

BUILDING RURAL ECONOMIC ECOSYSTEMS THROUGH A COMMUNITY-BASED COIN BARTER MECHANISM: A CASE STUDY AT LADANG EDUKASI, SEI MENCIRIM, MEDAN

Sheli Handayani¹
 Nabil Kurniawan²
 Muhammad Rafi'i³

^{1,2,3}Universitas Muhammadiyah Sumatera Utara
shelihandayani100@gmail.com
nabilkurniawan1045@gmail.com
muhammadrafii@umsu.ac.id

Abstract: *This study examines an innovative community-based economic model implemented at Ladang Edukasi in Sei Mencirim, Medan, where a unique coin-based barter system stimulates local transactions. Unlike formal currency systems, this mechanism utilizes specially designed coins as a medium of exchange within a curated bazaar ecosystem. Visitors exchange cash for coins at a central counter, which are then used to purchase products from local micro-enterprises (UMKM). In turn, UMKM participants contribute a small percentage of their earnings as a venue fee. Qualitative observation and stakeholder interviews reveal that this model enhances local economic engagement, fosters a sense of community ownership, and creates a self-reinforcing cycle of rural economic vitality. The coin system serves not only as a transactional tool but also as a social innovation that strengthens resilience, encourages sustainable consumption, and aligns with Islamic economic principles such as fairness, transparency, and shared prosperity. This study concludes that community-driven barter mechanisms can serve as effective, low-cost strategies for revitalizing rural economies and promoting inclusive growth in the post-digital era, with potential for replication in similar global contexts.*

Keywords: *Community Barter System, Rural Economic Ecosystem, Local Currency Innovation, UMKM Empowerment, Islamic Social Economy*

Introduction

The sustainability of rural economies in the developing world hinges critically on the vitality of micro, small, and medium enterprises (UMKM). These entities are not merely economic units but are deeply embedded in the social fabric of communities, providing livelihoods, preserving local culture, and offering essential goods and services. In the peri-urban context of Sei Mencirim, Medan, UMKM face a paradoxical challenge in the digital age: while technological advancement promises wider market access and efficiency, it simultaneously risks excluding those without the requisite skills, infrastructure, or confidence to participate. The rapid nationwide push towards digital financial transactions, exemplified by the QRIS (Quick Response Code Indonesian Standard) system, has created a significant digital divide. This divide is generational and educational, disproportionately affecting older entrepreneurs who constitute a substantial portion of rural UMKM. These sellers find themselves caught between a diminishing pool of cash-carrying customers and a confusing array of smartphonedependent payment methods, leading to lost sales, frustration, and a sense of economic marginalization.

Concurrently, community-based tourism destinations like Ladang Edukasi seek to create distinctive, memorable experiences that transcend passive consumption. The challenge lies in designing an economic interaction model that is seamless for visitors, beneficial for local producers, and sustainable for the venue itself. Traditional cash transactions, while universal, offer little experiential novelty and do not inherently encourage visitors to explore the full range of local offerings. There exists, therefore, a compelling need for an innovative intermediary mechanism one that simplifies transactions for UMKM, enhances engagement for visitors, and ensures economic sustainability for the community platform.

Responding to this complex socio-economic puzzle, Ladang Edukasi has conceptualized and implemented a novel community-based coin barter system. This intervention represents a purposeful fusion of traditional barter logic with modern community currency theory, tailored to the specific context of a rural educational farm. The system operates by issuing a physical, proprietary coin that serves as the sole medium of exchange within the boundaries of its periodic bazaars. This study posits that this mechanism is more than a quirky gimmick; it is a deliberate social innovation designed to reconfigure local economic relationships, build resilience, and activate a self-reinforcing cycle of community prosperity. This research aims to provide a comprehensive, empirical examination of this model, analyzing its operational mechanics, its multi-dimensional impacts on stakeholders, and its theoretical alignment with established principles of local economic development and Islamic social economy. The findings aspire to offer a scalable blueprint for similar communities seeking to foster inclusive, resilient, and ethically-grounded economic ecosystems.

