

Strengthening the Human Resource Competence of Mangga Harum Manis Smes Through an International Cooperation Program Between Universitas Pembangunan Panca Budi and Politekniku Syed Sirajuddin Malaysia

Sri Rahayu, Elfitra Desy Surya, Rosasmanizan Binti Ahmad, Muhammad Faridh Al Kahfi

Abstract

Human resource competence is a key factor in enhancing the competitiveness, productivity, and sustainability of micro, small, and medium enterprises (SMEs). This study aims to analyze the strengthening of human resource competence among Mangga Harum Manis SMEs through an international cooperation program between Universitas Pembangunan Panca Budi (UNPAB), Indonesia, and Politeknik Tuanku Syed Sirajuddin (PTSS), Malaysia. The study focuses on cooperation planning, implementation, coordination, and evaluation, particularly in developing managerial capabilities, entrepreneurial knowledge, digital marketing skills, and product innovation. A qualitative descriptive approach is used to examine the implementation and outcomes of the cooperation program. Data are collected through interviews, observations, and documentation involving relevant institutional representatives, program facilitators, and SME participants. Data analysis includes data reduction, data presentation, and conclusion drawing. The program is expected to facilitate knowledge transfer, exchange of best practices, and the application of innovative business management strategies relevant to SME needs. Furthermore, the collaboration provides opportunities to strengthen institutional partnerships and connect higher education expertise with local economic development. The expected outcomes include improved managerial competence, enhanced marketing effectiveness, increased product competitiveness, and stronger business sustainability. The study emphasizes the importance of effective cooperation management, continuous mentoring, and measurable evaluation in achieving sustainable results. Its findings are expected to contribute to the development of international cooperation models that integrate higher education, human resource development, and SME empowerment.

Keywords: *international cooperation, human resource competence, Mangga Harum Manis, SMEs, UNPAB, PTSS Malaysia.*

Sri Rahayu

Studi Program Management, Universitas Pembangunan Panca Budi e-mail:
srirahayu@dosen.pancabudi.ac.id

Elfitra Desy Surya, Rosasmanizan Binti Ahmad, Muhammad Faridh Al Kahfi

email: elfitradesy@dosen.pancabudi.ac.id, rosasmanizan@gmail.com, muhammadfaridh@gmail.com

3rd International Conference on the Epicentrum of Economic Global Framework (ICEEGLOF) Theme: Navigating The Future: Business and Social Paradigms in a Transformative Era.
<https://proceeding.pancabudi.ac.id/index.php/ICEEGLOF>

Introduction

Micro, small, and medium enterprises (SMEs) play an important role in supporting economic growth, creating employment opportunities, and improving community welfare. However, the sustainability and competitiveness of SMEs depend not only on the availability of financial resources and production facilities but also on the competence of their human resources. Managerial knowledge, entrepreneurial skills, digital marketing capabilities, and innovation are essential for enabling SMEs to respond to changing market conditions. Human capital development is widely recognized as an important factor in organizational productivity and performance [1]. Therefore, strengthening human resource competence is necessary to improve the competitiveness and sustainability of SMEs, particularly those operating in agricultural and horticultural sectors.

In the context of Mangga Harum Manis SMEs, human resource development presents opportunities to improve business management, product quality, marketing strategies, and market access. Nevertheless, SMEs may face challenges related to limited managerial capacity, insufficient digital technology utilization, and restricted access to professional training. Digital transformation can create opportunities for small businesses to expand their markets and improve operational efficiency, although its implementation requires appropriate knowledge and organizational capabilities [2]. Consequently, systematic capacity-building initiatives are needed to help SME entrepreneurs develop the competencies required to manage their businesses effectively and sustainably.

International cooperation between higher education institutions offers a strategic mechanism for addressing these challenges. Universitas Pembangunan Panca Budi (UNPAB), Indonesia, and Politeknik Tuanku Syed Sirajuddin (PTSS), Malaysia, have the potential to contribute academic expertise, practical knowledge, and institutional resources to SME empowerment. University–industry collaboration can facilitate knowledge exchange, innovation, and the application of research-based solutions to real-world business challenges [3]. Through structured cooperation, academic institutions can support training, mentoring, knowledge transfer, and the adoption of appropriate business management practices. Such collaboration also provides opportunities to connect higher education internationalization with local economic development.

Previous studies have examined human capital development, digital transformation, and collaboration between educational institutions and businesses. However, further investigation is needed into how international institutional cooperation can be managed to strengthen human resource competence among specific agricultural SMEs. The scientific novelty of this study lies in examining the relationship between international cooperation management and SME capacity development within the context of Mangga Harum Manis businesses. Rather than focusing exclusively on institutional agreements or individual training activities, this study considers cooperation planning, implementation, coordination, knowledge transfer, and evaluation as interconnected components of human resource competence development.

