
Understanding the Non-Digital Gig Economy in the Tourism Sector of Lemukutan Island

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Abstract

This study aims to understand the forms, characteristics, and working mechanisms of the non-digital gig economy in the tourism sector of Lemukutan Island, Bengkayang Regency, West Kalimantan. Unlike the conventional gig economy model based on digital platforms such as GoJek, Grab, or Airbnb, the working system in Lemukutan is formed organically through social networks, kinship, and verbal communication between residents and tourists. The research method used was a qualitative approach with a case study type, through in-depth interviews, participatory observation, and documentation of local tourism actors such as homestay owners, boat service providers, tour guides, and seasonal traders. The results of the study show that the gig economy in Lemukutan operates based on social capital in the form of trust, reputation, and mutual cooperation norms. Jobs are obtained through social recommendations, not digital algorithms, and are regulated through flexible informal agreements. The dominant forms of work include tourist transportation services, local accommodation, home-cooked meals, tour guiding, and seasonal trading. This system provides adaptive and participatory economic opportunities, but also faces challenges in the form of dependence on the tourist season, limited digital infrastructure, and unequal access to social networks. This study confirms that the gig economy is not always synonymous with digitalisation, but can grow in a local context based on social trust. Therefore, the non-digital gig economy in Lemukutan reflects a humanistic, resilient form of community-based gig work that has the potential to become an alternative economic model in sustainable tourism.

Keywords: Non-digital gig economy, social capital, community-based tourism, Lemukutan Island, informal economy, social trust

1. Introduction

Global economic development in the last two decades has been marked by the emergence of the gig economy, a system of short-term contract or freelance work that offers flexibility to workers (Fadhilulloh et al., 2023; Tarigas, 2025). The gig economy has flourished through digital platforms such as online transportation applications, professional service marketplaces, and shared accommodation platforms that connect workers with service users in real time (Berger et al., 2019; Kamarudin & Arif, 2024). This type of economy reflects a major transformation in the modern labour market, with digital technology acting as the main mediator between service providers and users

(Ahmad, 2021; Arafat et al., 2025). Digital platforms not only facilitate transactions, but also regulate working mechanisms through algorithms, rating systems, and automated pricing that transform traditional working relationships into data-based transactions.

However, the gig economy phenomenon is not always synonymous with digital technology. In a number of regions, such as the islands of Indonesia, freelance work has long existed in the form of a non-digital gig economy, a temporary work system based on kinship, social trust, and informal networks (Widiastini et al., 2024). This means that jobs are obtained not through digital applications, but through word of mouth, family recommendations, or direct interactions between residents and tourists (Marini et al., 2024). This system shows that the essence of the gig economy—flexibility, task-based work, and the absence of permanent contracts can operate without digital infrastructure. As long as there is strong social capital within the community, this can sustain freelance work practices.

Similar conditions were found on Lemukutan Island, one of the marine tourism destinations in Bengkayang Regency, West Kalimantan. This island is known for its beautiful coral reefs and rapidly growing community-based ecotourism potential since 2015 (Guntara et al., 2023; Tangkudung et al., 2018). The island has been promoted as one of the leading marine tourism destinations in Bengkayang Regency, and in 2022, Lemukutan Island won first place in the Water Tourism category at the Anugerah Pesona Indonesia (API) awards organised by the Ministry of Tourism and Creative Economy (jadesta.kemenparekraf.go.id, 2022). This achievement marks national recognition of Lemukutan's tourism potential and has spurred a significant increase in tourist visits.

Based on field observations and initial interviews conducted by researchers, most of the economic activities related to tourism on this island are carried out by casual workers such as local tour guides, homestay owners, boat service providers, cooks, and snorkelling equipment providers. They obtain work through social connections such as family, friends, or recommendations from previous visitors, rather than through digital systems or formal agencies. There are no online booking platforms, rating applications, or digital payment systems that regulate interactions between service providers and tourists. All transactions take place directly, based on trust, and are adjusted through personal negotiation.

This phenomenon is academically interesting because it illustrates how local communities adapt the principles of the gig economy without the presence of digital platforms. They practise a form of freelance work that is regulated by social norms and community values. This shows that the gig economy can emerge organically within traditional social structures, rather than solely as a result of digital transformation (Karim et al., 2024). These findings challenge the dominant assumption in the gig economy literature, which tends to equate this phenomenon with digitalisation and technology platforms. In fact, in many regions with limited digital infrastructure, communities have long developed flexible work systems that share similar characteristics with the modern gig economy, but are based on social capital and community networks.

