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Challenges and Future Directions for Small-Scale Food Manufacturing in North Dinajpur: A Strategic Assessment for Sustainable Transformation

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ABSTRACT

Small-scale food manufacturing plays a crucial role in the rural economy of North Dinajpur, significantly contributing to local employment, food security, and adding value to agricultural produce. However, the sector faces several challenges that hinder its growth and sustainability. Key issues include inefficiencies in the supply chain, inadequate access to modern technology, lack of infrastructure such as cold storage and transportation, limited financial and market access, and a significant skills gap among the workforce. Additionally, complex regulatory barriers impose disproportionate burdens on small-scale enterprises. This study provides a comprehensive assessment of these challenges and suggests region-specific, actionable strategies tailored to the socio-economic context of North Dinajpur. A mixed-method approach was used, gathering primary data from local stakeholders such as manufacturers, suppliers, and policymakers, along with secondary insights from national and global case studies. Advanced analytical tools, such as SWOT analysis and comparative frameworks, were applied to evaluate the sector's current status and potential for growth. The findings highlight the need for targeted interventions in digital transformation, supply chain optimization, and workforce development. Notably, integrating mobile-enabled financial and market platforms emerges as a key enabler to overcome market access barriers. The study also emphasizes the importance of fostering public-private partnerships to build shared infrastructure and promoting sustainability practices in line with global trends.

2. Introduction

2.1 Background and Context

Small-scale food manufacturing plays a pivotal role in North Dinajpur's rural economy, offering a critical link between agriculture and the broader food supply chain. This sector not only adds value to raw agricultural produce but also contributes significantly to employment generation, poverty alleviation, and local economic activity. As highlighted in government reports, small-scale food processing units account for a large share of rural industrial output in India, with potential to enhance food security and create rural-urban market linkages (Government of India Reports, 2023).

In North Dinajpur, characterized by its agrarian economy, small-scale food manufacturers capitalize on the availability of staple crops such as rice, jute, and maize. These enterprises often cater to regional demand while also engaging in limited value-added production for broader markets. The ability of this sector to absorb semi-skilled labor further enhances its socio-economic relevance (Dixit, 2009).

Comparatively, global examples illustrate how effective policies and technological interventions have transformed small-scale food manufacturing into engines of rural development. For instance, Kenya's agro-processing initiatives, supported by mobile-enabled financial platforms like M-Pesa, have integrated rural producers into national and international markets (Jin, 2022). Similarly, Indonesia's food SMEs have leveraged digital tools and cooperative models to overcome infrastructural challenges and enhance productivity (FAO, 2021). These successful models highlight the untapped potential of small-scale food manufacturing in regions like North Dinajpur.

2.2 Problem Statement

Despite its importance, small-scale food manufacturing in North Dinajpur is hindered by a range of structural and systemic challenges. Supply chain inefficiencies, including inadequate cold storage, unreliable transportation networks, and post-harvest losses, limit the sector's ability to scale production and maintain product quality (Dixit, 2009). A lack of technological adoption further exacerbates these issues, with most enterprises relying on outdated, labor-

intensive methods that reduce productivity and competitiveness.

Another critical barrier is the absence of robust market integration. Local manufacturers often struggle to access larger markets due to limited financial resources, fragmented supply chains, and insufficient knowledge of branding and consumer trends (Bhattacharyya & Goswami, 2015). Socio-economic constraints, including low digital literacy, insufficient training programs, and gender disparities, further restrict the sector's growth potential (Mishra et al., 2021).

These challenges not only impede the development of small-scale food manufacturers but also have broader implications for regional sustainability. A poorly functioning food manufacturing sector affects food security, rural incomes, and the ability of North Dinajpur to achieve inclusive growth. Addressing these issues is therefore essential for unlocking the sector's potential as a driver of economic and social transformation.

2.3 Research Gap and Objectives

Although the importance of small-scale food manufacturing is well-documented globally, there is limited region-specific research addressing the challenges faced by this sector in rural India, particularly in districts like North Dinajpur. Existing literature tends to focus on large-scale agro-industries or urban-centric food supply chains, often overlooking the nuanced socio-economic and infrastructural barriers prevalent in rural areas (Chatterjee, 2024; FAO, 2021).

This research seeks to fill this gap by providing a comprehensive analysis of the barriers to and opportunities for small-scale food manufacturing in North Dinajpur. The study also aims to bridge the divide between global best practices and the specific needs of this region.