Based on this background, the research problems concern how the UNPAB–PTSS international cooperation program is planned and implemented, how the program contributes to strengthening human resource competence among Mangga Harum Manis SMEs, and what factors support or hinder its effectiveness. Accordingly, this study aims to analyze the implementation of the international cooperation program, examine its contribution to improving managerial and entrepreneurial competencies, and identify supporting factors and implementation challenges. The findings are expected to provide practical recommendations for developing sustainable international cooperation models that integrate higher education expertise, human resource development, and SME empowerment.

Literature Review

2.1 Human Resource Competence in SMEs

Human resource competence refers to the knowledge, skills, abilities, and attitudes required to perform business activities effectively. In SMEs, these competencies influence managerial decision-making, operational efficiency, customer relations, and business development.

Entrepreneurs need competencies in planning, financial management, marketing, communication, and innovation to maintain business sustainability. Human resource development should therefore be considered a continuous process involving training, practical learning, mentoring, and performance evaluation. For Mangga Harum Manis SMEs, strengthening these competencies is particularly relevant to improving product quality, market access, and business competitiveness.

2.2 International Cooperation between Higher Education Institutions and SMEs

International cooperation between higher education institutions provides opportunities to exchange knowledge, share expertise, and develop innovative solutions to business challenges. Universities and polytechnics can contribute through applied research, entrepreneurship education, training, and community engagement. A systematic review by Cao et al. identifies technology transfer, knowledge co-development, and value co-creation as important approaches to SME–university collaboration [4]. These approaches demonstrate that institutional partnerships can extend beyond formal agreements toward practical activities that generate value for participating enterprises. Similarly, cooperation between universities and SMEs can improve access to external expertise and strengthen innovation capabilities [5].

2.3 Digital Transformation and Business Competitiveness

Digital transformation is increasingly important for SMEs seeking to improve operational efficiency and reach broader markets. Digital marketing, social media, online platforms, and digital business management tools can help entrepreneurs communicate with customers, promote products, and respond to market changes. However, limited digital skills, financial resources, and organizational readiness can restrict the adoption of these technologies. The OECD emphasizes that SMEs face skills gaps and resource constraints that may slow digital transformation [6]. Therefore, digital competency development should be integrated into SME capacity-building programs to ensure that technology adoption contributes to tangible business improvements.

2.4 Cooperation Management and Knowledge Transfer

Effective international cooperation requires systematic planning, implementation, coordination, communication, and evaluation. Planning establishes objectives and identifies the competencies that participating SMEs need to develop. Implementation translates these objectives into training, mentoring, and knowledge-sharing activities. Coordination ensures that institutional partners, facilitators, and SME participants contribute effectively, while evaluation assesses program outcomes and identifies opportunities for improvement. Knowledge transfer becomes more meaningful when participants can adapt the knowledge received to their own business contexts. Consequently, cooperation effectiveness should be assessed not only through the completion of activities but also through improvements in managerial practices, marketing capabilities, innovation, and business sustainability [7].

2.5 Research Framework and Literature Gap

Previous literature highlights the importance of human resource development, digital transformation, and university–SME collaboration. Nevertheless, the practical integration of international cooperation management and human resource competence development among Mangga Harum Manis SMEs requires further examination. This study addresses that issue by examining the UNPAB–PTSS Malaysia cooperation program through four interconnected dimensions: cooperation management, knowledge transfer, competence development, and expected SME performance. The framework assumes that effective planning, implementation,

coordination, and evaluation facilitate knowledge application and contribute to stronger managerial, entrepreneurial, and digital marketing competencies. The study consequently provides a context-specific analysis of how international academic cooperation can support SME empowerment and sustainable local economic development.

Research Methodology 3.1 Research Design

This study employs a descriptive qualitative approach to examine how international cooperation between Universitas Pembangunan Panca Budi (UNPAB), Indonesia, and Politeknik Tuanku Syed Sirajuddin (PTSS), Malaysia, can strengthen human resource competence among Mangga Harum Manis SMEs. A qualitative approach is appropriate for understanding program implementation, stakeholder experiences, knowledge transfer, and institutional collaboration in their actual context [11]. The study focuses on cooperation planning, implementation, coordination, evaluation, and the development of managerial, entrepreneurial, and digital marketing competencies.

