stakeholders, including higher education institutions. However, in reality, community service programs conducted by universities often remain ceremonial, short-term, and lacking in long-term impact on target communities. This situation indicates the need to revitalize the models and approaches used in university-based community engagement.

This revitalization effort is inseparable from the fundamental concept of the Tri Dharma of Higher Education, in which community service constitutes one of its core pillars. Unfortunately, compared to education and research, community service often occupies a subordinate position in terms of funding, academic recognition, and institutional strategic focus. As a result, the significant potential of universities to contribute knowledge-based solutions to societal issues becomes underutilized. In this context, a new paradigm is required—one that views community service not merely as an administrative obligation, but as an integral part of the academic mission and social commitment of higher education. This paradigm must dynamically and sustainably connect academic achievements with the real needs of society.

To achieve this, an innovation-based sustainable community engagement approach becomes both relevant and urgent. This concept refers to efforts to develop innovative solutions in terms of both technology and methods, rooted in the socio-cultural context of local communities and designed to be sustainable in the long run. Innovation here does not solely imply high-tech products but also encompasses social, institutional, and participatory innovations that foster community self-reliance. Such an approach demands interdisciplinary involvement, cross-sector collaboration, and adaptive monitoring and evaluation systems. In other words, sustainable innovation calls for a transformation in the way universities design, implement, and evaluate their community service programs (Fernández et al., 2023).

The notion of social transformation referred to in this study involves fundamental changes in the structures, values, and social interaction patterns of a community, ultimately leading to improved quality of life and social justice. Higher education institutions hold immense potential as catalysts for such change through knowledge transfer, appropriate technology dissemination, social capital formation, and local capacity strengthening (McDonnell-Naughton & Păunescu, 2022). However, meaningful social transformation cannot occur if community service processes remain top-down in nature, without critical dialogue and active participation of the community as subjects of change. Therefore, revitalizing the role of universities must include a repositioning of the

epistemology of community service—from a linear approach to a collaborative and transformative one.

In several case studies across Indonesia, such as the community development program at Universitas Gadjah Mada and the integrated agricultural innovation initiative by IPB University, it is evident that sustainable innovation-based community engagement can yield tangible impacts when executed through systemic and synergistic approaches. Universitas Gadjah Mada, through its Directorate of Community Service, has developed a Village-Based Community Service Program (Universitas Gadjah Mada, 2023). This program aims to empower rural communities through a comprehensive and multisectoral approach, focusing on improving well-being and promoting self-reliance. The initiative involves various stakeholders and employs appropriate technologies to address economic, social, cultural, health, and environmental issues in villages. This program is implemented in several locations, including the villages of Sriharjo and Selopamioro in Kapanewon Imogiri, Bantul. Further details on this program can be accessed via the official guidebook published by UGM.

IPB University, through its Vocational School, has developed a research and community service program focused on the development of bioactivators and both liquid and solid organic fertilizers derived from organic waste, including the utilization of golden apple snails and rice washing water. This program involves lecturers from various study programs and students, and is based on a partnership ecosystem mapping that has been conducted since 2023. The initiative aims to integrate research and the Teaching Factory (TeFa) model in the development of vocational learning, while also supporting sustainable agriculture based on regional potential (IPB University, 2025).

These two programs demonstrate that a community service approach based on sustainable innovation can produce tangible impact when implemented through a systemic and synergistic strategy. These initiatives not only address technical problems but also empower communities economically, socially, and culturally. However, not all universities possess the institutional capacity or strategic orientation needed to replicate such best practices. Furthermore, a persistent gap between academic activities and real-world community needs continues to hinder comprehensive social transformation.

In a global context, the revitalization of the role of higher education institutions aligns with the agenda of the Sustainable Development Goals (SDGs), which position higher education as a key actor in achieving sustainable development. Therefore, community service strategies should not only respond to local needs but must also be relevant to global challenges such as climate change, gender equality, food security, and social justice. This requires a framework that bridges local orientation with global issues and builds international collaboration networks to support socially innovative transformation missions.

