

Transformation of Small-Scale Fishermen's Economic Behavior towards Independent Entrepreneurship

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ARTICLE INFO

ABSTRACT

Keywords:
Fishermen's Economic Behavior,
Independent Entrepreneurship,
Social Capital,
Behavioral Economics,
Community-Based Development.

Kata Kunci:
Perilaku Ekonomi Nelayan,
Wirausaha Mandiri,
Modal Sosial,
Ekonomi Perilaku,
Pembangunan Berbasis
Komunitas

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This study examines the process of transformation of small-scale fishermen's economic behavior from subsistence patterns to independent entrepreneurship. The study was conducted using a systematic literature review approach to 41 academic sources that include scientific articles, books, and policy documents that are relevant in the context of coastal development. The findings show that this transformation is influenced by a combination of structural, psychological, and social factors, including loss aversion, low access to capital and markets, and the strength of community social capital. In addition, the role of local institutions such as BUMDes and fishermen's cooperatives has proven crucial in shaping adaptive capacity and entrepreneurial mindsets. A community-based development approach that integrates local wisdom, cultural values, and active community participation is the key to the success of the intervention. This study contributes to the literature by integrating behavioral economics and community-based development to propose a contextual model of fishermen's behavioral transformation. The findings highlight the need for empowerment policies that are psychologically informed and locally grounded, particularly in small-scale coastal communities of Eastern Indonesia.

SARI PATI

Penelitian ini mengkaji proses transformasi perilaku ekonomi nelayan skala kecil dari pola subsisten menuju wirausaha mandiri. Studi dilakukan dengan pendekatan systematic literature review terhadap 41 sumber akademik yang mencakup artikel ilmiah, buku, dan dokumen kebijakan yang relevan dalam konteks pembangunan pesisir. Temuan menunjukkan bahwa transformasi ini dipengaruhi oleh kombinasi faktor struktural, psikologis, dan sosial, termasuk loss aversion, rendahnya akses terhadap modal dan pasar, serta kekuatan modal sosial komunitas. Selain itu, peran lembaga lokal seperti BUMDes dan koperasi nelayan terbukti krusial dalam membentuk kapasitas adaptif dan pola pikir kewirausahaan. Pendekatan pembangunan berbasis komunitas yang mengintegrasikan kearifan lokal, nilai budaya, dan partisipasi aktif masyarakat menjadi kunci keberhasilan intervensi. Studi ini berkontribusi pada literatur dengan mengintegrasikan ekonomi perilaku dan pembangunan berbasis masyarakat untuk mengusulkan model kontekstual transformasi perilaku nelayan. Temuan ini menyoroti perlunya kebijakan pemberdayaan yang berwawasan psikologis dan berbasis lokal, terutama di masyarakat pesisir skala kecil di Indonesia Timur.

INTRODUCTION

Small-scale fishermen are one of the community groups that have a strategic role in coastal economic development in Indonesia. As an archipelagic country with the second longest coastline in the world, Indonesia has enormous potential for marine and fisheries resources. However, this potential has not been fully able to encourage the welfare of small-scale fishermen evenly. Many studies show that small-scale fishermen tend to be in vulnerable socio-economic conditions, characterized by low income, limited access to capital and technology, and the dominance of subsistence production patterns that are not oriented towards entrepreneurship (Kusnadi, 2002; Bene, 2003).

In the context of coastal economy, changes in global economic structure, environmental pressures, and dynamics of marine policies force fishing communities to adapt adaptively. One form of adaptation is the transformation of economic behavior from a subsistence orientation to independent entrepreneurship. This transformation is not just a change in the type of economic activity, but reflects changes in ways of thinking, decision-making patterns, and attitudes towards risks and opportunities (Allison and Ellis, 2001; Satria, 2009).

Fishermen's economic behavior is generally shaped by a combination of structural factors such as dependence on daily catches, minimal access to market information, and cultural factors that perpetuate an attitude of resignation to nature. In a behavioral economics perspective, this condition can be explained through the concept of bounded rationality and loss aversion as proposed by Kahneman and Tversky' (1979) Small fishermen tend to make economic decisions based on past experiences and prevailing social norms, rather than on the basis of fully rational economic calculations. This makes changing economic behavior towards independent entrepreneurship a complex and multidimensional challenge.

Empirical literature shows that fishermen empowerment programs based on market logic and classical economic approaches often fail when they do not consider the socio-cultural and psychological aspects of coastal communities. For example, entrepreneurship training that is not accompanied by intensive mentoring and local adaptation often does not produce sustainable results (Fitriani & Sari, 2020). In contrast, approaches that integrate social capital, community participation, and local values in intervention design have proven to be more effective in encouraging changes in fishermen's economic behavior.

The transformation of economic behavior towards independent entrepreneurship is also closely related to the existence of local institutions such as fishermen's cooperatives, joint business groups (KUB), and Village-Owned Enterprises (BUMDes) which are able to become collective forums for learning, capacity development, and resource mobilization (Ostrom, 2005). These institutions not only function as distributors of aid or programs, but also as the main actors in forming norms, values, and incentives that influence the economic behavior of the community.