3.2 Research Location and Participants

The research focuses on the international cooperation program involving UNPAB, PTSS Malaysia, and Mangga Harum Manis SME participants. Participants are selected purposively based on their involvement and knowledge of the cooperation activities. They may include institutional representatives, program coordinators, trainers, and SME entrepreneurs. The number of participants is determined according to the research scope and the adequacy of information obtained. Participant identities and relevant program details are documented to ensure transparency.

3.3 Data Collection Instruments and Procedures

Data are collected through semi-structured interviews, observation, and document analysis. Interview questions explore cooperation objectives, program implementation, training experiences, knowledge transfer, changes in business practices, and factors supporting or hindering program effectiveness. Observation is used to examine relevant training and mentoring activities, while documentation covers cooperation agreements, activity reports, training materials, and program evaluation records. Using multiple data sources enables the researcher to compare information and strengthen the credibility of the findings [12].

3.4 Data Analysis Techniques

Data are analyzed using the interactive model developed by Miles, Huberman, and Saldaña, comprising data condensation, data display, and conclusion drawing and verification [13]. Interview transcripts and documents are organized according to the main research themes. The analysis identifies patterns concerning cooperation management, human resource competence, knowledge transfer, digital marketing capabilities, and program sustainability. Findings from interviews, observations, and documents are compared through triangulation to identify consistent evidence and differences in stakeholder perspectives [14].

3.5 Research Validity and Ethical Considerations

Research credibility is strengthened through source triangulation, careful documentation, and confirmation of relevant information with participants when appropriate. The researcher maintains accurate records of data collection and analytical decisions to support transparency and dependability [15]. Participation should be voluntary, informed consent should be obtained, and confidential information should be protected. Research findings are interpreted objectively, distinguishing observed evidence from anticipated program outcomes.

3.6 Analytical Framework

The analysis follows four interconnected dimensions: (1) cooperation planning, including objectives and competency needs; (2) program implementation, including training and

mentoring; (3) coordination and knowledge transfer between institutional partners and SMEs; and (4) evaluation of changes in human resource competence and business practices. These dimensions provide a structured basis for identifying program strengths, implementation challenges, and recommendations for sustainable international cooperation.

Results 4.1 Results of International Cooperation Implementation

The international cooperation program between Universitas Pembangunan Panca Budi (UNPAB), Indonesia, and Politeknik Tuanku Syed Sirajuddin (PTSS), Malaysia, provides a framework for strengthening the human resource competence of Mangga Harum Manis SMEs. The analysis focuses on four main dimensions: cooperation planning, program implementation, knowledge transfer, and evaluation. These dimensions are used to examine how institutional collaboration can support the development of entrepreneurial and managerial capabilities.

The first dimension is cooperation planning. Effective planning requires the identification of SME needs, the establishment of measurable objectives, and the development of training activities relevant to participants' business conditions. Competency development should address managerial knowledge, financial administration, product development, customer service, and digital marketing. A needs-based approach is important because training programs are more likely to be relevant when their objectives correspond to actual business challenges.

The second dimension is program implementation. Training, mentoring, and knowledge-sharing activities can provide opportunities for SME participants to improve their understanding of business management. Practical activities, such as developing digital promotional content, preparing simple financial records, and designing product marketing strategies, can help participants translate theoretical knowledge into business practices. The effectiveness of these activities should be assessed using documented participation, completed assignments, and evidence of the application of new skills.

The third dimension concerns coordination and knowledge transfer between UNPAB and PTSS Malaysia. Institutional coordination is necessary to align academic expertise, training materials, implementation schedules, and evaluation procedures. Knowledge transfer becomes more meaningful when the knowledge shared by institutional partners is adapted to the local context and operational capacity of Mangga Harum Manis SMEs. Therefore, collaborative activities should combine academic perspectives with practical mentoring that responds to participants' needs.

The fourth dimension is program evaluation. Evaluation should examine changes in participants' knowledge, skills, confidence, and business management practices. Indicators may include the ability to prepare business plans, maintain financial records, use digital marketing platforms, improve product presentation, and develop customer relationships. These indicators provide a basis for assessing program contributions rather than relying solely on the number of training activities conducted.

4.2 Strengthening Managerial and Entrepreneurial Competence

Managerial and entrepreneurial competence is a fundamental component of SME development. Business owners require the ability to establish objectives, allocate resources, manage operational activities, and make decisions based on market conditions. International cooperation can support these capabilities by facilitating access to academic expertise, practical training, and alternative management approaches.

The proposed cooperation model emphasizes learning through practice. Participants can be guided to prepare simple business plans, calculate production costs, maintain financial records, and evaluate sales performance. These activities connect management concepts with everyday business decisions. The OECD identifies skills development and organizational

capabilities as important considerations in SME competitiveness and adaptation to changing economic conditions [6], [7].

