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ORIGINAL CONTRIBUTION

Co-Creating Human Resource Development in Traditional Craft Communities: A Multisite Study in Indonesia

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Abstract— Traditional craft communities often have to balance two needs: Developing the business side of their activities while retaining the practical knowledge and cultural meaning attached to the craft itself. This study looks at that issue through university–microenterprise collaboration in two Indonesian rattan craft communities. The research followed an interpretive, qualitative, multisite case-study approach and involved five informants directly involved in the collaboration. The study used interviews, participant observation, and relevant project documents. The material was then examined thematically, with both theory-guided and data-driven coding, before patterns from the two sites were compared. Collaboration in the two communities took place through a range of activities rather than a single program. These included training, mentoring, work on product and design development, digital marketing, applied research, and student participation. In describing their experiences, participants noted changes in product quality, design, pricing, customer communication, product presentation, and their use of digital tools. Knowledge also moved in both directions. University participants brought perspectives from management, design, and technology, while artisans drew on their own experience with rattan materials, production methods, cultural meanings, and the practical question of whether new ideas could actually be produced. The findings also show that collaboration continued only when the relationship was managed well. Trust, local coordination, repeated interaction, adaptable learning materials, and continued support helped sustain the learning process. By contrast, limited funding, project-team changes, differences in digital capability, innovation costs, and weak shared evaluation created difficulties. Overall, the study shows that community-based human resource development in traditional craft settings can be understood as a reciprocal learning process in which academic knowledge and artisans' experience are brought together across institutional boundaries.

Index Terms— University–microenterprise collaboration, Human resource development, Traditional craft communities, Rattan microenterprises, Reciprocal learning, Knowledge co-creation, Sustainable growth

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Introduction

Traditional craft communities play several roles at the local level. Alongside providing employment and entrepreneurial opportunities, they help maintain cultural practices and community identity. Craft production is therefore more than an economic activity, since much of the knowledge

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behind it is learned through practice and passed from one generation of artisans to another. At the same time, traditional craft clusters cannot rely solely on established practices if they are to respond to changing markets (Hu et al., 2025; Nuryakin et al., 2022). For microenterprises, this is particularly challenging because their continuity depends not only on experienced craftspeople, but also on business skills, market understanding, and the involvement of younger people. Therefore, Human Resource Development (HRD) in craft communities should extend beyond conventional training to include technical, managerial, digital, entrepreneurial, and tacit-knowledge development. More broadly, HRD also intersects with work-related outcomes such as employee motivation, job satisfaction, and the quality of the work environment, which remain important concerns in organizational and human resource management (Wolor et al., 2023). This perspective aligns with contemporary HRD research emphasizing learning across organizational boundaries and the role of boundary spanners in facilitating knowledge exchange, trust, and capability development (Turner et al., 2026). Loo et al. (2024) discovered that compensation and benefits are the key factors influencing employee job satisfaction. Broader organizational evidence also indicates that knowledge sharing can stimulate innovative work behavior, reinforcing the role of knowledge exchange in capability development (Udin & Shaikh, 2022).

University collaboration offers a potential way to support these needs. Universities can provide design expertise, business knowledge, applied research, digital capabilities, student participation, and access to broader networks. The importance of these capabilities is also evident in Indonesian SMEs, where innovation capability and international networking accessibility contribute to stronger export performance (Nuryakin, 2024). Research on 435 German small and medium-sized enterprises shows that university collaboration through joint research and infrastructure sharing strengthens managerial digital knowledge and supports firm digitalization (Schröder et al., 2026). Universities can also connect education with community problem-solving through client-based learning, service learning, mentoring, and applied projects (Ishida et al., 2026; Lofaro & Schwind, 2026). Collaboration among academic, business, and public actors may further support innovation and entrepreneurship, but its effectiveness depends on how relationships are organized rather than simply on the presence of multiple stakeholders Ameha et al., 2026; Patrón-Noriega and Pertuz, 2026. Adachi et al. (2025) show that Triple Helix collaboration is strengthened through joint enterprise, mutual engagement, and shared repertoires that enable actors to work across institutional boundaries.

However, university engagement with craft microenterprises is often framed as one-way knowledge transfer from universities to communities. This approach underestim artisans' experiential and tacit knowledge and may reduce engagement to training or technology delivery. Delaine et al. (2024) draw attention to how much influence community members actually have within a partnership. Their review suggests that reciprocity becomes more meaningful when communities can bring their own knowledge into the discussion and have a genuine say in decisions that shape the collaboration. Habiyaremye (2023) offers a similar example from university–community engagement, where local participants helped develop and test possible solutions rather than simply receiving them from academics. In that case, learning developed through joint involvement and through the trust that gradually formed between community and university participants. This issue is especially relevant to craft communities because artisan knowledge is embedded in materials, production routines, cultural meanings, and accumulated experience. Guo and Ahn (2023) show that craft knowledge develops through accumulation, expression, diffusion, and reflection, suggesting that academic-artisan collaboration should be understood as dynamic knowledge exchange rather than one-directional transfer.

