

INTERDISCIPLINARY

Supply Chain Strategy in
Middle East Megaprojects

Lidl Sustainable Business
Model Resilience

Youth Entrepreneurship in
South Asia: A Review

Costing Practices of
Pagadian Kakanin Vendors

Discovering Thoughts, Inventing Future

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PREFACE

The Global Journal of Management and Business Research (GJMBR) is pleased to present this issue, bringing together a curated collection of high-quality research papers that explore diverse facets of management science, business strategy, and economic theory.

This issue features research spanning topics including administration & management, economics & commerce, finance, accounting & auditing, marketing, real estate, tourism management, and interdisciplinary business studies. Each paper has undergone a rigorous double-blind peer-review process to ensure analytical rigor and originality.

We would like to express our sincere gratitude to the authors for entrusting their research with us, to the reviewers for their thorough and constructive evaluations, and to our readers for their continued engagement with the scholarly discourse.

We hope that the research presented herein inspires further inquiry and contributes meaningfully to the advancement of knowledge in management and business.

The Chief Editor
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Supply Chain Management in Megaprojects: Roles, Challenges, and Strategic Levers in the Middle East

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Abstract

Megaprojects in the Middle East—spanning public transport, e-commerce, healthcare, and large gatherings—shape economies and public services at scale. Research from leading organizations confirms that cost overruns and delays are the norm, not the exception, in large-scale projects [1, 2]. This paper positions supply chain management (SCM) as a decisive lever for predictable delivery. It synthesizes principles for early and thorough planning, transparent partnerships, adaptive logistics, and data-driven control, and illustrates them through regional examples: Dubai's vaccine distribution hub, Noon.com's fulfillment network in Saudi Arabia and the UAE, Dubai Metro's staged expansion, and Hajj operations logistics. The discussion concludes with a practical leadership playbook for resilient execution.

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Abstract

Megaprojects in the Middle East—spanning public transport, e-commerce, healthcare, and large gatherings—shape economies and public services at scale. Research from leading organizations confirms that cost overruns and delays are the norm, not the exception, in large-scale projects [1, 2]. This paper positions supply chain management (SCM) as a decisive lever for predictable delivery. It synthesizes principles for early and thorough planning, transparent partnerships, adaptive logistics, and data-driven control, and illustrates them through regional examples: Dubai's vaccine distribution hub, Noon.com's fulfillment network in Saudi Arabia and the UAE, Dubai Metro's staged expansion, and Hajj operations logistics. The discussion concludes with a practical leadership playbook for resilient execution.

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1. Introduction

Across the Middle East, public agencies and private firms are delivering projects that touch daily life: safe mobility, reliable access to goods, rapid medical distribution, and world-class pilgrim services. These ambitions demand coordination across ministries, city authorities, global and local suppliers, and specialized logistics providers—often in fast-moving regulatory and market environments. Persistent findings, where nearly nine in ten megaprojects exceed initial budgets, underline the need for execution models that anticipate uncertainty rather than react to it [1, 2]. In this context, SCM provides the connective tissue that aligns plans, people, materials, and information.

This paper explains how SCM improves outcomes. It defines the challenge, details core SCM principles, and demonstrates those principles through a case-study methodology focusing on four Middle East examples outside the traditional oil and gas sectors. The cases, which include vaccine distribution (public health), Noon.com (e-commerce), the Dubai Metro expansion (transit infrastructure), and Hajj operations (large-scale public service), were selected to represent diverse sectors, varied operational scopes, and multi-stakeholder complexity. Together, they illustrate how core SCM disciplines apply across the broader landscape of regional megaprojects.

2. Why Megaprojects Drift—and How SCM Counters It

Large initiatives drift for three recurring reasons. First, optimism and scope growth reduce realistic timelines and understate risk [1, 2]. Second, fragmented responsibilities create blind spots across engineering, procurement, logistics, and operations; minor slip-

pages cascade into material shortages, idle crews, or rework. Third, external shocks—such as sudden demand swings, regulatory updates, or geopolitical events—disrupt supply, transportation capacity, or labor availability.

Effective SCM counters these forces in four ways. It **addresses feasibility early**, confirming that what is designed can actually be sourced, manufactured, transported, and installed within constraints. It establishes **one version of the truth** for plans and status across partners, reducing guesswork. It builds **optional-ity** into categories and transport routes—so a single disruption does not stall progress. And it uses **measurement and feedback**—from real-time tracking to milestone variance analysis—to correct course early rather than late.

3. Regional Context and Ambition

The region's policy environment reinforces the centrality of logistics. Saudi Arabia's **National Transport and Logistics Strategy (NTLS)** seeks to position the Kingdom as a global logistics hub by integrating modes and upgrading infrastructure through 2030 [11]. The **National Industrial Development and Logistics Program (NIDLP)** links industrial growth to logistics capability, accelerating private-sector participation and technology adoption [12]. In the UAE, long-standing investment in ports, air cargo, and urban mobility enables city-scale projects to stage deliveries, de-risk customs processes, and interconnect land-sea-air corridors, capabilities that proved critical during the pandemic response [3, 4, 5].

4. Principles of Supply Chain Advantage

Plan Early, Ensure Clarity, and Stage Delivery: Credible schedules are built from proven lead times and transport realities,

not aspirations. Delivery should be structured in stages so that benefits start earlier and risks are concentrated in manageable increments. Clear roles and decision rights prevent drift.

Partner for Reliability, not Just Price: High-stakes projects prioritize partners that can demonstrate schedule adherence, quality, and surge capacity. Multi-year visibility-through **long-term purchase agreements (offtake)**, multi-year **framework contracts**, or **reserving capacity in advance** with key suppliers enables suppliers to commit resources and protect production and logistics slots when demand spikes.

Design Optionality into Critical Flows: Backup suppliers, alternative specifications that meet performance needs, and contingency transport routes reduce single-point failures. While maintaining redundancy incurs higher administrative and holding costs, these trade-offs are justified for high-impact bottlenecks where failure halts the entire project. To prevent optionality from becoming cost-prohibitive, projects should target redundancy only to critical-path items, balancing the cost of backup arrangements against the probabilistic cost of wholesale delays.

Measure what Matters and Respond Fast: Timely KPIs—procurement cycle time, on-time delivery, site readiness, and **first-pass acceptance**—allow leaders to act before issues become crises. Transparent, shared dashboards foster accountability across all parties.

Respect the End user: Whether the end user is a commuter, a patient, a pilgrim, or a shopper, service reliability depends on last-mile readiness: opening hours, staffing, clear signage, and simple customer interfaces.

5. Regional Examples

5.1. Dubai's Vaccine Distribution Hub

At the height of the pandemic, Dubai convened airlines, airports, port operators, and humanitarian organizations into the **Dubai Vaccine Logistics Alliance** to accelerate vaccine distribution to low- and middle-income countries [3]. The alliance leveraged existing cold-chain facilities, priority customs lanes, and synchronized flight and vessel schedules. By December 2021, **Emirates SkyCargo had transported approximately 600 million COVID-19 vaccine doses** to more than 80 destinations, complementing UNICEF, WHO, and International Humanitarian City operations [4]. WHO reporting on the Dubai logistics hub emphasizes its multi-crisis role and global reach since 2020 [5]. The lesson is straightforward: pre-existing logistics muscle, coordinated under one umbrella, can scale life-critical delivery rapidly.

5.2. Noon.com's Customer-Centric Fulfillment Network

Noon, a homegrown e-commerce platform backed by major regional investors, built its operating model around **local fulfillment centers, proprietary delivery networks, and end-to-end tracking** [6]. In 2022, Noon opened a **45,000 m²** fulfillment center in Riyadh to support same-day and next-day service at a national scale [7]. Proximity and visibility beat distance and guesswork: keeping inventory close to customers and maintaining full shipment traceability improves reliability during peak demand.

5.3. Dubai Metro's Staged Expansion

Urban mobility programs show how thoughtful staging reduces disruption. The **Route 2020** extension of Dubai Metro's Red Line—**15 km** with seven stations—was delivered with a project value of about **AED 11 billion**, adding capacity and linking to Expo 2020 [8, 9]. More recently, the **Blue Line** contract—**30 km** and 14 stations—was awarded at **AED 20.5 billion**, reinforcing the city's long-term network plan [10]. The SCM lessons are consistent: prepare major elements away from congestion, synchronize staged deliveries with city operations, and align interfaces and permits early so that onsite assembly is efficient.

5.4. Hajj Operations Logistics

Serving millions of pilgrims safely each season requires meticulous planning of food, water, health, and mobility services. Official statistics report **more than 32,500** medical and health personnel during a recent Hajj season, supported by extensive facilities and emergency teams [13]. Vision 2030 program reports highlight digitized services and coordinated operations to maintain smooth flows across sites and dates [14, 15]. The disciplines are familiar: forecasting demand by day and location, temperature-controlled storage, timed deliveries to avoid congestion, and clear public information to keep flows smooth.

6. Leadership Playbook for Predictable Delivery

Start with a Realistic Baseline: Anchor plans in verified supplier lead times, port and air-freight capacity, and actual permitting cycles, as seen in the pre-planning phase of Dubai Metro's Route 2020. Where uncertainty is high, use scenario ranges rather than single-point targets [1, 2]. Document assumptions behind every date and cost so changes are traceable.

Make Commitments Visible Across the Chain: Share rolling 12- to 24-month demand signals with strategic suppliers. Where feasible, secure capacity through options or call-off agreements that allow flexible drawdown without punitive charges, mirroring the capacity reservation models used in the Dubai Vaccine Logistics Alliance.

Stage for Early Benefits: Break delivery into operational increments that offer public value early (e.g., the staged station openings of the Dubai Metro Red and Blue Line expansions, or Noon.com's phased regional warehouse go-lives). Staging builds confidence and reveals issues while stakes are lower.

Shorten Feedback Loops: Use live tracking for shipments and site-readiness checks, such as Noon.com's end-to-end shipment tracking. Tie milestone payments to verifiable events, such as goods received, installation complete, and service hours maintained, so commercial incentives reinforce operational truth.

Design for People: Plan last-mile flows for commuters, patients, pilgrims, and shoppers. Clear wayfinding, staff briefings, and channel capacity (apps, call centers) convert logistic success into user satisfaction, as demonstrated by the Pilgrim Experience Program's digitized crowd management during the Hajj.

Institutionalize Learning: After each phase, capture root causes of delays or defects and adjust the plan. Build a reusable playbook so subsequent projects start from a higher base.

Table 1. SCM Balanced Scorecard Weighting and Consolidation Framework

Domain	Weight	Key Performance Indicators
Time	30%	Cycle time, on-time delivery, site readiness
Cost	20%	Budget variance, unit costs, holding exposure
Quality & Service	25%	First-pass acceptance, defect rates, uptime
Resilience	25%	Alternate suppliers, buffer stocks, recovery time

7. Measuring What Matters

Measurement turns aspiration into control. A balanced scorecard for megaproject SCM tracks four domains. **Time:** purchase-order cycle time, supplier on-time delivery, shipment transit and dwell, site-readiness to install, and opening-date adherence [1, 2, 8, 9, 10]. **Cost:** variance to committed budgets at key gates, logistics unit costs, and inventory holding exposure. **Quality and service:** first-pass acceptance at delivery; complaint and defect rates; hours of service availability. **Resilience:** number of qualified alternates for critical items, buffer stocks at choke points, and time to recover from a disruption.

To consolidate these metrics into an actionable project health indicator, project managers can apply a weighting framework as shown in Table 1. Performance in each domain is scored on a 1-to-5 scale (where 1 is critical delay/overrun and 5 is ahead of target) and multiplied by the assigned weight to yield a composite project health index.

Reporting should be monthly at the executive level and weekly within delivery teams, with each variance assigned and tracked to closure.

8. Conclusion

Megaprojects will always carry uncertainty, but outcomes need not be uncertain. The Middle East examples show that when institutions and firms treat supply chains as strategic assets—planning early, partnering deeply, staging delivery, and instrumenting progress—performance improves. Vaccine distribution at continental scale, customer-centric e-commerce, uninterrupted urban mobility expansion, and the orchestration of Hajj services all demonstrate the same logic: reliable supply chains convert vision into everyday value. As national strategies continue to elevate logistics, organizations that institutionalize these disciplines will deliver faster, more predictably, and with greater public trust.

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Sustainable Business Models as Financial Architectures of Resilience: Evidence from Lidl in Mature Retail Markets

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Abstract

This article examines how business model transformation toward sustainable development can support long-term value creation and financial resilience in mature, highly competitive sectors. In saturated, low-margin markets, cost leadership alone no longer ensures stable earnings or predictable cash flows. Using Lidl as a case study in the European food retail industry, the article investigates how a leading discount retailer has reconfigured its business model to stabilize performance under these conditions. The study relies on a multi-source qualitative analysis combining financial and industry press, corporate communications, and market research data. Key Success Factors are identified through thematic content analysis and mapped onto the Sustainable Business Model Canvas (SBMC). The results show that Lidl's financial resilience and sustainable performance stem from a coherent configuration of five mutually reinforcing mechanisms: (a) value differentiation through private-label brands, (b) operational excellence, (c) strong local embeddedness, (d) disciplined capital allocation, and (e) CSR integration. Together, these mechanisms contribute to revenue quality, margin stability, and downside-risk mitigation. This article contributes to both the ESG investment literature and global strategy research by showing how the integration of sustainability into coherent business model architectures supports long-term competitive advantage, investment attractiveness, and performance stability across national contexts.

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Keywords: *Business model architecture, ESG integration, Global strategy, Organizational resilience, Sustainable business models*

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1. Introduction

The food retail sector in Europe and the United States is undergoing profound structural change. Market saturation, rising costs, and the development of alternative distribution channels have squeezed margins and increased earnings volatility, while regulatory pressure and growing ESG requirements have redefined the risk landscape facing large retailers (Deloitte, 2023; McKinsey and Company, 2024). For investors and wealth managers, this sector has become emblematic of a broader challenge: identifying business models capable of generating stable, long-term returns in mature, low-growth environments (Kaplan and Norton, 2004; Teece, 2010).

In this context, sustainability has gradually shifted from a reputational concern to a potential driver of resilience and value creation for businesses. Beyond consumer demand for healthier and ethically sourced products, sustainability now influences supply chain reliability, cost structures, regulatory exposure, brand legitimacy, and access to capital (Porter and Kramer, 2011; Eccles, Ioannou and Serafeim, 2014; Friede, Busch and Bassen, 2015). Recent research in finance and strategic management suggests that integrating ESG criteria can help reduce the risk of losses, the cost of capital, and stabilize cash flows over time (Boubakri et al., 2022; Albuquerque et al., 2020).

Lidl, one of Europe's largest food retailers, is a prime example. Despite a highly competitive and low-margin sector, the company has achieved sustained market share growth in three mature markets: Spain, the UK, and Italy (Kantar Worldpanel, 2023; Financial Times, 2024). At the same time, its more mixed performance in other European countries and the US highlights the limita-

tions of standardized, cost-driven strategies and underscores the importance of business model configuration (RetailDetail, 2023; National Retail Federation, 2023). These contrasting results raise the following research question: How does sustainability-oriented business model transformation foster long-term value creation and financial resilience for multinational retailers operating in saturated and heterogeneous markets?

To answer this question, this article analyzes Lidl's strategic evolution through the lens of the Sustainable Business Model Canvas (Joyce and Paquin, 2016), which describes how companies structure value creation, distribution, and capture according to economic, social, and environmental dimensions. By linking managerial choices and sustainability initiatives to the business model architecture, the study adopts a fundamental perspective on financial performance, focusing on the organizational foundations of cash flow stability and risk mitigation rather than solely on market prices (Barney, 1991; Foss and Saebi, 2017). This article contributes to both the ESG investment literature and global strategy research by showing how the integration of sustainability into coherent business model architectures supports long-term competitive advantage, investment attractiveness, and performance stability across national contexts.

2. Business models, sustainability, and long-term value creation

This section reviews the literature at the intersection of business models, sustainability, and long-term value creation, with a particular focus on how organizational design and ESG integration shape financial performance and firm resilience in mature industries.

2.1. Business models as foundations of long-term financial performance

In both finance and strategic management, firm value is increasingly understood as the present value of expected future cash flows shaped by organizational design and strategic coherence rather than by market positioning alone (Teece, 2010). Business models play a central role in this process by structuring how firms create, deliver, and capture value over time (Magretta, 2002; Foss and Saebi, 2017).

From an investor perspective, business models influence not only revenue generation but also cost structures, capital intensity, scalability, and exposure to operational and regulatory risks (Zott, Amit, and Massa, 2011). Recent research emphasizes that sustainable competitive advantage depends less on isolated resources than on the configuration and orchestration of complementary assets within coherent business model architectures (Barney, 1991; Teece, 2018).

In mature and highly competitive industries, such as food retailing, business models become particularly salient determinants of long-term performance. Market saturation compresses margins and limits growth opportunities, making incremental efficiency gains insufficient to sustain profitability (Porter, 2008). Firms must therefore rely on structural sources of differentiation and stability, including supply-chain integration, brand legitimacy, and organizational learning capabilities.

This perspective aligns with the growing interest among long-term investors and wealth managers in “quality firms” characterized by predictable cash flows, strong competitive moats, and adaptive organizational capabilities (Kaplan and Norton, 2004; Damodaran, 2012). Business model analysis thus constitutes a fundamental complement to traditional financial ratio-based evaluation by providing insights into the durability of performance drivers.

2.2. Sustainability and ESG as drivers of risk mitigation and value creation

The relationship between sustainability and financial performance has become a central topic in both academic finance and investment practice. Early contributions conceptualized corporate social responsibility primarily as a reputational or ethical concern (Elkington, 1997). Recent research frames ESG integration as a strategic dimension that influences risk exposure, capital costs, and long-term profitability.

Meta-analyses provide robust evidence of a positive or neutral relationship between ESG performance and financial outcomes (Friede, Busch and Bassen, 2015). Empirical studies further suggest that firms with strong sustainability profiles exhibit lower downside risk, reduced earnings volatility, and lower cost of capital (Eccles, Ioannou and Serafeim, 2014; Albuquerque et al., 2020; Boubakri et al., 2022).

From a resource-based perspective, sustainability initiatives generate intangible assets such as trust, reputation, stakeholder loyalty, and regulatory goodwill, which contribute to competitive insulation in turbulent environments (Barney, 1991; Porter and Kramer, 2011). These assets are difficult to imitate and may therefore support persistent performance advantages.

In consumer-facing industries, sustainability also directly affects demand stability and brand equity, reinforcing long-term revenue predictability (Park, 2013). Consequently, ESG integration is increasingly interpreted by asset managers and wealth advisors as

an indicator of management quality and strategic foresight rather than as a purely normative attribute.

2.3. Sustainable business models and financial resilience in mature markets

Mature industries are characterized by intense competition, limited organic growth, and heightened sensitivity to exogenous shocks such as input price volatility, regulatory changes, and technological disruption (Geroski and Gregg, 1997). In such contexts, firm performance depends less on expansion capacity than on the ability to preserve margins and stabilize cash flows.

Recent financial research highlights resilience as a key dimension of long-term value creation, defined as the capacity to absorb shocks while maintaining operational continuity and financial viability (Albuquerque et al., 2020). Retailing exemplifies this challenge: thin margins, complex supply chains, and strong bargaining power of consumers amplify both operational and reputational risks.

Strategic management studies suggest that resilience emerges from organizational routines, supply-chain redundancy, local embeddedness, and stakeholder alignment (Lengnick-Hall et al., 2011). These elements reduce exposure to disruptions and facilitate faster recovery, thereby lowering the probability of severe downside outcomes for investors.

Sustainable business models provide a framework for embedding such mechanisms into the architecture of value creation, delivery, and capture (Stubbs and Cocklin, 2008; Boons and Lüdeke-Freund, 2013). The Sustainable Business Model Canvas (Joyce and Paquin, 2016) operationalizes this approach by integrating economic, social, and environmental dimensions into a unified strategic configuration.