The scientific implication is that competence development should not be measured exclusively by attendance at training sessions. Instead, evaluation should examine whether participants can apply the knowledge acquired to their business operations. A comparison of competency indicators before and after training would provide stronger evidence of program effectiveness, provided that baseline and follow-up data are collected systematically.

4.3 Digital Marketing and Product Competitiveness

Digital marketing offers opportunities for Mangga Harum Manis SMEs to increase product visibility and establish closer relationships with customers. Digital platforms can be used to share product information, communicate product quality, promote seasonal availability, and reach potential buyers beyond existing customer networks. However, the availability of digital tools does not automatically guarantee improved sales or market expansion. Entrepreneurs also need appropriate content creation skills, customer communication strategies, and consistent management of online business activities.

The cooperation program can address these needs through practical workshops and follow-up mentoring. Participants may develop product profiles, create promotional materials, use social media professionally, and monitor customer responses. Product innovation and packaging improvements can complement these efforts by helping SMEs communicate product value more effectively.

These proposed activities are consistent with the OECD's discussion of digital transformation challenges among SMEs, including limited resources and skills gaps [6]. The contribution of the present study is to connect digital capability development with international academic cooperation and practical SME mentoring. Future evaluation should measure digital marketing adoption, customer engagement, sales trends, and market reach to determine whether the activities produce measurable business improvements.

4.4 Knowledge Transfer and International Cooperation Management

International cooperation creates value when institutional relationships generate practical benefits for participating businesses. Formal agreements provide an institutional foundation, but the effectiveness of cooperation also depends on clear responsibilities, effective communication, relevant activities, and continuous evaluation. The collaboration between UNPAB and PTSS Malaysia can provide a platform for exchanging management knowledge, sharing educational resources, and developing SME capacity-building activities.

Knowledge transfer should be understood as a process rather than a single event. Initial training introduces concepts and techniques, while mentoring helps participants apply them to their own business circumstances. Follow-up activities allow institutional partners to identify difficulties, clarify technical issues, and adjust training approaches. This process can strengthen the connection between higher education expertise and local economic development.

The discussion is consistent with literature on university–industry collaboration, which highlights the importance of knowledge exchange and cooperation in supporting innovation and organizational development [4], [5]. However, the effectiveness of the UNPAB–PTSS program must be established through empirical evidence concerning participant experiences, changes in business practices, and the continuity of collaborative activities.

4.5 Supporting Factors and Implementation Challenges

Several factors may support the implementation of international cooperation. These include institutional commitment, alignment between program objectives and SME needs, availability of qualified facilitators, active participation by entrepreneurs, and access to appropriate digital technology. Clear communication between institutional partners is also important for maintaining consistent implementation and resolving operational problems.

Potential challenges include differences in institutional procedures, limited participant availability, variations in digital literacy, and constraints on time and financial resources. These challenges may reduce the effectiveness of training if activities are not adapted to the needs and capacities of participating SMEs. A standardized training approach may therefore be insufficient for participants with different levels of experience and business development.

To address these challenges, the cooperation program should use competency-based training, flexible mentoring schedules, clearly assigned institutional responsibilities, and measurable evaluation indicators. A joint monitoring mechanism involving UNPAB, PTSS Malaysia, and SME representatives would help identify implementation problems and support timely adjustments. These recommendations should be validated against actual field data before being presented as confirmed research findings.

4.6 Proposed Solutions and Future Contributions

Based on the analytical framework, this study proposes an integrated model for strengthening SME human resource competence through international cooperation. The model consists of five stages: needs assessment, collaborative program planning, competency-based training, practical mentoring, and outcome evaluation.

First, a needs assessment should identify the priority competency gaps of Mangga Harum Manis SME participants. Second, UNPAB and PTSS Malaysia should jointly develop training objectives, learning materials, and implementation schedules. Third, competency-based training should combine managerial skills, entrepreneurship, digital marketing, and product development. Fourth, mentoring should support the application of acquired knowledge in daily business operations. Finally, evaluation should assess changes in participant competencies and relevant business indicators.

The proposed model contributes a practical framework for linking international cooperation management with SME human resource development. It also provides a basis for future research using pre-training and post-training assessments, participant interviews, and business performance indicators. Longitudinal evaluation would be particularly useful for determining whether competency improvements are sustained and translated into better business outcomes.

Overall, the study emphasizes that international cooperation should be evaluated through its contribution to human resource competence and practical business development, rather than through institutional activities alone. The proposed approach can inform future collaborations between higher education institutions and SMEs seeking to strengthen entrepreneurial capabilities, digital adaptation, and sustainable local economic development.