A further issue concerns the conditions required to transform interaction into capability development. Microenterprises generally have limited financial, managerial, and human resources, which may restrict their ability to absorb and apply external knowledge. Research on university-small business collaboration indicates that structural, relational, and cognitive social capital provide support, sustain trust, and create shared meaning for knowledge co-creation (Yusup et al., 2026). Collaboration conditions also change over time. Trust, communication, knowledge complementarity, willingness to exchange knowledge, funding, and relationship experience may become more or less important as collaboration develops (O'Dwyer et al., 2023). For less-experienced firms, gaining value from university collaboration requires learning how to collaborate as well as learning from collaboration (Abu Sa' a & Gunnarsson, 2026). Thus, university engagement should be examined as a relational learning process through which microenterprises interpret, absorb, adapt, and apply knowledge within their own contexts. Recent evidence from Indonesian SMEs similarly indicates that absorptive capacity strengthens innovation and technological capabilities, which subsequently contribute to business performance (Nuryakin & Qamari, 2026).

Knowledge co-creation and boundary spanning are important mechanisms in this process. Iterative interaction between academics and practitioners can shift collaboration from knowledge transfer toward co-creation, generating practical and theoretical learning (Ates et al., 2025). In traditional crafts, co-design involves stakeholder participation, resource transfer, and mutual adaptation, with artisans contributing to innovation rather than passively receiving external knowledge (Hu et al., 2025). Evidence from longer-running community–academic partnerships also suggests that collaboration becomes more meaningful when academic actors listen to community experience, maintain dialogue, and recognize local expertise as part of the knowledge-building process (Carrera et al., 2025).

Moving knowledge between universities and community settings requires more than simply making academic expertise available. People involved in the collaboration must be able to interpret ideas from another setting and make them understandable and useful to those with different experiences. Dolmans et al. (2022) found that academics developed this boundary-spanning ability gradually, particularly as they became more familiar with their partners' perspectives through repeated interaction. What happens to knowledge after it crosses that boundary is also important. Abu Sa'a and Yström (2024) note that organizational conditions influence whether knowledge remains with particular individuals or is more widely absorbed, retained, and used. Rossi et al. (2022), meanwhile, distinguish between formal bridging and more informal forms of boundary interaction, which may lead to different types of innovation. From an HRD perspective, boundary spanning can therefore be viewed as

part of the learning process through which individual experience is translated into knowledge that can be used in collaborative and organizational settings (Turner et al., 2026).

Whether these collaborations can continue beyond individual projects is less certain, especially for microenterprises working with limited resources. Collaboration outcomes depend on facilitation before, during, and after projects, as well as on openness and appropriate expertise among participants (Bamford et al., 2024). Trust, proximity, and proactive academic engagement may support the development of strategic knowledge-exchange relationships, whereas misaligned priorities and limited stakeholder involvement may inhibit them (Moolenaar & Nunan, 2026) Collaboration with micro and small enterprises also involves different requirements across initiation, formation, execution, and evaluation phases (Ülgen & Forslund, 2026). Because co-design relationships may change over time, immediate participation or perceived capability gains should not automatically be interpreted as evidence of long-term sustainability (Brubaker et al., 2026; Rossi et al., 2022). therefore remains at the intersection of HRD, university-microenterprise collaboration, and traditional craft knowledge. Research on university collaboration with micro, small, and medium-sized firms remains less developed and fragmented across collaboration modes, enablers, barriers, temporal dimensions, and outcomes (Mura et al., 2026). Craft studies emphasize tacit knowledge and artisan participation, while university-industry studies explain boundary spanning, absorptive capacity, social capital, and relationship development (Abu Sa' a & Gunnarsson, 2026; Abu Sa'a & Yström, 2024; Dolmans et al., 2022; Guo & Ahn, 2023; Hu et al., 2025; Yusup et al., 2026). Less is known about how these mechanisms operate together as a community-based HRD process in traditional craft microenterprises.

Accordingly, this study examines university-microenterprise collaboration in the rattan craft communities of Trangsan, Central Java, and Rajapolah, West Java, Indonesia. It investigates how collaboration is organized, how academic and artisan knowledge are exchanged to support perceived competency development and intergenerational learning, and what relational, organizational, and contextual conditions enable or constrain continuity. The study conceptualizes collaboration as a reciprocal cross-boundary learning process in which academic expertise and artisan tacit knowledge are combined through trust, co-design, social capital, repeated interaction, absorptive capacity, coordination, and institutional support (Delaine et al., 2024; Mura et al., 2026). This study draws on evidence from collaboration as experienced during the period examined. The analysis therefore centers on what participants reported and what the study observed regarding the collaborative process, capability development, knowledge exchange, and the circumstances that appeared to support its continuation. Questions about whether these changes endure over time, contribute to long-term enterprise sustainability, or become embedded institutionally fall outside the evidence available in this study.