Macroeconomically, the informal sector still dominates Indonesia. According to data from the Central Statistics Agency, 59.17% of workers in Indonesia are still employed in informal activities (Wijaya & Saputra, 2024). This figure indicates a high dependence on jobs without permanent

contracts, social security, and formal employment protection. Informal employment in the tourism sector is higher because it is seasonal and depends on the number of tourist visits (Adi Prakoso, 2022). In coastal and island areas such as Lemukutan, the informal economy is a flexible, adaptive livelihood strategy that is suited to local conditions (I Made Putra Yasa et al., 2024; Widiastini et al., 2024). The informal sector is not merely a receptacle for surplus labour, but an economic system that has been internalised within the social structure of the community and has become a main pillar of household economic sustainability.

Social interactions in community-based tourism encourage the formation of social capital in the form of trust, networks, and norms of reciprocity. Coleman and Putnam (R Fathy, 2019) emphasise that social capital can function as "social currency" that facilitates economic exchange in local communities, as is the case on Lemukutan Island, where the non-digital gig economy operates based on these social values. Workers are trusted because of their reputation and social relationships, not because of app ratings or digital verification. This trust is built through long-term interactions, shared experiences, and strong norms of reciprocity in island communities that tend to be closed and homogeneous.

This phenomenon shows that the concept of the gig economy needs to be expanded, not only limited to digital platform-based work, but also to include flexible work systems governed by local social and economic norms. In Lemukutan Island tourism, the non-digital gig economy reflects how coastal communities are developing new economic mechanisms that combine social, cultural, and economic elements. This system proves that technology is not an absolute prerequisite for the gig economy; what is more fundamental is work flexibility, worker autonomy, and supply-demand matching mechanisms, which in Lemukutan are facilitated by social networks, not algorithms.

Research on the gig economy has been widely discussed in various literature. Most studies still focus on the digital-based gig economy connected to online platforms (Alauddin et al., 2025; Bayılmış et al., 2025; Kaine & Josserand, 2019). These studies highlight how digital technology has become the main link between freelancers and employers in modern economic activities. The development of digital technology in the Industry 4.0 era and the emergence of digital platforms have significantly transformed the employment landscape and the nature of work. Furthermore, digitalisation has also influenced the dynamics of industrialisation by triggering a decline in employment in the traditional manufacturing sector while creating new job opportunities in the platform-based service sector (Kurniawan & Aruan, 2021).

However, little research highlights the non-digital gig economy that has grown organically in rural or island areas. In places such as Lemukutan Island, non-permanent work practices are formed through social networks, kinship ties, and verbal communication between residents and tourists, rather than through digital applications. This situation indicates the existence of a traditional gig economy that operates locally, based on social capital and community trust, but has not been widely identified academically. The literature on the gig economy tends to be urban and technologically biased, ignoring local variants that have developed in areas with limited digital infrastructure but strong social capital.

This gap is important to bridge because the majority of regions in Indonesia, especially remote

islands, still have limited access to digital technology but are active in the tourism economy. Understanding how the non-digital gig economy operates can provide an alternative perspective on employment policies and sustainable tourism development that does not always depend on digitalisation. Furthermore, studies on the non-digital gig economy can enrich institutional economics theory by showing how social norms and social capital can replace the function of technology in reducing transaction costs and facilitating economic coordination.

Therefore, there is a research gap in understanding how the mechanisms, social values, and dynamics of the non-digital gig economy operate in local tourism sectors such as on Lemukutan Island. This study aims to fill this gap by highlighting forms of non-digital gig economy that are rooted in the social and cultural relationships of the local community. Specifically, this study aims to: (1) describe the forms and characteristics of the non-digital gig economy in the tourism sector of Lemukutan Island, which is formed through social networks, kinship relationships, and verbal communication between residents and tourists; (2) analyse the working mechanisms and social values underlying the non-digital gig economy system; and (3) identify the challenges and opportunities for developing the non-digital gig economy as an alternative economic model in community-based sustainable tourism.

This study has significant theoretical and practical contributions. Theoretically, this research expands the concept of the gig economy, which has been dominated by the perspective of digital technology, by showing that the gig economy can operate based on social capital and community networks. Practically, the findings of this research can be used as a reference for the development of inclusive, humanistic, and contextually appropriate sustainable tourism policies, without necessarily relying on digitalisation, which may not be accessible to all communities.

