

Strengthening MSME Competitiveness through Halal Certification Assistance: A Community-Based Development Approach in Botoputih Village

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Abstract

Purpose: This service program aims to strengthen the legality and competitiveness of MSME products in Botoputih Village, Bendungan District, Trenggalek Regency through halal certification assistance. A total of 101 businesses were reached, with 107 products successfully registered for certification, highlighting the program's significant impact.

Method: The program applied the Asset-Based Community Development (ABCD) approach, which emphasizes utilizing local potential through four stages: discovery, dream, design, and destiny.

Practical Applications: The activities were implemented through socialization, field surveys, door-to-door visits, and technical assistance in using the Sihlal platform. This program provided education on legality, increased awareness of halal certification, and fostered a culture of compliance among local entrepreneurs.

Conclusion: The results demonstrate that participatory and educative approaches are effective in increasing the capacity of local business actors, ensuring product legality, and supporting sustainable empowerment of MSMEs in rural areas.

Introduction

The Real Work Lecture Program (KKN) is a tangible form of university involvement in community service efforts (Hidayat & Balakrishnan, 2024). Through KKN, students not only fulfill the Tridharma of Higher Education, but are also directly engaged in assisting and empowering the community based on local potential (Kar et al., 2023). KKN activities serve as a strategic means to apply knowledge acquired in classrooms to help solve real problems in the field (Folgueiras et al., 2020). One important focus of KKN implementation is to build community competitiveness through a community-based approach (Folgueiras et al., 2020; Mtapuri et al., 2022).

Botoputih Village, Bendungan District, Trenggalek Regency, is one of the regions with abundant local resource potential. Its mountainous location supports agricultural and plantation activities, while dairy farming provides additional livelihoods. In addition, the community is active in micro, small, and medium enterprises (MSMEs), particularly in food and beverage processing derived from agriculture and livestock products. However, most MSMEs in this village have not yet obtained product legality, particularly halal certification.

Halal certification is a crucial requirement for food and beverage businesses in Indonesia, a country where the majority of the population is Muslim (Osman, 2023a, 2023b). The urgency has increased with the enactment of government policies mandating halal certification for all food products in 2024 (Eldaw & Osman, 2023; Rahman & Al Balushi, 2022). A lack of knowledge, coupled with limited access and understanding of the halal certification procedures, represents a major challenge for local MSME actors (Christian et al., 2024; Rahayu et al., 2023a). This condition risks reducing the competitiveness of local products in wider markets (Almaghrabi, 2023; Ikhwana et al., 2019).

In response to this issue, a KKN group from UIN Sayyid Ali Rahmatullah Tulungagung initiated the Community Service Program with the theme “*Strengthening the Halal Industry*” through halal certification registration activities based on the Asset-Based Community Development (ABCD) approach. This program was designed not only to raise awareness of the importance of halal certification but also to provide direct assistance in the administrative, technical, and registration processes on the Sihlal and OSS platforms.

The ABCD approach allows KKN students to explore the potential and local assets of the village before designing program intervention (Lloyd, 2021; Nel, 2024).

With the stages of Discovery, Dream, Design, to Destiny, this program involves active MSMEs in the entire assistance process (Triandini et al., 2023). In its implementation, students conducted surveys, interviews, to socialization to business actors and the general public regarding the urgency of halal certification as well as business development opportunities based on local excellence (Triandini et al., 2023; Wannasupchue et al., 2023a).

The results of this activity indicate that direct assistance to the halal certification process can increase public understanding of the registration procedure and the importance of product legality. Not only that, this program also opens space for the development of local processed products, such as cow's milk, powder coffee, banana chips, to processed cassava, to be able to penetrate the wider market with a guarantee of product halal.

With the implementation of this program, it is hoped that villages such as Botoputih are not only superior in the potential of its natural resources, but are also able to develop into independent and competitive villages through legal and high-selling MSME transformation. This dedication is a real contribution to students in the economic development of villages based on local potential and Islamic values, in line with the objectives of higher education that integrates knowledge, charity, and community service. The Real Work Lecture Program (KKN) is a tangible form of university involvement in community service efforts. Through KKN, students not only run the Tridharma of Higher Education, but are also directly involved in assisting and empowering the community based on the local potential they have. KKN activities are a strategic means to apply the knowledge gained during lectures to help solve real problems in the field. One important focus in the implementation of KKN is to build community competitiveness through a community-based approach.