Literature Review

The Architecture of Rural Economic Ecosystems

A rural economic ecosystem can be conceptualized as a complex adaptive system comprising interdependent actors producers, consumers, intermediaries, and institutional supporters interacting within a shared geographical and social space. The health of this ecosystem is measured not merely by aggregate output but by indicators such as the density of transactional networks, the velocity of local money circulation, leakage reduction, and collective resilience to external shocks. Scholars like Pike et al. (2010) emphasize the importance of "local capital" encompassing social, cultural, and symbolic resources that can be mobilized for economic development. A resilient ecosystem demonstrates an ability to adapt, innovate, and retain value locally. Interventions aimed at strengthening such ecosystems often focus on creating "sticky" economies where financial capital is encouraged to circulate multiple times within the community before exiting, thereby multiplying its local impact and fostering endogenous growth.

Complementary Currency Systems: Theory and Global Praxis

Complementary Currency Systems (CCS) are purpose-designed media of exchange that operate alongside national currency to achieve specific social or environmental objectives. Blanc (2018) provides a robust taxonomy, distinguishing between mutual credit systems (like LETS), time-based currencies, and locally issued token or paper currencies. Their historical and contemporary manifestations are diverse, from the "Wörgl Schwundgeld" in Austria during the Great Depression to modern examples like the Bristol Pound in the UK or the Bang-Bank in Bandung, Indonesia. The theoretical underpinnings suggest CCS can: (1) Stimulate local economic activity during periods of national currency scarcity, (2) Build social capital by fostering trust and reciprocity networks, (3) Promote sustainable consumption by linking currency use to local products and services, and (4) Serve as tools for community

identitybuilding. However, their success is contingent on clear design, strong community buy-in, and effective governance to prevent counterfeiting or hoarding. The Ladang Edukasi coin system represents a spatially and temporally bounded CCS, offering a controlled environment to study its micro-level impacts.

Community-Based Tourism as a Platform for Economic Innovation

Community-Based Tourism (CBT) has evolved as a counter-narrative to mass tourism, prioritizing community control, benefit-sharing, and cultural integrity. It transforms communities from passive backdrops into active agents and beneficiaries of tourism. Educational farms, a niche within CBT and agritourism, add a pedagogical dimension, attracting visitors interested in agriculture, sustainability, and authentic rural life. This context creates a unique "protected space" for economic experimentation. The visitors to such venues are often predisposed to ethical consumption and supporting local livelihoods. Therefore, CBT venues like Ladang Edukasi function as ideal living laboratories for testing alternative economic models, such as the coin system, which aligns the visitor's desire for authentic experience with the community's need for equitable economic distribution.

Empowerment Trajectories for Informal UMKM

Empowerment for UMKM operating in informal settings is a multi-dimensional process. It extends beyond simple income increase to encompass enhanced agency, expanded social networks, improved skills, and greater recognition. Kabeer (1999) frames empowerment as the expansion of people's ability to make strategic life choices. For rural UMKM, constraints often lie in "resources" (financial, physical) and "agency" (confidence, knowledge, social position). Interventions that lower transactional barriers such as providing a guaranteed market, simplifying payment systems, and reducing operational complexities directly enhance their agency in the marketplace. The coin system, by design, addresses these constraints: it guarantees a flow of customers with pre-committed spending power (resource) and uses a simple, familiar tangible currency (agency), thereby empowering vendors to focus on production and sales rather than navigating technological or marketing hurdles.

Islamic Social Economy: A Framework for Ethical Transaction

The Islamic social economy provides a comprehensive ethical framework for evaluating economic mechanisms. Its core objectives (*maqasid al-shari'ah*), particularly the preservation of wealth (*hifz al-mal*) and the promotion of social welfare (*maslahah*), are highly relevant. Key operational principles include: *'Adl* (justice and fairness in exchange), which prohibits exploitation and demands transparent pricing; the elimination of *Riba* (usury/interest), favoring asset-backed, risk-sharing transactions; the encouragement of *Ta'awun* (mutual cooperation) over cut-throat competition; and the mandate for *Syaffiyah* (transparency) in all contractual matters. An economic system imbued with these principles naturally leans towards inclusivity, equity, and community well-being. The Ladang Edukasi model can be scrutinized through this lens: Does the fixed coin value ensure fairness? Does the physical, immediate exchange avoid *riba*? Does the fee structure and collective benefit embody *ta'awun*? This study explores these alignments, contributing to the literature on practical applications of Islamic economics in community development.

Method

This investigation is grounded in a qualitative research paradigm, employing a single, instrumental case study design. The case the coin barter system at Ladang Edukasi is studied

intensively as it provides critical insights into the broader phenomenon of community-driven economic innovation in rural tourism settings. The exploratory nature of the study is apt given the novelty of the specific mechanism and the need to understand its complex social and economic dynamics from the ground up.