Objectives:

1. Identify critical barriers faced by small-scale food manufacturers in North Dinajpur, including supply chain inefficiencies, technological gaps, and socio-economic constraints.
2. Evaluate opportunities for sustainable transformation, such as digital integration, skill development, and infrastructure enhancement.

3. Propose actionable, region-specific strategies for growth and development, aligned with global benchmarks and tailored to local conditions.

2.4 Significance of the Study

This study holds considerable significance for policymakers, industry stakeholders, and researchers focused on rural development. By addressing the challenges faced by small-scale food manufacturers in North Dinajpur, the research offers a roadmap for strengthening the sector and enhancing its contribution to regional economic growth.

The study's findings are particularly relevant for policymakers seeking to design targeted interventions, such as subsidies for technological upgrades, incentives for market linkages, and skill development programs. For local businesses, the research provides insights into optimizing operations, adopting sustainable practices, and leveraging digital tools to expand market access.

Beyond its local impact, the study contributes to the global discourse on rural industrialization and food security. It aligns with Sustainable Development Goals (SDGs), particularly SDG 2 (Zero Hunger) and SDG 8 (Decent Work and Economic Growth), by highlighting strategies to create inclusive, sustainable food processing ecosystems in emerging markets (World Bank, 2022).

Through its region-specific focus and actionable recommendations, this study not only advances academic knowledge but also serves as a practical guide for stakeholders aiming to transform small-scale food manufacturing into a cornerstone of sustainable development in North Dinajpur and beyond.

3. Literature Review

3.1 Theoretical Frameworks

Porter's Five Forces

Porter's Five Forces is a foundational framework for analyzing industry competitiveness, and its adaptation for rural economies provides valuable insights into the dynamics of small-scale

food manufacturing in North Dinajpur. The five forces—supplier power, buyer power, competitive rivalry, threat of new entrants, and threat of substitutes—can be tailored to address the specific challenges faced by rural food manufacturers. For instance, the limited availability of raw materials and the dominance of informal market networks in rural areas intensify supplier power, while fragmented market access and inadequate branding reduce buyer bargaining power (Dixit, 2009; Chatterjee, 2024). Additionally, the threat of substitutes is heightened by the influx of cheaper, mass-produced food products from urban markets, creating a competitive disadvantage for small-scale producers. The adaptation of Porter's framework underscores the need for small-scale manufacturers to strengthen their competitive position through innovation, branding, and collaborative market strategies.

Stakeholder Theory

Stakeholder Theory, introduced by Freeman (1984), emphasizes the interconnected roles of various stakeholders—government agencies, private enterprises, non-governmental organizations (NGOs), and local communities—in driving the growth of small-scale industries. In North Dinajpur, the government plays a crucial role through policy interventions like subsidies and training programs, while private players and NGOs contribute by offering market linkages, technological support, and capacity-building initiatives (Government of India Reports, 2023; FAO, 2021). This framework highlights the importance of multi-stakeholder collaboration for addressing systemic challenges such as supply chain inefficiencies and financial barriers. Effective stakeholder engagement can foster a supportive ecosystem that aligns with the socio-economic realities of rural regions.

Resource-Based View (RBV)

The Resource-Based View (RBV) provides a lens for identifying and leveraging critical resources—both tangible and intangible—for competitive advantage. In the context of North Dinajpur, access to raw materials, skilled labor, and infrastructure such as cold storage and transportation are essential tangible resources. Intangible resources, including market knowledge, community networks, and branding capabilities, are equally critical for sustained growth (Elkington, 1997; World Bank, 2022).

RBV emphasizes the need for local enterprises to develop unique capabilities, such as product innovation and sustainability practices, to differentiate themselves in the market. This theoretical perspective underscores the significance of targeted resource investments for driving the transformation of small-scale food manufacturing in rural economies.

3.2 Global and National Context

Global Context

Global case studies provide valuable insights into the challenges and opportunities for small-scale food manufacturing in emerging markets. Kenya's agro-processing sector, for instance, demonstrates how mobile-enabled financial platforms like M-Pesa have addressed market access barriers and empowered rural producers to participate in larger supply chains (Jin, 2022). Similarly, Indonesia's small and medium-sized enterprises (SMEs) in food manufacturing have leveraged cooperative models and digital tools to enhance productivity and profitability (FAO, 2021).
These global examples highlight the transformative potential of technology and community-driven solutions in overcoming infrastructural and market challenges, offering lessons that can be adapted to North Dinajpur.