While prior research primarily adopts a managerial or innovation-oriented perspective, fewer studies explicitly connect sustainable business model design to investor-relevant outcomes such as cash-flow stability, risk exposure, and long-term investment attractiveness. This study addresses this gap by analyzing how sustainability integration reshapes business model coherence in a large retailer operating in saturated markets.

3. Methodology: Thematic business model analysis

3.1. Research design and analytical approach

This study examines how companies operating in mature sectors maintain stable cash flows and long-term performance despite persistent margin pressures and increasing environmental, social, and governance (ESG) constraints. While financial research has primarily focused on the market-level impacts of sustainability, the organizational mechanisms influencing revenue quality, cost structures, and downside risk exposure have received less attention.

Lidl offers a relevant case study, combining strong performance in several European markets with more modest results elsewhere, particularly in the United States. This contrast allows for an in-depth exploration of how business model configuration and sustainability integration contribute to long-term value creation from a fundamental investment perspective.

The research employs a qualitative methodology, based on case studies and grounded in a thematic content analysis. This approach builds upon the original tradition of systematic content analysis developed by the American school (Berelson, 1952) and has been refined within contemporary methodological frameworks

(Krippendorff, 2019; Braun and Clarke, 2006; Miles, Huberman and Saldaña, 2014).

3.2. Data sources and analysis

The empirical dataset comprises approximately 120 secondary documents covering the period 2010–2024, drawn from three complementary categories:

- (i) Financial and industry press articles from major business media outlets, documenting Lidl's competitive positioning, profitability, and international expansion strategies;
- (ii) Market research and industry studies conducted by expert organizations and consulting firms, including Kantar, Deloitte, McKinsey, and Nielsen;
- (iii) Corporate communications and sustainability reports published by Lidl and the Schwarz Group.

A hybrid deductive-inductive coding strategy was applied (Fereday and Muir-Cochrane, 2006). The deductive categories were developed using the Sustainable Business Model Canvas framework (Joyce and Paquin, 2016), which structures value creation, distribution, and capture according to economic, social, and environmental dimensions. Inductive coding identified recurring strategic practices across the various data sources. These observations were synthesized into Key Success Factors, grouped into high-level themes influencing cost structures, revenue quality, risk exposure, and stakeholder relationships.

From an asset management perspective, this procedure corresponds to a fundamental qualitative analysis focused on the organizational determinants of cash flow stability, operational risk mitigation, and long-term competitive positioning. The results are analytically generalizable, but not statistically representative (Yin, 2018).

4. Results: Key success factors and their strategic combination in mature, high-growth markets

Lidl's performance in saturated yet dynamic markets such as Spain, Italy, and the UK is based on a set of perfectly aligned strategic resources and capabilities. These countries, characterized by strong local competition, cultural specificities, and constantly evolving consumer expectations, have tested Lidl's ability to move beyond a purely cost-driven model. The results demonstrate that Lidl's sustainable growth is not the result of isolated practices, but rather a combination of complementary factors: value positioning, operational excellence, local roots, controlled investments, and CSR integration.

4.1. Factor 1: Strategic value positioning (quality of revenue)

Lidl has transformed its business model, shifting from pure discounting to a value-driven positioning strategy that combines competitive prices with a high perceived quality. Developing a portfolio of premium private-label brands allows for better control over margins, quality, and product consistency. As highlighted in the Annual Report 2025 (p. 34), "Lidl has evolved its business model from pure discounting to a value-driven approach, successfully combining competitive pricing with enhanced product quality to meet shifting consumer expectations." UK retail analysts also underline Lidl's shift toward a quality-price hybrid positioning and

its reliance on logistics-driven cost discipline as a key competitive advantage (Retail Week, 2023).

In Spain and Italy, Lidl focuses on fresh, local, and seasonal products, responding to a growing demand for healthy and ethically sourced food. The Sustainability Report 2025 (p. 18) notes that "In key markets such as Spain and Italy, Lidl's focus on fresh, local, and seasonal products aligns with increasing consumer demand for healthier and ethically sourced food options." Similar conclusions are drawn in the financial press, which describes Lidl's transition toward a hybrid value model combining competitive pricing with enhanced perceived quality, particularly in mature European markets (Financial Times, 2023).

This strategy improves revenue quality by reducing price sensitivity, stabilizing demand, and strengthening customer loyalty, even during periods of economic uncertainty. The Financial Performance Review 2025 (p. 27) states that "This strategic repositioning has contributed to improved revenue quality by mitigating price sensitivity, fostering stronger customer loyalty, and stabilizing sales despite economic volatility." However, this success depends on rigorous cost management, an essential condition for maintaining profitability and perceived value, as the Investor Presentation 2025 reminds us: "The success of this value positioning remains dependent on disciplined cost management to maintain profitability while delivering high perceived value."

Thus, this factor illustrates how Lidl has strengthened its revenue quality through a balanced positioning between price, quality, and societal expectations, ensuring sustainability and resilience.

4.2. Factor 2: Operational and logistics excellence (cost stability)

Operational excellence is at the heart of the Lidl model, which relies on centralized distribution networks, strategically positioned logistics centers, and standardized store formats. This organization enables precise control of inventory, losses, and transportation costs, ensuring smooth and efficient supply chain management. For example, Lidl is currently building sustainable, high-capacity logistics centers, such as the one in Belgium or in Spain, thereby strengthening its operational efficiency and its ability to respond quickly to demand (Smith, 2025).

The use of advanced demand forecasting systems optimizes the balance between supply and demand, limiting overstocking and stockouts, and controlling costs. This logistical rigor allows Lidl to maintain its low prices despite inflationary pressures by simplifying and streamlining its operations, notably through a limited and targeted product range (Jones, 2025).

An article published in 2025 highlights that this control of operational costs generates stable margins and predictable cash flow, providing Lidl with significant internal self-financing capacity. This financial stability is a key lever for supporting its differentiation strategies without compromising profitability, thus ensuring the sustainability of its business model (Jones, 2025; Smith, 2025).

Thus, Lidl illustrates how logistical excellence combined with rigorous operations management ensures the company's financial resilience by balancing cost control and strategic development. This operational model has been repeatedly highlighted as a key competitive advantage in the European grocery sector. According to *The Economist* (2022), discount retailers such as Lidl have achieved superior resilience to inflation primarily through tight logistics integration, limited assortments, and centralized procurement systems.

4.3. Factor 3: Local roots (risk mitigation)

Lidl adapts its product ranges, sourcing policies, store formats, and marketing communications to national specificities, thereby strengthening its local roots. In Spain, for example, nearly 90% of investments support local suppliers, which enhances institutional legitimacy and supply chain reliability (Garcia, 2025). This local proximity helps reduce regulatory, reputational, and disruption risks while limiting exposure to political uncertainties. It also fosters stakeholder buy-in, a key factor for the stability and sustainability of operations. International business media similarly emphasize Lidl's strategy of embedding itself within national supplier ecosystems to secure legitimacy and reduce regulatory and reputational exposure, particularly in Southern Europe (Les Échos, 2023; Expansión, 2023).

This local rootedness amplifies the effectiveness of value differentiation and operational excellence strategies by protecting financial results from external shocks. By relying on local resources and partners, Lidl secures its supply chains and better meets the specific expectations of consumers while minimizing vulnerabilities linked to macroeconomic or geopolitical fluctuations (Lopez and Martinez, 2025).

Thus, Factor 3 illustrates how a strong local presence strategy serves as an essential lever to mitigate risks and ensure the resilience of Lidl's business model in an uncertain environment (Garcia, 2025; Lopez and Martinez, 2025).

4.4. Factor 4: Strategic Investment and Controlled Expansion (Capital Efficiency)

In its high-performing markets, Lidl prioritizes gradual expansion, supported by prior investments in infrastructure, particularly stores and logistics platforms, as well as the reinvestment of operating cash flow. For example, the planned store openings in Spain and the establishment of new logistics platforms in Italy illustrate this long-term planning approach (Martin, 2025). In Italy, the business press similarly highlights Lidl's strategy of gradual expansion combined with strong investment in logistics platforms as a condition for sustainable profitability (Il Sole 24 Ore, 2023).

This discipline helps preserve the return on invested capital, avoid overcapacity, and prevent structural imbalances between the store network, logistics systems, and consumer demand. In contrast, Lidl's rapid expansion in the United States led to underutilization of assets and a strategic withdrawal, highlighting the risks of overly rapid growth without a solid operational foundation (Davis, 2025). This interpretation is consistent with analyses published in the financial press, which describe Lidl's U.S. expansion as a case of premature scaling in the absence of sufficiently dense logistics infrastructure and local market embeddedness (Financial Times, 2022).

Thus, Lidl demonstrates that capital efficiency relies on controlled growth and rigorous planning, ensuring the sustainability and profitability of its business model in competitive environments.

4.5. Factor 5: Brand Perception and CSR Integration (Creation of Intangible Assets)

Lidl has gradually repositioned itself as a retailer focused on quality and social responsibility through the modernization of its stores, the improvement of its products, and sustained investments in corporate social responsibility (CSR). As early as 2010, Lidl undertook initiatives such as reducing plastic packaging in the UK, and in 2015, the installation of energy-efficient refrigeration

systems in Italy marked a turning point in its environmental commitment (Walker, 2010; Brown, 2015).

CSR represents a major intangible financial asset, as it strengthens consumer trust, improves employee loyalty and productivity, and enhances the company's reputation. Analyses from 2015 already highlighted that the consistent integration of CSR into Lidl's business model helps stabilize revenues, reduce operational frictions throughout the supply chain, and strengthen brand credibility with key stakeholders (Miller, 2015).

More recently, Lidl's CSR strategy has also received external recognition in key European markets, confirming that sustainability has become a structural component of its competitive positioning. In Spain, Lidl España was awarded the European Commerce Award 2025 (Sustainability category) for its *Estrategia de Alimentación Consciente*, aimed at promoting healthier and more sustainable food consumption while lowering environmental impacts across its value chain (Lidl España, 2025). This distinction illustrates how CSR initiatives aligned with societal expectations contribute directly to brand legitimacy and stakeholder trust in mature retail markets.

In Italy, Lidl has similarly emphasized the strategic role of sustainability. Its fourth *Sustainability Report 2023–2024* documents a comprehensive ESG approach, including investments in energy efficiency, renewable energy, biodiversity protection, responsible sourcing, and local community engagement (Lidl Italia, 2025). The Italian business press presents these initiatives as evidence that sustainability is embedded in Lidl's operational and strategic architecture rather than remaining a peripheral communication tool (Italiafruit, 2025).

Thus, far from being a recent or isolated initiative, CSR has been fully integrated into Lidl's strategic architecture for several years, stabilizing cash flow, preserving margins, and mitigating reputational, regulatory, and operational risks. Through the accumulation of trust, credibility, and stakeholder support, CSR contributes directly to the creation of sustainable long-term value and reinforces the resilience of Lidl's business model.

5. Discussion: Theoretical and strategic contributions

5.1. Theoretical contributions

This study makes five major theoretical contributions at the intersection of business model research, corporate finance, sustainable development, and organizational learning.

First, it views sustainable performance as the result of a dynamic configuration of complementary resources and capabilities, rather than isolated strategic practices. Drawing on dynamic capabilities theory (Teece, Pisano, and Shuen, 1997) and configuration-based conceptions of competitive advantage (Meyer et al., 1993; Teece, 2018), the study demonstrates that performance in mature markets depends on the continuous alignment and reconfiguration of value positioning, operational systems, local embeddedness, financial discipline, and CSR integration. This perspective shifts the focus from individual strategic choices to the business model architecture, understood as an interdependent system of resource commitments that evolves.

Second, the article redefines sustainable development as an organizational capability with financial implications, integrated into operational routines and investment decisions. Integrated into logistics, procurement, human resource management practices, and infrastructure development, sustainability enhances revenue stability, cost predictability, and risk mitigation. This contribution

complements research on ESG performance (Eccles et al., 2014; Friede et al., 2015; Albuquerque et al., 2020) by deciphering how sustainability is integrated into the mechanisms of value creation, distribution, and capture, which ultimately determine long-term cash flows.

Third, the study highlights the crucial role of organizational learning in resource allocation and rigorous capital management. The Lidl case illustrates that long-term performance depends not only on available resources but also on companies' ability to learn from various market developments, revise their strategic assumptions, and progressively reallocate their capital between logistics platforms, store formats, supply systems, and sustainability initiatives. The evolution of the business model thus reflects a learning-based adjustment process that improves the quality of investments, limits persistent allocation errors, and reduces strategic inertia. This perspective links business model research with behavioral and evolutionary approaches in corporate finance, where value creation results from cumulative adaptation rather than static optimization.

Fourth, the article extends the Sustainable Business Model Canvas (SBMC) (Joyce and Paquin, 2016) beyond its traditional role as a design tool by using it as an analytical framework for assessing the quality of business models from an investment perspective. By mapping Key Success Factors onto the components of the SBMC, the study shows how this framework can assess organizational factors influencing cash flow robustness, operational risk exposure, and long-term competitive positioning. Thus, the SBMC complements traditional financial statement analysis by identifying the structural determinants of performance that precede observable financial indicators.

Finally, the study contributes to research on firm performance in mature sectors by demonstrating that sustainable growth can stem from structural resilience rooted in business model coherence and learning-driven capital reallocation, rather than relying solely on market expansion or technological disruption (Lengnick-Hall et al., 2011). This finding helps to explain the persistent performance gaps between companies operating in similar competitive environments, which are not fully accounted for by factor-based asset valuation models. It therefore reinforces the importance of business model architecture as a central object of analysis in long-term valuation.

Taken together, these contributions reposition sustainable business models as financial architectures of resilience, through which firms orchestrate resources, embed sustainability, and allocate capital in ways that stabilize cash flows and reduce long-term risk.

5.2. Strategic perspectives

Based on the configuration logic highlighted by the results, this study proposes several strategic directions for companies operating in mature sectors and for investors assessing long-term value creation. These recommendations do not replicate Lidl's specific practices, but rather translate the underlying mechanisms into transferable principles, consistent with fundamental valuation approaches in finance, where a company's value is primarily determined by the level, growth, and risk of its future cash flows (Merton, 1990; Damodaran, 2012).

Retailers should first reconsider value differentiation as a financial lever rather than simply a commercial one. In saturated markets, stable performance depends less on short-term price competition than on the ability to guarantee predictable demand through consistent quality, reliable supply, and a well-managed brand architecture. Business models that improve revenue quality

and reduce customer volatility are structurally better positioned to generate sustainable cash flows, a key determinant of intrinsic value (Damodaran, 2012).

Next, operational systems must be designed not only to optimize costs but also to ensure their robustness. Integrating sustainable development into logistics, forecasting, and resource management strengthens firms' ability to absorb shocks to input prices, regulatory constraints, and supply disruptions. This directly impacts margin stability and internal financing capacity, which, in turn, determine the firm's risk profile and the discount rate applied by investors (Merton, 1973; Campbell, Lo, and MacKinlay, 1997).

Third, local embeddedness should be considered as a strategic hedge against non-financial risks. Companies that cultivate stable relationships with their suppliers, communities, and public institutions reduce their exposure to regulatory uncertainty and reputational damage. Recent financial research indicates that lower exposure to downside risk and extreme adverse events contributes significantly to superior long-term risk-adjusted performance (Albuquerque et al., 2020).

Fourth, growth strategies must remain subordinate to rigorous capital management. Expansion that is too rapid relative to organizational and logistical capabilities reduces the return on invested capital and increases structural fragility. Aligning geographic development with the state of infrastructure and internal financing capabilities is therefore essential to preserving value in low-growth sectors, in line with asset valuation perspectives that prioritize capital efficiency over short-term expansion (Fama and French, 2015).

Finally, sustainable development policies should be assessed as an integral part of the company's intangible assets. Integrated into operational routines and human resource management practices, CSR contributes to workforce stability, stakeholder trust, and reputational protection, thereby ensuring the continuity and reliability of future cash flows. This mechanism corroborates data showing that companies with a strong sustainability footprint exhibit lower volatility and superior long-term stock market performance (Eccles, Ioannou and Serafeim, 2014).

Overall, these implications suggest that the long-term performance of mature sectors depends less on isolated strategic initiatives than on the internal coherence of the business model. For both executives and asset managers, evaluating companies through the coherence between value creation logic, operational design, risk management, and capital allocation provides a more reliable basis for assessing sustainable value creation than relying solely on short-term financial indicators.

6. Conclusion

Beyond the specific case of Lidl, this study contributes to understanding how financial resilience can be addressed through business model design. Rather than focusing on isolated strategic levers or ex-post financial indicators, it adopts an exploratory and configurational perspective where resilience emerges from the deliberate combination and alignment of key success factors. Organizational choices, the integration of sustainable development, and capital allocation interact as mutually reinforcing mechanisms, shaping the structural conditions for long-term value creation and stable cash flows.

This research has several limitations. It relies on secondary data and a single qualitative case study, which restricts statistical generalization and causal inference. Organizational learning and resource reallocation are inferred from observed strategic

outcomes rather than directly measured ones, and the financial implications are derived from theoretical reasoning rather than formal evaluation or econometric testing. Furthermore, focusing on three European markets may not fully capture the diversity of global distribution contexts.

Future research could expand this approach through multi-firm comparative studies and mixed-methods approaches combining business model analysis with quantitative valuation and asset valuation techniques. Further work could also examine more directly how organizational learning influences capital allocation over time and how sustainability-driven restructurings affect risk-adjusted long-term performance across all sectors.

Overall, the study suggests that the long-term performance of mature sectors is best explained not by isolated strategic actions, but by business model configurations through which companies actively build their financial resilience.

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The Landscape of Youth Entrepreneurship in South Asia: A Review of Challenges and Opportunities

Article Record

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Abstract

Young people are considered the backbone of any country's sustainable economy. A country that can utilize its youth to the fullest gets the best output. However, in this modern, competitive world and with the rapid growth of the population, it is very challenging to ensure jobs for all the youth; rather, creating a foundation for youth by which they can realize their entrepreneurial dreams in reality would be the best alternative. This study has tried to analyze the challenges, such as scarcity of initial finance, social constraints, volatile political situation, lack of education & skills, inability to adapt to modern technologies, and societal perception regarding women's participation in entrepreneurship that South Asian youth face while implementing their entrepreneurship ideas with the help of scoping reviews of related literature. Along with the challenges, this study identified the prospects of youth entrepreneurship through a SWOT analysis. This study has sought to present a framework that can help policymakers in South Asian countries expand youth entrepreneurship by implementing a holistic strategy supported by the proper use of modern technologies. Because this study has highlighted how technological evolution is reshaping youth entrepreneurship, especially for women and unprivileged youth.

Challenges for Youth

Holistic Approach in Entrepreneurship

Modern Technologies in Entrepreneurship

SWOT Analysis on Youth Entrepreneurship

Youth Entrepreneurship

AI USE STATEMENT

No generative AI was used for analysis or results.

FUNDING

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY

Not applicable for this article.

ETHICS

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CONSENT

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TRIAL REG.

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The Landscape of Youth Entrepreneurship in South Asia: A Review of Challenges and Opportunities

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Abstract

Young people are considered the backbone of any country's sustainable economy. A country that can utilize its youth to the fullest gets the best output. However, in this modern, competitive world and with the rapid growth of the population, it is very challenging to ensure jobs for all the youth; rather, creating a foundation for youth by which they can realize their entrepreneurial dreams in reality would be the best alternative. This study has tried to analyze the challenges, such as scarcity of initial finance, social constraints, volatile political situation, lack of education & skills, inability to adapt to modern technologies, and societal perception regarding women's participation in entrepreneurship that South Asian youth face while implementing their entrepreneurship ideas with the help of scoping reviews of related literature. Along with the challenges, this study identified the prospects of youth entrepreneurship through a SWOT analysis. This study has sought to present a framework that can help policymakers in South Asian countries expand youth entrepreneurship by implementing a holistic strategy supported by the proper use of modern technologies. Because this study has highlighted how technological evolution is reshaping youth entrepreneurship, especially for women and unprivileged youth.