Literature Review

Reciprocal learning, knowledge co-creation, and mutual knowledge exchange

Discussions of university engagement with communities and small businesses increasingly recognize that learning may occur in both directions. This differs from a conventional transfer model, where the university is usually positioned as the main source of expertise and practitioners as recipients. A more reciprocal view places greater weight on what each side brings to the relationship. In the Knowledge Transfer Partnership projects examined by Ates et al. (2025), this shift did not occur immediately. It developed through repeated interaction and reflection over the two-year projects, allowing participants to move from conventional transfer toward more participatory forms of co-creation. Habiyaremye (2023) describes a comparable pattern in university–community engagement. Community members became part of developing and testing solutions, rather than remaining at the receiving end of academic recommendations. Trust helped create the conditions for their experience to become part of the learning process.

The question of reciprocity is therefore useful when distinguishing co-creation from activities that remain largely consultative or instructional. In their systematic review, Delaine et al. (2024) describe reciprocity as varying considerably across partnerships. At one end, community involvement may still be shaped mainly by university priorities. At the other, community members take a more substantial role in defining problems, producing knowledge, making decisions, and sharing the benefits of collaboration. This distinction also matters in relationships with micro and small enterprises. Mura et al. (2026), after reviewing 82 studies, identified 23 different forms of university–M&SME collaboration, while also noting that research in this area remains fragmented in its treatment of actors, collaboration modes, enabling conditions, barriers, and outcomes. Yusup et al. (2026) adds another relational dimension, showing from 40 interviews that structural, relational, and cognitive forms of social capital support small-business collaboration in different but complementary ways. Taken together, these forms of social capital help explain how small firms gain practical support, build trust with partners, and develop a clearer understanding of the collaboration's purpose. Evidence from Indonesian community-based enterprise settings similarly suggests that strengthening social capital through trust, norms, and networks can reinforce entrepreneurial capability (Shahab et al., 2022).

In traditional craft communities, reciprocity becomes especially important because much of an artisan's knowledge is built through practice. Skills are refined through repeated making, observation, and adjustment, so this knowledge often remains closely connected to the production process itself. Drawing on interviews with artisans and university academics, Guo and Ahn (2023) describe tacit craft knowledge as developing through accumulation, expression, diffusion, and reflection. Their findings also help explain why artisans should not be positioned merely as recipients of outside expertise. Decisions about materials, production methods, cultural meaning, and technical feasibility depend strongly

on knowledge already held within the craft community. University engagement can therefore become a two-way learning process when local experience shapes the ideas and decisions that emerge from the collaboration.

Reciprocity, however, does not automatically result from establishing a formal partnership. What happens during the collaboration matters just as much as how the relationship is formally arranged. In their study of 13 university–industry partnerships, Bamford et al. (2024) found that productive knowledge exchange depended on active facilitation, relevant expertise, and participants' willingness to engage with one another's perspectives. Moolenaar and Nunan (2026) report a similar pattern in placements and project-based relationships. Relationships were more likely to develop beyond individual activities when trust, proximity, academic involvement, and participation by relevant stakeholders were present. These studies suggest that reciprocal learning grows from the quality of interaction between partners rather than from the existence of a partnership alone.

Boundary spanning, absorptive capacity, co-design, and local knowledge

Knowledge developed in universities and knowledge rooted in local practice do not always fit together easily. Participants may use different terms, work from different experiences, or understand the same problem in different ways. Boundary spanning helps explain how these differences are worked through. It involves interpreting ideas from one context and making them meaningful in another. Dolmans et al. (2022), In their longitudinal study, show that academics learned to perform this role gradually. Rather than entering the collaboration with a fully developed ability to bridge knowledge boundaries, they built that capability through experience with their partners. Their capacity to work across boundaries grew as they interacted repeatedly with industry partners and became more familiar with how those partners viewed problems. Knowledge translation, in this sense, develops through the relationship itself rather than being an automatic result of academic expertise.

Co-design offers another way of bringing academic or external expertise into direct interaction with knowledge held by local practitioners. Instead of developing solutions separately and presenting them afterward, participants work on problems together and adjust ideas as the process develops. In their study of 20 designers and artisans, Hu et al. (2025) describe co-design as a four-stage process in which stakeholder participation, resource movement, and mutual adjustment operate across macro, meso, and micro levels. Artisans consequently become active contributors to innovation rather than recipients of externally produced designs. Brubaker et al. (2026) further show through a five-year ethnography that co-design is dynamic and can move between intimate, instrumental, and limited forms as participation, feedback, decision-making, and organizational boundaries change. Recognition of local expertise is therefore essential to prevent collaboration from reverting to one-way transfer, particularly where knowledge is embodied and difficult to codify (Guo & Ahn, 2023). Evidence from Indonesian SMEs further indicates that open-innovation strategies can contribute to SME performance through the development of innovation capabilities such as eco-innovation (Nuryakin et al., 2022).