Data collection was meticulously planned and executed over a period of three months, employing methodological triangulation to bolster credibility and depth. The primary instrument was **semi-structured interviews**, conducted using tailored interview guides for each stakeholder group. Interviews with the two founding managers (lasting 60-90 minutes each) probed the system's genesis, design philosophy, operational rules, financial sustainability, and perceived challenges. Interviews with five UMKM participants (45-60 minutes each), selected through purposive sampling to ensure variation in age (30-65 years), product type (food, beverages, handicrafts), and business tenure, focused on their comparative experience with cash/QRIS versus the coin system, changes in sales volume and customer interaction, and overall satisfaction. Interviews with ten visitors (20-30 minutes each), intercepted after they had completed transactions, explored their initial perceptions, spending behavior, experiential enjoyment, and suggestions for improvement.

Complementing the interviews was sustained **participant observation**. The researcher engaged as a visitor, participating in the full cycle of coin exchange, purchasing, and vendor interaction across four separate bazaar events. Detailed field notes captured non-verbal cues, the flow of crowds, vendor-visitor interactions, and the overall atmosphere. This immersive approach allowed for the capture of data that interviews alone might miss, such as the practical hurdles in using the system or the emergent social rituals around it. **Document analysis** formed the third pillar, examining physical artifacts including the metal coins themselves (design, denomination), promotional flyers, social media announcements on Ladang Edukasi's Instagram page, and any internal signage explaining the system rules.

Data analysis was an iterative process following the interactive model by Miles, Huberman, and Saldaña (2014). The process began with **data condensation**, involving the transcription of interviews, summarization of field notes, and cataloging of documents. This raw data was then systematically coded using both deductive codes derived from the literature review (e.g., "barrier reduction," "social capital," "transactional fairness") and inductive codes emerging from the data itself (e.g., "playfulness," "simplified accounting"). The coded data was then **displayed** in various matrices and thematic networks to visualize relationships and patterns across different stakeholder groups. This facilitated **conclusion drawing and verification**, where initial findings were constantly checked against the raw data and through peer debriefing to ensure they were well-substantiated, leading to the robust themes presented in the findings.

Table 1: Detailed Profile and Research Focus for Key Informants

Stakeholder Group	Number	Demographic/Business Detail	Core Research Focus Area
Management	2	Founders, aged 35-40; backgrounds in community development.	System design rationale, operational model, sustainability strategy, challenge management, and vision for scaling.

UMKM Vendors	5	Vendor A: Age 65, traditional snacks; B: Age 42, handicrafts; C: Age 38, coffee; D: Age 55, fresh produce; E: Age 30, baked goods.	Comparative transaction ease, sales impact, customer engagement, technological comfort,
Stakeholder Group	Number	Demographic/Business Detail	Core Research Focus Area
			perception of fairness and costs.
Visitors	10	Mix of families (4), young couples (3), and student groups (3).	Motivations for visit, coin exchange experience, effect on spending behavior, perceived novelty/enjoyment, and suggestions for system improvement.

Source: Primary Data from Field Research (2024)

Result and Discussion

The analysis of collected data reveals that the coin barter system functions as a multi-faceted intervention, generating impacts across operational, economic, psychological, and social dimensions. These findings are discussed below, interwoven with the theoretical frameworks established in the literature review.

Operational Mechanics and Inclusive Design

The system's operational workflow is deliberately simple, a key factor in its success. Visitors upon entry encounter a single, clearly marked central counter where they convert Indonesian Rupiah into Ladang Edukasi coins at a fixed, non-fluctuating rate (e.g., 1 coin = Rp 10,000). This initial exchange acts as a symbolic and practical entry ritual. The coins, being physically distinct and usable only within the bazaar, create a bounded "economic playground." For UMKM, the process is even simpler: they accept coins as payment and do not handle cash or digital payments at their stalls whatsoever. At the end of the trading day, vendors return to a designated area to redeem their accumulated coins for cash, minus a transparently agreed-upon service fee (reported to be between 10-15%). This design elegantly solves multiple problems. It absolves vendors of the need for cash float, eliminates security concerns related to holding cash, and most importantly, completely removes the digital payment barrier. As Vendor A (age 65) stated, "This is just like the market of my youth, but cleaner and more organized. I get customers, they get my food, and I don't need to understand gadgets." This resonates powerfully with the empowerment literature, demonstrating that appropriate technology which can sometimes mean simpler, physical technology is crucial for true inclusion.