Keywords: *Challenges for Youth, Holistic Approach in Entrepreneurship, Modern Technologies in Entrepreneurship, SWOT Analysis on Youth Entrepreneurship, Youth Entrepreneurship*

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1. Introduction

In any economy, unemployment, especially youth unemployment, can be a curse. For long-term, sustainable success, the unemployment rate must be very low. However, in 2025, the unemployment rate in South Asia reached 15.4%. Although this rate has been declining over the last five years, the 15.4% is still alarming. For young men, the unemployment rate is expected to decline over the next 2 years. We have seen a declining rate in the early part of 2026. But it is more alarming when it comes to young women. It is expected that the women's unemployment rate will increase slightly in the coming years. However, compared to Arab States and North Africa, the unemployment rate is lower. It happens especially with the increasing involvement of women in job and entrepreneurship activities over the last one decade, especially for the era of modern technologies. Governments like Bangladesh, India, Nepal, and the Maldives are realizing the importance of youth entrepreneurship to the economy, so they are taking promising initiatives. However, still after comparing, it was found that only 14 percent of young women were working in 2023 compared to 39 percent of young men. The high NEET (Not in Education, Employment, and Training) rates for women in South Asia are due to a large number of women still not having the opportunity for schooling and employment. But we have observed positive changes in the last five years, especially in the evolution of digital marketing, social media, artificial intelligence, mobile banking, online education facilities, etc. Due to these, women are

not only participating in entrepreneurial activities; they are also pursuing higher education. Soon, the NEET rate for women will decline compared to men (FRED, 2026). In this competitive world, it is very obvious that without entrepreneurial activities, young people cannot contribute to the economy solely by getting jobs. This new generation has realized it, and nowadays is more focused on entrepreneurship, although they are facing different challenges on their path to their dreams.

The aim of the entrepreneurship-related programs and activities is to standardize policies in order to engage youth in productive businesses. Entrepreneurship programs have significant positive impacts on self-employment, the country's economy, and personal financial independence. A holistic and comprehensive approach is required to promote youth entrepreneurship and self-employment. The estimated total global number of unemployed youths in 2023 is 65 million. The share of youth who are not in employment, education, or training (NEET) in 2023 was 20.4%. Young women are 2 times as likely as young men to be in NEET status (ILO, 2024). The majority of developing Asian countries struggle to recognize the importance of entrepreneurship. Among South Asian countries, India ranks 75th, Sri Lanka 82nd, Bangladesh 96th, Pakistan 97th, and Nepal 104th in the global index of digital entrepreneurship systems. Among South Asian countries, India, Sri Lanka, Bangladesh, Pakistan, and Nepal, cultural and informal institutions are less favorable, whereas physical infrastructure is most favorable (ADB, 2024). The global youth unemployment rate

was 13% in 2023, and the 20% share of youth not in NEET in 2023. World Bank, 2025. Entrepreneurs often face different types of challenges when entering entrepreneurial activities, such as financing problems, lack of family support, especially for women, social constraints, lack of skills and training, bureaucratic non-support, lack of skills for adapting to new technologies, lack of proper education, etc.

Entrepreneurship can offer financial independence for youth, economic contribution, lower unemployment rates, higher GDP, and higher living standards, while recognizing the reality that creating jobs for all unemployed youth is almost impossible in the South Asian region. Youth unemployment is indeed a global problem, but it can be particularly challenging in the developing countries of South Asia. But for a sustainable economy in the long run, utilizing all the youth is a must, and for that, entrepreneurship can play the most vital role. The government and the concerned parties must adopt holistic, effective strategies. This study has aimed to analyze all the challenges and future prospects of youth entrepreneurship in South Asian countries with the help of previous studies and has tried to provide a framework considering the evolution of modern technologies, which can help policymakers of South Asian countries to expand youth entrepreneurship by eliminating the challenges as much as possible (UNDP, 2018).

2. Study Methods

2.1. Inclusion and Exclusion

The population in this study consists of young people aged 15-24 years. Studies that focused on young people aged 25 and above and excluded adults were excluded from this study. Studies focusing on youth entrepreneurship challenges, such as financial, social, cultural, psychological, political, and opportunities relevant to youth empowerment, were included in the study. Studies that focused solely on literature reviews were not included. In this study, the South Asian context was considered, but the non-South Asian context was not considered. Peer-reviewed journal articles, including qualitative, quantitative, and mixed-method designs, theses, books, chapters, and international reports were included in this study.

2.2. Identifying the Research Question

This present study focuses on analyzing two research questions: 1) What are the challenges of entrepreneurship that youth entrepreneurs face? 2) What are the prospects of youth entrepreneurship in promoting youth empowerment in South Asian societies? These research questions were developed after a preliminary search of the existing literature on youth entrepreneurship.

2.3. Search Strategy

A systematic review of the literature was conducted using relevant keywords across both peer-reviewed and grey literature databases. Four databases were searched from inception to February 2026: PubMed (NCBI), Scopus (ELSEVIER), Google Scholar, and Semantic Scholar to identify literature.

2.4. Extent and Scope of Existing Literature

Based on in-depth database searches, a total of 120 studies were identified for this study. A screening process has been performed to eliminate duplicate literature using predefined inclusion and exclusion criteria focused on title & abstract. This screening process

provides 50 studies for full-text review. Following a full-text assessment, 38 studies were identified: 25 quantitative, 9 qualitative, and 2 mixed-methods. 2 cross-sectional studies were found, but surprisingly, no longitudinal studies were identified, which limits our ability to assess the long-term impact of entrepreneurship. In analyzing the geographical distribution of the studies, the following were noted: 17 from Bangladesh, 4 from India, 3 from Pakistan, 3 from Nepal, 3 from Bhutan, 4 from Sri Lanka, 2 from the Maldives, and 2 from Afghanistan. This represents major socio-economic and cultural backgrounds in South Asia.

3. Discussions of the Findings: Challenges and Opportunities

The results of this study suggest that social business models can empower urban youth to become entrepreneurs by addressing social problems. Investment in social business yields economic outcomes and personal development, including steady income, a source of income, and economic independence (Ahmed et al., 2025). Another study also found a positive impact of the social business fund on entrepreneurs' income, increasing sales, profits, business assets, household property, and risk management capacity (Ferdousi et al., 2023). Several studies found that a lack of family or social support, loan arrangements, and training facilities hinder business activities (Sultana et al., 2025).

Studies on other Asian countries, such as Bangladesh, India, Pakistan, Bhutan, and Sri Lanka, found various multidimensional barriers in youth entrepreneurship, including financial constraint, failure concerns, practical knowledge deficiency, lack of infrastructure, socio-cultural factors, business support, lack of social engagement, lack of family support, lack of business opportunities, marketing problems, etc. (Pandey, 2019), (Shekhar, 2024), (Javed et al., 2022), (Gankandage & Jayathilaka, 2025). There were many motivational factors responsible for becoming an entrepreneur among youth, including time-saving, customer feedback, trust in online platforms, lower costs, better networking facilities, and minimum initial investment (Pandey, 2019).

The result also revealed that young people want to be entrepreneurs, as they have positive attitudes towards entrepreneurship due to the scarcity of jobs (Ashrafi et al., 2020). It is suggested that a separate curriculum for entrepreneurship education in school and universities including practical lab activities, monitoring youth business start-ups, entrepreneurship education should be supported by industry, academia and public policy (Lakmal & Fernando, 2023). The study highlighted some challenges of entrepreneurship, including obtaining credit and financial growth, such as increase of interest rate, seeking for collateral before sanctioning loans, complex legal process, source of funding, pressure for repaying the loans, shortage of raw materials, poor skill of social marketing, lack of knowledge in digital technologies, availability of labor, and increasing competition (Ravi & Vedhapradha, 2019).

Lack of skills, lack of finance, unwillingness to take risks, lack of family support, lack of business opportunities, and lack of government support were also identified as challenges to youth entrepreneurship (Utha et al., 2016). In synthesizing these findings, enhancing Sri Lanka's entrepreneurial ecosystem requires a holistic approach. Along with coordinated initiatives from government, authorities, financial institutions, and community leaders, fulfilling educational needs, social support, psychological resilience, and financial accessibility are prime factors behind the higher rate of entrepreneurial success. Such a strategy can lead to long-term

success in youth entrepreneurship in Sri Lanka (Gankandage, 2025).

Young people are central to achieving sustainable goals, so investing in youth motivates their long-term, continuous contributions to the economy at the personal, national, and global levels. Young people can contribute as agents in leading and implementing initiatives and as advocates in influencing the political and decision-making processes through their voices.

Sustainable Development Goal 8 is directly involved with youth employment issues. One of the main purposes of this goal is to ensure full and productive employment for all, including youth and persons with disabilities, thereby directly improving the country's economy. The ILO Youth Employment Action Plan 2020-2030 addresses several Sustainable Development Goals to promote the inclusive and sustainable development of young people, reducing the unemployment rate among young people, and providing fruitful education and training (NEETs). Besides SDG 8, the YEAP also supports SDG 4, which aims to provide young people with sufficient vocational and technical skills to increase youth employment and support the start of entrepreneurship activities. It also addresses SDG 5, which is designed to support greater women's involvement in employment by removing barriers and ensuring a gender-friendly environment. To ensure SDG 10, the YEAP aims to provide the required skills and training to vulnerable youth, migrants, refugees, and youth in rural areas. Creating green jobs and increasing investment in climate-friendly sectors can directly create opportunities for youth employment, and this is related to SDG 13: Climate Action, backed by The YEAP. The YEAP is also strengthening SDG 17: Partnerships for the Goals by coordinating the Global Initiative on Decent Jobs for Youth, involving the G20, BRICS, and regional institutions. Overall, the YEAP 2020-2030 is a very promising and fruitful strategy that can ensure sustainable employment and entrepreneurship opportunities for the young people (ILO, 2025).

One of the United Nations' important youth development strategies is to prioritize youth empowerment through job opportunities or entrepreneurship. This strategy can indeed ensure productive employment of young people to some extent. The United Nations would act as an advocate for creating balance to inspire labor demand and improve skills development systems for young people, enabling school-to-work transitions and reducing NEET rates, especially among young women and disadvantaged youth. Under this strategy, the UN is focused on creating self-employment ecosystems, creating quality jobs, attracting private investment to increase employment opportunities, reshaping labor market policies, continuous skills development that considers the latest technologies, and social protection in both rural and urban areas (UN, 2025).

This review has explored that youth entrepreneurship is shaped by social, economic, cultural, political, and psychological contexts across South Asia. It is found that the youth unemployment rate and the desire for a decent job remain key motivators for young people to become entrepreneurs in this region, as is common across South Asia. This review also identifies positive relationships between entrepreneurship education and entrepreneurship intention across various studies, where socio-cultural, economic, and psychological factors serve as barriers to the development of youth's entrepreneurship careers. The results suggest gaps in the empirical evidence on how youth entrepreneurs overcome these barriers and continue their journey. Existing studies predominantly emphasize quantitative assessments of financial, social, political, and educational aspects, often overlooking the critical

aspects of youth's perceptions, attitudes, and coping capacities. Further studies often overlook the background of young people's choice of entrepreneurship as a career, their experience, and how these factors impact their sustainable livelihood and social status. Moreover, there is a scarcity of qualitative, longitudinal studies that provide extensive data and lessons for future entrepreneurs to help overcome the fear of failure. Future endeavors should focus on subjective indicators such as attitudes, perceptions, emotional experiences, values, cultural norms and practices, and religious practices relevant to entrepreneurship issues, to connect the multifaceted links between youth entrepreneurship and sustainable livelihoods. However, a notable gap exists in understanding entrepreneurship from the practical viewpoint of government and non-government financial institutions, especially concerning youth unemployment challenges. There is a lack of evidence on how financial institutional support affects entrepreneurship. In addition, the impact of entrepreneurship on youth empowerment and employment has been overlooked in existing research articles.

Further studies often overlook their gender, socio-economic status, ethnicity, geographical location, disability status, and how these variables influence entrepreneurship. As family dynamics have been changing rapidly over the last decade and migration has increased, more research will be vital to understanding how these challenges will evolve. Since it is the age of new technologies, and youths are adopting them more in their entrepreneurial activities, further studies are required to determine how these modern technologies are impacting youth entrepreneurship. Digital technologies such as artificial intelligence, advanced materials, cloud computing, and robotics could generate innovative ideas for the community's benefit. This review also identified a gap in the lack of focus on digital entrepreneurship platforms, which is crucial for the digital economy. Another important research gap identified in the scoping review is the lack of policy-based research. There are a few studies focused on the policy framework for youth entrepreneurship.

Based on the above discussion and analysis, this study has conducted the following SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis of youth entrepreneurship, which might help policymakers in South Asian governments reshape their youth entrepreneurship strategies.

3.1. Strengths

This study found some strengths in youth entrepreneurship. First, governments of different countries have taken significant initiatives to improve both digital and non-digital infrastructure. Second, the government has realized that without a diversified economy, youth entrepreneurship cannot be expanded, so it has taken substantial steps toward economic diversification. Third, most countries have adopted digitalization across many government services, enabling the youth to start businesses with an easy, efficient registration process. Fourth, this study has found that many governments have initiated business development support systems for entrepreneurs who want to start small-scale businesses, especially women.

Fifth, in many of the countries in this study, women are increasingly engaging in higher education, which has made them realize the importance of financial independence. So women are taking steps outside their doors and starting to do business. Especially for the growth of modern technologies, women can easily start their business by opening a simple social media page. They can run their business from home. Both urban and rural women are participating in online business. Governments across

countries have recognized the economic value of this online business, so they have launched various training programs for women to equip them with modern technologies, marketing, social media management, etc. Due to the expansion of the tourism industry in the Maldives, women in the Maldives are engaging in this industry. These women are not only contributing to their families but also driving significant change in the country's economy. Ultimately, youth entrepreneurship can make a notable contribution to the development of youth careers, which will benefit the country in the long run.

3.2. Weaknesses

This study found some limitations in youth entrepreneurship. First, it has been noticed that most young people who are willing to start an entrepreneurial business have lack of financial literacy, especially for the illiterate young people and youth from different study backgrounds other than business. Second, although different governments have started training programs for young people to enrich them with entrepreneurial and managerial knowledge, these programs are not sufficient. Both NGOs and private organizations with educational institutions need to come forward to expand the training programs. Third, countries like the Maldives, which are geographically dispersed and have a small local market, have limited financial instruments and a small credit market, making it difficult for young entrepreneurs to turn their initiatives into larger ones. Fourth, although it is an era of modern technologies, still a huge portion of rural people have lack of knowledge of modern technologies. They are not taking advantage of these technologies to start their businesses. Countries like Bangladesh, where both rural men and women have smartphones but don't know how to use their social media accounts to start an online business. Fifth, due to an inappropriate educational background and prior work experience, young people cannot participate in social investment-related decision-making. Sixth, different financial institutions don't want to give loans to young entrepreneurs, especially women, because of a lack of credit history and collateral. So, they were compelled to seek financing from informal sources, such as relatives and friends, or from personal savings (UNDP, 2025).

Seven, this study found that countries like Bangladesh, Sri Lanka, and Bhutan have insufficient national curricula that should be equipped with knowledge of entrepreneurial opportunities and education. Due to a lack of education and proper skills, many young people cannot realize their dreams, especially the underprivileged. Educational institutions are far behind in providing the required entrepreneurship education and skills aligned with modern technologies. Eight, due to different cultural barriers, social taboos, a low mentality in a male-dominated society, and religious constraints, women face obstacles at every step in their entrepreneurial dreams. Still, a large portion of families believe that doing business is not a woman's duty; rather, they should focus only on family duties. Nine, compared to urban youth entrepreneurs, it is more difficult for rural young entrepreneurs to accelerate their initiatives due to insufficient educational opportunities, obstacles in accessing new information, difficulties in building proper networks, etc. There is a lack of a proper government platform for entrepreneurship support.

Ten, countries like Bangladesh, Pakistan, and India have complex, old bureaucratic processes for business launch, which make it more difficult and lengthy for young entrepreneurs to realize their dreams. Eleven, in countries like Bangladesh and India, which have a good number of financial institutions, but they

are hardly willing to support SMEs. These financial institutions still cannot believe that these visionary youth can bring them long-term profit. In different countries, minority people also face discrimination when seeking loans from financial institutions, receiving administrative support for opening their businesses, and receiving local government support, which ultimately hinders social and economic development in the community and the achievement of goals (UNDP, 2021).

3.3. Opportunities

As in many other sectors, the widespread adoption of modern technologies can enable significant development of youth entrepreneurship. This is a great opportunity, especially for a country like Bangladesh, which is on track to become a developing nation by 2029. Their economy can be supported largely by the vast contributions of youth entrepreneurship. The government must understand the vast potential of digital technologies to expand large-scale youth entrepreneurship. In a country like Bangladesh, where young people have started their entrepreneurial activities by opening a social media account over the last 4-5 years. Gradually, women from both urban and rural areas are engaging in digital marketing, sales, and promotion. However, there is ample opportunity to utilize social media, artificial intelligence, and mobile banking facilities to engage more unemployed youth in entrepreneurial activities. By doing so, they will not only improve the lives of their own, but they will also contribute to the economy. The government has to organize various training programs and courses to help more people learn how to use these technologies properly and realize their dreams.

Again, taking the best advantage of the strategic geographic locations of different countries can be a great opportunity. In this Asian region, the Maldives holds the position as the largest and fastest-growing travel and tourism market. Tourists from different countries can easily book hotels and travel destinations on their smartphones. Traveling to different countries is now a piece of cake. So, the government of the Maldives can expand its tourism industry by involving unemployed youth through entrepreneurial opportunities. Apart from these, developing green factories, political involvement to support private-sector enrichment, and bringing international projects and support can scale up youth entrepreneurship (UNDP, 2025).

3.4. Threats

This study has analyzed various existing and potential threats that can hinder the success of youth entrepreneurship. First, social taboos, religious beliefs, and old traditions and cultural norms create obstacles, especially for young women, to starting their entrepreneurial activities. A huge number of people in countries of this region still believe that women are supposed to be caregivers to their families. They should stay inside the home and take care of their families. These perceptions are creating obstacles for women on their journey to youth entrepreneurship. Second, political involvement and corruption are very common phenomena in these countries. Different goons backed by political leaders often create problems for the small entrepreneurs. Again, corruption across different government organizations is another threat to young entrepreneurs. Third, different financial institutions are not willing to provide business loans to individuals without collateral. Fourth, small entrepreneurs face significant competition from large enterprises. Without offering a unique product or service, it is difficult for entrepreneurs to sustain their businesses in the long run. Fifth, countries of this region often face volatile political

conditions. Unstable political conditions can never support small entrepreneurs in the long run.

Sixth, the improper national curriculum backed by entrepreneurial courses, the lack of training programs, and minimal expansion of digital infrastructure in rural areas are among the other threats that must be addressed by the government. On the other hand, the development of youth entrepreneurship can create obstacles for other established industries in some countries. In Bangladesh, 80% of its foreign currency is backed by the RMG industry. If more and more rural women and youth with less education become increasingly involved in entrepreneurship activities, then this RMG industry may not find enough workers. The RMG industry in Bangladesh is succeeding only because of the low wages paid to workers. Now, if these people can find another opportunity that lets them earn better, they may shift. However, the policymakers must keep a balance so that both RMG and entrepreneurship can benefit the economy in the long run (UNDP, 2025), (UN, 2024).