Knowledge crossing a boundary must also be absorbed and retained if collaboration is to contribute to capability development. Abu Sa'a and Ystrom (2024) distinguish between surface and deep knowledge dissemination and show that individual boundary-spanning activity depends on organizational conditions that enable knowledge to be absorbed, retained, and utilized. This is particularly consequential for less-experienced firms, which must develop not only substantive knowledge but also the capability to collaborate effectively with universities (Abu Sa' a & Gunnarsson, 2026). Quantitative evidence from 435 German SMEs further shows that university collaboration through joint research and infrastructure sharing can strengthen managers' digital knowledge, which in turn supports firm digitalization (Schröder et al., 2026). Boundary practices also shape subsequent innovation: an analysis of 95 interviews across 75 collaborations found that formal bridging practices were associated with exploitative innovation, whereas informal blurring practices were associated with exploratory innovation (Rossi et al., 2022). Together, these studies suggest that reciprocal HRD emerges through the interaction of boundary spanning, co-design, local knowledge recognition, and organizational absorptive capacity.

Enablers, barriers, and continuity of collaborative learning

University-microenterprise collaboration is not sustained by a single enabling condition. Its continuity depends on changing combinations of relational, organizational, and contextual factors. O'Dwyer et al. (2023) identify embryonic, initiation, engagement, and established phases of collaboration and show that trust, knowledge complementarity, prior experience, communication, intellectual-property arrangements, and funding vary in importance across those phases. Similarly, Yusup et al. (2026) demonstrates that structural support and flexibility, relational trust, and cognitively shared meanings jointly sustain engagement in small-business collaboration. These findings indicate that continuity is better understood as an evolving relational accomplishment than as an automatic consequence of successful project delivery. Related evidence from Indonesian furniture SMEs also shows that relational capabilities can mediate the relationship between entrepreneurial orientation and SME performance, highlighting the importance of network-based capabilities in small-firm development (Nuryakin, 2021).

This process is especially sensitive to the resource constraints of micro and small enterprises. Ülgen and Forslund (2026) SE collaboration for three years, identify initiation, formation, execution, and evaluation as distinct phases requiring different combinations of prior experience, planning, project management, resources, and evaluation. Less-experienced firms additionally require learning environments and coordination mechanisms that enable them to develop their own collaboration capability itself (Abu Sa' a & Gunnarsson, 2026). Active facilitation and outcome

assessment mechanisms remain important after formal activities end because project completion does not ensure that collaboratively generated knowledge will continue to be used (Bamford et al., 2024). Misaligned institutional priorities and limited stakeholder involvement can similarly prevent promising activities from becoming continuing relationships (Moolenaar & Nunan, 2026).

These conditions clarify an important conceptual boundary between continuity of collaborative learning and long-term sustainability. Mura et al. (2026) show that existing research has not sufficiently integrated the relationships among university-M&SME collaboration enablers and barriers. Moreover, longitudinal evidence indicates that collaboration arrangements and their outcomes can change substantially over time (Brubaker et al., 2026; Ülgen & Forslund, 2026). Rossi et al. (2022) show that claims about longer-term innovation require evidence beyond immediate project outcomes. Accordingly, university-microenterprise collaboration is conceptualized here as a process in which reciprocal engagement enables boundary spanning and co-design, academic and tacit local knowledge are combined through mutual learning, and capability development is conditioned by trust, social capital, absorptive capacity, repeated interaction, coordination, resources, institutional alignment, and evaluation. This process-oriented perspective provides the theoretical basis for examining community-based HRD while distinguishing observable collaborative learning from unverified claims of long-term sustainability.

Methodology

This research adopted an interpretive qualitative approach using a comparative multisite case-study design. The purpose was to understand how university–microenterprise collaboration was experienced and interpreted within traditional rattan craft communities, particularly in relation to learning, knowledge exchange, and capability development. A qualitative case-study approach was considered appropriate because these processes are closely tied to their social and institutional settings and are difficult to capture through statistical relationships alone. Case studies also allow complex and bounded phenomena to be examined through several forms of evidence in their real-life context (Avery et al., 2011; Creswell & Poth, 2018; Miles et al., 2013).

Two rattan-producing communities were treated as separate cases: Trangsan in Central Java and Rajapolah in West Java, Indonesia. Both communities are known as established craft-production centers involving artisans, microenterprises, community organizations, and outside development actors (Agung, 2024). Each site was first examined on its own before the findings were compared across the two cases. The intention was not to generalize statistically from these communities, but to understand how collaboration, learning, and knowledge exchange took shape within each setting and where similar or different patterns emerged between them (Avery et al., 2011; Njie & Asimiran, 2014).