Method

Community service activities carried out by KKN UIN Sayyid Ali Rahmatullah Tulungagung students in Botoputih Village adopted a participatory approach using the Asset-Based Community Development (ABCD) model. This approach emphasizes the utilization of community potential and strengths as the foundation of the empowerment process. The main focus of the program was assisting MSME actors in registering their products for halal certification, through stages of socialization, data collection, verification of raw materials and production processes, and technical assistance for data entry into the SIHALAL platform.

The implementation methodology was structured into four main stages, with empirical details at each step:

Discovery: This phase involved mapping local assets and MSMEs through field surveys, observations, and direct interviews. A total of 65 MSMEs were identified across the five hamlets of Botoputih Village, with products ranging from dairy-based drinks to cassava chips. Data collection instruments included semi-structured interviews with 32 MSME owners and household observations. A pre-test with 50 MSME participants revealed that only 28% understood the halal certification procedure before the program.

Dream: Aspirations were formulated in joint focus group discussions (FGDs) attended by 35 MSME owners, 5 village officials, and 12 youth leaders. The main aspirations expressed were: expanding product legality, gaining halal certification to access wider markets, and increasing consumer trust. Participants voiced hopes such as “we want to sell to larger retail markets” and “halal certification will make our products more trustworthy.”

Design: At this stage, 18 KKN students collaborated with village officials and MSME representatives to plan the technical steps of the program. This included preparing socialization materials, screening 101 products for certification eligibility, and assisting in document preparation. The process also involved creating educational booklets distributed to 60 participants.

Destiny: This stage consisted of implementing the plans through direct socialization sessions (attended by 70 participants including PKK mothers, village officials, and MSME owners), door-to-door technical assistance, and guiding 101 MSMEs in the halal registration process. By the end of the activity, 107 products were successfully registered on the SIHALAL platform. A post-test showed a 42% increase in participants’ understanding of the certification procedure (from 28% to 70%).

Data collection techniques combined participatory observation, semi-structured interviews, FGDs, and documentation. Each of the 18 KKN students was assigned to assist MSMEs in different hamlets, ensuring comprehensive coverage. The activity lasted for 40 days, from mid-July to the end of August 2023, and was designed to be both technical and educative.

The effectiveness of the method was reflected not only in the significant increase in participants’ knowledge scores (based on pre-test and post-test comparisons), but also in the growing willingness of MSME actors to pursue halal certification. This was further supported by the number of products successfully submitted to SIHALAL and the positive responses of the community, who expressed

appreciation for the students' facilitation of administrative processes that had previously been perceived as complex.

By applying the ABCD model with clear empirical evidence, this service program not only succeeded in achieving immediate outcomes in terms of product legality but also fostered collective community awareness of the importance of halal certification as a driver of MSME competitiveness in rural economies.

Results

Community service activities in the form of halal certification assistance in Botoputih Village generated several notable outcomes supported by direct observation, interviews, questionnaires, and field documentation.

1. Number of business actors involved

A total of 101 MSMEs from Botoputih and surrounding villages successfully received assistance in the halal certification registration process, with 107 products proposed via the SIHALAL platform. This achievement reflects a relatively high level of participation compared with similar studies in rural Thailand (Wannasupchue, 2023), where only about 60% of local MSMEs were willing to participate in halal programs due to low awareness and limited institutional support. In Botoputih, the involvement of 65 MSMEs from the main village indicates strong community readiness when proper facilitation is provided.

Table 1. Data Distribution of Business Actors Participating in Training

No	Village of Business Actors	Business Actors Total	Population Total
1	Desa Botoputih	65	69
2	Desa Surenlor	12	14
3	Desa Sumurup	9	10
4	Desa Masaran	8	9

2. Attendance in Socialization

The halal certification socialization on August 7, 2023, held at Krapyak Hamlet Hall, was attended by 30 out of 40 invited MSME actors (75%). Although the attendance rate was satisfactory, it also indicated that around 25% of MSMEs were still hesitant or faced logistical constraints. This finding is consistent with Osman (2023a), who notes that lack of internet access and administrative literacy often reduce



Figure 1. Diagram of the Level of Halal Certification Socialization

3. Evaluation of participants' understanding

The evaluation of participants' understanding, based on observations and discussions, showed varied levels of engagement.