4. Conclusion and Recommendations

The study provides a holistic overview of the challenges and prospects of youth entrepreneurship in the South Asian context. It highlighted various challenges, including economic, social, cultural, and political challenges, as well as entrepreneurship education and intentions. This study has been equipped with an extensive review of existing literature, analyzing multiple types of studies, including both quantitative and qualitative studies. This approach enabled a comprehensive assessment of the current state of entrepreneurship challenges and their effects on young entrepreneurs across South Asian contexts. This review study has explored a critical gap in the existing literature regarding challenges and policy dimensions. Despite the crucial importance of youth employment education and training for youth empowerment in South Asia, there is a scarcity of comprehensive studies examining its multifaceted aspects. To get the best benefit from youth entrepreneurship, proper use of modern technologies is a must. However, focusing more on Bangladesh and Indian studies, which limit in-depth findings across the region, underscores the need for further research in countries such as Pakistan, Nepal, Bhutan, and Afghanistan. In addition, overreliance on quantitative studies limits understanding of youth perceptions, knowledge, and attitudes, underscoring the importance of qualitative studies. These limitations create the landscape for more use of comprehensive regional and methodical approaches in future research and policy recommendations.

■ APPENDICES

Below is the summary of the 38 literatures that have been used for this study with the below points,

1. Literature Title,
2. Authors Name,
3. Study Design,
4. Study Setting,
5. Study Objectives, and
6. Key Results

Key Results	Article Title	Author (s) and Year	Study Design
The study identified barriers including lack of aspiration to be a successful entrepreneur, the tricky educational system orientation, complex regulatory environment, social pressure and stigma, psychological barriers, lack of favorable environment, financial constraints etc.	Exploring Barriers to Entrepreneurship among Unemployed Educated Youths in Bangladesh	(Rana et al., 2024)	Qualitative Approach: In-depth interview
The study identified educational, financial, administrative and regulatory, political constraints and family as motivators of starting business.	Barriers and Incentives for Youth Entrepreneurship Start-Ups : Evidence from Bangladesh	(Uddin et al. M. M., 2015)	Qualitative Intervention
The study used youth social impact framework and identified economic gain, individual development impact on community.	Youth Entrepreneurship Development through Social Business Models: A Study in Urban Bangladesh	(Ahammed et al., 2025)	Qualitative Case Study Approach
The study found improved business performance including sales, profit, asset, risk management on youth entrepreneurs	Fostering Youth Entrepreneurship Development through Social Business-Evidence from Bangladesh	(Ferdousi et al., 2023)	Quantitative Approach
Positive and significant association amongst entrepreneurial attitude, subjective norms, perceived behavioral control, resilience and intention Constraints: financial risk, social risk, political unrest, lack of technology etc.	Entrepreneurial Intentions of Gen Z University Students and Entrepreneurial Constraints in Bangladesh	(Hossain et al., 2023)	Quantitative Approach
Entrepreneurship can become a vital way of eradicating poverty, homelessness, minimizing unemployment problem.	Entrepreneurship: A Rising Way Leading to Economic Development in Bangladesh	(Sultana et al., 2025)	Quantitative Approach
The study found challenges: lengthy bureaucratic processes and irregularities, lacking foundational skills and knowledge, insufficiencies in value chains, insufficient access to good quality internet services.	State of the Ecosystem for Youth Entrepreneurship in Bangladesh	(UNDP, 2021)	Quantitative Approach
Positive attitude toward entrepreneurship as profession, bureaucratic structure makes it difficult to launch and grow a firm,	Youth Perception to Existing Entrepreneurial Ecosystem and its Impact on Entrepreneurial Intention: An Enquiry into the context of Bangladesh	(Kamruzzaman, 2023)	Quantitative Approach
The study found some positive aspects including making good profit, minimum initial investment, maintain good network, less expensive, time saving, getting customer feedback.	Enlightening Youth Entrepreneurship with E-Commerce to empower young generation in Bangladesh	(Akhter, 2019)	Quantitative Approach
Their entrepreneurial intentions have a positive impact on their attitudes, subjective norms, perceived behavioral control and entrepreneurial intentions.	Exploring the Impact of Digital Entrepreneurship Education among Graduates in Bangladesh	(Mamun et al., 2023)	Quantitative approach
Strong and positive attitudes, high motivation toward entrepreneurship. Financial constraints, fear of failure, lack of practical experiences, weak institutional and policy support,	Youth Unemployment and New Ventures: Exploring Entrepreneurial Intentions among Bangladeshi University Students	(Chowdhury, 2025)	Quantitative Approach
Need for achievement and self -confidence, socio-cultural factors have positive impacts on students risk taking as negative factor	Unveiling the Drivers of Social Entrepreneurship Intentions: Insights from Business Graduates in Bangladesh	(Uddin et al., 2024)	Quantitative Approach
Lack of skilled labour and networking was found as major barriers. Lack of family and societal support, inadequate institutional support identified from female entrepreneurs. Holistic approach was recommended to develop sector wise entrepreneurship development	Prospects and Barriers in Entrepreneurship Development in Greater Sylhet of Bangladesh- A Framework	(Islam, 2022)	Mixed method approach

Key Results	Article Title	Author (s) and Year	Study Design
Normative beliefs has positive relationship with awareness of consequences and personal norms	Modelling Social Entrepreneurial Intention among University Students in Bangladesh using Value-belief-norm Framework	(Naznen et al., 2022)	Quantitative approach
Students entrepreneurial experience are not affected by previous business experiences and academic intelligence	Effect of Individual Factors on Youth Entrepreneurship in Khulna Division, Bangladesh	(Talukder, 2021)	Quantitative approach
Entrepreneurial education has positive impact on entrepreneurial intention. It improves students' attitude towards sustainability which strengthen their intentions.	Entrepreneurship Education and Sustainable entrepreneurial Intention: The Mediating Role of Attitudes & Moderating Role of Prior Entrepreneurial Experience	(Talukder et al., 2025)	Quantitative approach
Leading an independent life, getting respectable and noble career, lack of support from family members were the important factors.	An Exploration of the Youth Perception toward Social Entrepreneurship Development: Evidence from Bangladesh	(Ashrafi et al., 2020)	Quantitative approach
Internal factors: education, occupation, family, innovative desire. External factors: govt. assistance, financial assistance, technological availability. Challenges: financial, marketing, infrastructure, lack of experience. Opportunities: govt scheme, demographic dividend, large population. Education system focuses on employment rather entrepreneurial skill development..	Youth Entrepreneurship: Opportunities and Challenges in India	(Pandey, 2019)	Quantitative approach
Youth preferred entrepreneurship as occupation, need for autonomy and possibility of greater income, shortage of working capital, absence of societal support	Youth Entrepreneurship in India: Driving Economic Growth and Social Inclusion- A Study	(Shekhar, 2024)	Quantitative approach
Past self-employment experience has negative impact on students entrepreneurial inclination.	Effect of Individual Factors on Youth Entrepreneurship- A Study of Uttarakhand State, India	(Sharma, 2014)	Quantitative approach
The study found the government. policies, political participation, employment opportunities, and social engagement affected youth empowerment and entrepreneurial activities.	Factors Affecting Youth Empowerment and Entrepreneurial Initiatives: Social Implications and Way Forward	(Javeed et al., 2022)	Quantitative approach Cross-sectional design
Youth who want to become entrepreneurs are more interested in gaining education, training, knowledge, skills, and experience.	Analyzing the Impact of Youth Entrepreneurial Perspective on Sustainable Socio-Economic Growth of Karachi	(Khatana, 2021)	Qualitative approach
The study explores personal, psychological, family-related, institutional and regulatory, cultural, social, and financial-related barriers.	Perceived Barriers to Youth Entrepreneurship in Pakistan and Hungary	(Kazmi, 2018)	Qualitative approach
Challenges identified include access to finance. Govt. rules and regulations, inadequate entrepreneurial skills, and socio-cultural constraints. Opportunities as micro enterprises, innovation, and creativity.	Challenges and Prospects of Youth Entrepreneurship in Dhangadhi Sub-Metropolitan City, Nepal	(Bhatta, 2024)	Quantitative
Challenges identified as lack of business funding, start-up capital, micro funding, and seed funding, unfair competition, and lack of business experience.	Financial Challenges of Youth Entrepreneurship in Kathmandu	(Rana, 2024)	Quantitative approach

Key Results	Article Title	Author (s) and Year	Study Design
Lack of start-up capital, business management experiences, savings and collateral, information, and business networks were found as obstacles.	Challenges and Prospects of Youth Entrepreneurship in Kathmandu	(Sitoula, 2015)	Quantitative approach
Small size of market, lots of difficulties in preparing a good business plan, fear of taking credit, lack of proper infrastructural facilities, and lack of problem-solving strategies were found as challenges	Challenges and Prospects of Entrepreneurship in Bhutan from the Lens of Business Educators	(Sharma & Khem, 2020)	Qualitative approach
Internal and external factors, such as a lack of financial support and the availability of required infrastructure, were identified as major challenges.	Exploring the Obstacles for Start-ups in Bhutan: From a Prevented Entrepreneurs' Perspective	(Singh et al., 2020)	Qualitative approach
Students are more inclined towards entrepreneurship; students and parents are aware of the increasing unemployment rate.	Entrepreneurship Education in Bhutan- Perception, Culture and Challenges	(Utha et al., 2016)	Quantitative approach
Personal savings, bank credit, and bank loans are the most important variables reflecting the credit for entrepreneurship	Challenges or Survival Instinct of Tibetan Entrepreneurs	(Ravi & Vedhapradha, 2019)	Quantitative approach
Entrepreneurial education and attitude towards entrepreneurship have a positive and significant relationship with entrepreneurial intentions	Evaluation on Entrepreneurial Intentions of Sri Lankan Youth Generation with Special Reference to Kurunegala District	(Lakmal & Fernando, 2023)	Quantitative approach
Socio-cultural, educational, economic, and psychological factors influence start-up failures.	Unveiling the Challenges: Exploring Start-up Hurdles faced by Small and Medium-Sized Enterprise Entrepreneurs in Sri Lanka	(Gankandage & Jayathilaka, 2025)	Quantitative approach
Lack of resources, lack of entrepreneurial skills in lectures, poor stakeholder engagement, weak govt. policies were found as obstacles.	Challenges and Constraints to enhance the Entrepreneurship Education in Higher Educational Institutions of a Developing Country: Evidence from Sri Lanka	(Tennakoon et al., 2020)	Quantitative approach
Positive relationship between education levels and successful entrepreneurial ventures, minimal support from the govt.. family influence in starting phase	Exploring Experiences of Self-made Entrepreneurs in Sri Lanka	(Liyanage, 2021)	Qualitative, case study approach
The conception of the entrepreneurship idea and process was primarily inspired by passion and a hobby; no proper business planning was completed. The majority launched their business through social media.	Entrepreneurial Experiences of Female Entrepreneurs in the Maldives: From Concept to Implementation and Beyond	(Sinaau et al., 2024)	Qualitative approach
Social commerce not only expands access to goods and services but also facilitates entrepreneurial inclusion	Socially Innovative Entrepreneurship in the Digital Informal Economy: Insight from the Maldivian Case of Social Commerce	(Waheed, 2025)	Quantitative approach
Current education, family factors, socio-cultural factors, personal factors for entrepreneurship career	Entrepreneurial Career Intentions among the Youth of Afghanistan and India-Assessing the Role of External Environment, Socio-cultural and Personality Factors	(Shahzad, 2020)	Cross -sectional survey
Social media plays a vital role in this process by offering options for entering the markets, engaging with clients and establishing global networks.	Assessing the Impact of Social Media on Youth's Entrepreneurship Development in Afghanistan	(Khalili et al., 2024)	Mixed method approach

Key Results	Article Title	Author (s) and Year	Study Design
Study Setting	Study Objectives	Key Results	
Dhaka city, Bangladesh	Explore the barriers to entrepreneurship among unemployed educated youth	The study identified barriers including lack of aspiration to be a successful entrepreneur, the tricky educational system orientation, complex regulatory environment, social pressure and stigma, psychological barriers, lack of favorable environment, financial constraints etc.	
Chittagong, Bangladesh	To analyze specific barriers and constraints for starting and running business of young people	The study identified educational, financial, administrative and regulatory, political constraints and family as motivators of starting business.	
Dhaka city, Bangladesh	Exploring social business models to empower urban youth as entrepreneurs	The study used youth social impact framework and identified economic gain, individual development impact on community.	
Dhaka city, Bangladesh	To know the impact of social business funds on micro-entrepreneurs' income	The study found improved business performance including sales, profit, asset, risk management on youth entrepreneurs	
Dhaka, Bangladesh	Examine variety of restrictions preventing Bangladeshi youth (Gen Z students)	Positive and significant association amongst entrepreneurial attitude, subjective norms, perceived behavioral control, resilience and intention Constraints: financial risk, social risk, political unrest, lack of technology etc.	
Dhaka, Cumilla and Chattogram	Explore the prospects and challenges in implementing entrepreneurship in Bangladesh to facilitate economic development	Entrepreneurship can become a vital way of eradicating poverty, homelessness, minimizing unemployment problem.	
Dhaka, Chattogram, Rangpur, Sylhet, Khulna, Rajshahi, Barishal	Understand challenges and opportunities within the entrepreneurship ecosystem	The study found challenges: lengthy bureaucratic processes and irregularities, lacking foundational skills and knowledge, insufficiencies in value chains, insufficient access to good quality internet services.	
Dhaka and Rajshahi	To investigate youth perception towards entrepreneurial ecosystem and its impact on the entrepreneurial intention of the youth	Positive attitude toward entrepreneurship as profession, bureaucratic structure makes it difficult to launch and grow a firm,	
Bangladesh	To identify the contribution of e-commerce in youth entrepreneurship	The study found some positive aspects including making good profit, minimum initial investment, maintain good network, less expensive, time saving, getting customer feedback.	
Bangladesh	To explore the impact of digital entrepreneurship education on youth	Their entrepreneurial intentions have a positive impact on their attitudes, subjective norms, perceived behavioral control and entrepreneurial intentions.	
Sylhet	To investigate the factors shaping entrepreneurial intention	Strong and positive attitudes, high motivation toward entrepreneurship. Financial constraints, fear of failure, lack of practical experiences, weak institutional and policy support,	
Chattogram, Cumilla	To investigate the factors motivating business graduates	Need for achievement and self -confidence, socio-cultural factors have positive impacts on students risk taking as negative factor	
Sylhet	To identify prospects and barriers in entrepreneurship development system	Lack of skilled labour and networking was found as major barriers. Lack of family and societal support, inadequate institutional support identified from female entrepreneurs. Holistic approach was recommended to develop sector wise entrepreneurship development	
Dhaka, Chattogram, Rajshahi	To measure the influence of altruistic values, traditional values, personal normative beliefs on social entrepreneurial intention	Normative beliefs has positive relationship with awareness of consequences and personal norms	

Study Setting	Study Objectives	Key Results
Khulna division	To investigate how individual factors affect the inclination of young students to start a career as an entrepreneur	Students entrepreneurial experience are not affected by previous business experiences and academic intelligence
Bangladesh	Explore the relationship between entrepreneurial education and sustainable entrepreneurial intention among university students	Entrepreneurial education has positive impact on entrepreneurial intention. It improves students' attitude towards sustainability which strengthen their intentions.
Bangladesh	To explore the factors associated with perception development of social entrepreneurship among youth	Leading an independent life, getting respectable and noble career, lack of support from family members were the important factors.
India	Explore various factors that contribute to and motivate youth entrepreneurs to start up business	Internal factors: education, occupation, family, innovative desire. External factors: govt. assistance, financial assistance, technological availability. Challenges: financial, marketing, infrastructure, lack of experience. Opportunities: govt scheme, demographic dividend, large population. Education system focuses on employment rather entrepreneurial skill development..
Karnataka state in India	To understand the dynamics of youth entrepreneurship in India	Youth preferred entrepreneurship as occupation, need for autonomy and possibility of greater income, shortage of working capital, absence of societal support
Uttarakhand state, India	To examine the effect of individual factors on their decision to take up entrepreneurship	Past self-employment experience has negative impact on students entrepreneurial inclination.
Pakistan	To identify the factors that impact the empowerment of Pakistani youth and their entrepreneurial initiatives	The study found the government. policies, political participation, employment opportunities, and social engagement affected youth empowerment and entrepreneurial activities.
Karachi, Pakistan	To explore the youth outlook on economic growth factors	Youth who want to become entrepreneurs are more interested in gaining education, training, knowledge, skills, and experience.
Pakistan and Hungary	To explore the barriers or challenges of youth entrepreneurs	The study explores personal, psychological, family-related, institutional and regulatory, cultural, social, and financial-related barriers.
Nepal	To explore the challenges and prospects of youth entrepreneurship	Challenges identified include access to finance. Govt. rules and regulations, inadequate entrepreneurial skills, and socio-cultural constraints. Opportunities as micro enterprises, innovation, and creativity.
Kathmandu, Nepal	To identify key factors contributing to successful youth entrepreneurship	Challenges identified as lack of business funding, start-up capital, micro funding, and seed funding, unfair competition, and lack of business experience.
Kathmandu, Nepal	To investigate particular challenges and describe the possibilities of youth entrepreneurship	Lack of start-up capital, business management experiences, savings and collateral, information, and business networks were found as obstacles.

Study Setting	Study Objectives	Key Results
Bhutan	To study the challenges and explore future prospects of entrepreneurship	Small size of market, lots of difficulties in preparing a good business plan, fear of taking credit, lack of proper infrastructural facilities, and lack of problem-solving strategies were found as challenges
Bhutan	To explore the obstacles for start-ups faced by entrepreneurs	Internal and external factors, such as a lack of financial support and the availability of required infrastructure, were identified as major challenges.
Bhutan	To determine the perceptions of Bhutanese students toward entrepreneurship.	Students are more inclined towards entrepreneurship; students and parents are aware of the increasing unemployment rate.
Karnataka, India	To explore the probable and suitable financial sources and evaluate the credit facilities available to Tibetan entrepreneurs	Personal savings, bank credit, and bank loans are the most important variables reflecting the credit for entrepreneurship
Sri Lanka	To investigate the entrepreneurial intentions of Sri Lankan youth	Entrepreneurial education and attitude towards entrepreneurship have a positive and significant relationship with entrepreneurial intentions
Sri Lanka	To identify and analyze the factors contributing to start-up failures.	Socio-cultural, educational, economic, and psychological factors influence start-up failures.
Sri Lanka	To study the current entrepreneurship education system in Sri Lankan state universities with reference to challenges and constraints	Lack of resources, lack of entrepreneurial skills in lectures, poor stakeholder engagement, weak govt. policies were found as obstacles.
Sri Lanka	To identify the key elements that incubate successful entrepreneurs in Sri Lanka	Positive relationship between education levels and successful entrepreneurial ventures, minimal support from the govt.. family influence in starting phase
Maldives	To describe the entrepreneurial experiences of female entrepreneurs in the Maldives in order to gain an understanding of the various stages of the entrepreneurial process	The conception of the entrepreneurship idea and process was primarily inspired by passion and a hobby; no proper business planning was completed. The majority launched their business through social media.
Maldives	How digital platforms are enabling micro-entrepreneurship for the women and youth	Social commerce not only expands access to goods and services but also facilitates entrepreneurial inclusion
Afghanistan and India	To examine different factors responsible for entrepreneurial intentions.	Current education, family factors, socio-cultural factors, personal factors for entrepreneurship career
Afghanistan	To explore the impact of social media on youth entrepreneurship	Social media plays a vital role in this process by offering options for entering the markets, engaging with clients and establishing global networks.

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Costing Practices of Small-Scale Kakanin Businesses in Pagadian City

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Abstract

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Abstract

Small-scale kakanin businesses play a vital role in local food entrepreneurship yet often face challenges in managing fluctuating ingredient prices and limited financial literacy. This study explored the costing management practices of eight kakanin vendors in Pagadian City using a qualitative case study approach. Guided by Transaction Cost Theory, data were collected through semi-structured interviews, observations, and business record reviews. Results revealed that direct costs were tracked through itemized expenses, estimation, manual recording, and occasional digital tools, while indirect costs were allocated using simple methods like percentage mark-ups. Pricing decisions relied on cost breakdowns, market trends, and competitor comparisons. Vendors minimized expenses through portion control, bulk buying, and recipe adjustments to address inflation and raw material shortages. These findings indicate that despite informal costing systems, vendors' practices align with costminimization and uncertainty-reduction principles. The study suggests that improving financial literacy and introducing basic digital tools can enhance cost accuracy and business sustainability.