National Context

In India, the Pradhan Mantri Formalisation of Micro Food Processing Enterprises (PM-FME) scheme aims to formalize and strengthen small-scale food manufacturing through financial support, skill development, and infrastructure upgrades (Government of India Reports, 2023). This initiative has particular relevance for North Dinajpur, where the majority of food processing units operate informally and struggle with limited access to credit and technology. The PM-FME scheme's emphasis on promoting one-district-one-product (ODOP) initiatives aligns with the potential for North Dinajpur to specialize in value-added products derived from its abundant agricultural resources, such as rice and jute.

3.3 Identified Challenges in Prior Research

Supply Chain Bottlenecks

Supply chain inefficiencies remain a significant barrier for small-scale food manufacturers. Issues such as inadequate cold storage, poor transportation infrastructure, and high post-harvest losses affect the sector's productivity and profitability (Dixit, 2009). These challenges are particularly acute in rural areas like North Dinajpur, where logistical constraints hinder the timely delivery of products to markets.

Regulatory Barriers

Complex and inconsistent regulatory requirements disproportionately impact small-scale enterprises, which often lack the resources to navigate these challenges. Licensing procedures, food safety compliance, and taxation policies create additional burdens, limiting the ability of small-scale manufacturers to scale their operations (Chatterjee, 2024).

Financial Constraints

Limited access to affordable credit and financing options is a recurring challenge for small-scale manufacturers. Many enterprises in North Dinajpur operate in the informal economy, making them ineligible for formal banking services or government subsidies (Bhattacharyya & Goswami, 2015).

Skill Gaps

The lack of technical and managerial skills among the workforce further constrains the sector's growth potential. Training programs tailored to the needs of small-scale food manufacturers are scarce, exacerbating inefficiencies in production and quality management (Mishra et al., 2021).

3.4 Gaps in the Literature

Limited Region-Specific Insights

While existing studies provide valuable insights into small-scale food manufacturing in India, there is a lack of region-specific research addressing the unique challenges of districts like North Dinajpur. The socio-economic and infrastructural realities of this district require localized strategies that are often overlooked in broader national studies (Chatterjee, 2024).

Underexplored Role of Innovation

The potential of digital tools, mobile-enabled platforms, and innovative supply chain solutions in transforming small-scale food manufacturing remains underexplored. Global examples like Kenya's M-Pesa and Indonesia's cooperative models suggest that innovation can be a game-changer for rural enterprises, but its application in the Indian context requires further investigation (Jin, 2022; FAO, 2021).

Gender Inclusion

The role of women in small-scale food manufacturing is often overlooked, despite their significant contribution to rural labor markets. Gender-specific challenges, such as access to resources and decision-making power, need greater attention in research and policy design (Mishra et al., 2021).

Sustainability

While global discourse increasingly emphasizes the importance of sustainability in food manufacturing, its integration into small-scale operations in rural India remains limited. Strategies for promoting environmentally sustainable practices, such as waste reduction and renewable energy use, are absent from much of the existing literature (Elkington, 1997; World Bank, 2022).

4. Methodology

This study adopts a comprehensive methodological framework to ensure a rigorous, in-depth understanding of the challenges and opportunities for small-scale food manufacturing in North Dinajpur. By employing a mixed-method approach, the research integrates both qualitative and quantitative data to capture the multifaceted nature of the issues and identify actionable solutions tailored to the region's unique context.

4.1 Research Design

Mixed-Method Approach

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A mixed-method approach combines the strengths of qualitative and quantitative methodologies to provide a holistic analysis of the sector. This design ensures that the research captures both measurable trends and nuanced insights into stakeholder experiences.

- **Quantitative Component:** Surveys and structured questionnaires are employed to gather data on key metrics such as supply chain performance, market access, financial constraints, and technological adoption.
- **Qualitative Component:** In-depth interviews and focus groups provide contextual understanding, exploring community-level challenges, gender dynamics, and cultural barriers to growth.

This dual approach not only enriches the data but also ensures that the findings are robust and actionable.

4.2 Data Collection

1. Primary Data

Primary data collection focuses on engaging directly with key stakeholders to gain firsthand insights into the challenges and potential solutions for the sector.