Participants were chosen purposively because direct experience with the collaborative activities was necessary for answering the research questions. Five key informants took part in the study. From each village, one artisan or microenterprise owner and one community manager were included, together with one university representative who had been involved in the program. This composition was intended to bring together accounts from people occupying different positions in the collaboration rather than to achieve numerical representation (Njie & Asimiran, 2014). The adequacy of this small sample was considered through the principle of information power, which places emphasis on the relevance and specificity of participants, the focus of the research question, theoretical grounding, interview quality, and the analytical strategy used (Malterud et al., 2016; Roberts et al., 2026). Interviews lasted approximately 45–70 minutes and produced detailed accounts related to the study objectives.

The study does not assume that five interviews were sufficient to claim saturation. The number of interviews required in qualitative research varies according to the analytical purpose and the type of analysis being undertaken, and there is no universal minimum for reflexive thematic analysis (Squire et al., 2024; Wutich et al., 2024). For this study, adequacy was considered in relation to the participants' direct involvement, the depth of the interviews, the use of more than one source of evidence, and the clearly bounded nature of the two cases. The interpretations are therefore kept within the scope of these two communities and are not intended to represent craft communities across Indonesia. The university perspective is also limited because only one university participant was interviewed. When an interpretation came only from this participant, it was treated as an individual account unless field observations or documents provided additional evidence.

The study drew on interviews, field observations, and documents. Interviews were used to understand how participants experienced the collaboration and how they described changes in production, business practices, learning, knowledge exchange, project implementation, and the difficulties they faced. With their consent, the interviews were recorded and transcribed for analysis. Field observations were carried out in production workshops and during activities connected with the collaboration. These visits provided direct exposure to working routines, demonstrations, training activities, interactions among participants, and the circumstances in which knowledge was exchanged. Documents provided a third source of evidence and included training materials, activity records, product-related documentation, and project materials. Each source offered a different view of the cases, allowing the collaborative experience to be examined from more than one angle (Avery et al., 2011; Houghton et al., 2017).

Interview, observation, and documentary evidence were examined alongside one another rather than assumed to agree from the outset. The comparison focused on where the sources reinforced the same interpretation, where one source added detail to another, and where they suggested a different reading of the case. This follows the view that triangulation is useful only when the contribution of each source to the analysis is made explicit (Schlunegger et al., 2024). As themes were developed, the researchers returned to the underlying evidence to check what supported each interpretation. Material that did not fit the emerging explanation was not discarded.

Such instances were considered because disagreement or negative evidence can reveal weaknesses in an interpretation and lead to a more careful explanation of the case (Hymer & Smith, 2022).

Analysis was carried out in several rounds rather than as a single coding stage. Ideas from the literature on reciprocal learning, knowledge co-creation, boundary spanning, and collaborative continuity provided an initial lens for reading the material, but they were not used as a fixed coding scheme. The interview transcripts, field notes, and documents were read repeatedly so that additional codes could emerge from the cases themselves. Initial codes were compared, grouped, and reconsidered as possible themes. The researchers then returned to the source material to check whether those themes were adequately supported and to revise them when necessary. Trangsan and Rajapolah were first examined separately. Only after the within-case analysis had been completed were the two cases compared using a matrix to identify recurring patterns and differences between the sites (Braun & Clarke, 2021; Creswell & Poth, 2018; Ghasemi & Zakaei, 2025; Miles et al., 2013).

Several checks were built into the analysis to make the interpretive process more transparent. Evidence from interviews, observations, and documents was compared across sources, while reflexive notes were used to record analytical decisions and possible alternative readings of the material. Changes made to codes and themes were also documented as the analysis progressed (Nowell et al., 2017; Roberts et al., 2026). Preliminary interpretations were later shared with participants. This step was used to invite clarification and identify possible disagreements, not simply to seek confirmation of the researchers' conclusions. Participant responses were therefore incorporated as additional material for interpretation, and the analysis recorded whether these responses confirmed, clarified, or challenged the initial reading (de Loyola González-Salgado et al., 2024). Researcher interpretation was also considered throughout the analysis, particularly when choices were made about coding, theme development, and the meaning assigned to the evidence (Braun & Clarke, 2021).

Ethical approval was in place before fieldwork began. Participants were told what the research was about and were informed that taking part was voluntary. They were also informed about confidentiality and their right to leave the study if they no longer wished to participate. Personal identifiers were removed from the research records, and information that could reveal commercially sensitive details was handled in the same way. Research data were kept in secure storage. Particular attention was given to the reporting of craft knowledge because some information was closely connected to individual artisans or their businesses. The article therefore includes only material that participants had agreed could be used. These ethical safeguards were applied together with the analytical procedures described above, while keeping the interpretation within the limits of the five informants and the two cases examined. Figure 1 provides an overview of the research process.