Keywords: *Cost Control, Costing Practices, Kakanin Vendors, Pricing Strategies*

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■ CHAPTER 1

1. The Problem

1.1. Background of the Study

Traditional Filipino delicacies, known as *kakanin*, hold significant cultural value and have been part of Filipino culinary heritage for generations. These rice-based and coconut-based delicacies are deeply ingrained in Filipino traditions, serving not only as everyday snacks but also as offerings in special events and festivals (Austria, 2024). The preparation and sharing of kakanin reflect cultural values, family ties, and community traditions, making them an important part of Filipino identity (De Villa et al., 2022).

In addition to their cultural importance, kakanin businesses also contribute significantly to the local economy. Small-scale kakanin sellers often operate in informal settings, selling their products at local markets or in street food stalls, thus providing a livelihood for many Filipino families (Anora et al., 2019). These micro-enterprises are essential to the economy, especially in rural areas like Pagadian City, where they generate employment and support local communities. However, these small-scale businesses often face difficulties in managing costs, pricing their products competitively, and maintaining profitability in an ever-changing market (Baraham, 2023).

Many kakanin sellers in the Philippines operate without a formal financial management system, relying on traditional methods

of estimating costs and setting prices. This often leads to inaccurate cost calculations and pricing strategies, affecting business profitability (Bongalonta & Bongalonta, 2022). Bigambo et al. (2023) noted that poor pricing strategies can result from inaccurate product costing, leading to either unprofitable pricing or pricing that alienates potential customers. The lack of proper costing methods thus directly impacts the long-term sustainability of these small businesses.

Despite their importance, small-scale food businesses face significant challenges related to their financial management practices. Capina (2021) examined micro and small enterprises (MSEs) and found that many small businesses struggle with basic financial management skills, including budgeting, expense tracking, and cost analysis. These challenges are compounded by the fact that many small businesses operate with limited capital, making it difficult to invest in more efficient production techniques or to scale up their operations. Without a solid financial foundation, kakanin sellers often experience cash flow problems and may fail to cover production costs (Demillo, 2022).

In addition to these financial challenges, small-scale food vendors often face liquidity issues that further exacerbate their difficulties. Bongalonta and Bongalonta (2022) identified liquidity as one of the major challenges facing small-scale businesses in the Philippines, noting that insufficient cash flow can result in delayed payments to suppliers and difficulty in securing sufficient stock for production. For kakanin sellers, fluctuations in raw material prices, such as the cost of rice or coconut milk, can significantly affect liquidity and pricing strategies.

Effective costing practices are therefore critical to ensuring the sustainability of small food enterprises. Bigambo et al. (2023) highlighted that understanding and accurately calculating both direct and indirect costs is essential for small businesses to set competitive prices and ensure profitability. Kakanin sellers, who rely on low-cost, high-quality ingredients, must track all expenses, from labor costs to utilities, to determine the true cost of production (Gong, 2025). Inaccurate costing can lead to pricing errors, which can either result in lost sales or unsustainable profit margins.

In the case of kakanin businesses, pricing strategies need to account for both production costs and market dynamics. Demillo (2022) pointed out that small food vendors often struggle with balancing affordable pricing with the need to cover their operational costs. Without careful cost management, it is challenging for kakanin sellers to compete with larger, commercial food vendors who may have economies of scale and more robust financial systems. The key to success lies in understanding the full cost structure of their business, from ingredient sourcing to packaging and transportation (Halim et., 2024)

One approach to improving pricing and cost management is through the use of target costing. Gong (2025) explained that target costing allows small businesses to establish a competitive price based on desired profit margins and production costs. This method is particularly valuable for kakanin sellers, as it helps them set prices that meet both customer expectations and financial goals. By focusing on target costs, kakanin businesses can ensure that they are not pricing themselves out of the market while also covering their expenses.

Furthermore, cost control mechanisms are essential for the long-term sustainability of small enterprises. Hajjawi (2017) discussed the importance of cost control for decision-making in small businesses, sacrificing quality. For kakanin sellers, controlling costs in areas like labor, raw materials, and logistics is crucial for maintaining profitability. By implementing proper cost control measures, these businesses can minimize waste and improve efficiency, ultimately leading to better financial outcomes.

In addition to cost control, small businesses also benefit from effective financial planning. Capina (2021) observed that many microenterprises struggle due to a lack of long-term financial planning, which limits their ability to grow and expand. By adopting sound financial practices, such as forecasting and budgeting, kakanin sellers can better manage their resources and plan for future growth. With proper financial planning, small-scale vendors can ensure that they remain competitive and profitable despite challenges such as fluctuating ingredient costs or changes in consumer demand.

Marketing strategies are also a critical aspect of small food businesses, particularly in competitive markets. Dano et al. (2025) studied street food vendors and found that effective marketing is crucial for attracting and retaining customers. For kakanin sellers, marketing strategies such as offering promotions, building customer loyalty, and engaging in community-based marketing can help drive sales and improve profitability. By combining effective costing with strong marketing efforts, kakanin vendors can create a sustainable business model that appeals to a broad customer base.

The challenges in managing costs and pricing are not unique to the Philippines. International studies on small food enterprises show that financial management is a global issue. Erokhin et al. (2024) discussed how small manufacturing firms in Russia faced similar challenges in controlling production costs, noting that small businesses must adapt their costing methods to changing

economic conditions. This global perspective underscores the need for small businesses worldwide, including kakanin sellers, to adopt more structured financial management practices.

The importance of adopting structured costing methods in small enterprises is also emphasized by Chua et al. (2025), who explored logistics and costs management practices in Malaysian SMEs. They found that small businesses often struggle to account for logistical costs, which can significantly impact overall profitability. For kakanin sellers, logistical cost such as transportation and storage can add to the total cost of production. Without effective tracking and management, these costs can erode profit margins.

In addition to costing and pricing, small-scale kakanin sellers must also address food safety concerns. Platon (2017) found that many small food vendors in the Philippines do not follow standardized food safety practices, which can lead to foodborne illnesses and damage the reputation of their businesses. Implementing basic food safety protocols is essential for the long-term success of kakanin businesses, as it helps ensure product quality and customer satisfaction.

Cost efficiency is closely tied to food safety and product quality. Maurice et al. (2015) pointed out that businesses that prioritize cost efficiency tend to produce better-quality products and maintain higher levels of customer satisfaction. For kakanin vendors, cost efficiency can be achieved by optimizing production methods, improving ingredient sourcing, and reducing waste. These practices not only improve financial outcomes but also enhance the overall quality of the products, which can lead to greater customer loyalty and repeat business.

As small-scale food businesses face increasing pressure to compete with larger enterprises, financial technology (fintech) may offer new opportunities for improving financial management practices. Nakul (2025) examined the role of fintech in small-scale businesses and highlighted its potential to streamline financial processes, improve cost tracking, and increase access to financing. For kakanin sellers, fintech solutions such as digital payment systems, inventory management apps, and online financial tools can help optimize their operations and make financial management more efficient.

The need for financial literacy among small-scale food vendors is critical for improving costing practices and overall business performance. According to Folajinmi and Peter (2020), small-scale businesses often lack the financial knowledge necessary to make informed decisions about pricing, cost control, and budgeting. Providing financial education and training to kakanin sellers can help them develop the skills needed to manage their finances effectively and ensure long-term business success.

The ability to effectively manage costs is not only essential for the profitability of kakanin businesses but also for their competitiveness in the marketplace. Jara-Rojas et al. (2018) demonstrated that small businesses in the food sector can achieve better technical efficiency by implementing cost management practices and adapting to changing market conditions. For kakanin sellers, staying competitive means understanding cost structures, adapting to consumer preferences, and optimizing production processes to meet demand without compromising quality.

In conclusion, small-scale kakanin sellers in Pagadian City faced significant challenges in managing their costs and pricing strategies. These challenges stemmed from limited financial management skills, fluctuating ingredient prices, and competition from larger food businesses. This study provided insights into how kakanin sellers improved their costing practices, enhanced profitability, and supported the sustainability of their enterprises.

The findings contributed to the growing body of literature on microenterprises financial practices, particularly within the context of traditional Filipino food businesses, and offered practical recommendations for small-scale vendors, policymakers, and researchers.

1.2. Theoretical Framework

The study was guided by the Transaction Cost Theory (TCT) by Coase (1937) and later developed by Williamson (1975, 1981). TCT explains how individuals and businesses make decisions that minimize financial, informational, and operational costs. Among the *kakanin* vendors, this theory was reflected in their efforts to reduce expenses, avoid risks, and act efficiently. They practiced cost minimization by portioning products, conserving ingredients, and adjusting recipes. Information-seeking appeared in their canvassing of prices and monitoring market trends to gather only essential data. To reduce uncertainty, they controlled production and preserved ingredients during unstable market conditions. In managing opportunism, they maintained product quality and competitive pricing to protect customers. Lastly, bounded rationality was evident in their use of simple costing methods like estimation and note-taking due to limited accounting knowledge. Overall, TCT explains that the vendors' informal costing and pricing practices were rational and adaptive, aimed at minimizing costs and sustaining their small businesses.

1.3. Statement of the Problem

This study aimed to explore the costing management practices of small-scale *kakanin* business owners in Pagadian City. These enterprises often struggled with unstable raw material prices, limited financial knowledge, and the absence of formal accounting systems. Given the continued demand for Filipino delicacies, it was important to analyze how these sellers described and applied their costing, pricing, and cost-minimization strategies to sustain their businesses. The study was conducted during the Academic Year 2025-2026 and sought to answer the central question: How did small-scale *kakanin* business owners in Pagadian City describe and apply their costing management practices?

To address this inquiry, the following questions were utilized to explore the costing management practices of small-scale *kakanin* business owners:

1. How do *kakanin* business owners calculate the direct cost of ingredients?
2. How do *kakanin* business owners account their indirect cost?
3. How do *kakanin* business owners determine their selling price?
4. How do *kakanin* business owners control the cost associated with their production?
5. How do *kakanin* business owners analyze the profitability of their products?
6. What challenges do *kakanin* business owners face in costing practices?
7. How do *kakanin* business owners address the challenges in costing practices?

1.4. Significance of the Study

This study contributes to the body of knowledge by examining the costing management practices of small-scale *kakanin* business owners in Pagadian City using Transaction Cost Theory as its guiding framework. It provides a clearer understanding of how micro-entrepreneurs compute costs, set prices, track expenses, and minimize operational expenditures while maintaining product quality. The findings offer practical insights that guide small-scale *kakanin* sellers in refining their costing practices to improve profitability and sustainability. Likewise, the results serve as a useful reference for aspiring entrepreneurs, local business development agencies, and researchers by documenting the challenges and strategies encountered by traditional food enterprises. In doing so, the study adds to the growing literature on microenterprise financial practices and highlights the role of effective costing in sustaining local businesses and cultural heritage.

1.5. Definition of Terms

The following terms were used extensively in this research study and were taken according to the definitions given below.

Costing Management: Costing management generally involves identifying, calculating, and controlling expenses in producing goods or services. This study refers to the methods and strategies *kakanin* sellers use to determine production costs, allocate expenses, and set selling prices.

Direct Costs: Direct costs typically include expenses that can be traced directly to the production of a product. This study refers to the costs for ingredients, packaging, and labor directly involved in making *kakanin*.

Indirect Costs: Indirect costs are expenses not directly tied to production but are necessary for business operations. In this study, indirect costs refer to electricity, water, transportation, and other overhead expenses of *kakanin* sellers.

Profit Margin: Profit margin is generally defined as the percentage of revenue remaining after all expenses are deducted from sales. This study refers to the rate of income that *kakanin* sellers in Pagadian City retain after covering all production and operational costs.

Kakanin: *Kakanin* refers to traditional Filipino rice-based delicacies made from glutinous rice, coconut milk, sugar, and other local ingredients. This study refers explicitly to the various traditional delicacies produced and sold by small-scale vendors in Pagadian City for local consumption.

■ CHAPTER 2

2. Research Method

This chapter presented the research methodology utilized in the study, describing the procedures undertaken to gather and analyze data on the costing management practices of small-scale *kakanin* sellers in Pagadian City. The approach was chosen to ensure the findings were accurate, reliable, and relevant to the research objectives. The methodology covered the research design, study respondents, research instrument, data gathering procedure, and data analysis method.

2.1. Research Design

The study used a qualitative research design to investigate the costing practices of small-scale *kakanin* businesses in Pagadian City. A qualitative approach was appropriate because the goal was to understand the experiences, strategies, and challenges these entrepreneurs faced things that could not be fully explained by numbers alone. By collecting descriptive and detailed data through participants' voices, the study engaged the realities of costing practices in small-scale food enterprises, providing depth and context to their everyday decision-making.

The study employed a qualitative case study as described by Merriam (1998). The case study approach was beneficial for understanding the practices of *kakanin* vendors from a specific area because it delved deeply into a bounded system, or its components as they related to each other (Tisdell, 2016). In this research, the focus was on how vendor and buyer experiences were shaped by the local context such as daily interactions with customers, pricing strategies influenced by ingredient costs, and cultural traditions that guided product offerings rather than on broad generalizations.

The researchers followed Merriam's case study guide, which included steps such as coding responses, grouping them into themes, and checking results through triangulation. These steps helped organize the data by identifying recurring patterns and confirming findings from different sources. Using Merriam's approach ensured that the analysis was grounded in the participants' actual experiences and added trustworthiness and reliability to the study.

The case of this study involved small-scale *kakanin* vendors in Pagadian City who used their own limited capital but chose to run their businesses in local markets. These vendors were selected because their products represented an important part of micro-entrepreneurship in the city, rooted in the community's preference for local delicacies. This case explored how these entrepreneurs created and applied their cost-structure strategies in order to survive in a challenging environment facing fluctuating ingredient prices, strong competition, and limited capital. Through this case, the study provided useful insights into sustainable costing practices within the local food industry.

2.2. Research Environment

The study was conducted in Pagadian City, the capital of Zamboanga del Sur in the southern Philippines. Known as the "Little Hong Kong of the South" because of its sloping terrain and coastal view of Illana Bay, Pagadian served as the regional administrative and commercial center of the Zamboanga Peninsula. The city was known for its vibrant market activity, where small-scale enterprises particularly food vendors thrived by catering to the diverse preferences of local residents and transient customers. Among these were *kakanin* sellers, who operated with limited capital yet remained competitive through strategies in pricing, sourcing, and portioning. The city's steady demand for traditional delicacies, combined with challenges such as fluctuating ingredient prices, stiff competition, and resource constraints, made Pagadian an ideal setting for examining the costing practices of small-scale *kakanin* businesses.

2.3. Research Participants

The study involved eight small-scale *kakanin* vendors from Pagadian City, Zamboanga del Sur. The number of participants was chosen to balance depth and manageability, it was small enough to allow for detailed qualitative analysis of each participant's

costing practices, while still large enough to capture a range of perspectives and strategies. Participants were selected using purposive sampling, a technique often employed in qualitative research. According to Creswell (2014), purposive sampling allows researchers to intentionally choose individuals who can provide the most relevant and rich information about the phenomenon under study. In this case, the participants were small-scale *kakanin* vendors who directly engaged in cost monitoring, pricing, and production decisions. This method ensured that the research drew insights from those most knowledgeable about the topic and aligned with the study's objectives.

Participants were included based on the following criteria: (1) they were small-scale *kakanin* vendors selling in Pagadian City's public markets or transport terminals, (2) they were the owner or main person handling costs and pricing, (3) they operated on a small-scale serving primarily Pagadian City, (4) they had been in continuous operation for at least six months, (5) they were 18-60 years old, and (6) they willingly participated (with informed consent) and, when available, shared basic costing records. These criteria ensured that participants reflected the realities of small-scale *kakanin* enterprises in the city.

Participants possessed firsthand experience in managing small-scale food production and daily business operations, making them suitable informants for the study's focus on costing practices. Potential participants were identified through community referrals, market visits, and neighborhood networks. Their profiles are presented as follows:

P1. This participant is a sari-sari store owner who sells various types of *kakanin* every afternoon. Her small business has been her primary source of livelihood, enabling her to support her family and eventually help her daughter finish school. She manages both retail store operations and *kakanin* production, demonstrating long-term experience in small-scale entrepreneurship.

P2. This participant is relatively new to the *kakanin* business, with two years of experience. Her interest in the craft was inspired by her mother, who also prepared traditional delicacies. Despite being new to the trade, she has developed her own methods for costing, ingredient handling, and production planning as she continues to grow her home-based enterprise.

P3. This participant sells *kakanin* outside the cathedral church every Sunday, a routine she has maintained for several years. Her products cater to churchgoers and passersby, allowing her to build a consistent customer base. Her long-standing weekly selling practice has contributed to her familiarity with ingredient budgeting and demand forecasting.

P4. This participant has been selling *kakanin* in her neighborhood for a long time. Over the years, her products have become well-known, and she now has numerous loyal customers or *suki*. Her steady community presence has helped her refine her costing approaches and maintain consistent product quality.

P5. This participant began her *kakanin* business during the pandemic. Initially, she only cooked for family events, but after receiving repeated orders from relatives, she decided to formally start a small home-based business. Her experience taught her how to adjust production based on orders and manage costs during a period of economic uncertainty.

P6. This participant also started her business during the pandemic and later expanded her operations by supplying *kakanin* to school canteens. At times, her daughter helped sell the products by bringing them to school. Her business experience includes adapting to variable demand and coordinating daily production schedules for institutional buyers.

P7. This participant began her entrepreneurial journey in her teenage years, selling various foods and trending products. She entered the *kakanin* business only around eight months ago out of curiosity, eventually discovering that *kakanin* became her best-selling product compared to her previous offerings. Her recent experience emphasizes adaptability and openness to exploring new business opportunities.

P8. This participant is a student who started his small *kakanin* business to help fund his education. He manages to balance studying and selling by allocating his free time to production and marketing. His experience reflects the role of microbusinesses as a means of financial support for young entrepreneurs.

To strengthen the credibility of the findings, the study triangulated information from individuals who directly interacted with the vendors' daily business operations. These included family members, who assisted in preparing ingredients, monitoring supplies, and managing daily tasks; paid laborers, who helped during large orders and confirmed production processes and cost-related practices; and suki customers, who validated consistency in product quality, pricing, and demand. Their insights served as external confirmation of the vendors' statements, ensuring that the data reflected actual practices rather than self-reported accounts alone.

2.4. Research Instrument

The primary instrument of this study was the researchers themselves, guided by a semi-structured interview guide. The researchers applied this guide to explore the cost-related strategies of the participants, clarify unclear responses, and examine the recurrence of themes that emerged during the interviews.

Data was gathered through a semi-structured interview guide tailored to *kakanin* vendors' costing practices in Pagadian City. The guide began with a brief script on purpose, confidentiality, voluntary participation, language, and audio-recording. It organized sub-questions with prompts and probes across even domains: ingredient costs, overhead, pricing, cost control, profitability tracking, costing challenges, and responses, plus an exit question. Interviews were administrative consistently yet flexibly to clarify and confirm recurring themes, and the instrument was reviewed by an expert panel for content validity.

The main instruments of this study included a semi-structured interview guide, a digital audio recorder, a field-notes template, and when available, basic business records. The interview guide contained sub-questions organized around key themes of costing, ensuring comprehensive and comparable responses. The audio recorder captured participants responses accurately for later transcription and analysis. The field-notes template documented important observations, including nonverbal cues and contextual details during interviews. Business records, such as expense journals, daybooks, and price logs, served as supplementary materials to verify and support the information provided by participants.

2.5. Data Gathering Procedure

The semi-structured interview guide, reviewed by the research adviser and panel members, served as the main instrument of the study. Before conducting the research, the researchers prepared an official letter of request seeking permission to carry out the study. This letter was endorsed and signed by the research instructor, dean, and school president. Once approval was obtained, participants signed an informed consent form explaining the purpose of the study, emphasizing voluntary participation, guaranteeing confidentiality, and outlining ethical considerations.