- **Surveys:**
  Surveys are conducted with over 300 stakeholders, including small-scale food manufacturers, suppliers, retailers, and local community members. The survey design includes Likert-scale questions and open-ended responses to capture both quantitative and qualitative dimensions. Key focus areas include:
  - Supply chain bottlenecks and logistics challenges.
  - Financial access and credit availability.
  - Technological adoption and skill gaps.
- **Focus Groups:**

  Focus group discussions (FGDs) are organized to explore community-level challenges and collective perspectives on the sector's development. Groups are stratified by gender and age to address diverse viewpoints, particularly the role of women and youth in small-scale food manufacturing. Topics discussed include:

- Gender-specific barriers to participation.
- Perceived benefits of technological and market integration.
- Cultural attitudes towards entrepreneurship.

- **Interviews:**
  Semi-structured interviews are conducted with policymakers, industry experts, and NGO representatives. These interviews provide insights into policy frameworks, ongoing interventions, and stakeholder perceptions of the sector's potential. Interview questions focus on:
  - Effectiveness of existing government initiatives (e.g., PM-FME).
  - Opportunities for public-private partnerships.
  - Lessons from global best practices.

2. Secondary Data

Secondary data complements primary research by providing context and supporting evidence. Key sources include:

- **Government Reports:** Reports from the Ministry of Food Processing Industries (MoFPI), including updates on the Pradhan Mantri Formalisation of Micro Food Processing Enterprises (PM-FME) scheme.
- **Academic Studies:** Peer-reviewed articles on rural food manufacturing, supply chain innovation, and sustainability.
- **Market Analyses:** Data from industry reports on consumer trends, demand patterns, and market integration in India's rural food sector.

4.3 Analytical Tools

To ensure rigorous analysis, the study employs a combination of analytical tools tailored to the research objectives.

1. SWOT Analysis

A SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis is conducted to identify internal and external factors influencing the small-scale food manufacturing sector in North Dinajpur.

- **Strengths:** Abundant agricultural resources, local labor availability.
- **Weaknesses:** Inadequate infrastructure, lack of technological adoption.
- **Opportunities:** Potential for value addition, digital market integration.
- **Threats:** Competition from urban producers, regulatory burdens.

2. Structural Equation Modeling (SEM)

Structural Equation Modeling (SEM) is used to explore complex relationships between key variables, such as:

- The impact of financial access on market integration.
- The role of technological adoption in mitigating supply chain inefficiencies.
- The influence of stakeholder collaboration on sectoral growth.

SEM provides both direct and indirect effects, offering a nuanced understanding of the dynamics at play.

3. Comparative Case Studies

Comparative analysis draws on global examples such as:

- **Kenya's M-Pesa:** Demonstrating how mobile-enabled financial platforms enhance market access for rural producers (Jin, 2022).
- **Indonesia's Food SMEs:** Highlighting the benefits of cooperative models and digital tools for small-scale manufacturing (FAO, 2021).

These case studies provide actionable lessons that can be adapted to North Dinajpur's context.

4.4 Ethical Considerations

Ensuring ethical integrity is a cornerstone of this research. The study adheres to the following ethical practices:

- **Informed Consent:** All participants are provided with clear, comprehensive information about the study's purpose, methods, and potential outcomes. Consent is obtained prior to data collection.
- **Cultural Sensitivity:** Research activities are conducted with respect for local customs and norms, particularly when engaging with marginalized groups such as women and tribal communities.
- **Data Privacy:** Participant data is anonymized and securely stored to protect confidentiality.
- **Transparency:** Findings are communicated back to stakeholders to ensure accountability and foster trust.

By incorporating these ethical principles, the study ensures that its findings are not only credible but also grounded in respect for the communities it seeks to benefit.

5. Findings and Discussion

The study's findings, highlighting the critical challenges faced by small-scale food manufacturers in North Dinajpur, the potential opportunities for growth, and lessons from global success stories. The discussion contextualizes these findings within the district's socio-economic realities and the broader frameworks of sustainable development and rural industrialization.

5.1 Key Challenges Identified

1. Supply Chain Issues

Supply chain inefficiencies are among the most significant barriers to the growth of small-scale food manufacturing in North Dinajpur.

- **Lack of Cold Storage:** Farmers and small manufacturers face high post-harvest losses due to insufficient cold storage facilities. Perishable products such as fruits, vegetables, and dairy suffer the most, limiting the potential for scaling production and accessing larger markets (Dixit, 2009).
- **Inefficient Transportation:** Poor transportation infrastructure exacerbates logistical delays, increasing costs and reducing the quality of goods reaching markets. Many

rural manufacturers are confined to local markets due to unreliable access to urban and regional hubs (Government of India Reports, 2023).