The importance of transforming economic behavior in the context of sustainable coastal development is also emphasized by the community-based development approach that places the community as the main actor in the process of socio-economic change. This approach assumes that increasing economic capacity will not be achieved only through technology transfer or financial capital, but requires changes in the way the community interprets and carries out its economic activities (Chambers, 1997). In this case, independent entrepreneurs are not only understood as successful fisheries business actors, but as actors of change who have the vision, capacity, and networks to strengthen local economic resilience.

However, the journey towards this transformation is not easy. There are many obstacles faced by small

fishermen in the process of change, ranging from low levels of education, resistance to innovation, to dependence on collectors in the seafood trading system. On the other hand, the uneven distribution of supporting infrastructure such as market access, seafood storage facilities, and microfinance services also slow down this transformation process (Jentoft and Eide, 2011).

With this background, this literature review is important to summarize and evaluate various empirical findings and relevant theories in explaining the process of transforming fishermen's economic behavior towards independent entrepreneurship. Through a systematic review of previous research results, this article aims to develop a conceptual framework that can be the basis for policy interventions and empowerment programs in the future.

This study also aims to fill the gap in literature that has so far been minimal in explaining aspects of fishermen's economic behavior in depth, especially in the context of the transition to entrepreneurship. By combining behavioral economics perspectives, social capital theory, and institutional approaches, it is hoped that this paper will be able to provide significant academic contributions in enriching the discourse on community-based coastal development.

LITERATURE REVIEW

Behavioural Economics in the Context of Fishers' Economic Transformation

Behavioural economics offers insights into fisheries management by examining the cognitive biases and decision-making processes of fishers (Wieczorek *et al.*, 2021). This approach challenges traditional assumptions about rational behaviour, acknowledging that decisions are often context-dependent and influenced by psychological factors (Vlaev, 2018). In small-scale fisheries, non-compliance with regulations is a persistent problem, necessitating an integrated approach that takes into account both actor motivations

and environmental opportunities (Oyanedel, Gelcich and Milner-Gulland, 2020). However, the tendency to overemphasize cognitive biases in behavioural economics has been criticised as potentially misleading (Gigerenzer, 2018). Research on fishers' behaviour has relied heavily on social cognitive models, but there is a need to explore the epidemiological consequences of behavioural variability (Galer *et al.*, 2024). Defining small-scale fisheries remains a challenge, with the scientific literature increasingly focusing on technological aspects rather than socio-cultural characteristics (Smith and Basurto, 2019). Agent-based models offer a promising avenue for incorporating complex decision-making processes into ecological simulations (DeAngelis and Diaz, 2019).

Prospect theory explains why many fishers are reluctant to switch from traditional fishing to entrepreneurial ventures, as they tend to experience loss aversion (Cabedo-Peris *et al.*, 2022). This reluctance is evident in West Sumatra, Indonesia, where the cultural and entrepreneurial attitudes of fishers have an impact on marine resource conservation and village development (Zamzami and Effendi, 2023). Entrepreneurship education programs aim to foster interest through pedagogical experiences, but current approaches may be less effective in addressing diverse personal identities (Zainuddin *et al.*, 2019). Cash waqf has the potential to support entrepreneurship and economic empowerment (Azzahra *et al.*, 2024). Local wisdom in coastal resource management requires standardization for sustainability (Rizal *et al.*, 2022). Furthermore, prospect theory developed by Kahneman and Tversky' (1979) provides an important framework for understanding why many fishers are reluctant to switch from traditional fishing activities to entrepreneurial ventures. This theory suggests that individuals tend to experience loss aversion, which is more afraid of experiencing losses than motivated to gain profits. In practice, fishermen would prefer to maintain old practices even though they are low-risk, rather than trying new opportunities such as cultivation or business

diversification, which although potential, are considered riskier and more uncertain.

Empirical literature also supports this. Fitriani and Sari (2020) in their study showed that fishermen's resistance to entrepreneurship training was caused by negative perceptions of risk and market uncertainty. Therefore, interventions in fishermen's empowerment programs need to be designed by considering psychosocial approaches and gradual behavioral change mechanisms, not just technical training or economic incentives.

Social Capital in Fishermen's Economic Transformation

Social capital plays a crucial role in coastal community development and economic transformation, especially for small-scale fishers (Bennett, 2019). Social capital encourages entrepreneurship, strengthens community resilience, and supports sustainable resource management (Zamzami and Effendi, 2023; Evans *et al.*, 2023). Local wisdom and traditional practices, such as the *tesang* system in South Sulawesi, can contribute to economic empowerment and social cohesion (Rahman R *et al.*, 2023). Social capital also facilitates interfaith harmony and conflict resolution in various communities (Zainuri, 2021). In forest management and tourism development, social capital strengthens group networks and encourages community participation (Herdiyanti *et al.*, 2022). During crises such as the COVID-19 pandemic, strong social capital enables communities to collaborate effectively and implement government programs (Dewi *et al.*, 2021). Innovative approaches, such as cash waqf-based entrepreneurship programs, can better leverage social capital for economic empowerment and poverty reduction (Azzahra *et al.*, 2024).