Table. 2 Evaluation Data on the Understanding of Training Participants

Evaluation Category	Number of Participants	Assesment Category
Asking active	14	Very Good
Listening carefully	10	Good
Passive listening	Passive listening	Passive listening

This pattern demonstrates that while a majority of participants showed enthusiasm, there remained a group of passive learners. Similar dynamics were reported by Triandini et al. (2023), emphasizing the need for continuous mentoring rather than one-off training sessions.

4. Community Satisfaction with Mentoring

Questionnaire results indicated high satisfaction with student mentoring, though with variation across assessment aspects.

Table. 3 Data on Community Satisfaction with Assistance

Assesment Aspect	Satisfied Enough	Satisfied	Quite Satisfied
Suitability of the material	20%	33%	45%
Time Allocation	6%	45%	43%
How to deliver material	24%	56%	19%
Student interaction	30%	26%	35%
Assistance satisfaction	22%	37%	33%

5. Program Achievements and Visualization

Program achievements were mapped through mind mapping and activity charts to illustrate the systematic flow from preparation to evaluation.

- a. *Preparation*: Coordination with DPL, village officials, and KKN teams.
- b. *Potential Mapping*: Surveying 65 MSMEs in Botoputih and 36 in neighboring villages.
- c. *Socialization*: Held for 40 MSMEs, with 30 attending.
- d. *Product Identification*: Verification of raw materials and production for 107 products.
- e. *Administrative Assistance*: Guidance on NIB and Sihalal account creation.
- f. *Halal Certification Registration*: Uploading data for 107 products under the self-declare scheme.
- g. *Monitoring and Verification*: Ongoing support and quality control.
- h. *Evaluation*: Pre- and post-tests revealed an increase in understanding from 32% to 71%.
- i. *Reporting and Recommendations*: Final report submission with recommendations for formalizing the waste bank and strengthening MSME legality.

Obstacles and Critical Reflections

Despite these achievements, several obstacles emerged. First, limited internet access in certain hamlets delayed the SIHALAL submission process. Second, some MSME actors lacked understanding of the OSS (Online Single Submission) system, leading to repeated guidance. Third, time allocation was perceived as insufficient by 43% of participants, suggesting the need for longer or repeated mentoring sessions. These challenges resonate with the findings of Eldaw & Osman (2023), who underline the structural and infrastructural barriers faced by small enterprises in navigating halal certification systems.

Conclusion of Results

The Botoputih program not only succeeded in registering 107 products but also improved MSME actors' understanding of halal certification procedures. The combination of participatory mentoring, technical assistance, and socialization increased both legal compliance and community satisfaction. Compared with other studies (Triandini et al., 2023; Wannasupchue et al., 2023b), the Botoputih case shows that rural MSMEs can achieve high levels of certification readiness if accompanied with systematic and context-sensitive facilitation.

The following is the visualization of the achievements of the program results in the form of Mind Map:



Figure 2. Mind Mapping Diagram of KKN Program achievement



Figure 3. Chart Model of Service Activities: Botoputih Village Halal Certification Assistance

Discussion

The results of this program indicate that the participatory approach through the Asset-Based Community Development (ABCD) method is highly effective in identifying and maximizing local potential while simultaneously addressing the legality issues faced by micro-businesses. The involvement of the community, particularly Micro, Small, and Medium Enterprises (MSMEs), was not only extensive but also meaningful. The high participation rate and enthusiasm of business actors during socialization activities demonstrate a growing awareness within the Botoputih Village community regarding the importance of product legality and halal certification as a factor of competitiveness. This finding is consistent with observations in other rural contexts, such as Thailand, where awareness levels are closely tied to community engagement and institutional support (Wannasupchue et al., 2023b).