To realize this ideal role, institutional governance reforms within universities are essential. This includes reformulating faculty performance indicators, integrating community service into curricula, and enhancing human resource capacity to design programs based on sustainable innovation. Moreover, building a collaborative ecosystem

between universities, local governments, the private sector, civil society organizations, and local communities is crucial. Such collaboration will strengthen the legitimacy and sustainability of community service programs while minimizing resistance from target communities. Through this approach, higher education institutions can truly become strategic partners in shaping a more just, inclusive, and sustainable future.

Based on this background, this study aims to examine how higher education institutions can revitalize their role in driving social transformation through community service strategies grounded in sustainable innovation. This approach is expected not only to enhance the effectiveness of community service programs but also to reinforce the position of universities as key engines of knowledge-based and community-driven social development.

Community Engagement

Community engagement is one of the three pillars of higher education (Tridarma Perguruan Tinggi), serving as a platform for the actualization of academic knowledge by lecturers and students in addressing real societal issues (Regita, 2023). This activity goes beyond charitable acts or one-way socialization efforts; it emphasizes collaboration and active participation of the community in problem identification, solution formulation, and program implementation. Community engagement aims to enhance local capacity, empower vulnerable groups, and generate constructive social change by utilizing research findings and academic innovations. Therefore, effective community engagement demands a contextual, transdisciplinary, and sustainable approach to ensure not only short-term impact but also long-term transformation of social structures in a holistic manner.

Social Transformation

Social transformation refers to the process of structural and cultural change within a society, oriented towards improving welfare, justice, and social inclusivity (Valladares, 2021). Such transformation does not occur spontaneously, but is influenced by internal factors such as community critical awareness and external factors like public policy interventions, technological advancements, or the roles of strategic institutions such as universities. In the context of community engagement, social transformation is understood as a systematic effort to shift stagnant conditions—such as poverty, underdevelopment, or inequality—towards progressive states through educational, innovative, and participatory approaches. Thus, social transformation driven by higher education institutions becomes a strategic mechanism for creating a more just and adaptive social order in response to contemporary challenges.

Sustainable Innovation

Sustainable innovation is the process of developing new ideas, technologies, or methods that not only offer novelty and efficiency but also consider environmental, social, and economic sustainability (Bataineh et al., 2024). In the context of community engagement, sustainable innovation serves as a tool for generating long-term solutions to structural societal problems, such as inequitable access to education, food security, and inclusive

economic systems. This type of innovation typically emerges from interdisciplinary and collaborative approaches and emphasizes sustainability in terms of replicability, adaptability, and local participation. Hence, sustainable innovation is assessed not only by its technical sophistication but also by how well it strengthens local capacity and maintains social and environmental balance over the long term.

Higher Education Institutions

Higher education institutions are the highest level of formal education, tasked with producing competent graduates and bearing the social responsibility of shaping a more just, knowledgeable, and competitive society (Khatri et al., 2024). Within the Tridarma framework, universities occupy a strategic position as centers of knowledge production, laboratories of social innovation, and partners in community development. The relevance of higher education institutions in today's context is increasingly reinforced by the demand that they abandon the ivory tower model and instead engage actively in solving real-world problems through evidence-based research and community engagement. Therefore, revitalizing the role of universities requires a more open, adaptive, and collaborative approach to ensure they become true agents of social transformation with broad and sustainable impact.

METHOD

This research is a literature review study employing a qualitative approach aimed at enriching theoretical and conceptual references related to community engagement based on sustainable innovation, in the context of the role of higher education institutions in driving social transformation. The qualitative approach was chosen because this study emphasizes an in-depth understanding of concepts, ideas, and scholarly findings from various relevant sources, rather than focusing on quantitative or statistical measurements. Data collection was conducted through credible secondary sources, with a primary focus on scientific articles published between 1996 and 2025, sourced from Google Scholar as well as from various reputable national and international academic journal websites. The data collection technique involved document searches using keywords such as "innovation-based community engagement," "revitalization of the role of higher education," "social transformation," and "sustainable innovation in higher education." The initial search yielded 40 articles that met the criteria for thematic relevance and topical currency. However, after a rigorous selection process based on publication quality, direct relevance to the research issue, clarity of methodology, and contribution to the understanding of community engagement, only 19 articles were selected for further analysis. This selection process was intended to ensure that only literature with strong relevance and high analytical depth would serve as the basis for this study.