Social capital plays a crucial role in managing common resources and strengthening local institutions. Trust, social norms, and networks are key elements of social capital that contribute to sustainable resource management and community

development (Puspita, Qurniati and Febryano, 2020; Herdiyanti *et al.*, 2022). For coastal and marine resources, local wisdom and traditional practices are important for conservation and sustainable ecotourism (Marlina *et al.*, 2020; Rizal *et al.*, 2022). In co-management of fisheries, community involvement and customary law can be effective, but there are still challenges in linking local institutions to broader governance structures (Tilley *et al.*, 2019). Village-Owned Enterprises (BUMDes) have the potential for rural economic development but face operational challenges (Nasfi *et al.*, 2023).

Research shows that strong social networks among fishermen facilitate collective economic activities, market access, and innovation adoption (Zamzami and Effendi, 2023). Local wisdom practices such as *tesang* in South Sulawesi promote profit sharing and economic development (Rahman R *et al.*, 2023). Social capital strengthens group lending dynamics and repayment capacity in community empowerment programs (Indriani *et al.*, 2023). Sustainable coastal management benefits from local wisdom, although the level varies among different groups (Rizal *et al.*, 2022). Cash waqf has the potential to support entrepreneurship and economic empowerment (Azzahra *et al.*, 2024).

In addition, empirical studies show that fishermen who are members of strong social networks are more likely to engage in collective economic activities, access markets and financial resources, and adopt business innovations. (Bene, 2003) stated that the success of fishermen empowerment programs is greater in areas with high levels of social cohesion. Conversely, low trust between community members or towards local institutions can be a serious obstacle to the transformation of economic behavior.

Community-Based Development in the Context of Fishermen's Economic Transformation

Community-based development is a participatory approach that emphasizes active community involvement in designing, managing, and evaluating

the development process. This approach emerged as a critique of top-down development models that often fail to understand the social and cultural dynamics of local communities (Chambers, 1997). In the context of small-scale fishing communities, community-based development is a relevant framework because it accommodates local interpretations of change and strengthens collective capacity for sustainable economic transformation. Various studies confirm that the success of this approach is determined by the integration of local wisdom, cultural practices, and entrepreneurial attitudes as key elements in improving the welfare of coastal communities (Kunyati *et al.*, 2024; Ekawati *et al.*, 2022; Marlina, *et al.*, 2020; Zamzami and Effendi, 2023; Rizal *et al.*, 2022). Thus, community-based development serves not only as an economic empowerment strategy but also as a social mechanism to strengthen the cohesion, participation, and independence of fishing communities.

Coastal community-oriented development requires more than just technical interventions such as fishing gear assistance or business training. More importantly, how communities are empowered to understand local potential, determine priority needs, and build inclusive institutions and decision-making mechanisms. Studies such as (Mansuri and Rao, 2013) show that development that fully involves communities tends to produce more lasting impacts because it is rooted in shared values, identities, and interests.

Sustainable coastal development requires more than technical interventions; it requires community empowerment and inclusive decision-making (Kunyati *et al.*, 2024; L. Didi *et al.*, 2020). Effective governance and local wisdom are essential for sustainably managing resources, as demonstrated in studies of the COREMAP program and local practices in Pangandaran (Rizal *et al.*, 2022; Marlina *et al.*, 2020). The blue economy offers opportunities for poverty alleviation, but must prioritize community engagement to ensure equitable

benefits (Evans *et al.*, 2023). In addition, fostering an entrepreneurial attitude among fishermen can improve socio-economic conditions and encourage conservation (Zamzami and Effendi, 2023). Community perceptions of waste management highlight the need for better infrastructure and education (Herdiansyah *et al.*, 2021).

The transformation of subsistence fishermen into independent entrepreneurs reflects broader social and structural changes in coastal communities. Effective economic programs require deliberative community participation, local capacity building, and facilitation of social learning processes (Rizal *et al.*, 2022; Kunyati *et al.*, 2024). Sustainable coastal development relies on the application of authentic and contextual community-based approaches (Zamzami and Effendi, 2023; Marlina *et al.*, 2020). Empowerment strategies must integrate local wisdom, cultural values, and traditional knowledge (Hamzah *et al.*, 2024; Dushkova and Ivlieva, 2024). Marine tourism and social entrepreneurship can improve socio-economic capabilities and foster community understanding of creative village development (Zamzami and Effendi, 2023). Innovative financing mechanisms such as cash waqf can support entrepreneurship and economic empowerment in coastal areas (Azzahra *et al.*, 2024). However, careful consideration of risks and opportunities is needed to ensure that blue economy initiatives benefit coastal communities and maintain healthy marine ecosystems (Evans *et al.*, 2023).

The transformation from subsistence fishermen to independent entrepreneurs, in this approach, is not just a change in economic activity, but reflects a change in the social structure and mindset of the community. Community participation in economic programs will be effective if it is carried out in a deliberative manner, accompanied by strengthening local capacity, and facilitation that supports the social learning process. Therefore, the success of sustainable coastal development is highly dependent on the extent to which the

community-based approach is applied authentically and contextually.

Based on the literature synthesis, the relationships between the main variables in the process of transforming fishermen's economic behavior can be described in the following conceptual framework (Figure 1). This model shows how psychological factors (loss aversion, bounded rationality) interact with social factors (social capital, trust networks), and local institutions (village-owned enterprises, cooperatives) in facilitating the change towards independent entrepreneurship (Kahneman and Tversky' 1979; Ostrom, 2005; Chambers, 1997; Bene, 2003).