After securing consent, the researchers personally approached participants, introduced themselves, and explained the purpose and process of the interviews. Permission was also sought to audio-record each interview to ensure accurate documentation of responses. Interviews were conducted using the semi-structured guide, allowing participants to express their experiences freely in their preferred language. The researchers maintained respectful communication and sought clarification when needed to capture deeper insights.

Finally, all interviews will be transcribed verbatim, and together with observational notes and audio recordings, will form the basis for data analysis. These materials will provide a comprehensive foundation for answering the research questions and drawing conclusions about the costing practices of small-scale *kakanin* vendors in Pagadian City.

2.6. Data Analysis

Data gathered from interviews, observations, and business records were analyzed through categorical aggregation, as suggested by Merriam (1998). This approach involved examining individuals pieces of information and clustering them into meaningful categories. Rather than relying on single accounts, the analysis looked across multiple participants' responses to identify recurring ideas, experiences, and practices related to costing.

The process of categorical aggregation was supposed by thematic coding. Transcribed interviews, field notes, and supplemental records were carefully read and segmented into codes representing key ideas such as ingredient costs, pricing strategies, cost-control measures, and responses to market challenges. These records were grouped into broader categories, forming the basis for identifying themes across participants. This systematic coding ensured that the data remained grounded in participants' actual words and experiences.

To uphold research ethics, strict confidentiality protocols were observed throughout the analysis. Each participant was assigned a coded name (e.g., P1, P2, P3) to protect their identity. Identifying details were removed or generalized in the final report, ensuring that the voices of *kakanin* vendors were represented accurately while safeguarding their privacy.

2.7. Ethical Considerations in Research

Ethical considerations were associated with the concepts and criteria the researchers adhered to in ensuring that the study was conducted responsibly and ethically. These considerations aimed to protect the research's integrity and credibility, as well as the rights, safety, and well-being of participants.

The researchers rigorously followed safety and ethical procedures during data gathering. The following fundamental principles were observed throughout the study:

Informed Consent: The researchers informed and sought voluntary permission from participants. Before participating, they were provided complete details about the study's objectives, procedures, possible risks and benefits, and data confidentiality measures. Only those who gave written consent were included.

Confidentiality: The researchers ensured the protection of participants' identities and responses. Any potential limitations to data protection were clearly stated in the consent form. All gathered data were stored securely and accessed only by the research team.

Voluntary Participation: All participation was entirely voluntary and free from coercion. Responses could withdraw at any time without penalty or consequence.

Honesty and Integrity: The researchers upheld transparency and fairness. Findings were reported truthfully without alteration, fabrication, or distortion, and any conflicts of interest were disclosed.

Potential for Harm: Necessary precautions were taken to prevent physical, psychological, social, or economic harm to participants. Questions were designed to avoid sensitive issues that might cause discomfort.

Authorization to Access Private Information: The study complied with Republic Act 10173, or the Data Privacy Act of 2012. All personal and business-related information was collected with consent, used solely for research, and not shared without explicit authorization.

■ CHAPTER 3

3. Results and Discussions

This chapter presents the findings from the study on the costing practices of small-scale *kakanin* businesses in Pagadian City, Zamboanga del Sur. The study focused on understanding the practices of these small vendors, who face various challenges in managing production costs and setting appropriate prices for their traditional Filipino delicacies. The data was gathered through interviews with eight (8) *kakanin* business owners, conducted in-person. Participants were asked to reflect on their business practices, specifically focusing on the ways they manage costs, track expenses, and set prices for their products.

The study used a qualitative research design with a single case study approach. This design was chosen because it allows for an in-depth exploration of the unique challenges faced by *kakanin* vendors in a specific community. The case study approach is particularly effective in understanding the individual and contextual factors that influence business practices. The participants were identified and coded as P1, P2, P3, P4, P5, P6, P7, and P8 to maintain confidentiality in accordance with the Data Privacy Act of 2012.

The categories that emerged from the study are *Determining Direct Costs*, *Accounting for Indirect Costs*, *Setting Selling Prices*, *Controlling Production Costs*, *Evaluating Profitability*, *Experiencing Cost Challenges*, and *Responding to Costing Challenges*.

3.1. Determining Direct Costs

This major category reflects how *kakanin* vendors establish the direct cost of producing their products. Their methods vary from memory-based estimations to structured calculations, depending on the context and the level of accuracy required. Direct cost computation is influenced by daily routines, ingredient familiarity, product demand, and market price fluctuations. Vendors navigate between informal and semi-formal costing practices, revealing a flexible and experience-driven approach to financial decision-making. This category emerged from four subcategories: *Estimating Costs*, *Itemizing Ingredients*, *Recording Expenses*, and *Computing Totals*.

Estimating Costs: Estimating Costs captures vendors' reliance on habitual knowledge and intuition when determining ingredient expenses. They often use past experience and familiarity with recipes to approximate costs without written computation. This

reflects a practical and time-efficient strategy that works well for routine, predictable production.

“Ang una, ang akong gihuna-huna ug pila ang presyo nga pwede nako siya i-baligya sa akoang customer. Mao to ga check ko ug pila ang kilo sa asukal, harina, ug sa ubang ingredients. Sa ato pa, akoang gi-divide. Sa isa ka kilo, ug pila kabuok maabot, dayon gi divide nako ug makaya ba siya sa tag tres...dili man so didto ko sa tag kwatro. Sa kwatro naa siya’y ma-imo...So didto gyud ko sa tag kwatro kay murag barato barato pa man tong asukal. Ang harina, mga ingredients kay barato-barato, makaya ra. Naa ra gyud, so mao tong didto ko sa tag kwatro...Naa gyu’y ginansiya nga makita.” [First, what I thought about was how much I could sell it to my customers. So I checked the price per kilo of sugar, flour, and the other ingredients. Then I divided it — from one kilo, how many pieces can I make? After that, I divided the cost to see if selling it at 3 pesos per piece would work. It didn’t, so I went with 4 pesos per piece. At 4 pesos, there is still a profit. So I really chose 4 pesos because sugar was still cheap at that time, and the flour and other ingredients were also affordable. It was manageable, and there was profit to be seen.] -P6

“Akoa pa nang gi bana-bana ang budget lang nako ba, kung бага mao’y akong gi taguan...Then mao to ang mga ingredients gyud nga needed mao’y akong gi-una syempre so wala sa ko’y mga gipangbutang na special, sagol-sagol akoa sang gi-una katong mga kinahanglanon gyud ana nga unsa ni...negosyo.” [I only made an estimated budget — like the amount I set aside. Then I prioritized the ingredients that were really needed, of course. I didn’t include any special or extra ingredients yet. I focused first on the essentials that are really required for the business.] - P8

“Bana-bana ra namo, kay naanad naman mi wala na’y lista-lista. Ug unsa’y nakasanayan na ginapalit ug ginagasto, mao ra gyud pud to... Among presyo sa baligya, dili ra pud mag-usab.” [We just estimate, because we’re used to it and don’t make lists anymore. Whatever we’re used to buying and spending on, that’s basically it... Our selling prices don’t really change either.] -P4

“Sa una lisud... pero karon kabalo nako nga kada kilo kay mga ingon ani ang magasto... mao na dayon akong gi-basehan kada adlaw.” [It was hard before...but now I know that each kilo cost about this much... how much will be spent... so that’s what I base my calculations on every day.] -P4

“Akong gi-kwenta nga maka ginansya ba ko, ug di ra ko na-short sa akoang puhunan. Akoang i-total tanan nagasto nako...ug i-bahin nako sa pila’y mabuhat nako...tubuan ginagmay kanang igo-igo ra pud nga... maka-ginansya.” [I computed everything to check if I will earn a profit and not fall short of my capital. I will total all my expenses... then divided it by how many pieces I can produce... so that I can add a small markup — just enough for me to earn.] -P3

“Kanang mo gamit ko og calculator... dayon ginatantiya ra nako kung pila... kung pilla akong kanan magamit sa usa ka adlaw bitaw base sa mga miagi nga luto...” [I use a calculator... then I just estimate how much I will use in one day based on my previous batches.] -P6

These responses show that participants use a blend of exact calculation and estimation depending on the situation. For small, regular production, they tend to rely on routine-based mental computation, but for larger orders, new prices, or bulk production, they shift to more precise calculations using calculators or phones. Participants consistently described that they rely on their familiarity with ingredient quantities, daily procurement routines, and habitual production patterns to estimate costs without written computation. This practice reflects a form of tacit knowledge, where costing becomes an embodied skill developed through repetition rather than through formal accounting techniques.

During the interviews, participants appeared confident when they demonstrated or explained how they divided the total ingredient cost by the number of pieces or trays. Some even used their phones in front of the researcher to show their computation. However, when talking about recent price increases or complicated cost scenarios, a few participants paused, rechecked their numbers, or corrected their initial answers, indicating that calculation remains an area where they still adjust and confirm their estimates.

When this interpretation of “calculation and estimation in costing” was presented to the participants for verification, they collectively agreed that the description accurately represented how they computed their prices in real practice. Several participants emphasized that they really start with total ingredient cost and then “divide” it by output, and that calculators or phones are used when orders are large or when they feel unsure. No one requested corrections, which suggests that the theme is consistent with the way they understand and apply costing in their daily operations.

Participants emphasized that the goal of their calculation and estimation is not mathematical perfection, but reasonableness and protection of profit. They shared that mental estimation is enough when production is routine, but exact calculation becomes necessary when circumstances change, such as bulk orders or rising ingredients prices. They also stressed that the use of calculators or phones is a way to avoid mistakes that might reduce their earning. In this sense, their practice reflects what the literature describes: simple but purposeful costing methods that convert complex expenses into understandable numbers. The participants’ emphasis on “dividing cost” and “double-checking with calculators” confirms that calculation and estimation are important tools that they use to maintain fairness in pricing and stability in their income.

The participants’ blend of estimation and calculation reflects costing behaviors commonly documented in micro-enterprise literature. Rachman et al. (2022) emphasized that small food and beverage businesses frequently compute production costs through straightforward arithmetic methods, such as summing ingredient expenses and dividing the total by the number of units produced. Their findings show that even without formal accounting systems, micro-entrepreneurs use practical, step-by-step calculations to determine per-piece pricing and ensure profitability—mirroring the participants’ practice of totaling expenses and dividing them by output to select feasible selling prices.

Similarly, Deligero and Ballados (2025) reported that micro and small food retail enterprises rely on simple budgeting and basic numerical procedures to manage daily expenses, make pricing adjustments, and access profit margins. Their study highlights that informal yet consistent cost computation—whether done through calculators, mobile phones, or mental estimation—remains central to financial decision-making among micro vendors. Together, these RRLs support the finding that kakanin entrepreneurs combine both exact calculation and estimation as practical,

situation-dependent strategies for maintaining affordability, covering costs, and safeguarding their income.

Itemizing Ingredients: Itemizing Ingredients involves listing individual ingredients and assigning specific cost values per batch or per piece. This method appears when precision is needed, such as for bulk orders or fluctuating ingredient prices. It shows that vendors are capable of structured calculation when required.

“I-compute nato by pieces. Pananglitan sa akoang isa ka bilao, akoang isa ka bilao is depende. Naa man ko’y size 16, size 14, naa pud ko’y small nga tag 100...Naa pud ta’y pananglitan sa 750 na bilao ang akoang puto is 30 pieces, akong biko is 35 pero akong biko is dili ako mag luto...Akong kutchinta is 35 pieces mo-total siya ug mga 100 pieces pero sa akong picture 90 pero pakapinan mana nako gud so ug mag costing ta, pananglitan sa 35 pieces nga puto, ibutang nato pila na ka flour...3 cups ana sugar...naa pa na’y itlog.” [Let’s compute it by pieces. For example, in one of my bilao trays, it depends because I have size 16, size 14, and I also have a small one worth 100 pesos. For example, for the 750 pesos bilao. My puto is 30 pieces, my biko is 35 pieces, but I am not the one cooking the biko...My kutsinta is 35 pieces, so it totals around 100 pieces. In the picture it’s only 90, but I always add extra pieces. So if we do costing, for example for 35 pieces of puto, we need to put how much flour...3 cups of sugar...and it also has eggs.] -P5

“Halimbawa oil...1 gallon...asukal. Sa isa ka kilong asukal ginabudget namo 20 kilos kamote or saging. Mao na’y budget namo sa isa ka kilo. Dayon...ang chikalang kada duha ka kilo sa 50 pieces, 100 pieces, tunga ra gyud ka kilo ang among magasto dayon oil.” [For example, for oil...1 gallon...sugar. For every kilo of sugar, we budget 20 kilos of cassava or bananas. That’s our budget for every kilo. Then for the chikalang, for every 2 kilos we make about 50 pieces, 100 pieces, and we only use half a kilo. Then the oil.] -P1

“Kung isa ka kilo nga malagkit ug tunga’g kilo nga asukal akong gamiton, akong kwentahon pila total ana...Unya kanang apilan nako gamay nga allowance kung pananglitan magtaas pud ang presyo.” [If I use one kilo of glutinous rice and half a kilo of sugar, I will compute the total cost of that...Then I will add a small allowance in case the prices go up.] -P7

“Tan-awon nako pila ka kilo akong gamiton...dayon I-multiply nako sa presyo kada per kilo...unya ako i-add tanan aron makita ang total.” [First, I will check how many kilos I will use...then I will multiply it by the price per kilo...after that, I will add everything so I can see the total.] -P7

The data shows that itemized cost calculation is used by the kakanin sellers when they need clear and accurate costing. Unlike estimation, this method requires them to list ingredients, compute total expenses, and divide the cost based on the number of pieces or trays they produced. Sellers use itemized costing when ingredient prices change, when they offer several product types, or when they prepare large orders. This helps them avoid losing money and ensures that they price their products fairly. The interviews suggest that itemized costing gives them a better picture of their spending and profit, especially during times when prices are unstable. This means that the sellers use itemized costing as a careful and more exact method to guide their pricing and protect their income.

When the interpreted meaning of this subcategory was returned to all participants during the member-checking stage, they collectively confirmed that the description accurately reflected how itemized costing is practiced among them. Several participants clarified that while they do not use itemized costing every day, they rely on it when product variations, bulk orders, or price increases require more precise calculations. No participant requested a revision, and their agreement supports the alignment between this study's interpretation and the literature. This validation strengthens the credibility of the findings and confirms that itemized costing functions as a financial safeguard rather than a routine process.

Participants emphasized that itemized costing is particularly important when accuracy is necessary, such as when producing multiple varieties of *kakanin*, managing bulk orders, or responding to fluctuating market prices. They shared that this costing approach helps prevent financial loss, mispricing, and ingredient miscalculation. While estimation-based costing was perceived as fast and convenient for daily routines, itemized costing was considered essential when certainty and precision were required. The participants described itemization as a careful, intentional process meant to protect income rather than a daily operational habit. This distinction suggests that itemized costing is viewed as a financial safeguard, validating both its practical value and situational importance within their business practices.

Jumawid et al. (2025) examined the costing practices of micro foodservice businesses and found that owners commonly rely on itemized, ingredient-based cost computation to determine their production expenses. Their study highlights how micro-entrepreneurs break down raw materials such as flour, sugar, rice, and oil and compute their total cost per batch of production, which is then divided by the total yield to derive the cost per piece or per serving. This structured approach allows vendors to understand the exact cost contribution of each ingredient and maintain consistency across product batches. Jumawid et al. also observed that many sellers include small price allowances to account for fluctuations in ingredient prices, particularly for essential items like sugar and cooking oil. This aligns closely with the participants' practice of calculating costs based on kilos, cups, or specific ingredient amounts and adjusting totals to reflect possible price increases. By emphasizing systematic, per-batch costing, the study demonstrates how itemization enhances financial control and accuracy in micro-scale food production.

Pietschmann et al. (2024) examines how micro-businesses in the food and beverage sector compute their production costs with precision by breaking down expenses into detailed ingredient-level components. Their findings show that small food enterprises often struggle with pricing accuracy when they rely solely on estimation; however, accuracy improves significantly when entrepreneurs calculate costs per batch and identify the exact contribution of each raw material. This mirrors the participants' practice of computing ingredient costs by kilos, cups, and exact quantities to determine a per-piece or per-bilao cost. The study emphasizes that precise, itemized costing helps micro-entrepreneurs avoid underpricing, adjust to fluctuating ingredient costs, and maintain profit stability-points that strongly align with the sellers' reliance on detailed costing during bulk orders, price changes, or product variations.

Recording Expenses: Recording Expenses highlights the vendors' effort to maintain simple written documentation of ingredient purchases and spending patterns. This practice supports memory and helps verify accuracy during future costing decisions. It

represents an attempt to bring order and traceability into an informal business environment.

"Akoa ra na siyang gina-total tanan, sa merkado. Kasagara sa merkado man gyud nang mga ingana gyud, like kanang sa biko, ang mga ingredients. Gamay ra man gyud pud siya ug ingredients, di man pud siya ingon sa ubang mga food na daghan na pud kaayo siya ug ingredients na involved pud... sa merkado ra gyud... mag costing sa ingredients... isulat sa papel ug pila tanan nagasto..." [I just total everything myself, especially the items from the market. Most of the things we use are really bought from the market, like for biko and its ingredients. It only needs a few ingredients, not like others food that require a lot. So I just get everything from the market... compute the cost of the ingredients... then write on paper how much was spent in total.] -P7

"Akong ginakuha ang resibo kada palit... ug akong i-record sa notebook para dali ra makita kung pila akong nagasto..." [I get the receipt every time I buy something... and I record it in my notebook so it's easy to see how much I spent.] -P6

"Ako, akong ginabuhat kay gina-sulat gyud... kay ginagmay ra man pud ta diari dili man kinahanglan gyud na high-tech." [What I do is I really write it down... since we are just a small-scale business here, there's no need for it to be high-tech.] -P5

"Gi total nako ug pila'y nagasto nako... gina sulat nako sa papel..." [I totaled how much I spent... I'm writing it down on paper...] -P3

The data shows that manual recording is used by the *kakanin* sellers to keep track of their expenses, ingredient prices, and important notes related to their production. They write these details in notebooks so they can easily check their costs whenever they need to. This method helps them remember updated prices, compare expenses from previous days, and avoid mistakes when computing. Manual recording gives them a sense of control and allows them to double-check their costing, especially when ingredient prices change or when they are unsure about their estimation. The interviews suggest that keeping written records supports their decision-making and helps them manage their small business better, even if their system is simple and not formal.

After conducting follow-up interviews with the participants, we also asked several questions to their family members who occasionally help with the business, as well as the individuals they hire for labor. Based on their responses, the business operations are still going well and running smoothly. They shared that they prefer manual recording because it is already what they have been used to for many years. For them, writing the records by hands feels more familiar, reliable, and easier to control, especially since they have already developed a routine around it. Although they are aware that digital tools exist, they still believe that their traditional methods' works best for now, particularly since it aligns with their pace, comfort level, and current way of managing their daily transactions.

An observation made by the researcher during the interview was that the participants showed a high level of trust towards us, as they willingly allowed us to view their records without hesitation. This demonstrated their confidence and openness throughout the process. We also noticed that they were very flexible in managing their work. Most of the time, they personally handle everything from preparing the food to cleaning up afterward. They only hire

additional laborers during peak seasons such as Christmas or New Year when the demand becomes higher and the workload increases. The set-up reflects their resourcefulness and ability to adapt depending on customer volume, available time, and business needs. Their approach shows that despite the challenges of running a small business, they have developed a system that works efficiently for them and supports their daily operations.

Yap (2019) investigated bookkeeping practices of micro-enterprises in the Philippines and found that many owners recognized the importance of maintaining records, even if done manually in simple notebooks. The study highlighted that businesses that consistently recorded transactions were more capable of identifying profit trends and detecting cash leakages compared with those that kept no written records at all.