2. Research Method

This study employed a qualitative case study approach to explore non-digital gig economy practices within the tourism sector on Lemukutan Island. Case study research is appropriate in this context because it enables an in-depth exploration of a real-life, bounded system through detailed data collection from multiple sources of information (Creswell, 2013). Data collection was conducted during the 2025 research period through in-depth interviews, participatory observation, and field documentation involving tour guides, homestay owners, boat service providers, and seasonal traders. Informants were selected using purposive sampling based on their active involvement in non-digital tourism activities. The data were analyzed using thematic analysis to identify patterns of work relations, social mechanisms, and cultural values that shape non-digital gig economy practices. To ensure the validity and credibility of the findings, data triangulation was conducted across interview transcripts, observation fieldnotes, and visual documentation

3. Results and Discussion

5.1. Overview of the Gig Economy on Lemukutan Island

Lemukutan Island, located in Bengkayang Regency, West Kalimantan, is one of the rapidly developing marine tourism destinations in the last decade. This is evidenced by the increasing number

of tourists visiting the island. Based on the number of entrance tickets sold there were 12,762 tickets in 2023 (masterplandes.com, 2024), in 2024, there were 14,844 visitors in one year, with the highest number of visitors during the school holidays in June and July. The number of visitors has increased since Lemukutan was designated as a tourist village and has encouraged the emergence of various forms of flexible or gig work among the local community. However, unlike the general characteristics of the gig economy, which is based on digital platforms, the work system in Lemukutan relies entirely on non-digital mechanisms, namely social relationships, verbal communication, and kinship among fellow residents.

Interviews with the village head, traditional leaders, tourism operators, and residents indicate that jobs in the tourism sector on this island are formed organically, not through formal contracts or technological intermediaries. Residents obtain work based on social trust and recommendations from fellow residents. For example, a tour guide gets guests because they were introduced by a friend or relative who previously served tourists, and tourists looking for accommodation are often directed by local residents to the homes of residents who have vacant rooms. A homestay owner said that "*we set our own prices and facilities, but basically we follow our friends who opened first*". This statement shows that the economic mechanism in Lemukutan is built through informal social agreements, not official regulations or digital algorithms as in the app-based gig economy (Pilatti et al., 2024).

In addition to homestays, various other forms of gig-based work have emerged, such as inter-island boat services, snorkelling equipment rentals, sales of seaweed specialties, nutmeg sweets, processed fish, and cooking services for guests staying overnight. Their work patterns are temporary, flexible, and without fixed contracts, in line with tourist demand. This phenomenon is in line with the concept of the gig economy, which is a *task-based work* system that offers high flexibility for workers (Kamarudin & Arif, 2024; Tarigas, 2025), but in Lemukutan, this system operates without digitalisation.

From a local economic perspective, these activities have a positive impact. The Lemukutan Village Head stated that "*the effects of tourism are felt by the entire community, not only those who own homestays, but also traders, fishermen, and boatmen*." This means that the non-digital gig economy in Lemukutan is a driver of household income, especially during the tourist season (July and December). The increase in tourist arrivals creates a new economic chain that involves various segments of society in freelance work, either directly or indirectly. Although it provides new economic opportunities, this work system is still highly dependent on the tourist season and social networks. When the weather is bad or tourist numbers decline, work automatically stops. There are no contracts, insurance, or social protection as regulated in the formal work system. This phenomenon illustrates that the non-digital gig economy in Lemukutan is seasonal and based on trust, not contractual sustainability.

5.2. Forms and Characteristics of the Non-Digital Gig Economy on Lemukutan Island

3.2.1 Based on Trust and Social Networks, Not Digital Systems

Social trust serves as economic capital that enables the freelance work system to operate without formal contracts or guarantees. Each party has confidence that their work partners will act honestly

and responsibly because personal reputation is a key social asset. According to Putnam (in Marini & Nurhadi, 2019), this type of trust network is part of bonding social capital, which refers to strong social relationships between individuals with similar backgrounds and emotional closeness, which serve to maintain social stability and community solidarity. This social capital underpins the tourism work system in Lemukutan, as relationships between residents are prioritised over transactional business mechanisms. This form of trust-based work demonstrates the uniqueness of the local economy in the island community, which has limited digital infrastructure. According to Granovetter (in Zakiyah et al., 2025), economic activity is always embedded in social networks, so that individual economic decisions cannot be separated from social relationships. For example, a tourist's decision to stay at a particular homestay or rent a boat owned by a resident is influenced by social recommendations, not by search algorithms on digital platforms such as Traveloka or Airbnb. This indicates that social embeddedness is the primary mechanism governing the flow of work, trust, and economic opportunities at the community level.