METHODS

Type of Research

This study uses a qualitative systematic literature review (SLR) approach with an exploratory design to understand and explain the process

of transforming fishermen's economic behavior towards independent entrepreneurship. This approach was chosen because it is able to synthesize previous research results systematically and critically, and is relevant to identifying patterns, key findings, and gaps in the available literature (Snyder, 2019; Tranfiel *et al.*, 2003).

Data Collection Techniques

The data in this study were obtained from scientific articles, academic books, research reports, and policy documents published between 2000 and 2024. The search strategy was carried out through academic database platforms such as Google Scholar, ScienceDirect, Scopus, JSTOR, and Web of Science. Keywords used in the search process include: fishermen entrepreneurship, economic behavior of small-scale fishermen, subsistence to entrepreneurship transition, community-based fisheries, and behavioral transformation in coastal economy. The types of publications included are

CONCEPTUAL MODEL OF BEHAVIORAL AND INSTITUTIONAL TRANSFORMATION OF SMALL-SCALE FISHERMEN

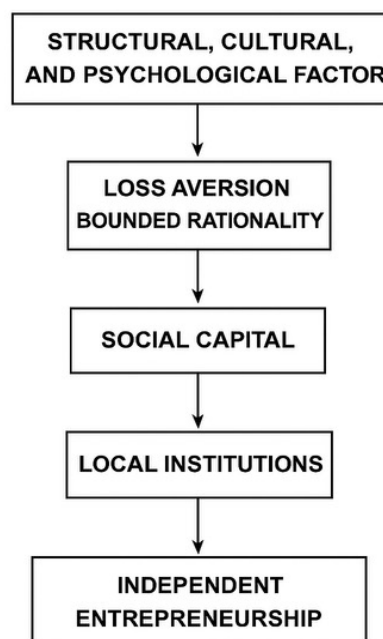


Figure 1. Conceptual Model of Behavioral and Institutional Transformation of Small-Scale Fishermen

peer-reviewed articles, scientific books, conference proceedings, and policy reports from official institutions such as FAO, World Bank, and KKP.

Literature Selection Criteria

In an effort to ensure the accuracy, relevance, and depth of the literature analysis used, this study applies a number of strict selection criteria to the sources included in the review. These criteria are compiled based on the theoretical and empirical needs of the focus of the study on the transformation of fishermen's economic behavior towards independent entrepreneurship, as well as considering academic standards in the systematic literature review methodology.

First, only literature that explicitly discusses the economic behavior of fishermen or the process of economic transformation in coastal areas is considered in the analysis. This focus aims to maintain the alignment between the objectives of the study and the substance of the literature, so that the information collected truly reflects the socio-economic context of small-scale fishing communities.

Second, each selected publication must have a clear theoretical framework, whether derived from behavioral economics, social capital, institutional, or community-based development approaches. The existence of a theoretical basis allows researchers to synthesize concepts in a more systematic and structured manner, and facilitates the development of an in-depth conceptual framework.

Third, the selected literature must contain empirical data or conceptual analysis that is relevant to the context of Indonesia or other developing countries with similar coastal community characteristics. This is important to ensure that the findings and conclusions of previous studies can be compared, contextualized, and validly applied in a similar scope. Fourth, the publications used must come from verified academic sources, namely accredited national journals (SINTA 1 and 2) or reputable

international journals indexed in Scopus and Web of Science (WoS). This criterion is applied to ensure the methodological quality and academic credibility of each reference analyzed.

The selection of literature followed the PRISMA 2020 guidelines (Page *et al.*, 2021), consisting of four main stages: identification, screening, eligibility, and inclusion. From 820 initial documents obtained through Scopus, DOAJ, and Google Scholar, 180 articles were screened using keywords such as "fishermen behavior," "entrepreneurship," "social capital," and "community-based development." After removing duplicates and assessing relevance, 60 full-text articles were evaluated, and finally, 41 met the inclusion criteria. Among them, 24 were empirical studies, 10 theoretical papers, and 7 policy documents. Ten core references provided the most substantial theoretical and empirical foundations for constructing the conceptual framework, as summarized in Table 1.

Following the mapping of the main literature sources presented in Figure 2, the subsequent section summarizes ten core references that constitute the conceptual and methodological foundation of this study. The summary highlights the central focus, analytical approach, and key contributions of each work in advancing the understanding of small-scale fishermen's behavioral transformation toward independent entrepreneurship within the broader framework of sustainable coastal development.

Data Quantity and Characteristics

As part of the systematic approach in this literature review, an initial screening process was carried out on approximately 180 articles and academic sources that were successfully identified through keyword-based searches on various scientific databases. From all these sources, 41 literatures were selected that met the eligibility criteria and were relevant to the focus of the study on the transformation of fishermen's economic behavior towards independent entrepreneurship.