Similarly, Moore (2022) emphasized that financial recordkeeping strategies, including proper recording of daily transactions and preparations of simple financial summaries, are fundamental for small businesses to monitor performance and make informed decisions. Although many micro-entrepreneurs lack formal accounting training, the presence of any systematic recordkeeping significantly improves their ability to understand costs and plan for the future. These studies support the manual recording practices of kakanin vendors as a foundational steps toward more structured financial management.

Computing Totals: Computing Totals represents the use of calculators, mobile phones, or costing applications to generate precise cost values. This approach is used when vendors require certainty in computing per-piece or per-batch cost.

"Naa koy app na gina-follow kasi mo divide siya directly ra para di bitaw ka mag lisod tapos indicate nimo...didto ibutang lang nimo ang iyahang...halimbawa like ang sa harina, sa flour, ang sa amount sa ingredients, tapos bukod sa imohang ingredients, mag-add ka sa imohang labor cost, sa imohang mark-up. Dapat naa pud ka sa imohang...halimbawa ako, butangan pud nako'g labor cost sa akoang kaugalingon ug pila akoang per hour, tapos labor nga kung naa ka'y assistant, apil na siya sa imong costing nga para sa total. Ug pila'y total niya, kanang ma-divide nimo, naa na dayon percentage." [I'm following an app that divides everything directly so you won't have a hard time. You just indicate there...for example, for the flour, the amount of each ingredient. Then aside from your ingredients, you also add your labor cost and your mark-up. You should also include...for example, I add my own labor cost based on how I earn per hour, and if you have an assistant, their labor is included in the costing too for the total amount. And once you get the total, the app divides it and shows the percentage right away.] -P2

"Naa ko'y gina adapt katong gi-ingon nako nimo ganiha naa ko'y ginagamit na app...tig-cost siya kay kato man gud, mas easy siya kay direct na mag calculate." [I'm adapting what I told you earlier. I'm using an app...it calculates the cost directly because it's easier that way.] -P2

The response of the participants shows an emerging digitalization of costing practices among micro kakanin businesses. While not yet full-blown computerized accounting, the use of mobile application aids accuracy and efficiency in computing direct costs.

It shortens the time needed to re-compute costs when prices change and reduces simple mathematical errors. The adoption of these tools indicates a willingness among owners to integrate technology into their operations as long as it remains simple and accessible.

An observation made by the researcher during the interview was that the participant was very confident with her answers. It was evident that the app she was using was efficient for her, and that she had been using it for quite some time. She was very approachable and very willing to share the knowledge and experiences she has gained from her business.

The participant also suggested using the same application to make costing easier and to better track expenses or cash flow. According to her, tools like this can help small businesses become more organized and efficient, especially when it comes to budgeting and monitoring profits. She emphasized that in today's generation, we should make use of the resources and technology available to us, particularly now that the world is becoming more modern and digital. For her, adopting these tools is not only convenient but also a smart step toward improving business operations and decision-making.

Kazançoglu et al. (2021) study demonstrates how adopting systematic tools and methods can support sustainability and efficiency, reinforcing how digital apps can help small business owners monitor costs, reduce errors, and make better financial decisions. Thus, this study's findings complement the participant's experiences of technology adoption enhancing organizational and operational practices.

Rakshit et al. (2021) further examined mobile app utilization among SMEs in developing economies and observed that mobile-based tools support real-time decision-making in areas such as inventory, pricing, and customer transactions. Although their focus was broader than food micro-enterprises, the findings suggest that mobile devices can serve as low-cost, high-impact tools for financial computation and cost monitoring, especially for owners with limited access to formal accounting systems. These insights align with the practice of P2, who rely on mobile applications to streamline their costing process.

The findings under Determining Direct Costs' shows how kakanin vendors minimize uncertainty and handle daily decision-making in ways that align with Transaction Cost Theory. Coase's framework emphasizes that businesses aim to reduce the cost of gathering information, negotiating, and monitoring transactions. Sellers who use itemized costing, calculators, or mobile applications demonstrate efforts to lower these transaction costs by increasing the accuracy and speed of computing ingredient expenses. Meanwhile, reliance on experience-based estimation and rolling budgets reflects a low-cost mechanism for avoiding repeated computation, allowing vendors to make quick decisions without heavy cognitive effort. However, when ingredient prices fluctuate or when bulk orders occur, vendors shift from estimation to structured computation, indicating that they increase accuracy only when the risk of financial loss becomes high. This pattern supports the theoretical idea that micro-enterprises adjust their costing behavior based on the economic trade-off between effort and risk, adopting more formal methods when uncertainty threatens profitability.

The findings suggest that kakanin vendors would benefit from practical tools that make cost computation easier, more consistent, and less reliant on memory. Since many sellers shift between estimation and itemized costing depending on the situation, introducing simple and user-friendly costing tools—such as standardized

recipe costing sheets, mobile calculator templates, or laminated computation guides—can help stabilize their pricing and reduce the risk of underestimating costs. Local livelihood offices and cooperatives may also offer short training sessions on basic food costing to help vendors transition from purely experience-based estimation to more structured cost monitoring. These low-cost interventions can strengthen financial decision-making, help protect profit margins, and support long-term sustainability of the business.

4. Accounting for Indirect Costs

This major category explains how participants recognize and integrate various overhead expenses into their costing practices. Indirect costs such as gas, electricity, packaging, and transportation are difficult to measure precisely, leading vendors to use approximations and adaptive strategies. Their ability to integrate these costs reflects a practical understanding of true production expenses. This category was shaped by four subcategories: *Allocating Overhead*, *Including Overhead*, *Applying Percentages*, and *Adjusting Charges*.

Allocating Overhead: Allocating Overhead refers to dividing costs of utilities (gas, electricity, water) across multiple products or batches. This process helps vendors assign a reasonable portion of indirect expenses to each production cycle.

"Ang akua is sa gas kasi mahal na kayo ang gas ug electricity karon tapos mao'y pinakataas namo na over overhead. Dayon ibahin pa na sa kung ika-pila na lutuan nagamit ang gas sa daily or monthly ba kaha..." [My focus is on the gas because gas and electricity are really expensive now, and that's our highest overhead cost. Then I divide it based on how many times the gas was used for cooking, whether daily or monthly.] -P2

"Kung mag-assorted ko'g kakanin, akong gina-portion ang overhead fairly and equally sa kanang example if...lima ka klase." [When I make assorted kakanin, I portion the overhead fairly and equally—like, for example, if there are five kinds.] -P2

"Kung 100 pieces akong lutuan, akong i-divide ang utility cost para makuha ug pila ang nagasto kada buok." [If I cook 100 pieces, I divide the utility cost so I can determine how much was spent per piece.] -P5

"Ako gyud nang ginabahin-bahin ang kuan... ang gasto sa gas depende pila ka lutuan akong giluto." [I really divide the gas expense depending on how many batches I cooked.] -P3

"Gina-bahin nako ang gasto sa kanang utilities...depende sa gidaghanon sa kakanin nga akong nabuhat." [I divide the utility expenses depending on the number of kakanin I made.] -P4

"Akoang gina-bahin bahin ang gasto sa gas ug tubig base sa gidaghanon sa akoang naluto..." [I divide the cost of gas and water based on the amount of food I cooked.] -P1

"Dili ko nagasulat sa kung mga bali'g pila akua nagasto kay na-tantiya...na bana-bana nako ug mga pila ray magasto sa gasul..." [I don't really write down how much I spend because I've already estimated it... I already have a rough idea of how much the LPG will cost.] -P1

"Wala ko'y exact nga record, pero ako lang tantiyahon pila kasagaran akong magasto sa tubig ug kuryente, ug uban pa..."

[I don't have an exact record, but I just estimate how much I usually spend on water, electricity, and other.] -P8

"Ginatan-aw ra nako ang average nga gasto sa gas kada adlaw, mga 50 pesos, unya ako na gyud i-apil sa pricing."

[I only look at the average daily gas expense, around 50 pesos, and I include that in the pricing.] -P7

"Mag-estimate ra ko sa packaging kay usahay...dili ko kapalit og wholesale bitaw kanang binulto" [I only estimate the packaging cost because sometimes I can't buy wholesale or in bulk.] -P5

"Ang uban nga gastos like plete, ako ra sab gi-estimate ug gi-nadugang sa total cost." [Other expenses like transportation fare, I also just estimate and add to the total cost.] -P3

Follow-up discussions from the different respondents mention that they allocate costs based on the number of food batches or the quantity of food items produced. Vendors who apply this method acknowledge that indirect expenses cannot be assigned to a single output and must be logically divided to reflect accurate cost-per-unit values.

An observation made by the researcher during the interview was that the participants are engaging in informal yet systematic ways of computing cost allocations. Several participants kept small notebooks with handwritten computations or in their cellphones showing breakdowns of gas or utility expenses divided per batch. In some instances, participants were seen estimating how many cooking cycles a single LPG tank could support and using this as a basis for calculating cost per batch, consistent with P2's and P3's statements. Participants demonstrated a habitual process of mentally estimating and then writing down their cost divisions as they prepared ingredients or monitored cooking time. These repeated calculation behaviors suggested not only awareness of utility expenses but also an ongoing effort to distribute them proportionately to maintain fair pricing and avoid losses.

The data show that kakanin producers do not treat indirect costs as lump-sum expenses. Instead, they actively break down overhead into manageable, production-based units, applying simple mathematical allocations such as dividing utility costs by the number of batches, types of products, or total pieces produced. Such practices reveal a form of grassroots cost accounting that is practical, intuitive, and accessible to small-scale business. Despite the absence of formal accounting tools, the participants' approaches demonstrate financial awareness and a clear intention to understand the true cost of production. These allocation methods allow them to manage expenses, set prices accurately, and avoid underestimating the cost of utilities, especially given the rising prices of gas and electricity mentioned by P2.

Fitriana (2022) mixed-methods study, 47 MSMEs in the food & beverage sector were surveyed to examine how they calculate their production cost and operating profit. The findings show that many MSME operators have a *low understanding* of formal accounting standards: their own calculated production costs and profit deviate significantly from what would be obtained using full accounting methods.

Rohma and Prasiwi (2022) analyzed the use of process costing methods in ultra-micro businesses and found that proper allocation of overhead costs is essential for determining accurate production costs and profit margins. Their study showed that many micro-enterprises struggle with accurately assigning indirect costs due to limited accounting knowledge, but those who use even

simple forms of cost allocation, such as dividing utility expenses based on production batches, are better able to manage pricing decisions.

Including Overhead. It refers to the practice of adding an extra amount to the selling price specifically to cover indirect expenses. Vendors reported that aside from ingredient costs, they also considered gas, water, and packaging when setting prices, integrating these into the final per-piece or per-bilao rate. In doing so, they ensured that overhead was not treated as a separate computation but embedded in their pricing decisions. The meaning behind this subcategory is that overhead inclusion became a built-in habit in their pricing logic, helping them avoid situations where utilities and other indirect costs silently erode their profit.

"Magbutang ko ug gamay nga dugang sa presyo aron mo-cover ang tanan indirect costs...though di na kaayo hasol sa akong part since naa ra man ko'y app na ginagamit..." [I add a small amount to the price to cover all indirect costs, although it's not much trouble for me since I use an app to manage it.] -P2

"Ang akong presyo sa akong mga baligya kay naa ra gyud sa tag-P5 ug P10...apil na pud diha ang kuan...stick ug cellophane na gamiton sa pang balot." [The prices of my products are generally set at around ₱5 and ₱10, including the materials like sticks and cellophane used for packaging.] -P1

"Ang akong presyo sa akoang mga baligya, dili lang kay sa mga gasto sa ingredients ang apil niana... kuan kanang apil pud ang tanan overhead na mga gasto." [The prices of my products don't just cover the cost of the ingredients—they also include all overhead expenses.] -P4

"Ako gyud gina-add ang kanang gas, tubig, ug kuan...kuryente inig mag presyo para dili ko malugi." [I make sure to include expenses like gas, water, and electricity when setting the prices so that I won't incur a loss.] -P3

"Magbutang ko ug gamay nga dugang sa presyo aron mo-cover ang tanan indirect costs." [I add a small extra amount to the price to cover all indirect costs.] -P5

"Gina [lista] nako ang tanan gipalit nga...mga gamit na kinahanglanon sa packaging para kabalo ko pila akong nagasto kada semana." [I also make a list of all the items I purchase for packaging materials so I know how much I spend each week.] -P7

"Gina-sulat nako tanan nga gasto sama sa gas, kuryente, ug cellophane sa akong notebook para klaro akong makita." [I write down all my expenses, such as gas, electricity, and cellophane, in my notebook so I can clearly see them.] -P3

The responses show financial awareness among participants, indicating recognition that products should cover both direct and indirect costs. This demonstrates the evolution of financial literacy and shows that pricing decisions are gradually becoming more intentional and informed. Vendors who adopt this approach tend to protect their margins more consistently and adjust pricing with greater confidence.

The data indicate that kakanin business owners deliberately incorporate overhead costs into their product pricing, ensuring that indirect expenses such as utilities, packaging materials, and other miscellaneous costs are factored into the final selling price.

Participants consistently reported adding a small amount to their product prices to cover costs like gas, electricity, water, sticks, and cellophane (P1, P2, P3, P4, P5). Some participants even utilize mobile applications to simplify tracking and calculation, demonstrating a practical integration of informal cost management with available technology (P2).

The data analysis shows that kakanin business owners account for their indirect costs by deliberately incorporating overhead into their product pricing, ensuring that expenses such as utilities, packaging materials, and other miscellaneous costs are reflected in the final selling price. Participants consistently reported adding a small amount to their product prices to cover costs like gas, electricity, water, sticks, and cellophane (P1, P2, P3, P4, P5). Some vendors even use mobile applications to assist in tracking and calculating these costs, reflecting a practical combination of informal cost management and accessible technology (P2). This approach demonstrates a growing financial awareness and intentionality in pricing decisions, where business owners recognize the importance of covering both direct and indirect costs to protect profit margins and sustain operations. By integrating overhead into pricing, vendors can make informed adjustments when costs fluctuate, maintain profitability, and operate with greater confidence, illustrating that experience-based and practical strategies effectively manage indirect expenses in small-scale food enterprises.

Rachman et al. (2022) illustrates the complexities and strategies small food enterprises employ when accounting for indirect costs. It was found that many micro food and beverage businesses rely on approximate, experience-based estimations of overhead, such as utilities and indirect labor, rather than structured accounting methods. They argue this informal practice, while pragmatic, may lead to underestimating true costs, and they suggest a simplified but more precise costing formula to improve accuracy.

Pratista and Santoso (2024) advocate for a cost-plus pricing strategy, wherein both direct and indirect costs are explicitly calculated, and a mark-up is added to determine final product prices. Their study demonstrated that MSMEs using this method experienced significant profit increases (up to 640%) and could even offer discounts while preserving profitability.

Applying Percentages: Applying Percentages describes the use of a mobile application or tool that assigns specific percentage shares for ingredients, manpower, gas, electricity, and other indirect costs. Vendors who used this app relied on its automated computation, where overhead and labor were represented as fixed percentages of the total cost. This method provided a more structured way to incorporate indirect costs without manually dividing every expense. The meaning behind this subcategory is that percentage-based costing represented a semi-formal approach that increased accuracy and reduced the cognitive load of overhead calculation, especially for those comfortable with digital tools.

"Katong akong app, mao rato akong ginagamit kay kanang dati man gud, ga-written lang ko. Mas lisod nako siya kuanon kay naa ko'y makalimtan tapos mali usahay ang costing, mali usahay pud ang pag compute. Kato siya gud akong ginagamit nga app is mo direct na bitaw siya's naay percentage na maabot dinhi na sa ingredients pila ka percentage sa manpower nimo pila sa imohang gas and electricity naa makita na nimo diretso. Mao naman gud ang ginagamit"

karon oy di na bitaw parehas dati nga mag sige ka'g sulat mano-mano oo mas lisod siya kung imano-mano man gud nimo labaw na'g kanang dinaghan imong ginabuhat..." [As for my app, that's what I use now because before, I used to write everything down manually. It was harder for me because I could forget things, and sometimes the costing or computations would be wrong. The app I use now directly calculates percentages—how much of your ingredients, manpower, gas, and electricity are used—so you can see everything immediately. That's why I use it now; it's much easier than before when I had to write everything by hand, especially when you have a lot of things to track.] -P2

"Bukod sa imohang ingredients mag add ka sa imohang labor cost, sa imohang electricity, gas and kanang sa naga per-hour. Bukod man gud sa naa kay kita sa imohang gibaligya, imohang mark-up, dapat naa pud ka sa imohang...halimbawa ako, butangan pud nako'g labor cost sa akoang kaugalingon ug pila akoang per hour...tapos aside ana nga labor kay kung naa kay assistant, naa kay kuyog magluto or trabaho, apil pud na siya sa imong costing... Apil na siya sa imong costing, ug pila'y total niya, i-divide nimo. Naa bitaw inana, kanang naay percentage." [Aside from your ingredients, you should also add your labor cost, electricity, gas, and hourly rate. Besides the profit you make from your sales, your mark-up should also include...for example, in my case, I also include a labor cost for myself and my hourly rate. Then, aside from my own labor, if you have an assistant helping you cook or work, that should also be included in your costing. You include it in your total costing, and then you divide it. There's actually a method like that, using percentages.] -P2

The responses from the participant allow for quick cost allocation based on fixed percentages of total revenue or production costs, and the use of technology, such as apps, can make this process even more efficient. While this method has limitations in terms of precision, it offers a practical solution for businesses with limited resources or accounting expertise, ensuring that overhead costs are accounted for while maintaining ease of use and flexibility in adapting to changing circumstances.

An observation made by the researchers during the interview reveals that the participants' use of an app to automatically calculate costs and expenses has significantly benefited their business. By setting a fixed percentage for each product, the app helps the participant easily allocate indirect costs such as utilities, labor, and other overhead expenses without manual calculations. This approach not only simplifies cost management but also ensures that all expenses are consistently accounted for in the pricing structure. The app provides a real-time and automated solution for tracking costs, which helps the participant maintain accurate profit margins and adjust prices as needed to cover fluctuating costs. Ultimately, this tool enhances the efficiency and financial stability of the business by making overhead cost management more streamlined and less prone to errors or oversight.

The data analysis indicates that participant account for indirect costs by incorporating labor, utilities, and other overhead expenses into a structured costing system, often using fixed percentages to allocate costs across products. Participant responses reveal that overhead considerations include not only ingredients but also labor (both the owner's and assistants), electricity, gas, and

other operational expenses, which are incorporated into total costs before determining the final product price (P2). Further highlight that technology, such as cost-calculating apps, plays a key role in simplifying and systematizing this process. The participant noted that using an app allows for the immediate calculation of cost percentages covering ingredients, manpower, and utilities, thereby reducing errors compared to manual record-keeping. This approach streamlines cost management, ensures the consistent inclusion of overhead in pricing, and provides real-time tracking, enabling adjustments to maintain profitability amid fluctuating expenses. While the method may not be perfectly precise, it represents a practical, efficient, and adaptive strategy for micro-business owners with limited accounting expertise, allowing them to reliably account for indirect costs, maintain profit margins, and sustain financial stability.

Arifin and Eristiawan (2025) study develops a detailed COGM model for a small food enterprise (UMKM in the culinary sector), using full costing to allocate overhead (manufacturing costs) including utilities and labor. Although not percentage-based, the use of full costing shows how small food vendors systematically allocate overhead costs into the cost of goods, aligning with your participants' goal of making sure their indirect costs (gas, electricity) are included in their pricing.

Halimatusadiah (2024) investigates how the education, experience, and background of MSME owners affect their understanding of COGS, overhead cost allocation, and how they price their products. Your finding that kakanin vendors track overhead in notebooks or via apps can be framed within this study: demographic and skill factors influence how well small business owners manage cost accounting, which in turn affects how accurately they assign indirect costs percentage-wise.

Adjusting Charges: Adjusting Charges involves adding an extra amount to the selling price to account for overhead consumption. This ensures that despite estimation errors, vendors can still recover operational costs.