Data analysis was conducted using a descriptive-qualitative technique, focusing on summarizing, classifying, and interpreting the content of the articles to uncover the connections among theoretical concepts, implementation approaches, and models of innovative and sustainable community engagement. In this process, the researcher

identified thematic patterns, conceptual principles, and strategic trends employed by various universities in designing and implementing their community engagement programs. The analysis also considered the local context, collaborative approaches, and contributions toward achieving social transformation as the ultimate outcome of community service activities. The results of this descriptive analysis are expected to provide a clear mapping of the paradigm shift in community engagement—from a linear approach to a participatory and innovative one oriented toward sustainability. Additionally, this study aims to identify underexplored research gaps and offer strategic insights for formulating campus policies to strengthen the role of community engagement as a key element of the Tridarma of Higher Education. Thus, this research contributes not only academically but also serves as a reference for developing more relevant, applicable, and impactful community engagement practices.

Through a qualitative approach and systematic analysis of selected literature, this study also serves as a conceptual foundation for more applied and empirical follow-up research, while encouraging scholarly discourse on the transformative role of universities in social development. The curated and critically analyzed references are expected to enhance the understanding of researchers and higher education practitioners in designing community engagement models that are more responsive to contemporary needs and global challenges.

FINDING AND DISCUSSION

Revitalizing the role of higher education institutions in driving social transformation should not merely be understood as an effort to improve the quality of education and research, but rather as a call for a more fundamental paradigm shift regarding the strategic function of universities in social life. In this context, the concept of engaged scholarship proposed by Boyer (1996) positions community service not as a supplementary component to the other two pillars of the Tri Dharma Perguruan Tinggi (education, research, and service), but as a dimension with equivalent epistemological weight. Boyer emphasizes that community engagement must be grounded in applicable scientific integration aimed at solving real-world problems faced by society. Therefore, universities are expected to design community engagement programs that are collaborative, participatory, and capable of bridging the gap between academic theory and the socio-economic realities on the ground. When community service is no longer seen as a mere administrative obligation but as an academic responsibility that enriches the learning and research process, the role of universities as agents of social change becomes increasingly relevant and crucial. Amidst increasingly complex and rapid social, economic, and environmental changes, the presence of universities as catalysts of sustainable social innovation is vital to help communities adapt and thrive. This revitalization must involve institutional vision renewal, reformulation of service-related policies, and capacity building of university human resources to perform as active partners in inclusive and transformative development.

The Triple Helix Model developed by Etzkowitz and Leydesdorff (2000) offers a comprehensive theoretical framework to understand the synergistic relationship among universities, industry, and government in fostering social and economic innovation. In this model, none of the three actors holds a dominant role over the innovation process; instead, all three interact dynamically to create an innovation ecosystem that is responsive to societal challenges. When community service is conducted unilaterally by educational institutions without the involvement of external partners, the potential for meaningful and applicable innovation becomes limited. Conversely, cross-sector collaboration enables a more effective exchange of knowledge, resources, and technology, ultimately enhancing the quality and impact of programs. A concrete example is when a university collaborates with local governments and MSME actors to develop a cultural village tourism initiative supported by creative economy digitalization—such multi-stakeholder collaboration can broaden the scope of social benefits while strengthening the legitimacy and sustainability of the program. The role of the university as a knowledge producer, the government as a regulator and facilitator, and the industry as an economic catalyst makes the Triple Helix a highly relevant and effective approach in realizing innovative, measurable, and impactful community engagement for sustainable social development.

A study by Fitriani (2025) in *Jurnal Mandira Cendekia* highlights the challenges faced by MSMEs in Sukaratu Village, Tasikmalaya Regency, particularly in terms of unsystematic financial recordkeeping and low levels of financial literacy. This indicates the need for effective financial strategies, such as the use of digital bookkeeping applications and mentoring from relevant institutions to help entrepreneurs better manage their finances and improve business sustainability. Although the study does not explicitly adopt a co-creation approach, it underscores the importance of collaboration among village governments, academics, and financial institutions as a strategic step to provide practical and relevant solutions for MSMEs in that area. Meanwhile, Fitriani et al. (2024) in *Jurnal Amal Ilmiah* emphasize that digital financial literacy is crucial in empowering MSMEs, especially in rural areas that often struggle with limited access to technology and information. Their community service project aimed to help business actors understand and adopt digital financial tools through training and outreach tailored to local communication patterns and characteristics. This demonstrates that locally grounded interventions involving university actors and other stakeholders can significantly contribute to improving the productivity and competitiveness of rural MSMEs, while also promoting broader financial inclusion. Thus, participatory and collaborative approaches are key to the success of community engagement programs that produce real and sustainable impacts for local economic development.