While in the digital gig economy, the work system is regulated by algorithms and rating systems (Diyana, 2025; Harrington, 2025; Stauffer, 2025; www.global-imi.com, 2023), in Lemukutan, "ratings" are represented by social reputation spread by word of mouth. Reputation becomes *a kind of social currency* that determines how likely someone is to get a job or customers. Workers maintain service quality not because of the threat of a drop in stars as on digital platforms, but because they fear losing the trust of the community and guests. This shows that social control in Lemukutan is communal and moral in nature, not technological. In addition to strengthening the work network, the trust-based system also functions as an informal social protection mechanism. Residents help each other when one of them lacks manpower or facilities. For example, when one homestay is full, the owner will direct guests to another resident's house. This practice demonstrates the high value of mutual aid in the local economic system. According to Widiastini et al. (2024), this pattern of collaboration is commonly found in community-based tourism sectors in Indonesia, making social solidarity a key factor in maintaining economic sustainability (Purwanto, 2024; Zakiyah et al., 2025).

This trust-based system also has limitations, with the absence of a digital recording system or formal contracts making work fragile and seasonal. When social networks are disrupted, for example due to minor conflicts or customer dissatisfaction, access to work can decline. This is in line with the findings of Pilatti et al. (2024) that in the gig economy, the strength of social networks can be both an opportunity and a risk, depending on the stability of social relationships between economic actors.

Table 1. Aspects of the Digital Gig Economy versus the Non-Digital Gig Economy

Aspect	Digital Gig Economy	Non-Digital Gig Economy in Lemukutan
Mediation Mechanism	Digital platform (algorithms, applications)	Social networks and word-of-mouth recommendations
Trust systems	Online ratings and reviews	Reputation and personal relationships
Social control	Technological and automated rating systems	Morals and social norms
Worker Protection	Limited, but documented	Informal, based on community solidarity
Capital base	Digital and financial capital	Social and cultural capital

Source: Researcher Data Analysis, 2025

Table 1 expands our understanding of the gig economy concept, which has been synonymous with the digital world. The non-digital gig economy on Lemukutan Island proves that social capital can replace the role of technology as the foundation of trust and work distribution. This phenomenon is in line with the theory of community-based tourism, which emphasises the importance of alternative economic practices rooted in social relations and local values (Enggawati et al., 2023; Marini et al., 2024). Lemukutan is an example of how communities can create adaptive economic systems that are inclusive, humanistic, and sustainable, even without the support of digital technology.

3.2.2 Flexibility and Multi-Roles in the Non-Digital Gig Economy

One of the most prominent features of the non-digital gig economy on Lemukutan Island is the high level of flexibility and multi-role among local economic actors. Almost all residents involved in tourism activities have alternative jobs, such as fishermen, seaweed farmers, traders, or housewives. They switch to becoming tourism service providers according to the needs and demands of tourists. This phenomenon shows that the Lemukutan community has developed a work system that is adaptive to changes in the tourist season and market demand dynamics, without the need for digital intermediaries or formal contracts.

In-depth interviews reveal that a fisherman can become a tourist boat driver during the holiday season, then return to sea when tourist numbers decline. Similarly, housewives who sell local food on normal days also become cooks at homestays or provide simple catering services when there are many guests. One resident said, "*When there are guests, we help cook and deliver food to homestays, but when it's quiet, we just sell food as usual.*" This pattern illustrates how residents manage their time and resources flexibly to maximise household income.

This phenomenon reinforces the view that flexibility is the essence of the gig economy. According to Alauddin et al. (2025), the gig economy is characterised by short-term, *task-based work* that gives individuals the freedom to determine their working hours, location, and type of work. Interestingly, in Lemukutan, this flexibility does not stem from the push of digital technology, but rather from social values and local economic needs. Flexibility here is *community-driven*, fuelled by solidarity and the ability to adapt to seasonal changes, rather than by global market logic.

This multi-role work system also reflects a *livelihood diversification* strategy, as explained by Sulistiyowati et al. (2023) in their study on *sustainable livelihoods*, which states that communities living in villages with limited resources usually develop various sources of income to reduce economic risk. Thus, work flexibility in Lemukutan is not only an economic strategy but also a form of social resilience against uncertainty. When marine yields decline due to weather conditions, tourism work becomes an alternative that saves the family economy. Conversely, when there are few tourists, residents can return to focusing on their traditional work without losing their source of income entirely.