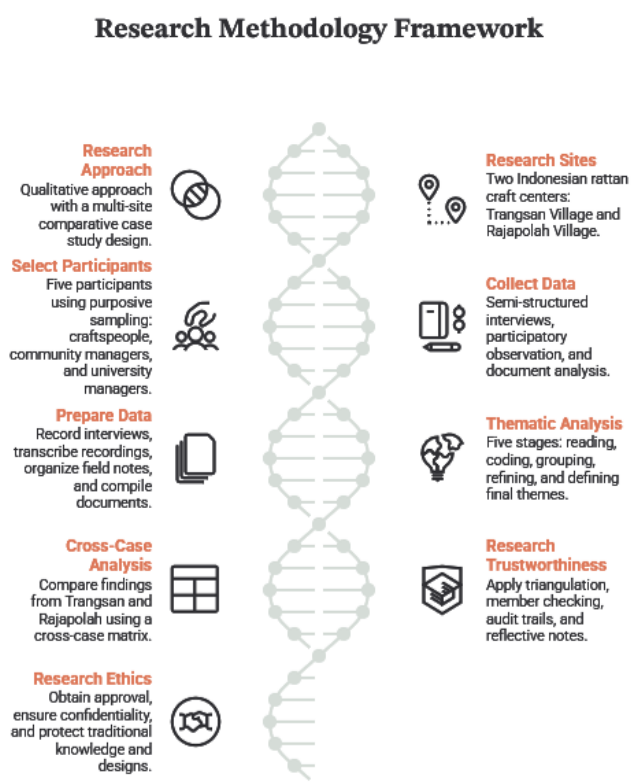

Fig. 1 *Research flowchart*

Results and Discussion

Forms and processes of university–microenterprise collaboration

University engagement took a number of forms in both craft communities. Participants recalled taking part in training and business mentoring as well as activities related to product design, digital marketing, applied research, and student projects. In practice, these activities were often connected rather than experienced as clearly separate programs. A discussion that began with a production issue, for instance, could also lead to questions about design, pricing, or how a product should be positioned in the market. P1 recalled university participants discussing "product design, pricing, and target audience positioning" while working through production-related concerns. P3 added that suggested changes still had to fit the characteristics of the existing craft. New ideas, in other words, could not simply be introduced without considering how artisans were already working. The collaboration therefore involved both structured learning activities and discussions around problems that artisans were dealing with in their day-to-day work.

Evidence from interviews was considered together with what was observed in the field and found in project documents. During field visits, the researchers observed spaces used by rattan business operators for training and interaction with university participants, as shown in Figure 2. This observation provides evidence that structured learning activities took place, but it does not by itself demonstrate that those activities improved participants' capabilities. Training materials and activity records were treated in much the same way: they helped establish what activities had occurred and what they covered, rather than serving as evidence of their effects. Keeping these functions separate is important in case-study research because interviews, observations, and documents may contribute different kinds of evidence to an interpretation (Houghton et al., 2017; Schlunegger et al., 2024).

Fig. 2 *Training space used by rattan business operators during university–community engagement*

Community managers described how these activities were arranged at the local level. According to P2, group meetings and more focused training sessions gave craftspeople opportunities to communicate the kinds of support they needed. P4, meanwhile, stressed that learning materials were more useful when they could be adjusted to current market demands and to what artisans were already able to do. Experiences from both communities therefore point to a combination of organized university activities and negotiation with people in the local craft setting. This corresponds with the variety of university–micro, small, and medium enterprise collaboration identified by Mura et al. (2026), who found 23 different collaboration modes. It also reflects earlier findings that university engagement can move beyond straightforward knowledge transfer when practitioners have a meaningful role in deciding what problems should be addressed and how activities are carried out (Ates et al., 2025; Habiyaremye, 2023).

The institutional perspective needs to be interpreted more cautiously because only one university participant was included. P5 explained that collaborative activities were often initiated through research, community-engagement programs, and student projects. P5 also recalled that communication with community partners became harder to sustain after the funded project period ended. These observations are presented as P5's account rather than as evidence of how the university, government, or the wider collaboration system operates. Where possible, this perspective was considered alongside community accounts and project-related records. Such caution is necessary because conclusions about a case should be built from the overall pattern of evidence rather than by giving one informant's account explanatory weight for an entire institutional system (Houghton et al., 2017; Schlunegger et al., 2024).

Competency development, reciprocal learning, and intergenerational knowledge transfer

When participants talked about what they had learned from the collaboration, they usually referred to practical aspects of running and improving their businesses. Product quality, design, pricing, communication with customers, product presentation, and digital marketing were mentioned most often. P1, for example, became more attentive to consistency in product dimensions and to the quality of product photographs. P3 approached prototype development from a production perspective, asking whether a proposed design could realistically be made with the materials and techniques available locally. P2, meanwhile, connected product photography and the way a product story was presented with customers' perceptions of its value. These examples reflect changes that the participants associated with their own experience of the collaboration. They indicate perceived learning and capability development rather than independently verified changes in business performance.