A practical example of sustainable innovation-based community service can be seen in a program conducted by the Faculty of Biology at Universitas Gadjah Mada in Beji Village, Ngawen District, Gunungkidul Regency. This program integrates applied research, appropriate technology, and social entrepreneurship training to empower village communities holistically (Burhani, 2010). A transdisciplinary approach is employed, involving various academic disciplines to comprehensively address socio-economic

challenges. Ongoing mentoring ensures that the community not only receives immediate solutions but also gains the skills and knowledge needed to sustain and further develop those solutions independently. The results of this intervention include increased household income, the emergence of community-based business units capable of reaching export markets—such as handicrafts, processed food products, and local cultural tourism services. Through active community participation, the program demonstrates that social transformation can be achieved when universities engage as equal partners that build community capacity, rather than as entities that merely transfer technology without contextual understanding. This case affirms that systematically and participatorily designed community service can yield tangible and sustainable outcomes.

The concept of Sustainable Innovation, as explained by Nidumolu et al. (2013), extends the understanding of innovation beyond environmentally friendly products or technologies into a systemic approach that simultaneously creates social, economic, and environmental value. In the context of community engagement, this implies that higher education institutions should not merely focus on creating new technologies but must also develop more inclusive and adaptive social systems for communities that have long been marginalized from mainstream development. One example of this implementation is the program by Universitas Pendidikan Indonesia (UPI), which integrates the Community Service Program (KKN) with the Teaching Campus initiative to empower underdeveloped, frontier, and outermost (3T) regions. Through this program, UPI students are placed in schools within 3T areas to support the learning process, including strengthening digital literacy (Megapratwi, 2022). For instance, UPI KKN students at SD Negeri 3 Mendo Barat applied the Problem-Based Learning (PBL) method to improve students' literacy skills using digital technology (Putriani, 2021). This program focuses on teaching, community empowerment, and enhancing local capacity to tackle educational challenges in 3T areas. It demonstrates that community service integrated with technology can be an effective solution to reduce educational access disparities in 3T regions. Through an approach centered on local empowerment and technological utilization, the program contributes to the improvement of education quality and the adaptive capacity of communities in responding to social and economic change.

To ensure that innovations derived from community engagement are truly adopted and utilized by society, universities need to understand the innovation adoption mechanisms as described in the Diffusion of Innovations theory by Rogers et al. (2019). Rogers emphasized that the success of innovation dissemination heavily depends on five key characteristics: relative advantage, compatibility, complexity, trialability, and observability. Additionally, the diffusion process is influenced by the quality of interpersonal communication, the time required for adoption, and the social structure in which the innovation is spread. Based on this theory, universities must strategically design dissemination and education methods that align with the characteristics of the target community. For example, Universitas Gadjah Mada (UGM), through its Faculty of Agriculture and Faculty of Economics and Business, in collaboration with industry partner PT Banoo Inovasi Indonesia, conducted digital training on bookkeeping for tilapia

fish cultivation and processing businesses in Dusun Bokesan, Sindumartani Village, Ngemplak District, Sleman (Rukmana, 2025). This program aims to empower women in the fisheries sector through digital transformation, focusing on digital literacy enhancement, effective fish feed production, disease prevention for tilapia, and IT-based business management (Agus, 2024). The training has been held biweekly since March 2025 and is attended by ten women from tilapia farming and processing groups (Rukmana, 2025). This program exemplifies the application of Everett Rogers' innovation diffusion theory, emphasizing the importance of understanding the socioeconomic characteristics of the target audience when designing communication and innovation implementation strategies. The program successfully promoted the voluntary and sustainable adoption of new technologies by adopting an approach sensitive to local social and cultural norms and involving women as agents of change. This highlights that community engagement focused on empowerment and social inclusion can accelerate the diffusion of innovation in everyday community practices.