From a social relations perspective, this flexibility strengthens bonds between residents because everyone can depend on each other in economic activities. When a homestay owner is short-staffed, for example, they will ask relatives or neighbours to help clean rooms or prepare meals for guests. This illustrates collaborative flexibility, where the boundaries between economic and social roles become

fluid. In Putnam's theory of social capital (in Marini & Nurhadi, 2019), practices such as this fall under *bridging social capital*, a social network that connects individuals from various occupational backgrounds for shared productive purposes.

Interestingly, this multi-role system also forms a non-hierarchical and egalitarian work pattern. There is no rigid division of roles between "business owners" and "workers." All parties can switch roles as needed. Homestay owners sometimes cook for guests, while workers who help with cleaning can also act as tour guides. This work pattern reflects the principle of *solidarity economy*, which emphasises horizontal cooperation rather than vertical exploitation. In this context, working relationships are not based on formal contracts or fixed wages, but on informal agreements and a fair distribution of profits according to each person's contribution.

However, this high degree of flexibility also has consequences. Because there is no clear specialisation of work, the quality of service can sometimes be inconsistent. A fisherman who doubles as a tour guide may not have in-depth knowledge of the coral reef ecosystem. Similarly, impromptu cooks may not be trained in commercial food hygiene standards. Therefore, flexibility needs to be balanced with training and minimum service standards so as not to diminish the tourist experience and maintain Lemukutan's reputation as a quality tourist island.

Furthermore, this multi-role approach demonstrates that the non-digital gig economy in Lemukutan is inclusive. Almost all residents, regardless of their educational background or formal skills, can participate in the tourism economy. This system provides broad and equitable economic access, unlike the digital gig economy, which often requires technological literacy and access to smartphones. In the context of sustainable development, this kind of inclusivity is an important asset for reducing economic inequality and strengthening social cohesion at the community level. Everyone has the same opportunity to benefit economically from tourism, without discrimination based on social status or technological ability.

3.3. Dominant Types of Gig Work on Lemukutan Island

Tourism activities on Lemukutan Island have given rise to various forms of flexible work that are carried out by the local community spontaneously, situationally, and based on the needs of tourists. From the interviews, at least four main groups of non-digital gig jobs have been identified: tourist transportation services, lodging and homestay services, food and beverage services, and tourism support services such as guiding, equipment rental, and documentation. Each category shows a strong link between economic work and social networks and the local community's ability to adapt to tourism opportunities.

3.3.1. Tourist Transportation Services (Boatmen and Tourist Guides)

The earliest and most vital type of work in Lemukutan is sea transportation services that connect tourists from the Teluk Suak or Teluk Suak Tengah piers to the island. The boat drivers, called "boatmen," are not affiliated with any company or official operator but operate independently or in small family-based groups. They work without an online booking system; customers are obtained through recommendations from homestay owners or word of mouth among tourists. In addition to transporting passengers, some boatmen also offer additional services such as island tours, snorkelling,

or fishing trips. These activities exemplify gig work based on personal assets, namely the use of privately owned boats as the main capital.

The boatmen's operating pattern, which is based on trust and social networks, reflects the characteristics of the informal sector in Indonesia, which relies on social capital as a market mechanism. Research by Syafitri et al. (2024) shows that informal economic actors in coastal areas tend to build customer networks through reputation and personal recommendations, rather than massive promotion. The absence of digital intermediation gives boatmen full control over pricing and operational schedules, unlike transport workers who are tied to digital platforms and lose economic autonomy because they must follow algorithms and application pricing.

The diversification of services provided by boatmen, from transportation to tours and fishing trips, demonstrates a multi-income strategy which, according to Pitoyo (2007), is a common characteristic of urban and rural informal sector workers in Indonesia, where individuals perform various roles to maximise their irregular income. This adaptability is in line with the concept of *flexible specialisation* in the informal economy, which allows workers to respond to fluctuations in demand without a formal organisational structure. Lemukutan boatmen not only transport tourists but also serve as local informants who provide knowledge about sea conditions, the best diving spots, and stories about the island's history, making their role more than just transport providers but also *cultural brokers* who bridge tourists with the local culture.

3.3.2. Homestay and Local Accommodation Providers

Homestays are the most stable sector in the non-digital gig ecosystem on Lemukutan Island. Homestay owners say that during peak season, their homestays can accommodate 20–30 guests per week, and when fully booked, tourists are directed to other residents' home. Accommodation here differs from the formal accommodation industry in that homestays are managed in a familial and participatory manner. Homeowners typically involve family members in various roles, such as preparing rooms, cooking, cleaning, or receiving guests. There are no written employment contracts, and the payment system is daily or profit-sharing. In practice, many houses only become homestays during peak tourist season, while outside of the season they return to being ordinary residences. This phenomenon shows the conversion of domestic space into temporary economic space, which is a characteristic of community-based tourism in rural areas where houses become a meeting point between the private and public spheres (Marini et al., 2024; Syafrini et al., 2022).