PRISMA 2020

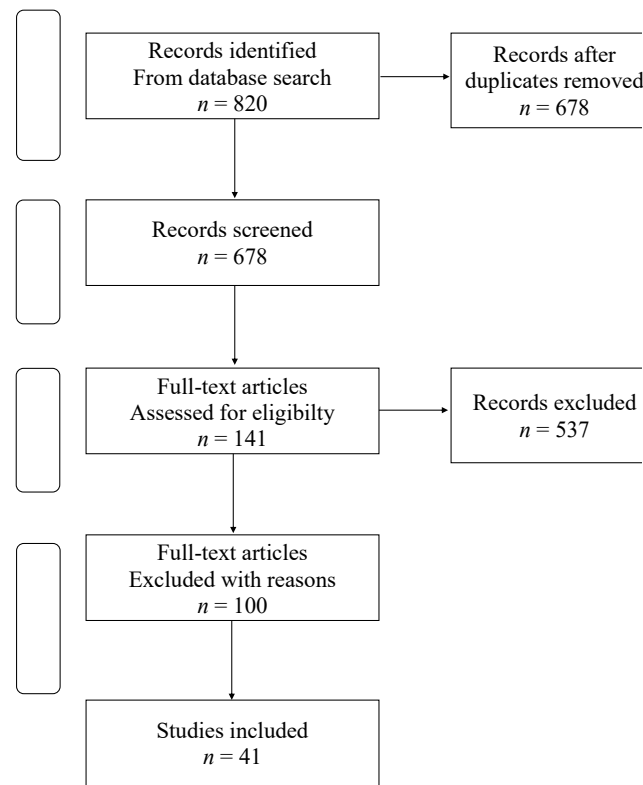


Figure 2. Primary Literary Sources

The composition of the selected literature consists of 30 scientific journal articles, with details of 20 international articles from reputable journals (indexed by Scopus and Web of Science), and 10 national articles published in SINTA 1 and SINTA 2 accredited journals. These articles are the main foundation in building theoretical synthesis and empirical findings related to the dynamics of the fishing community economy.

In addition to journal articles, this study also includes 5 academic books that are considered to have significant conceptual contributions, both in the fields of behavioral economics, social capital, and community-based development. These books are used to enrich the theoretical framework and provide depth of analysis from a conceptual perspective.

A total of 6 research reports or policy documents from national and international institutions such

as FAO, the Ministry of Marine Affairs and Fisheries (KKP), and WorldFish are also analyzed to obtain institutional and macro policy perspectives related to coastal economic transformation.

Geographically, the scope of the literature analyzed is dominated by studies conducted in Indonesia, with additional studies from other coastal countries in the Southeast Asian region and a number of developing island countries. This aims to provide contextual comparisons and broaden insights into the practices and dynamics of fisherman transformation globally.

Data Analysis Techniques

Data analysis in this study was conducted using a thematic content analysis approach, which was chosen because it is able to capture the conceptual dynamics of various literature sources and allows for systematic cross-disciplinary theoretical synthesis. This approach is very appropriate for the research

Table 1. Summary of 10 Main Literature Used in Analysis (Core References)

No	References (Short)	Type of Study	Major Contributions to the Study
1.	Kahneman & Tversky (1979)	Behavioral Theory / Economics	Explaining loss aversion and bounded rationality as the basis for analyzing changes in fishermen's behavior.
2.	Bene (2003)	Empirical / Development	Linking fisheries poverty to institutional and social resilience.
3.	Chambers (1997)	Participatory Theory / Development	To become the foundation of the community-based development concept for empowering coastal communities.
4.	Ostrom (2005)	Theory / Institutions	Providing an institutional framework for the management of shared resources such as cooperatives and BUMDes.
5.	Satria (2009)	Empirical / Socio-Cultural	Provides a sociological context regarding the identity and socio-economic dynamics of fishermen in Indonesia.
6.	Fitriani & Sari (2020)	Empirical / Entrepreneurship	Describes the importance of psychological and social assistance in developing fishing entrepreneurship.
7.	Zamzami & Effendi (2023)	Empirical / Local Wisdom	Demonstrates the role of cultural values and community solidarity in shaping entrepreneurial behavior.
8.	Untari <i>et al.</i> , (2021)	Descriptive qualitative field study with simple quantitative analysis (FER) / Papua	(1) Socio-economic comparison, (2) Use of FER as welfare measure, (3) Explanation of behavioral-economic gap, (4) Policy recommendations for coastal development, (5) Institutional and adaptive insights for eastern Indonesia.
9.	Nasfi <i>et al.</i> , (2023)	Analysis / BUMDes	Describes the potential and challenges of village institutions in strengthening the local coastal economy.
10.	Snyder (2019)	Methodology / SLR	To be a methodological reference for conducting systematic literature reviews in the economic and social fields.

objectives that focus on in-depth exploration of the transformation of fishermen's economic behavior through empirical and theoretical literature reviews. The analysis process begins with an initial coding stage (open coding), which is the identification and marking of important concepts that appear repeatedly in the literature. Some of the main concepts coded at this stage include "subsistence," "entrepreneurial intention," "risk perception," "community participation," and "institutional support." This process is done manually and assisted by reference management software such as Mendeley to ensure data consistency and traceability.

Next, categorization (axial coding) is carried out by grouping the marked codes into major themes.

Some of the main themes that are formed include: factors driving the transformation of economic behavior, structural and cultural barriers, the role of local institutions, and the integration of economic, social, and psychological approaches.