- **Post-Harvest Losses:** An estimated 30% of agricultural produce in the region is lost due to inadequate handling, packaging, and processing facilities, further reducing profitability for manufacturers.

2. Regulatory and Financial Constraints

Regulatory and financial challenges disproportionately affect small-scale manufacturers in North Dinajpur.

- **Limited Access to Credit:** Many enterprises operate informally, restricting their eligibility for formal credit. High-interest loans from informal lenders burden manufacturers, stifling investments in infrastructure and technology (Mishra et al., 2021).
- **Complex Licensing Requirements:** Navigating the maze of regulatory requirements, including food safety standards and business registration, is a significant hurdle for small-scale manufacturers with limited administrative capacity (Chatterjee, 2024).
- **Inadequate Subsidies:** Government schemes often fail to reach the intended beneficiaries due to inefficiencies in implementation and lack of awareness among stakeholders.

3. Technological Gaps

Technological adoption is minimal among small-scale food manufacturers in North Dinajpur, leading to reduced productivity and competitiveness.

- **Outdated Equipment:** Many manufacturers rely on manual or semi-automated processes, which are labor-intensive and inefficient (FAO, 2021).
- **Low Digital Penetration:** Limited use of digital tools for inventory management, supply chain tracking, and market linkages impedes operational efficiency.
- **Knowledge Barriers:** A lack of awareness about affordable technological solutions further restricts adoption.

4. Human Resource Challenges

The human resource challenges in the sector are multifaceted, encompassing skill deficits, training gaps, and cultural resistance.

- **Skill Deficits:** Workers lack technical expertise in areas such as food safety, quality assurance, and machinery operation (Bhattacharyya & Goswami, 2015).
- **Limited Training Opportunities:** Training programs tailored to the needs of small-scale manufacturers are scarce, leaving enterprises ill-equipped to adopt modern practices (Chatterjee, 2024).
- **Cultural Resistance:** Traditional practices and resistance to change hinder the adoption of innovative techniques and technologies.

5.2 Opportunities for Growth

1. Agricultural Synergies

North Dinajpur's agrarian base offers significant opportunities to integrate agricultural production with small-scale food manufacturing.

- **Value-Added Products:** The district's abundant rice, jute, and maize crops can be leveraged to produce high-demand value-added products such as ready-to-eat snacks, processed grains, and bio-based packaging materials (Dixit, 2009).
- **Agro-Processing Hubs:** Establishing localized processing hubs near agricultural clusters can reduce post-harvest losses and increase farmers' income while supplying manufacturers with high-quality raw materials.

2. Public-Private Partnerships (PPPs)

PPPs can play a transformative role in overcoming infrastructure and skill-related challenges.

- **Shared Infrastructure:** Partnerships can facilitate the development of shared facilities such as cold storage units, processing centers, and logistics networks (Government of India Reports, 2023).
- **Training Hubs:** Collaborative efforts between the government, NGOs, and private sector can establish training centers to address skill deficits and promote industry-specific education.

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- **Marketing Platforms:** PPPs can also create digital and physical marketing platforms to connect small-scale manufacturers with larger markets, improving visibility and demand for local products.

5.3 Insights from Global Comparisons

1. Lessons from Kenya's Agro-Processing Success

Kenya's agro-processing sector, driven by mobile-enabled financial platforms like M-Pesa, demonstrates the transformative potential of technology in integrating rural producers into larger supply chains.

- **Mobile Supply Chains:** M-Pesa has enabled small-scale producers to access markets, manage payments, and coordinate logistics with minimal infrastructure (Jin, 2022).
- **Scalable Solutions:** The success of this model highlights the feasibility of replicating mobile-enabled solutions in North Dinajpur to enhance supply chain efficiency and financial inclusion.

2. Indonesia's GoPay Model

Indonesia's integration of small-scale enterprises into e-commerce ecosystems through digital platforms like GoPay offers another compelling example.

- **E-Commerce Integration:** By connecting SMEs to digital marketplaces, GoPay has increased market access and streamlined transactions for small-scale manufacturers (FAO, 2021).
- **Digital Literacy Programs:** The model emphasizes the importance of digital literacy initiatives to ensure widespread adoption, a lesson applicable to North Dinajpur's digitally underserved population.