This system of profit sharing without formal contracts in homestay management is in line with research findings in Pentingsari Tourism Village, which show that the flexibility of family-based work sharing actually increases business adaptability to fluctuations in tourist demand. The temporary conversion of domestic space reflects the risk management strategy of rural families, where the home functions as an economic buffer that can be activated or deactivated according to tourism market conditions (Sutomo et al., 2024). However, the lack of formalisation can lead to income uncertainty and difficulties in accessing financing for business actors, as found in studies of homestays in various tourist villages in Indonesia. Without formal financial records and business legality, homestay owners find it difficult to access bank loans for facility development. This family-based management pattern

also demonstrates the application of *community-based tourism* principles, where the community collectively manages tourism assets without the dominance of external investors. This strengthens *local ownership* and ensures that the economic benefits of tourism remain within the community, rather than flowing out of the area.

3.3.3. Culinary Services and Tourist Consumption

The culinary sector is the most fluid and accessible form of gig work, especially for women. Many housewives utilise their cooking skills to provide meals for guests or sell local products such as traditional cakes, coconut ice cream, and grilled fish. Some residents also offer "on-call" cooking services, where they come directly to homestays to prepare meals according to tourist requests. This work pattern shows a combination of domestic work and professional services, without a clear separation between the spaces of production and consumption. Women in the informal tourism sector often play dual roles as producers and servants, which strengthens the economic contribution of the family while expanding social interaction with tourists (K Endah, 2020).

The dominance of women in the informal culinary sector is consistent with research (Purwaningsih, 2021) in the Indonesian Economic Journal, which shows that female heads of households in the informal sector have more flexible working patterns but lower welfare than those in the formal sector. The "cooking on demand" system found in Lemukutan is in line with the concept of on-demand labour in the informal economy, where local women offer traditional skill-based services with high time flexibility to accommodate domestic responsibilities. (Hidayati & Gender Surabaya, 2015) in Muwazah: Journal of Gender Studies emphasises that domestic-based work allows women to generate income without abandoning their childcare responsibilities, although it often results in a *double burden*.

The lack of formal recognition and standard pricing in this sector reflects *the undervaluation* of women's reproductive work in the context of the tourism economy. Although their contribution is significant in providing authentic culinary experiences for tourists, women in this sector rarely receive the same appreciation as formal business actors. However, women's participation in this non-digital gig economy opens up important opportunities for *economic empowerment*, especially in coastal communities where women's access to formal employment is very limited. Income from culinary activities provides financial autonomy and improves women's bargaining position in household decision-making.

3.3.4. Tour Guides, Equipment Renters, and Documentation

In addition to household-based work, there are also young people who are active as tour guides (local guides), snorkelling equipment providers, or freelance photographers. They work seasonally and form flexible informal networks, where tasks are divided based on ability. For example, one person is in charge of guiding a snorkelling group, while another prepares equipment or delivers logistics. Working relationships are regulated through verbal agreements and trust, without a fixed wage structure. These activities demonstrate a form of non-hierarchical collaboration that is characteristic of community gig networks (Pilatti et al., 2024), where work is collective and regulated through social consensus rather than formal contracts.

This collaborative network of young people providing tourism services is similar to the findings of research on community participation in Pujonkidul Village, Malang, which shows that *skill-* and *trust-based* division of labour is more effective in managing seasonal workloads than formal organisational structures (Prabowo et al., 2016). The variable wage system found in Lemukutan reflects the flexibility of compensation that allows for a more equitable redistribution of income among group members when demand is low, in accordance with the principle of mutual cooperation in Indonesian society. When there are many tourists, income is divided according to contribution, but when it is quiet, they continue to help each other without rigid calculations.

However, reliance on verbal agreements can lead to internal conflicts when tourist volumes increase dramatically and potential income grows, requiring a more explicit, albeit informal, negotiation mechanism. This collective work pattern reflects the application of community-based tourism at the micro level, where local youth become agents of sustainable tourism development. They are not only service providers but also guardians of the environment who teach tourists about the importance of coral reef and marine ecosystem conservation. This educational role adds value to the tourist experience while strengthening conservation awareness among the local youth.