The next stage is synthesis and interpretation (selective coding), namely the preparation of a conceptual narrative that connects findings between themes with the theoretical framework used, such as behavioral economics, social capital, and community-based development. This narrative aims to build a holistic and in-depth understanding of the fishermen's transformation process.

In an effort to increase the validity and reliability of the analysis, source triangulation and cross-

comparison between literatures were also carried out. This step aims to confirm the consistency of the findings and avoid interpretive bias.

This technique is considered effective because it is able to accommodate the complexity of conceptual data and support the critical reflection needed in literature-based qualitative studies (Saldana, 2022).

The selection of the systematic literature review (SLR) method combined with the thematic content analysis approach is considered very appropriate to answer the objectives and scope of this study. First, this method allows the preparation of a strong and comprehensive conceptual framework based on diverse findings from various previous studies. By utilizing extensive data sources, both in the form of journal articles, books, and policy reports, this approach is able to explore the dynamics of the transformation of fishermen's economic behavior across disciplines and geographical contexts.

Second, this method supports the reliability of findings through a systematic data selection and categorization process. The process includes stages ranging from initial searches, screening based on inclusion criteria, to coding and grouping themes methodologically. This technique not only maintains data accuracy but also increases transparency and traceability in the analysis process, as recommended in best practices for scientific literature reviews (Booth *et al.*, 2016; Snyder, 2019).

Third, this method ensures the relevance of the results to the empirical and theoretical context that is currently developing in coastal development studies. By integrating behavioral economics, social capital, and community-based development theories, this method allows researchers to link local phenomena of fishermen in Indonesia with global literature, and build a contextual and applicable theoretical basis. This is important to produce insights that are not only academic, but also useful for formulating policies and designing coastal community empowerment programs more effectively.

RESULTS AND DISCUSSION

The transformation of fishermen's economic behavior, especially from a subsistence lifestyle to independence as entrepreneurs, is a complex process influenced by various social, economic, cultural, and psychological dimensions. This literature review aims to identify key factors that drive and hinder this transformation, and to highlight the role of local institutions and interdisciplinary approaches in strengthening fishermen's adaptive capacity. In addition, this study also identifies gaps in the existing literature and recommends further research directions to deepen understanding of the dynamics of economic change in coastal communities. The following five topics are structured to summarize key findings that are relevant in this context.

1. Driving Factors of Fishermen's Economic Behavior Transformation

The transformation of subsistence fishermen into independent entrepreneurs is influenced by internal and external factors. Internal factors include economic motivation and the desire to reduce vulnerability, while external factors include government policies and access to training and capital (Zamzami and Effendi, 2023). The development of entrepreneurship in the fisheries sector is very important for poverty alleviation and community empowerment (Zamzami and Effendi, 2023; Rizal *et al.*, 2022). Local wisdom plays a role in the sustainable management of coastal resources, although standardization is needed (Rizal *et al.*, 2022). Gender mainstreaming policies in the fisheries sector are still partial, limiting women's access to resources and perpetuating poverty (Purwanti *et al.*, 2022). Cash waqf has the potential to support entrepreneurship and economic empowerment (Azzahra *et al.*, 2024). The development of the blue economy through neon tetra fish cultivation presents both opportunities and challenges, thus requiring support from related agencies and increased human resource training (Setiyowati *et al.*, 2022).

Recent research highlights the importance of entrepreneurship education and economic literacy in encouraging innovation and economic transformation among coastal communities. Digital transformation in entrepreneurship education creates a new learning model that develops entrepreneurial attitudes and intentions among students (Rauf *et al.*, 2024). Cash waqf has the potential to support entrepreneurship development and economic empowerment (Azzahra *et al.*, 2024). Integration of culture and social entrepreneurship can improve socio-economic capabilities and entrepreneurial attitudes of fishermen (Zamzami and Effendi, 2023). Active learning methods in economic education improve student achievement, motivation, and interest (Ismail *et al.*, 2020). Effective disaster communication plays an important role in mitigation efforts by providing guidelines and changing attitudes and behaviors (Aziz, 2023). Local wisdom in coastal resource management requires standardized gut steps (Rizal *et al.*, 2022). Bengkulu's natural resources, including marine biodiversity and renewable energy potential, offer opportunities for sustainable development and energy security (Oktoyoki *et al.*, 2023).

2. Structural and Cultural Constraints in Transformation

Research on coastal communities in Indonesia reveals structural and cultural challenges in economic transformation. Several studies emphasize the critical role of local wisdom and entrepreneurship integration for sustainable coastal resource management (Rizal *et al.*, 2022) (Zamzami and Effendi, 2023). Gender mainstreaming policies in the fisheries sector are still partial, mainly focusing on empowerment and neglecting protection for fisherwomen (Purwanti *et al.*, 2022). Community-based tourism development faces obstacles such as limited human resource skills and challenges related to the pandemic (Umam *et al.*, 2022). The blue economy presents opportunities, especially in neon tetra fish farming, but requires support from relevant institutions and improved post-harvest and market access (Setiyowati *et al.*, 2022).

Conservation efforts in marine areas utilize local wisdom, as seen in the traditions of the Bajo Mola community in Wakatobi National Park (Marlina *et al.*, 2020).