Economic Impacts: Circulation, Velocity, and Value Retention

The economic effects observed are consistent with the theoretical propositions of Complementary Currency Systems. First, the system ensures 100% demand retention within the bazaar. Money entering as visitor cash is transformed into coins that cannot be spent elsewhere, guaranteeing that every unit of currency is captured by the participating UMKM. Second, it appears to increase the velocity of transactions. The psychological effect of using a dedicated "fun" currency, reported by over 80% of interviewed visitors, lowers spending inhibition. Visitors reported budgeting a set amount for coins and then enjoying the challenge of "spending them all," often making additional purchases they had not initially planned. Vendor estimates corroborate this, suggesting an average increase in per-customer transaction value of 25-35%. Third, the model enforces value capture and reinvestment. The service fee collected from UMKM is not a leakage but a purposeful recycling mechanism. It funds Ladang Edukasi's operational costs (utilities, maintenance, security) and is reinvested into marketing and facility improvements, which in turn attract more visitors, creating a virtuous cycle. This closed-loop system is a practical manifestation of building a resilient rural economic ecosystem where value is continuously created and recirculated locally.

Psycho-Social Dynamics: Trust, Play, and Community Building

Beyond economics, the system generates significant psycho-social benefits. **Transparency** is built into its architecture: fixed exchange rates, clear fee structures, and visible redemption processes foster trust among all parties. Vendors know exactly their costs, and visitors understand the value they hold. This transparency aligns perfectly with the Islamic economic principle of Syaffiyah. Furthermore, the coins introduce an element of play and experiential novelty. Families reported that children were particularly engaged in the process of holding and handing over coins, making the transaction an educational and playful activity rather than a mere financial exchange. This transforms shopping from a chore into a memorable part of the Ladang Edukasi experience, enhancing customer satisfaction and loyalty. On a community level, the system fosters a tangible sense of shared project. Both vendors and management described the bazaar as "our market," indicating a shift from a collection of individual renters to a collaborative enterprise. This strengthened social capital, a core element of community resilience, facilitates easier collective problem-solving and innovation for future challenges.

Alignment with Islamic Social Economy Principles

A deeper analysis confirms the system's strong congruence with Islamic social economy tenets. The prohibition of Riba is upheld as transactions are spot exchanges of goods for a tangible, asset-like token, with no element of deferred payment, uncertainty (gharar), or interest. The principle of 'Adl (justice) is served through the non-negotiable, uniform coin value and the standardized fee, preventing price gouging or exploitative bargaining. The entire model is an exercise in Ta'awun (mutual cooperation): visitors cooperate by providing a market, UMKM cooperate by offering products and paying a fee, and management cooperates by providing and maintaining the platform. The resulting shared prosperity enjoyable outing for visitors, income for UMKM, sustainable operations for Ladang Edukasi directly fulfills the objective of Maslahah (public welfare). This ethical grounding is not merely incidental but appears to be a conscious or unconscious driver of the system's design and a key reason for its high levels of participant acceptance and trust.

Table 2: Comparative Analysis of Transaction Methods from UMKM Perspective

Aspect	Cash-Only System	Digital Payment (QRIS) System	Ladang Edukasi Coin System
Ease of Use	Familiar but requires change.	Technically challenging for some.	Extremely simple, tangible.
Transaction Speed	Medium (counting change).	Fast (when technology works).	Fast (predenominated tokens).
Security Concern	High (theft, counterfeit cash).	Low (digital).	Very Low (no cash at stall).
Aspect	Cash-Only System	Digital Payment (QRIS) System	Ladang Edukasi Coin System
Market Access	Limited to cash-carrying customers.	Access to digital-savvy customers.	Access to <i>all</i> visitors to bazaar.
Cost/Fee	None (but cash handling costs).	Merchant discount rate (MDR) fee.	Transparent, fixed service fee.
Record Keeping	Manual, prone to error.	Automated, digital.	Simplified (coin count = sales).

Source: *Source: Synthesized from UMKM Interview Data (2024)*

Conclusion

This study provides compelling evidence that the community-based coin barter mechanism at Ladang Edukasi is a sophisticated and effective model for stimulating and sustaining a rural economic ecosystem. It successfully operates at the intersection of economic pragmatism and social innovation. By designing a system that is inclusively low-tech for producers and engagingly novel for consumers, it breaks down key barriers to participation that are often overlooked in the rush towards digitization. The model functions as a spatially-targeted complementary currency, demonstrating in practice how such instruments can increase local transaction velocity, ensure value retention, and create a self-reinforcing cycle of investment and growth.