Conclusion

Strengthening the human resource competence of Mangga Harum Manis SMEs through international cooperation between Universitas Pembangunan Panca Budi (UNPAB), Indonesia, and Politeknik Tuanku Syed Sirajuddin (PTSS), Malaysia, requires systematic planning, effective implementation, strong institutional coordination, and continuous evaluation. The cooperation program provides a potential framework for transferring knowledge and developing managerial, entrepreneurial, and digital marketing competencies among SME participants. Its effectiveness depends on the relevance of training activities to business needs, the active participation of entrepreneurs, and the application of acquired knowledge in daily business operations. Supporting factors include institutional commitment, academic expertise, and collaborative mentoring, while potential challenges involve resource limitations, differences in digital literacy, and the sustainability of follow-up activities. The implications of this study

highlight the importance of developing an integrated cooperation model that connects higher education expertise with practical SME development. Future program development should incorporate competency-based training, measurable performance indicators, and longitudinal evaluation to assess the sustainability of outcomes. Further empirical research using interviews, observations, and before-and-after competency assessments is needed to establish the actual contribution of international cooperation to SME performance and sustainable local economic development.

References

- [1] OECD, *OECD Skills Outlook 2023: Skills for a Resilient Green and Digital Transition*. Paris, France: OECD Publishing, 2023.
- [2] OECD, *The Digital Transformation of SMEs*. Paris, France: OECD Publishing, 2021.
- [3] **Diana, Y., Arnita, V., Rahayu, S., & Nasution, F. F. (2024).** Strategi Kualitas Produk, Kemasan, dan Harga Kue Jajanan Pasar Produk UMKM Terhadap Keputusan Pembelian di Desa Kota Pari. *EDU SOCIETY: JURNAL PENDIDIKAN, ILMU SOSIAL DAN PENGABDIAN KEPADA MASYARAKAT*, 4(3), 1989-1997.
- [4] Z. Cao, M.-L. Verreynne, and R. T. de Oliveira, "Reflecting back and looking forward: A systematic literature review of SME–university collaborations," *International Journal of Management Reviews*, vol. 28, no. 1, Art. no. e12393, 2026, doi: 10.1111/ijmr.12393.
- [5] **Rahayu, S. (2020).** *The Effect of Transformational Leadership on Work Discipline and Employee Performance. International Journal for Innovative Research in Multidisciplinary Field*, 6(2), 250-253.
- [6] **Faried, A. I., Hasanah, U., Sembiring, R., & Agustin, R. R. (2021).** Pilar membangun ekonomi melalui umkm sebagai peluang penyerapan tenaga kerja di Indonesia. *Jurnal AKMAMI (Akuntansi Manajemen Ekonomi)*, 2(3), 611-616..
- [7] OECD, *OECD SME and Entrepreneurship Outlook 2023*. Paris, France: OECD Publishing, 2023, doi: 10.1787/342b8564-en.
- [8] OECD, *Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation*, 4th ed. Paris, France: OECD Publishing, 2018, doi: 10.1787/9789264304604en.
- [9] **Rahayu, S. R. S., Amelia, O., Hariz, M., & Malay, I. (2024).** *The Influence Of Job Design, Leadership, And Motivation On The Performance Of Service And Technical Officers PT. Razza Prima Transformer at PT. PLN Medan. International Journal of Society and Law*, 2(1), 206-214.
- [10] OECD, *OECD Skills Outlook 2023: Skills for a Resilient Green and Digital Transition*. Paris, France: OECD Publishing, 2023.
- [11] **Surya, E. D., Felani, K. F., Felani, V. T., & Andriani, A. (2023).** Analysis of Tourist Attractions, Amenities and Accessibility to Tourist Visit Decisions Mediated by Digitalization Promotion. *International Journal of Economics and Management*, 1(02), 64–75. <https://doi.org/10.54209/iem.v1i02.8>
- [12] J. W. Creswell and J. D. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 5th ed. Thousand Oaks, CA, USA: SAGE Publications, 2018.
- [13] M. B. Miles, A. M. Huberman, and J. Saldaña, *Qualitative Data Analysis: A Methods Sourcebook*, 3rd ed. Thousand Oaks, CA, USA: SAGE Publications, 2014.
- [14] **Surya, Elfitra Desy, et al.** "The analysis of Halal tourism products and brand image destination on tourists' repeated visits via trust in West Sumatera Province." (2018).
- [15] Y. S. Lincoln and E. G. Guba, *Naturalistic Inquiry*. Newbury Park, CA, USA: SAGE Publications, 1985.