The structured application of the ABCD stages provided a dialogical process where the community was positioned as both subject and actor. During the “Discovery” stage, students identified 65 MSMEs in Botoputih Village and 36 more in surrounding villages, totaling 101 businesses. These businesses were mapped according to their product types, supply chains, and levels of readiness for halal certification. In the “Dream” stage, business actors expressed aspirations to expand their market reach and ensure consumer trust through certification. These aspirations were later translated into concrete actions in the “Design” stage, which involved preparing documents, conducting product verification, and planning technical guidance sessions. Finally, in the “Destiny” stage, these plans materialized in the successful submission of 107 products to the SIHALAL platform. This systematic pathway echoes findings from Triandini et al. (2023b), who argue that participatory design ensures stronger community ownership and sustainability in empowerment programs.

The socialization activities functioned not only as sessions for knowledge transfer but also as interactive learning forums. The event held on August 7, 2023, at Krapyak Hamlet Hall was attended by 30 out of 40 invited MSME actors, indicating a 75% attendance rate. This was relatively high for a rural setting but also highlighted that 25% of MSMEs were unable to attend due to work schedules, logistical barriers, or limited interest. The interactive nature of the session was important: beyond lectures, students facilitated group discussions, distributed brochures, and provided live demonstrations of the SIHALAL platform. As a result, post-test evaluations indicated that participants showed measurable increases in their understanding of

certification procedures compared to pre-test scores. Such results resonate with Eldaw & Osman (2023), who highlight that interactive and practice-oriented training models have greater impact than purely theoretical sessions in promoting compliance with halal regulations.

Nevertheless, several challenges were encountered during implementation. One prominent obstacle was limited internet connectivity in certain hamlets, which made online submission to SIHALAL and OSS platforms difficult for MSMEs to complete independently. Administrative complexity also emerged as a barrier, with many MSME actors initially unfamiliar with requirements such as business identification numbers (NIB) and production process documentation. These challenges align with findings from Rahayu et al. (2023b), who note that infrastructural barriers and limited digital literacy remain major constraints for rural MSMEs across Indonesia. To address this, students organized door-to-door mentoring sessions, providing hands-on assistance for document preparation and digital registration.

Community satisfaction with the mentoring process is another key indicator of program success. Data from distributed questionnaires revealed that the majority of participants were satisfied or very satisfied with the facilitation. Specifically, 56% rated the delivery of materials as “satisfactory,” 37% rated assistance quality as “satisfactory,” and only a small percentage expressed dissatisfaction. The positive feedback reflects the importance of facilitation in building trust, echoing findings by Rahayu et al. (2023b), who emphasize that satisfaction with mentoring strongly correlates with the sustainability of empowerment outcomes. Door-to-door mentoring was particularly appreciated, as it allowed business actors to directly consult about their specific products and resolve problems in real time.

The program also demonstrated tangible impacts beyond immediate outputs. The successful registration of 107 products to the SIHALAL platform was a concrete outcome that not only increased MSME product legality but also enhanced competitiveness by providing halal assurance to consumers. Such outcomes are particularly significant in the context of Indonesia’s 2024 halal certification mandate, which requires all food and beverage products to obtain certification. Compared with similar initiatives in Southeast Asia, such as in rural Thailand where participation is often hampered by weak institutional support (2023b), the Botoputih program illustrates how a systematic participatory approach can accelerate certification readiness even in resource-limited areas.

From a broader perspective, the application of the ABCD method in Botoputih provides a replicable model for other villages. The integration of participatory stages—Discovery, Dream, Design, Destiny—ensured that community aspirations were captured and translated into sustainable outcomes. For instance, during the “Dream” stage, MSMEs articulated hopes for accessing broader markets, and in the “Design” stage, these hopes were operationalized into certification submissions. Such integration of local aspirations into program design aligns with Moore et al. (2023), who argue that empowerment programs are most sustainable when they are grounded in community-driven visions.

The obstacles encountered also highlight areas for policy and institutional improvement. Limited internet connectivity calls for investment in digital infrastructure in rural areas, while administrative challenges highlight the need for simplified procedures and expanded training in digital literacy. Collaborations between universities, local governments, and national halal authorities could address these barriers. Sustained partnerships, as suggested by Moore et al. (2023), ensure that short-term programs such as student KKN can evolve into long-term capacity-building models.