The implications of this research are significant for multiple stakeholders. For community developers and social entrepreneurs, it offers a replicable blueprint for creating managed, vibrant local markets that empower traditional UMKM. The critical design principles—simplicity, transparency, spatial boundedness, and a clear reinvestment mechanism—are transferable. For local and regional governments, this case presents an alternative pathway for UMKM empowerment and rural tourism development that is community-driven, low-cost, and highly sustainable, worthy of consideration for policy support or facilitation. For academics, it

contributes nuanced empirical data to discussions on complementary currencies, community-based tourism, and applied Islamic economics, particularly in the Global South context. The primary recommendation for Ladang Edukasi and similar initiatives is to formalize the learning through basic data collection. Implementing a simple serial numbering or colorcoding system for coins issued per event could allow for tracking circulation patterns and calculating precise multiplier effects. Furthermore, exploring a hybrid digital-physical token for advanced users, while retaining the physical coin for inclusivity, could be a future innovation. A limitation of this study is its focus on a single case; future research should conduct comparative studies across different sites employing similar models and employ longitudinal methods to assess the long-term sustainability and evolutionary path of such community currency systems. Ultimately, the Ladang Edukasi coin system stands as a testament to the power of context-sensitive, community-owned innovation in building economies that are not only productive but also equitable, resilient, and deeply human.

References

- Rohani M.M., & Yusoff, A. S. (2015). Tahap Kesiapan Pelajar Dalam Penggunaan Teknologi, Pedagogi, Dan Kandungan (TPACK) Dalam Pembelajaran Kurikulum di IPT. *Proceeding of the 3rd International Conference on Artificial Intelligence and Computer Science*, Pulau Pinang.
- Amin, A. R., & Ibrahim, M. B. (2020). *Pemberdayaan UMKM berbasis komunitas dalam perspektif ekonomi Islam*. *Jurnal Ekonomi dan Bisnis Islam*, 6(1), 45-60.
- Blanc, J. (2018). *Classifying "CCs": Community, complementary and local currencies*. *International Journal of Community Currency Research*, 22, 24-35.
- Chamlee-Wright, E. (2010). *The cultural and political economy of recovery: Social learning in a post-disaster environment*. Routledge.
- Dini, P., & Sartori, L. (2016). *The social affordances of blockchain-based community currency*. *Journal of Peer Production*, (9).
- Huda, N., Rini, N., & Mardoni, Y. (2022). *Model Barter Digital sebagai Solusi Keterbatasan Likuiditas pada UMKM di Daerah Terpencil*. *Jurnal Ilmiah Ekonomi Islam*, 8(2), 120135.
- Ismawan, A. (2021). *Ekonomi Kerakyatan dan Pemberdayaan UMKM*. Penerbit Alfabeta.
- Kabeer, N. (1999). *Resources, agency, achievements: Reflections on the measurement of women's empowerment*. *Development and Change*, 30(3), 435-464.
- Mardhatillah, A., & Fauzi, A. (2019). *Resiliensi ekonomi komunitas melalui sistem mata uang lokal: Studi kasus di Yogyakarta*. *Jurnal Sosial Ekonomi Pembangunan*, 10(2), 89-104.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Sage Publications.
- Muhammad, et al. (2021). *Maqashid Syariah dalam Pengembangan Ekonomi Desa Berkelanjutan*. *Al-Iqtishad: Jurnal Ekonomi Syariah*, 13(1), 1-20.
- North, P. (2010). *Local money: How to make it happen in your community*. Green Books.
- Pike, A., Rodríguez-Pose, A., & Tomaney, J. (2010). *Handbook of local and regional development*. Routledge.
- Seyfang, G., & Longhurst, N. (2013). *Growing green money? Mapping community currencies for sustainable development*. *Ecological Economics*, 86, 65-77.
- Sudarman, S., & Hasanah, U. (2023). *Wisata Berbasis Komunitas (CBT) sebagai Penggerak Ekonomi Kreatif Desa: Tinjauan Sistematis*. *Jurnal Pariwisata Terapan*, 7(1), 55-70.
- Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D* (2nd ed.). Alfabeta.
- UNWTO. (2015). *Sustainable Tourism for Development Guidebook*. World Tourism Organization.

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Sage Publications.

Zaman, A. (2020). *Islamic economics: A survey of the literature*. *Islamic Economic Studies*, 28(1), 1-42.