3.3.5. Seasonal Traders and Spontaneous Services

Other gig jobs emerge spontaneously during peak tourist periods, such as food vendors on the beach, life jacket rental providers, and simple souvenir sellers. They do not have formal permits or permanent stalls, but adjust their location and selling hours according to tourist traffic. This pattern reflects an opportunistic gig economy—the ability of residents to capitalise on fleeting economic opportunities to supplement their income. This opportunistic character is commonly found in community-based tourism sectors in Indonesia, where residents balance economic needs with local social norms (Widiastini et al., 2024).

The opportunistic characteristics of these seasonal traders are reinforced by research (Pitoyo, 2007) on the dynamics of the informal sector in Indonesia, which found that the ability to read demand patterns and business location flexibility are key to economic success without large capital investment. The absence of formal permits for spontaneous traders reflects the gap between formal tourism policy and the economic reality of local communities, where rigid regulations can actually hinder the economic inclusion of marginalised groups. Furthermore, (Nursyamsu et al., 2020) shows that despite the uncertainty of income, the informal trading system provides an economic entry point for citizens with limited capital and allows for business experimentation without high financial risk.

The spatial and temporal flexibility of these seasonal traders also reflects their adaptation to economic uncertainty, which is characteristic of informal work in Indonesia's tourism sector. Traders can quickly change their products or selling locations in response to the market, without being tied to rent or long-term contracts. Although their income is unstable, this operational freedom provides room for creativity and product innovation that is difficult to find in the rigid formal sector. Some seasonal traders have even succeeded in developing products unique to Lemukutan, such as crafts made from seashells or accessories made from seaweed, which have become attractions in their own right for tourists.

The diversity of the above types of work reflects that the non-digital gig economy system in Lemukutan is not centred on a single form of production, but forms a hybrid work ecosystem that supports each other. Gig workers are interdependent in the informal value chain, such as boat drivers taking guests to homestays, homestay owners calling local cooks, and tour guides working with snorkelling equipment rental companies. This type of work network demonstrates mutual interdependence, which strengthens social solidarity at the community level. Theoretically, this cycle represents a form of "non-digital labour ecosystem" (Rydzik & Kissoon, 2022) governed by social norms and personal relationships, rather than algorithms or market contracts.

Without the intervention of digital platforms, this system provides space for residents to negotiate directly and determine the division of labour according to local conditions and potential. This illustrates an economic dynamic that is more *human-centred* and trust-based than digital efficiency logic. This work ecosystem also demonstrates high resilience because it does not depend on fragile technological infrastructure or the decisions of digital platform corporations, which can change at any time. When one sector is weak, other sectors can compensate, creating an adaptive and sustainable economic system.

3.4. Challenges of the Non-Digital Gig Economy on Lemukutan Island

The absence of digital intermediation reinforces local autonomy and social capital instead reveals a paradox, as such conditions may lead to structural vulnerability in the absence of sufficient institutional support systems. Lemukutan's tourism workers face the dual burden of gig economy's inherent flexibility-insecurity trade-off compounded by infrastructural deficits and information asymmetries characteristic of remote island economies. This section critically examines how the intersection of non-digital coordination, seasonal demand volatility, and limited state capacity produces unique challenges that transcend conventional gig economy discourse.

3.4.1 Economic and Structural Challenges

One of the main challenges is dependence on the tourist season. Based on interviews with homestay owners and boat drivers, residents' incomes increase sharply in June and December because these are holiday seasons, but decline dramatically outside of these seasons. Some residents return to their old jobs such as fishing or small-scale trading. This situation causes unstable incomes and has the potential to weaken long-term economic sustainability. According to Wood et al. (2019), income instability is a common feature of the gig economy due to its unpredictable nature and dependence on demand. However, in Lemukutan, this situation is exacerbated by limited access to transportation and supporting tourism infrastructure, such as electricity, which is only available for 12 hours (from 2 p.m. to 6 a.m.), internet signal, and inconsistent tourism promotion. This confirms that the flexibility that is the strength of the gig economy is also its vulnerability, especially when it is not supported by a stable institutional system.

Another challenge is the limited capacity and competence of tourism, as some local economic actors do not yet have formal training in homestay management, tourism services, or destination promotion. The lack of training means that services are still spontaneous, although friendly and authentic. According to Eko (2002), the main challenges for community-based tourism in Indonesia

are weak capacity building and a lack of digital-based marketing strategies, so that local potential has not been optimally utilised.