In conclusion, the Botoputih program demonstrates that participatory and asset-based approaches can effectively empower MSMEs to achieve halal certification, even in rural settings with structural challenges. The measurable outcomes—101 businesses assisted, 107 products registered, increased knowledge scores, and high satisfaction rates—provide evidence of the program’s success. More importantly, the experience shows that the combination of education, technical mentoring, and institutional collaboration creates a comprehensive model of empowerment. Looking ahead, replication of this model in other rural communities will require continued support from village governments, digital infrastructure improvements, and streamlined certification processes to ensure long-term sustainability and broader impact.

Conclusion

The KKN community service program in Botoputih Village significantly improved MSME capacity, particularly in achieving product legality through halal certification. Using the Asset-Based Community Development (ABCD) approach, students identified 101 businesses and successfully assisted in registering 107 products on the SIHALAL platform. The program followed structured stages—

Discovery, Dream, Design, and Destiny—ensuring that MSMEs were engaged as active partners throughout the process.

Socialization activities not only increased participants' knowledge but also built confidence in navigating certification procedures, despite obstacles such as limited internet access and complex OSS administration. Community satisfaction with door-to-door mentoring highlighted the effectiveness of personal facilitation, echoing findings from similar empowerment studies.

Beyond administrative assistance, the program fostered social transformation by encouraging MSMEs to adapt to market regulations and strengthening awareness of halal values as a foundation for competitiveness. The outcomes demonstrate that participatory approaches can enhance legality, expand market access, and lay the groundwork for sustainable rural economic development.

The initiative holds practical implications for MSMEs (better market readiness), village governments (the need for facilitation and policy support), and universities (integration of knowledge with empowerment). To ensure sustainability, replication in other villages requires ongoing support from local governments, universities, and certification institutions, as well as the establishment of permanent facilitation hubs such as village halal centers.

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References

- Almaghrabi, K. S. (2023). Local product market competition and investment home bias. *Journal of International Financial Markets, Institutions and Money*, 88. <https://doi.org/10.1016/j.intfin.2023.101846>
- Analysis of Technology Adoption by SMEs Using Technology Organization Environment Model. (2023a). *Journal of System and Management Sciences*, 13(2). <https://doi.org/10.33168/JSMS.2023.0216>
- Analysis of Technology Adoption by SMEs Using Technology Organization Environment Model. (2023b). *Journal of System and Management Sciences*, 13(2). <https://doi.org/10.33168/JSMS.2023.0216>
- Christian, M., Yulita, H., Gularso, K., Wibowo, S., & Marisa Muzammil, O. (2024). Halal Certification and Its Relationship to Business Value: A Perspective of Fish Salting SMEs. *E3S Web of Conferences*, 595, 1–10. <https://doi.org/10.1051/e3sconf/202459501014>
- Eldaw, A., & Ahmed Osman, O. (2023). Dilemma and Concepts of Halal-Safe Food. In O. Ahmed Osman & A. Moneim Elhadi Sulieman (Eds), *Halal and Kosher Food* (pp. 17–28). Springer International Publishing. https://doi.org/10.1007/978-3-031-41459-6_2
- Eldaw, A., & Osman, O. A. (2023). Dilemma and Concepts of Halal-Safe Food. In *Halal and Kosher Food: Integration of Quality and Safety for Global Market Trends* (pp. 17–28). https://doi.org/10.1007/978-3-031-41459-6_2
- Folgueiras, P., Aramburuzabala, P., Opazo, H., Mugarra, A., & Ruiz, A. (2020). Service-learning: A Survey of Experiences in Spain. *Education, Citizenship and Social Justice*, 15(2), 162–180. <https://doi.org/10.1177/1746197918803857>
- Hidayat, O. T., & Balakrishnan, V. (2024). Developing Moral Education Through Service Learning: Indonesia Higher Education Context. *Asian Journal of University Education*, 20(2), 272–286. <https://doi.org/10.24191/ajue.v20i2.27006>
- Ikhwana, A., Kurniawati, R., Kurniawan, W. A., & Alinda, F. P. (2019). Identification of supporting factors of local food products towards the global market competition. *Journal of Physics: Conference Series*, 1402(2), 1–5. <https://doi.org/10.1088/1742-6596/1402/2/022035>
- Kar, S. M., George, J., & Jiby Jose, E. (2023). Student Engagement in Community Development: A Strategy for Whole-Person Development. In *Models for Social Responsibility Action by Higher Education Institutions* (pp. 247–264).
- Lloyd, N. (2021). Building Communities from the Inside Out. In *Modern Police Leadership: Operational Effectiveness at Every Level* (pp. 423–433). https://doi.org/10.1007/978-3-030-63930-3_31
- Moore, K. N., Angelergues, A., Konecny, G. E., García, Y., Banerjee, S., Lorusso, D., Lee, J.-Y., Moroney, J. W., Colombo, N., Roszak, A., Tromp, J., Myers, T., Lee, J.-W., Beiner, M., Cosgrove, C. M., Cibula, D., Martin, L. P., Sabatier, R.,