Research on fishing communities and traditional markets in Indonesia reveals complex socio-economic dynamics. Fishermen often exhibit aversion to risk and change, rooted in cultural values and limited exposure to alternatives (Zamzami and Effendi, 2023) (Cabedo-Peris *et al.*, 2022). This is in line with prospect theory, where loss aversion influences decision-making (Rahayu *et al.*, 2023). Traditional subsistence farming and agroforestry practices persist due to small land holdings, low literacy, and limited access to technology (Achmad *et al.*, 2022). Local wisdom in coastal resource management varies in sustainability (Rizal *et al.*, 2022). Traditional markets and housing structures face challenges in modernization but retain cultural significance (Nazaruddin *et al.*, 2023; Kiswari, 2019). Gender gaps in the fisheries sector persist, with women often marginalized despite their significant contributions (Purwanti *et al.*, 2022). These findings highlight the need for targeted interventions to address poverty and promote sustainable development in fishing communities.

3. The Role of Local Institutions in Encouraging Independent Entrepreneurship

Local institutions play an important role in fostering an independent entrepreneurial spirit among coastal communities in Indonesia. Village-Owned Enterprises (BUMDes) and fishermen groups contribute to socio-economic development and poverty alleviation (Nasfi, Aimon and Ulfa Sentosa, 2023; Zamzami and Effendi, 2023). Traditional practices such as tesang among the Bugis and Makassar communities encourage profit sharing and economic empowerment (Rahman R *et al.*, 2023). Cash waqf has the potential to be a source of business capital (Azzahra *et al.*, 2024). Local wisdom in resource management is essential for sustainable coastal development, as seen in Pangandaran and Wakatobi (Rizal *et al.*, 2022; Marlina *et al.*, 2020).

Social capital strengthens community networks and supports tourism development (Herdiyanti *et al.*, 2022). However, there are still challenges in optimizing VOE operations and balancing economic growth with environmental conservation (Nasfi *et al.*, 2023). Neon tetra fish farming and blue economy initiatives offer opportunities for diversification (Setiyowati *et al.*, 2022).

Local institutions play a critical role in community development and resource management, but their effectiveness depends on social legitimacy and institutional capacity. Studies show that smaller municipalities foster greater efficacy and political participation (McDonnell, 2019). Social capital, including trust, networks, and norms, is critical for sustainable community forest management (Puspita *et al.*, 2020; Herdiyanti *et al.*, 2022). However, many local institutions face challenges such as weak leadership, low member participation, and lack of equitable incentive mechanisms (Didi *et al.*, 2020). Strengthening local institutions requires not only structural improvements but also normative changes through internalization of shared values, community leadership training, and participatory accountability mechanisms (Bajrami and Bajrami, 2024). Effective local governance involves adapting to citizen needs and increasing awareness of participation opportunities (Martini and Lubis, 2021; Jalaluddin and Irwan Suriadi, 2019). Leadership perceptions can influence organizational learning, although the impact may vary in different contexts (Ramadhan and Widiarini, 2022).

In the Papuan context, the role of local institutions such as the Saireri Village-Owned Enterprise (BUMDes) in Biak Numfor Regency and the Fisheries Cooperative in Merauke demonstrates a distinctive pattern of adaptation. Both institutions act as liaisons between fishermen and markets, while strengthening social capital based on kinship and traditional beliefs. Mentoring that integrates local wisdom, such as the "catch sharing" system in Yos Sudarso Bay, has been shown to increase economic participation and entrepreneurial literacy

among fishermen (Untari *et al.*, 2021; KKP, 2022; Bene, 2003).

4. Integration of Economic, Social, and Psychological Approaches

This literature review highlights the importance of an interdisciplinary approach in understanding and addressing complex socio-economic issues in coastal communities. Studies emphasize the integration of local wisdom, cultural attitudes, and entrepreneurship development in sustainable fisheries management and village development (Kunyati *et al.*, 2024; Zamzami and Effendi, 2023; Rizal *et al.*, 2022). The human dimension in fisheries models is increasingly recognized, requiring input from the social sciences and humanities (Weber *et al.*, 2019). Islamic economic principles are noted as relevant for family financial management, promoting ethical and sustainable practices (Alam *et al.*, 2024). Social relations and harmony between different religious groups are highlighted as essential for community development (Zainuri, 2021). The review also touches on migrant worker policies and their economic impacts (Jalaluddin and Irwan Suriadi, 2019), as well as the implementation of Islamic financial compensation practices (Azzahra *et al.*, 2023).

Community-based approaches to development and entrepreneurship emphasize active participation, integration of local knowledge, and community empowerment (Dodds, Ali and Galaski, 2018; Ensor *et al.*, 2018). These approaches can enhance resilience, sustainability, and economic well-being (Dushkova and Ivlieva, 2024; Zamzami and Effendi, 2023). Entrepreneurship education programs play a critical role in fostering interest and skills among students (Zainuddin *et al.*, 2019). Innovative financing mechanisms such as cash waqf can support entrepreneurship development and poverty reduction (Azzahra *et al.*, 2024). Successful community-based initiatives require understanding the local context, addressing specific needs, and overcoming challenges related to coordination and competition (Khairandy *et al.*, 2022; Kapsalis

and Kapsalis, 2020). The transformation towards entrepreneurship involves not only profit-making but also changes in mindset, risk-taking, and building social trust. Community involvement as active subjects, not passive recipients, is crucial for sustainable interventions and local ownership of development processes (Dodds, Ali and Galaski, 2018; Ensor *et al.*, 2018).