Digital tools also gave participants an opportunity to try different ways of presenting their products. One activity involved demonstrating a virtual showroom for rattan products, which is shown in Figure 3. Its use during the collaboration confirms that digital presentation was included in the learning process, but the evidence available here cannot show whether it produced commercial benefits after the activity ended. P4 saw digital content, product innovation, and online selling as ways of making rattan craft more attractive to younger people. This view reflects P4's experience during the collaboration; the study did not track younger participants over time and therefore cannot determine whether such interest later resulted in sustained participation in the craft workforce.

Fig. 3 *Virtual showroom demonstrated as part of the digital learning activities with the rattan community*

Knowledge was also contributed by the artisans themselves. P5 described design, management, and technology as areas in which universities could offer input, but artisans brought expertise developed through their own craft practice. This included familiarity with rattan materials, weaving techniques, standards of quality, cultural symbols, and the stories associated with particular products. This account is consistent with P1 and P3, whose descriptions showed that external design proposals were assessed against local production feasibility. The convergence suggests a reciprocal interaction in which academic ideas were modified through artisan knowledge. Research involving artisans and academics similarly shows that tacit craft knowledge moves through accumulation, expression, diffusion, and reflection and that artisans should be treated as active knowledge contributors (Guo & Ahn, 2023). Hu et al. (2025) likewise demonstrate that co-design depends on stakeholder involvement, resource transfer, and mutual adaptation.

This finding distinguishes participation from genuine reciprocal learning. University training alone would not demonstrate co-creation; reciprocity requires evidence that local knowledge influences the learning process and subsequent decisions Habiyaremye (2023). In the present cases, artisans' judgments concerning materials, technical feasibility, and cultural characteristics shaped discussions of product development. This resembles the shift from transfer toward participatory learning reported by Ates et al. (2025). It also reflects boundary-spanning processes in which actors learn to translate knowledge across different professional and epistemic contexts (Dolmans et al., 2022).

Enabling conditions, barriers, and conditions for continuity

Four recurrent conditions shaped participants' accounts of collaboration: Trust, adaptation of learning content to local practice, continuity of guidance, and the presence of local coordinators. Participants also pointed to several practical difficulties. P1 explained that producing a new

sample could require additional time and money, while P3 found that technical terminology was difficult to use unless it was explained through examples that made sense in actual production work. These experiences suggest that simply providing outside knowledge is not enough to make it usable. Whether artisans can put new ideas into practice also depends on available resources, how those ideas are translated into their working context, and their capacity to absorb them. These issues can be particularly important for smaller firms with relatively little previous experience of university collaboration (Abu Sa' a & Gunnarsson, 2026). Evidence from Indonesian SMEs further suggests that external financing and government support are more likely to contribute to SME performance when entrepreneurs possess sufficient entrepreneurial competence (Sudarnice et al., 2023).

P2 and P4 described local community members as helping to connect the university teams with the artisans involved in the activities. In practice, they brought participants together and helped relate university initiatives to the everyday realities of craft production. This role became important because the artisans differed in their circumstances and in how readily they could participate. Some were more comfortable with digital tools than others, some had less time available for activities, and willingness to experiment with unfamiliar practices also varied. Yusup et al. (2026) reports a related pattern, showing that university–small-business engagement is supported by a combination of organizational support, trust, and shared understanding. The distinction made by Moolenaar and Nunan (2026) is also relevant here: completing an activity successfully does not necessarily mean that the relationship between partners will continue afterward.

P5 identified team turnover, limited funding, and the absence of shared indicators as institutional barriers. These points are reported specifically as the university participant's assessment rather than as generalized findings about all institutional actors. Nevertheless, they complement community concerns about the discontinuity of guidance and resource limitations. The combined evidence indicates conditions that may support or constrain continuity of collaborative learning, not proof that collaboration is institutionally sustainable. Research similarly shows that collaboration barriers and enablers evolve over time and that funding, trust, cohesiveness, routines, and coordination have different functions across developmental phases (O'Dwyer et al., 2023). Evidence from 13 university–industry partnerships also indicates that facilitation before, during, and after formal projects is necessary for knowledge outcomes to remain meaningful (Bamford et al., 2024).

Member checking was used to return preliminary interpretations to participants for verification and clarification. The study materials available for reporting do not document a theme-changing disagreement or an unresolved challenge to the three thematic domains presented above. Member checking is therefore treated as a verification procedure rather than as independent evidence of consensus, and the findings remain bounded by the perspectives of the five participants and the supporting observational and documentary evidence.