Despite the various theoretical approaches and case studies demonstrating the success of innovation-based community service, practical realities still reveal significant obstacles. Limited budget allocations for research and community engagement often result in innovative programs being suboptimal or short-lived. Furthermore, a disconnect still frequently exists between on-campus academic activities and the real needs of off-campus communities, leading to a mismatch between academic outputs and social needs. Social resistance to change also poses a challenge, particularly in communities with conservative social structures. Therefore, the management system of community service within universities must be comprehensively reformed towards evidence-based planning, involving communities from the planning to the evaluation stage. Additionally, the role of students as agents of change must be strengthened through the integration of the "Merdeka Belajar Kampus Merdeka" (MBKM) curriculum, which allows students to directly engage with communities through innovation-based social projects. This involvement enhances their academic relevance and helps shape adaptive, empathetic social characters capable of addressing future complex challenges. This model has proven effective in improving students' problem-solving abilities, leadership skills, and job readiness, while also fostering social innovations rooted in local realities.

Referring to the various theories, empirical evidence, and field practices discussed above, it can be concluded that revitalizing the role of higher education in community service requires a transformation from a symbolic to a transformative orientation based on sustainable innovation. Universities can no longer remain isolated centers of knowledge; they must become equal partners with communities in creating contextually relevant and long-term impactful solutions. This transformation requires a well-structured multi-stakeholder synergy among universities, government, businesses, and civil society, alongside strengthening institutional capacity to drive social innovation focused on sustainability. In this framework, community service is not merely one of the three pillars of the Tri Dharma of Higher Education, but a strategic medium for generating systemic and meaningful social change for the nation's future. Therefore, policy reformulation,

curriculum renewal, and capacity building of university human resources are essential to ensure that community engagement can optimally function as a genuine center of social transformation.

CONCLUSION

Revitalizing the role of higher education institutions in social transformation through innovation-based community engagement is an imperative amidst the complex challenges of contemporary society. Universities are not only responsible for producing high-quality graduates but must also act as catalysts for tangible social change through community service rooted in research, appropriate technologies, and multi-stakeholder collaboration. Findings from this study indicate that sustainable innovation developed through community service has a greater impact when carried out using participatory, contextual, and synergistic approaches, as reflected in the theories of the Triple Helix, Diffusion of Innovations, and engaged scholarship. The case studies examined demonstrate that when universities collaborate with communities and industries, real and sustainable social change can be achieved.

The theoretical implication of this study broadens the understanding that community engagement can no longer be viewed as a symbolic or supplementary activity but must be positioned as the core of a knowledge- and innovation-driven social transformation agenda. Practically, this study encourages higher education institutions to adopt innovation-based approaches in designing community engagement programs, by involving interdisciplinary faculty, students, industry actors, and government agencies. Additionally, strengthening impact-based monitoring and evaluation systems is crucial to ensure the sustainability and replicability of innovations in a systematic manner.

First, universities need to reform the management of community service programs to be more integrated with research and learning, for example, through the implementation of the MBKM (Merdeka Belajar Kampus Merdeka) curriculum scheme and thematic community service programs (KKN) based on social innovation. Second, government bodies and donor institutions are encouraged to provide cross-sector research-service incentives that promote active collaboration between campuses, industries, and communities. Third, it is necessary to enhance the capacity of lecturers and students in co-design methods, participatory action research, and social technology literacy to ensure that innovations produced are truly aligned with field needs. Lastly, it is essential that every community engagement program be developed within a sustainability framework, covering aspects of technology, social ecosystems, and financing models.

This study has several limitations. First, as a literature review, the data utilized are restricted to secondary sources from published articles between 1996 and 2025, and may not capture the most recent dynamics that have occurred after this period. Second, the majority of studies analyzed are derived from the Indonesian context, thus generalizations to international contexts should be made cautiously. Third, this review does not include primary data or in-depth interviews with field practitioners, and therefore does not capture

firsthand subjective dynamics and practical challenges. Future research using a mixed-methods approach or in-depth case studies is highly recommended to fill these gaps.

ACKNOWLEDGEMENT

We would like to express our deepest gratitude to all those who have supported and contributed to the success of this research.

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