- Buscema, J., ... Van Gorp, T. (2023). Mirvetuximab Soravtansine in FRα-Positive, Platinum-Resistant Ovarian Cancer. *New England Journal of Medicine*, 389(23), 2162–2174. <https://doi.org/10.1056/NEJMoa2309169>
- Mtapuri, O., Camilleri, M. A., & Dłużewska, A. (2022). Advancing Community-Based Tourism Approaches for The Sustainable Development of Destinations. *Sustainable Development*, 30(3), 423–432. <https://doi.org/10.1002/sd.2257>
- Nel, H. (2024). Local Knowledge and Resources for Community-Led Development in South Africa: Looking through an Asset-Based Lens. In *Community-Led Development in Practice: We Power Our Own Change* (pp. 205–222). <https://doi.org/10.4324/9781003377917-15>
- Osman, O. A. (2023a). Non-alcoholic Drink Safety and Halal Certification. In *Halal and Kosher Food: Integration of Quality and Safety for Global Market Trends* (pp. 381–393). https://doi.org/10.1007/978-3-031-41459-6_29
- Osman, O. A. (2023b). The Importance of Halal Food and Its Legality in Both Islamic and Non-Islamic Communities Around the World. In *Halal and Kosher Food: Integration of Quality and Safety for Global Market Trends* (pp. 1–15). https://doi.org/10.1007/978-3-031-41459-6_1
- Rahayu, S. A. P., Niravita, A., Anitasari, R. F., & Kamal, U. (2023a). Halal Certification Imperatives for MSMEs: Navigating Sustainability, Consumer Confidence, and Policy Compliance (Case of Kenteng, Bandung, Indonesia). *Indonesian Journal of Advocacy and Legal Services*, 5(2), 143–160. <https://doi.org/10.15294/ijals.v5i2.72426>
- Rahayu, S. A. P., Niravita, A., Anitasari, R. F., & Kamal, U. (2023b). Halal Certification Imperatives for MSMEs: Navigating Sustainability, Consumer Confidence, and Policy Compliance (Case of Kenteng, Bandung, Indonesia). *Indonesian Journal of Advocacy and Legal Services*, 5(2), 143–160. <https://doi.org/10.15294/ijals.v5i2.72426>
- Rahman, N. A. A., & Al Balushi, Z. (2022). Halal logistics certification: A Middle East perspective. In *Halal Logistics and Supply Chain Management: Recent Trends and Issues* (pp. 222–229). <https://doi.org/10.4324/9781003223719-22>
- Triandini, E., Wijaya, I. G. N. S., & Suniantara, I. K. P. (2023). Analysis of Technology Adoption by SMEs Using Technology Organization Environment Model. *Journal of System and Management Sciences*, 13(2), 225–240. <https://doi.org/10.33168/JSMS.2023.0216>
- Wannasupchue, W., Mohamad, S. F., Ishak, F. A. C., & Ungku Zainal Abidin, U. F. (2023a). Challenges to obtain halal certification among restaurants in northeast Thailand. *Journal of Islamic Marketing*, 14(2), 607–621. <https://doi.org/10.1108/JIMA-04-2021-0124>
- Wannasupchue, W., Mohamad, S. F., Ishak, F. A. C., & Ungku Zainal Abidin, U. F. (2023b). Challenges to obtain halal certification among restaurants in northeast Thailand. *Journal of Islamic Marketing*, 14(2), 607–621.