5. Literature Gaps and Further Research Directions

Recent research highlights the complex dynamics that shape coastal communities and fisheries management. Research on entrepreneurial attitudes of fishers in West Sumatra highlights the importance of integrating social and economic factors for successful entrepreneurship (Zamzami and Effendi, 2023). Research in Indonesia highlights challenges in managing migrant workers and protecting their rights (Jalaluddin and Irwan Suriadi, 2019), while others focus on land use policies for tourism development in coastal areas (Martini and Lubis, 2021). The need for more comprehensive fisheries models that incorporate behavioral diversity is emphasized (Wijermans *et al.*, 2020), along with the importance of understanding contextual and behavioral factors that influence water use efficiency (Moncaleano *et al.*, 2021). Research also explores factors influencing electric vehicle adoption in Indonesia (Gunawan *et al.*, 2022) and compares coastline change in Sri Lanka and Indonesia, highlighting the impacts of human activities and natural phenomena on coastal management (Purwanti and Koestoer, 2024).

Community-based interventions have shown potential to improve health outcomes, including physical activity levels and health literacy, across diverse populations. However, evidence for long-term effectiveness is limited (Belfrage *et al.*, 2023; Haverinen *et al.*, 2021). Several studies have shown sustained effects on physical activity up to 4 years post-intervention (Wahlich *et al.*, 2020). Key factors for long-term sustainability include ongoing participant engagement, staff support, collaboration with other services, and stable

funding (Morton *et al.*, 2021). More longitudinal research is needed to evaluate long-term impact and organizational change (Pinheiro and Alves, 2023). Community-based approaches can improve the accessibility, acceptability, and effectiveness of mental health interventions in low- and middle-income countries (Kohrt *et al.*, 2018). However, rigorous evaluation using standardized measures is needed to support the implementation of evidence-based national policies and programs (Nutbeam *et al.*, 2018). Multidisciplinary interventions have shown promising results in reducing loneliness among older adults, with some showing long-term effects (Zaharia *et al.*, 2024).

MANAGERIAL IMPLICATION

Designing a Contextual and Inclusive Empowerment Program

The study results emphasize the importance of a community-based approach, local wisdom, and socio-cultural values in changing the economic behavior of fishermen. Therefore, policy makers and implementing institutions need to design empowerment programs that are not merely technical (training or equipment assistance), but also touch on psychological and social aspects in a gradual and participatory manner.

Budget Allocation for Social and Psychological-Based Interventions

Given the role of loss aversion in resistance to change, intervention budgets should be directed toward long-term mentoring activities, facilitating social learning, and establishing business networks, rather than simply one-way training or capital grants.

Strengthening and Collaborating with Local Institutions

BUMDes, fishermen cooperatives, and joint business groups need to be supported as strategic partners. Managerial decisions should include investments in strengthening local institutions, leadership training, and developing participatory incentives to increase community trust.

Integrating Social Capital into Distribution and Market Strategies

To make fisheries distribution systems effective, program managers should consider existing social networks of fishermen and involve local actors in marketing and market access strategies, rather than introducing new systems that are foreign to the community.

Utilization of Alternative and Innovative Financing

Financing models such as cash waqf and social trust-based group loans can be used to encourage investment in fisherman micro-enterprises. This requires financial managers/microfinance institutions to create more flexible schemes based on community trust.

CONCLUSION

As stated in the Introduction chapter, this study aims to understand the dynamics of the transformation of small-scale fishermen's economic behavior from subsistence patterns to independent entrepreneurship through an interdisciplinary approach that includes behavioral economics, social capital, and community-based development. These expectations are consistently reflected in the findings presented in the Results and Discussion chapters.

Through a systematic literature review approach, this study successfully identified various driving and inhibiting factors for transformation, ranging from risk perception (loss aversion), the role of local

institutions (BUMDes, fishermen's cooperatives), to the importance of a participatory approach based on local values and practices. These findings emphasize that changes in economic behavior are not driven by financial incentives alone, but require a deep social process and strong institutional support.

The prospects for developing the results of this study are wide open, especially in designing policy interventions and empowerment programs that are more contextual and rooted in the socio-cultural conditions of the fishing community. This study also opens up opportunities for further empirical research with a longitudinal approach, to observe changes in fishermen's behavior in more depth over time. In addition, the development of a waqf-based empowerment model, digitalization of catch marketing, and strengthening local institutions are strategic directions for implementing these findings in the context of sustainable and inclusive coastal economic development.

The novelty of this study lies in its interdisciplinary synthesis that bridges behavioral economics, social capital, and community-based development frameworks into a unified conceptual model. This integrative approach offers policy relevance by emphasizing gradual behavioral change, participatory local governance, and trust-based financial schemes for fishermen's entrepreneurship empowerment (Booth *et al.* 2016; Snyder 2019; KKP, 2022). ■

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