3.4.2. Social and Technological Challenges

Socially, the non-digital gig system in Lemukutan operates on trust, but this also creates social exclusivity. Access to work tends to be limited to those with strong social networks, while newcomers or lesser-known residents often find it difficult to enter the community work system. This shows the paradoxical side of social capital, which on the one hand strengthens solidarity, but on the other hand can narrow social inclusion (Triristina et al., 2022). The biggest challenge in technology is the lack of digitalisation and digital literacy. The community is not yet accustomed to using online media for tourism promotion or management. Information about homestays, transportation, and tourist activities is only circulated verbally. As a result, Lemukutan Island is not yet widely connected to national or international tourism networks. According to Srnicek (2021), the absence of digitalisation causes local actors to lose competitiveness because they are not included in the digital value chain. This condition indicates that social capital without technological mediation tends to reproduce closed and inward-looking economic networks. In the long term, the exclusion from digital infrastructures may solidify power asymmetries between established local actors and those who are structurally marginalized within the community.

3.5. Non-Digital Gig Economy Opportunities on Lemukutan Island

The non-digital gig economy on Lemukutan Island is grounded in socio-cultural structures of informal coordination, mutual trust, and shared responsibility. Without digital platforms, labor exchange and service provision rely on direct interpersonal negotiation, producing an economic environment that is flexible, adaptive, and rooted in collective values. Development opportunities lie not in replacing this system, but in strengthening its organizational capacity, particularly in management, documentation, and community coordination. Thus, the non-digital gig economy provides a foundational model that can be incrementally enhanced to support community-based ecotourism and inclusive livelihood strategies, while maintaining the social cohesion that underpins it.

3.5.1. Strengthening the Local Economy

The non-digital gig economy in Lemukutan holds great opportunities for strengthening the local economy based on social values. First, a kinship- and trust-based work system has formed a strong reciprocal economy network. With a little institutional support and simple management training, this network can develop into a sustainable and inclusive collaborative ecotourism model. Second, the Lemukutan community has authentic cultural products and services that can be positioned as competitive advantages. Tourists who come to the island often appreciate the warmth of personal interactions and the authenticity of the local experience, making them want to visit again and again. This opens up opportunities to develop experiential tourism-based niche tourism, a global trend that prioritises human interaction and cultural values over modern comforts (Richards, 2022). Thirdly, there is potential to develop a simple community digital platform, such as an online catalogue or collective reservation system managed by Pokdarwis Nusa Impian. Such platforms do not have to resemble large commercial models such as Airbnb, but can be adapted for local interests while

maintaining the value of mutual cooperation. This model has been successfully implemented in Penglipuran Tourism Village, Bali, where promotion and booking are carried out through community social media, rather than large applications (Widiastini et al., 2024).

3.5.2. Social Transformation and Local Innovation

The non-digital gig economy has provided opportunities for empowerment for vulnerable groups, especially women and youth. Women gain additional opportunities through culinary activities and cleaning services, while youth are active in tour guiding, documentation, and logistics. The participation of these groups strengthens social inclusiveness and enhances the capacity of local communities as key players in tourism, rather than merely beneficiaries (Widiati & Permatasari, 2022). This community-based work system has the potential to become a transitional economy model, which is a form of economy that bridges the traditional system and the digital economy without eliminating local social values. The hope is that by strengthening basic digital literacy and collaboration between actors, the Lemukutan community can transform into a gig community that still upholds the principle of social trust but utilises technology to expand its market reach.

4. Conclusion and Recommendations

This study shows that the non-digital gig economy in the tourism sector on Lemukutan Island is a unique form of informal economic practice based on trust, solidarity, and social networks. Unlike the gig economy in general, which relies on digital platforms and algorithms, the work system in Lemukutan grew naturally from social relationships, mutual cooperation values, and local kinship structures. Part-time jobs such as tour guiding, sea transportation, homestay management, home-cooked meals, and seasonal trading are obtained not through applications, but through verbal-based social mechanisms and personal recommendations. Social capital is the main driver of this economic system. Trust, reciprocity, and mutual assistance form the "social infrastructure" that sustains economic activities amid limited access to technology.

With the power of *bonding* and *bridging social capital*, communities are able to maintain a balance between individual and collective interests, so that wealth can be distributed evenly among citizens. This pattern shows that the gig economy can operate effectively without digitalisation, as long as the community has strong social solidarity and vibrant economic moral values. This study also identified several structural challenges, such as dependence on the tourist season, limited tourism training, low digital literacy, and access to work that is still determined by certain social networks. However, these conditions also open up transformative opportunities, where community-based digital capacity building can be carried out without eliminating the local social values that are at the core of Lemukutan's economic sustainability.

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