Discussion

The findings position university–microenterprise collaboration as a form of community-based HRD that operates through reciprocal cross-boundary learning rather than through training delivery alone. The six observed collaboration forms created interaction spaces in which academic knowledge was introduced, evaluated, and adapted in relation to production realities. This interpretation extends the broad typologies of university–M&SME collaboration identified by Mura et al. (2026) by showing how different activities can become connected through a learning process within a traditional craft setting. The relevant distinction is therefore not between training, mentoring, design, or student projects as separate interventions, but between activities that remain transactional and those that permit mutual influence. Ates et al. (2025) offer longitudinal evidence for a similar pattern: the more substantial learning in their cases developed as academics and practitioners continued working with one another, rather than simply because a formal partnership had been established.

What is particularly relevant for HRD in these cases is that learning drew on knowledge held by both sides of the collaboration. University participants contributed perspectives from design, business, and technology. Artisans approached the same issues through experience with materials, production processes, technical feasibility, and the cultural meaning of their products. Their knowledge therefore influenced how proposed ideas were judged and adapted rather than serving only as contextual information. This is consistent with Guo and Ahn (2023), who highlight the importance of artisan tacit knowledge in academic–craft collaboration, and with Hu et al. (2025), whose findings show that co-creation requires adaptation by the parties involved. The cases examined here also indicate how boundary spanning occurred in practice. External ideas became more useful when they were translated into examples that made sense within production, while artisan expertise helped university participant's judge whether proposed changes were workable and appropriate to the craft context. Dolmans et al. (2022) show that such translation depends on perspective taking developed through repeated engagement rather than on expertise alone.

The results also clarify why observed competency gains should not be equated with long-term sustainability. Participants reported learning related to design, pricing, product presentation, and digital practices, but the study did not longitudinally measure whether these changes persisted or generated sustained enterprise performance. Rossi et al. (2022), using 95 interviews across 75 collaborations together with subsequent innovation evidence, demonstrate that long-term outcomes are temporally distinct from immediate project outputs. Brubaker et al. (2026) similarly show over five years that co-design relationships can strengthen, weaken, or shift between different forms. Accordingly, the present evidence supports perceived capability development and conditions for continuity, but not sustained workforce renewal, institutionalized collaboration, or long-term enterprise sustainability.

Continuity appears instead to depend on the interaction of relational and organizational conditions. Trust, local coordination, repeated interaction, understandable knowledge, resource availability, follow-up support, and shared expectations collectively shaped whether participants

could continue using the knowledge gained through collaborative learning. This configuration accords with O'Dwyer et al. (2023), who show that collaboration enablers change across relationship phases, and with Yusup et al. (2026), who demonstrates complementary roles for structural, relational, and cognitive social capital. For smaller firms working with limited resources, learning how to collaborate with a university may therefore be a capability in its own right (Abu Sa' a & Gunnarsson, 2026). Continued facilitation and alignment between partners remain important because a project that works well in the short term does not necessarily develop into an ongoing relationship (Bamford et al., 2024; Moolenaar & Nunan, 2026).

Conclusion

The two cases examined in this study show that collaboration between universities and rattan microenterprises is better understood as a two-way learning relationship than as a simple transfer of knowledge from universities to local businesses. Participants associated the collaboration with changes in several practical areas, particularly product quality, design, pricing, communication with customers, product presentation, and the use of digital tools. These changes were not shaped by university input alone. Artisans brought their own understanding of materials, weaving methods, production feasibility, cultural meanings, and product histories into discussions about new ideas. Their experience became an important reference point when deciding whether a proposed change made sense for the local craft context. Learning in these cases, therefore drew on knowledge contributed by both university participants and the artisan communities.

Participants' accounts also showed that continuing the collaboration depended on how the relationship was supported after and between individual activities. Participants repeatedly referred to trust, coordination within the community, opportunities for continued interaction, learning materials that could be adjusted to local needs, and support after formal activities had taken place. These conditions made it easier for participants to continue using what they had learned. Continuity became more difficult when funding was limited, project teams changed, participants differed in their digital capabilities, or experimenting with new products required additional costs. The absence of shared ways to evaluate progress also created difficulties. In these cases, community-based HRD was therefore experienced less as a stand-alone training activity and more as an ongoing process in which university knowledge was interpreted alongside the practical knowledge held by artisans.

The evidence available here is limited to what could be observed and reported within the period covered by the study. It is therefore not possible to determine from these cases whether the learning described by participants continued in the longer term, improved business sustainability, contributed to lasting workforce renewal, or became part of an institutionalized form of collaboration. Answering those questions would require following the partnerships over a longer period and involving a wider range of institutional actors. A longer-term study would be useful for examining what happens to these relationships once particular university projects have ended. It could also bring in more voices from universities and government institutions and examine whether similar patterns appear in other craft sectors or under different governance arrangements. Following the same communities over time would make it possible to see whether the capabilities reported here remain in use and whether they eventually have broader consequences for the businesses, the people working in the craft sector, and the preservation of craft heritage.

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