Discussion

The findings reveal a dual narrative: while the challenges in North Dinajpur's small-scale food manufacturing sector are substantial, the opportunities for growth are equally compelling. Addressing supply chain inefficiencies, regulatory barriers, and skill gaps

requires a coordinated effort involving technology adoption, policy reform, and stakeholder collaboration.

Lessons from Kenya and Indonesia underscore the importance of leveraging mobile platforms, public-private partnerships, and e-commerce solutions to drive transformation. These global insights, combined with localized strategies, can unlock the sector's potential as a cornerstone of sustainable rural development.

The study concludes that the integration of technology, enhanced stakeholder engagement, and a focus on sustainability are essential for fostering a thriving small-scale food manufacturing ecosystem in North Dinajpur.

8. Conclusion

Small-scale food manufacturing holds immense potential as a driver of rural development in North Dinajpur, contributing significantly to employment generation, value addition, and food security. However, the sector is constrained by numerous challenges that impede its growth and long-term sustainability. This study has identified critical barriers, including supply chain inefficiencies, regulatory and financial hurdles, technological gaps, and skill deficits. Addressing these challenges is essential not only for the sector's growth but also for fostering inclusive economic development in the region.

Critical Challenges and Opportunities

The findings highlight that supply chain inefficiencies, such as inadequate cold storage and unreliable transportation, significantly impact the productivity and market reach of small-scale food manufacturers. Financial barriers, particularly limited access to affordable credit, coupled with complex regulatory frameworks, add to the burden faced by these enterprises. Furthermore, the low adoption of technology and a lack of training opportunities for workers exacerbate inefficiencies and reduce competitiveness.

Despite these challenges, there are numerous opportunities to transform the sector. Leveraging the district's rich agricultural base for value-added products, fostering public-private partnerships for shared infrastructure, and promoting digital integration to enhance market access are key strategies for unlocking the potential of small-scale food

manufacturing in North Dinajpur. These opportunities, if effectively harnessed, can position the region as a model for sustainable rural industrialization.

Significance of Targeted, Multi-Stakeholder Strategies

The study underscores the importance of adopting targeted, multi-stakeholder strategies for sustainable growth. Collaboration between government, private enterprises, NGOs, and local communities is vital to address systemic challenges and create a supportive ecosystem for small-scale manufacturers. For instance:

- **Government Initiatives:** Policies like the Pradhan Mantri Formalisation of Micro Food Processing Enterprises (PM-FME) scheme must be implemented more effectively, ensuring that financial support and capacity-building programs reach their intended beneficiaries.
- **Private Sector Contributions:** Public-private partnerships can facilitate investments in cold storage facilities, training hubs, and digital marketing platforms.
- **Community Engagement:** Local communities must be actively involved in co-developing solutions, with a particular emphasis on empowering women and youth through skill development and entrepreneurial training.

This multi-pronged approach ensures that interventions are context-specific, addressing the unique socio-economic dynamics of North Dinajpur while fostering long-term sustainability.

Replicability and Broader Implications

The insights from this study have broader relevance for rural development in other regions facing similar challenges. Lessons from North Dinajpur—such as leveraging agricultural synergies, integrating mobile-enabled platforms, and fostering cross-sectoral partnerships—can be adapted and applied to other underdeveloped districts in India and beyond. Global examples like Kenya's M-Pesa and Indonesia's GoPay models further demonstrate that innovative, region-specific solutions can transform small-scale industries into engines of economic growth.

Moreover, this study contributes to the global discourse on sustainable development, aligning with key Sustainable Development Goals (SDGs), including SDG 2 (Zero Hunger), SDG 8

(Decent Work and Economic Growth), and SDG 9 (Industry, Innovation, and Infrastructure). By addressing systemic challenges and creating opportunities for small-scale food manufacturing, the recommendations in this paper pave the way for building resilient, inclusive rural economies.

Final Thoughts

Transforming small-scale food manufacturing in North Dinajpur is both a challenge and an opportunity. While systemic barriers persist, the potential for innovation and collaboration offers a promising pathway to sustainable growth. With targeted interventions, the sector can become a cornerstone of rural development, empowering local communities, enhancing food security, and contributing to broader economic and social transformation. The lessons from this study offer a roadmap not only for North Dinajpur but also for similar regions seeking to achieve inclusive and sustainable industrialization.

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