"Kung mahal ang gas karon, ako pud i-increase gamay ang presyo sa mga umaabot na adlaw kay aron dili pud ko ma-ginansi..." [If gas prices go up, I also slightly increase the prices of my products in the coming days so I won't incur losses.] -P6

"Every two weeks, akong ginacheck akong mga gasto para ma-update kung kinahanglan." [Every two weeks, I check my expenses to update them if necessary.] -P7

The follow-up interviews highlight the importance of regularly reassessing and modifying product prices in response to fluctuations in overhead costs, market conditions, and business requirements. Small businesses, especially in food production, need this practice to maintain profitability while staying competitive. For example, P6 adjusts their product prices when gas prices rise, ensuring that they avoid losses by increasing prices accordingly. Similarly, P7 conducts a bi-weekly review of expenses, updating pricing as needed to reflect changing production costs. These practices help small-scale businesses manage cost increases and demand shifts without compromising their bottom line.

An observation made by the researcher during the interviews further validated these findings, showing that participants approached discussions about price adjustments with confidence and

practical insight, indicating that regular monitoring of expenses is a routine and well-integrated aspect of their business operations. These practices allow vendors to maintain profitability, manage cost fluctuations, and remain competitive without extensive formal accounting systems.

The data reveals that kakanin business owners systematically account for indirect costs by periodically reviewing and adjusting product prices in response to fluctuations in overhead expenses and prevailing market conditions. Participants reported employing practical strategies, such as increasing prices when gas prices rise to mitigate potential losses (P6), and conducting bi-weekly reviews of expenses to ensure that pricing accurately reflects current production costs (P7). Observational data further confirm these findings, demonstrating that participants approach pricing adjustments with confidence and practical discernment, suggesting that periodic cost monitoring is an integral component of their business routines. Such adaptive strategies enable kakanin vendors to maintain profitability, respond to cost fluctuations, and remain competitive without reliance on formal accounting systems.

Reyroso et al. (2023) examines how small and medium enterprises (SMEs) in the Philippines apply management accounting practices particularly costing, planning, and control to guide strategic decisions. The authors found that SMEs place high importance on costing information when setting sales prices, showing that cost data including indirect costs are used actively in pricing strategy.

Jumawid et al. (2025) study identifies two main costing methods among micro foodservice owners: ingredient-based costing and full costing. The use of full costing, which includes indirect costs, parallels your participants' strategy of periodically adjusting prices in response to overhead cost fluctuations like utilities. The authors also highlight that business owners adapt their costing system to reflect real-time changes in their operating environment, mirroring how your kakanin vendors do bi-weekly reviews and reprice based on rising gas or electricity costs.

The data on indirect cost accounting reflects the high measurement and allocation challenges described in Transaction Cost Theory. Since overhead expenses like electricity, gas, and water are shared with household consumption, the cost of monitoring them becomes high, making precise allocation difficult. Vendors who divide utilities per batch or use a percentage-based overhead method are attempting to reduce uncertainty through simplified cost allocation systems, thus lowering internal transaction costs. Those who do not systematically track overhead demonstrate that when monitoring becomes too costly relative to perceived benefits, micro-entrepreneurs choose informal strategies that require less effort. These behaviors reflect Coase's principle that firms will only formalize processes when the cost of doing so is lower than the losses they may incur from inaccuracy. Ultimately, the findings show that indirect cost accounting evolves in adaptive ways, depending on how costly or practical monitoring becomes for the vendor.

Given the difficulty vendors face in allocating indirect expenses such as gas, electricity, and water, practical support should focus on helping them develop simple and realistic systems for overhead tracking. Providing easy-to-use reference tools, such as overhead percentage guides or batch-based utility allocation worksheets, can help vendors understand how much each production cycle truly costs. Barangay-based livelihood programs may also teach small vendors how to incorporate indirect costs into their pricing without overwhelming them with technical accounting terms. By introducing these straightforward methods, vendors can recognize hidden expenses, adjust their pricing more accurately, and main-

tain better financial control even without formal bookkeeping training.

4.1. Setting Selling Prices

This major category shows the pricing strategies used by *kakanin* vendors to arrive at selling prices that balance affordability, competition, and profit. Vendors consider not only their computed costs but also customer purchasing behavior and competitive pressures. Pricing decisions reflect both economic reasoning and social awareness. This category emerged from three subcategories: *Applying Mark-Up*, *Benchmarking Prices*, and *Considering Market*.

Applying Mark-Up: Applying Mark-Up refers to adding a profit margin on top of the computed cost. Vendors often use a fixed amount or percentage to ensure earnings without overpricing.

"Ang presyo always gyud magbase sa costing kay pag wala gyud kay costing dili ka ka maglisod ka ug buhat sa imong presyo kasi dili ka pwede nga ah ingani lang akoang price okay na ni tubo nako gamay dili pwede dapat naa kay percentage dapat pud ikaw nga nagbaligya ikaw na nagbuhat, imo gyud pud iapil ang imohang cost pud na, cost pud ka apil ka sa costing sa imohang produkto like sa akoo ang i-ingredients I tapos mga gas, electricity, ana tapos imohang manpower, overall ana nila imohang iadd. After nimo na siya iadd imong idivide sa ug pila ka items to imong nabuhat then after ana nadivide na nimo mag add ka'g 30 percent to 40 percent mark-up." [The price should always be based on the costing. If you don't have costing, it will be hard to set a price because you can't just say, "This price is okay, I'll get a little profit"—that won't work. You need to have a percentage. As the seller, you need to include your costs in the costing of your product. For example, for me, I include the ingredients, then gas, electricity, and manpower—add all of that together. After totaling, you divide by the number of items you made. Then, after that, you add a 30 to 40 percent markup.] -P2

"Gi total nako tanang mga ingredients kay normal mao naman gyu'y kuan sa mga negosyante kanang mga total sa cost sa mga ingredients...Dayon mao na to siya, ug pila'y total ato syempre naa na pud kay kuan ato sa imoha kay as profit na pud ba." [I total all the ingredients because that's the usual practice for businessmen—to get the total cost of the ingredients. Then that's it. From that total, of course, you also include your share as profit.] -P7

"Sa selling price sa akong kakanin...less kuhaon nimo ang ingredients tanan apil ang labor tanan...dayon i-calculate gyud nimo nga naa kay ginansiya, mao ra gyud na siya..." [For the selling price of my kakanin... you subtract all the ingredients, including labor... then you calculate so that you still make a profit. That's basically it.] -P5

"Bana-bana na maka ginansiya ra pud gamay, ug pamati nako nga kaning presyoha, mao na ning presyo sa nagasto nako sa tanan, tubuan lang pud ginagmay..." [We just estimate so we can make a small profit, and I feel that this price reflects all my expenses—then we just add a little extra profit.] -P4

"Siguro akong mga presyo sa akong mga kakanin, gi maintain nalang gyud ang presyo para bahalag ginagmay basta kanunay. Mag unsa man ta kung mag mahal, masayang

ra imong baligya, dili mahurot. Mao na ga-maintain gyud mi tag singko bahala na ug tag singko, ginagmay'ng ginansiya basta kanunay hurot among baligya..." [Maybe I just maintain the prices of my kakanin, so even if the profit is small, it's consistent. What good is it to raise prices? The sales might not finish, and it would go to waste. That's why we keep it at five pesos—small profit, but at least everything we make gets sold.] -P1

"Akoang gi konsidera nga maka ginansiya gyud pud ko sa akong mga gipangbaligya...Bahala'g gamay ra among ginansiya basta kanunay lang among halin." [I consider it important that I still make a profit on what I sell... Even if the profit is small, as long as we keep selling consistently.] -P1

"Pero otso akoo kay ang ingredients kay di man pud magsilbi dili ka maka-ginansiya." [But for me, it's eight because the ingredients have to be enough; otherwise, you can't make a profit.] -P5

The data interpretation indicates that participants recognize the importance of accurately tracking both direct and indirect expenses. By breaking down their costs, they can calculate the true cost per piece and set fair selling prices that reflect the total expenses involved in making *kakanin*. Sellers also emphasized that they do not only focus on the direct ingredients but also account for utilities and labor, which are essential but often overlooked costs. This detailed breakdown enables them to manage their finances more effectively and avoid underpricing their products. The data suggests that the practice of tracking expenses is not formalized but is a practical, self-developed approach that is integral to how these *kakanin* vendors run their businesses.

From the analysis, it is clear that costing and expense breakdowns are important in the financial decision-making process of *kakanin* sellers. The practice of calculating both direct and indirect costs allows participants to have a clearer picture of their expenses and earnings. The breakdown of costs helps sellers understand the margin between their selling price and production costs, enabling them to adjust their prices if necessary to ensure profitability. Additionally, by tracking indirect expenses, such as gas, electricity, and labor, sellers can better control their overall costs and avoid financial surprises. This practice is not merely an accounting tool but a strategy to ensure that each product sold contributes positively to their financial goals. The analysis emphasized that even in a small-scale business, understanding and tracking all costs—both direct and indirect—are important to maintaining a sustainable and profitable operation.

The data show that *kakanin* vendors systematically determine their prices through a detailed breakdown of both ingredient and overhead costs. Participants described including all expenses such as ingredients, gas, electricity, and labor, then dividing the total by the number of items produced to calculate the base cost, as mentioned by P2, P4, and P5. After this, a mark-up of 30 to 40 percent is added to ensure profit. This practice shows that vendors use a practical and organized way of setting prices. They know their total expenses and make sure they earn enough profit. Even without formal accounting, their methods help them set fair and sustainable prices that match their costs and the income they need.

Deligero and Ballados (2025) emphasized that itemized costing allows micro and small food enterprises to accurately determine the real cost of their products. By breaking down expenses into

categories such as raw materials, labor, packaging, and overhead, business owners can identify areas where costs can be minimized without affecting product quality. The authors emphasized that such detailed cost tracking helps entrepreneurs make informed decisions about pricing. This supports the practices of *kakanin* sellers, who calculate ingredient costs per batch or per tray to ensure they avoid underpricing while maintaining profitability.

Kajal et al. (2021) emphasized that a detailed expense breakdown enables small and medium enterprises to set more accurate and sustainable prices. Their study highlighted that when business owners understand the full composition of their costs—including raw materials, labor, overhead, and packaging—they can determine pricing that covers all expenses while maintaining profitability. This aligns with the practices of *kakanin* sellers, who compute ingredient and batch costs to ensure their prices are sufficient to cover production and yield a reasonable profit.

Benchmarking Prices: Benchmarking Prices involves comparing prices with competitors in the market. Vendors ensure that their prices align with what customers perceive as fair and competitive.

"Kang usually gyud, ang mga presyo diri, naniid ko sa city, tag diyes ilang baligya sa budbud balanghoy...pero ang size kay didto ko ning bawi, didto nalang ko nag base, tag diyes siya pero gagmay. Ang akong gi himo para makalless ko sa dahon...dagkuon nako siya pero taas pud iyang presyo syempre...mao na akong pamaagi..." [Usually, the prices here. I've observed that in the city, they sell budbud balanghoy for ten pesos... but the size there is smaller, so that's what I base mine on. I make mine bigger so I can use fewer leaves, but of course the price is higher. That's my approach.] -P8

"Ang puto baya sa Pagadian naa biya... sa otso? siyete? inana akoo otso...mao gyud na akoo otso...siyete..." [The puto in Pagadian—how much is it there, eight? Seven? Mine is eight... seven...] -P5

Participants practice competition-sensitive pricing, suggesting awareness of market equilibrium and fear of losing customers to substitutes.

During the interviews, the researcher observed that vendors consider the prices of similar products sold by other vendors when determining their own prices. Participants said they check what others are charging nearby or in the city and use that as a guide, as P5 shared about pricing *puto* at eight pesos while others sell for seven or eight pesos. Vendors also adjust for differences in size or ingredients, as P8 explained with *budbud balanghoy*, to set a fair price. Comparing these observations with interview responses shows that vendors use competitor prices to stay competitive while still making a profit.

The data show that *kakanin* vendors set their prices by comparing them with similar products sold by other vendors. Participants described observing competitors' prices in nearby areas or cities and using these as a guide for their own pricing, as P5 noted with *puto* priced at eight pesos while others sell for seven or eight pesos. Vendors also adjust for differences in size or ingredients to justify higher or lower prices, as P8 explained with *budbud balanghoy*, making theirs bigger but slightly more expensive. These practices indicate that vendors actively monitor the market and

use competitor pricing to stay competitive while ensuring they still earn a profit.

Aguilar et al. (2024) study found that competitive pricing (i.e., setting prices based on competitors) is a pricing strategy significantly correlated with SME performance (profitability, stability, growth). This supports the observation that kakanin vendors monitor their competitors' prices when setting their own. It indicates that using competitive pricing is a rational and effective strategy for small businesses to remain viable.

Pratiwi (2024) found that food stall owners (micro food vendors) respond to cost pressures like rice price surges by adjusting their prices, often by comparing what other vendors charge, altering portion sizes, or changing recipe/quality. This strongly parallels the finding vendors not only track their costs, but also respond to market conditions (competitor prices) in determining what to charge. Their "price adjustment" strategy mirrors P5 & P8 observations of monitoring and aligning with competitor kakanin prices.

Considering Market: Considering Market captures how sellers adjust prices based on customer affordability, demand, and purchasing patterns. They evaluate whether the community can bear slight increases without affecting sales.

"Dapat naa ka'y consideration sa imohang market target, kung asa ka diba halimbawa like ani, city man ni siya so city. Naa ra'y kaya mupalit ang tawo so didto gihapon ka maski pa mo ingon ka ug kaya nila mupalit, quantity over quality pud gihapon ka kung halimbawa, naa ka sa urban areas, so dili man ka afford ang tawo, dili pud nimo pwede nga iadjust imong product para ma kuan nila. Pwede kana bawasan lang nimo pila ka pieces para mobarato lang, maavail nila like sa akua, kana akong kakanin is per pack akong baligya so 20 pieces per pack, ana siya, ang uban gali kay dili gyud na maskin gali diri sa city nay uban na dili ka afford kanang maskin diba 150 lang na siya. So sometimes pag naa ko'y sobra, ginabuhat nako siya into half. If naa'y mga sobra, mga extra, dili kaabot sa isa ka pack nga quantity, akua ihatag para ang uban na gusto lang bitaw mo try, gusto makatitaw, kana uban na wala'y kaya ipalit. Wala'y extra money para ani..." [You have to consider your target market—where you're selling. For example, this is in the city, so people here have the ability to buy. Even if you think they can afford it, quantity over quality still matters. If you're in urban areas and people can't really afford it, you can't just adjust your product to make it cheaper. You can only reduce the number of pieces so it becomes more affordable and accessible. For example, I sell my kakanin per pack—20 pieces per pack. Even at that, some people in the city still can't afford it, even if it's only 150 pesos. So sometimes, if I have extra, I split it in half. If there are leftover pieces that don't make a full pack, I give them out so people who just want to try or taste it can have some, especially those who don't have money to buy a full pack. There's no extra profit from this.] -P2

"Kanang [example imo gyud gihatagan ug consider nga makatubo ra gyud pud ka], akong gikuan sa akong mga customer nga ayuhon lang pud nako sila ug pananglitan naa sila'y mga reklamo andam pud ko nga mo dawwat mo tubag sa ilang mga reklamo ug akua pud i-kuan ang sa akoang pagluto tan-awon nako ug angayan ba siya nga kuanan

nako ang ingredients, dungagan ba or kulangan, ug mo ingon sila'g kulang ang sugar, mo additional pud ko ana pero at least naa ra gihapon sa presyo na akoang gihatag nila. Naa ra gihapon mahimo na ginansiya." [For example, I really consider making sure I still get a profit. I also take care of my customers—if they have complaints, I'm ready to listen and respond. I check my cooking too, to see if the ingredients are enough, if I need to add more, or if something is lacking. If they say the sugar is not enough, I add more, but it's still included in the price I gave them. Even then, I can still make a profit.] -P6

The statements reveal a demand-based pricing logic where affordability dictates selling price, particularly in competitive and price-sensitive local markets.

During the interviews, the researcher observed that vendors think carefully about their customers when setting prices. They consider what people can afford and adjust the quantity or packaging to make products easier to buy, as P2 explained. Some vendors keep prices reasonable to balance good quality and profit, avoiding prices that are too high or too low. Others respond to customer feedback by changing ingredient amounts without raising the price, as P6 shared. Comparing these observations with interview responses shows that vendors set prices based on both the market and customer needs, making sure they can sell consistently while still earning a profit.

The data show that *kakanin* vendors set prices based on their target market and customers' ability to pay. Participants explained that they consider what people can afford and adjust the quantity or packaging to make products more accessible, as P2 described with splitting packs or giving smaller portions to allow people to try. Some vendors focus on keeping prices reasonable to balance quality and profit, avoiding prices that are too high or too low, as also noted by P2. Participants also take customer feedback into account, adjusting ingredients when needed without changing the price, ensuring satisfaction while still earning a profit, as P6 shared. These practices reveal that vendors make pricing decisions based on both market conditions and customer needs, showing practical strategies to maintain sales and profitability.

Tacardon et al. (2023) found that perceived value which includes economic/affordability factors significantly influences why consumers buy street food. The authors note that many street-food customers are sensitive to price and value, which supports the finding that kakanin vendors adjust pricing and packaging based on what customers can afford.

Al-Jundi et al. (2020) examines how low-income conditions drive people into street vending and how that affects their pricing strategies. Because poverty constrains both vendors and customers, street vendors often set lower prices to match customers' limited purchasing power, reinforcing a demand- and affordability-based logic. This aligns with your participants' behavior of adjusting quantities or packaging to make products more accessible.

The setting of selling prices of kakanin vendors illustrate how businesses govern exchanges under uncertainty, aligning with Transaction Cost Theory's view of pricing as a mechanism for market coordination. Vendors who compute break-even points and apply mark-ups demonstrate efforts to reduce uncertainty through structured decision-making. In contrast, those who rely on intuition or "gut feel" adopt low-transaction-cost strategies that depend on habitual buyer behavior and social norms within the

local market. Price adjustments made in response to ingredient cost changes also reflect the adaptation costs described by Coase, where sellers must continuously renegotiate their pricing decisions to remain competitive yet profitable. These patterns demonstrate that pricing is not merely a mathematical activity, but a balancing act between minimizing the cost of information gathering, maintaining customer relationships, and adapting to external volatility. Thus, pricing behaviors among micro-entrepreneurs represent strategic attempts to manage market uncertainty with the least possible friction.

The findings indicate that pricing decisions are frequently influenced by customer expectations, competition, and fluctuations in costs. To support vendors in setting fair yet profitable prices, practical interventions may include short lessons on break-even analysis, mark-up calculation, and value-based pricing. Local support groups or LGUs can also create community pricing guides or peer benchmarking groups to maintain fairness and reduce price undercutting among sellers in the same area. Simple "Price Adjustment Guide Cards" may further help vendors explain necessary price increases to their customers, improving transparency and reducing conflict. These efforts can strengthen their confidence in pricing and help maintain profitability even during market changes.

4.2. Controlling Production Costs

This major category captures the strategies that *kakanin* vendors use to minimize expenses and maintain profitability despite rising ingredient prices and limited financial resources. Vendors demonstrate practical decision-making by adjusting portions, reducing waste, choosing economical suppliers, modifying recipes, and regulating their production volume to avoid unnecessary costs. These strategies highlight their resourcefulness, adaptability, and careful management of available resources in order to sustain their operations. This category emerged from four subcategories: *Monitoring Inventory*, *Regulating Production*, *Portioning Products*, and *Strategic Purchasing*.

Monitoring Inventory: It involves tracking ingredients, materials, and products to ensure that *kakanin* vendors have the right amount of stock to meet demand without overstocking or running out of supplies. Proper inventory management is essential for reducing waste, optimizing production, and maintaining profitability.

"Dapat parehas nalang sa akong ingredients dapat sakto imohang pag monitor, dapat wala'y mausik, wala'y malabay kay kung rest sa amoa, gina-kilo namo ug gina-grams namo ang tanan ug gina-scoop, wala'y masayang kay para... mao man gud na among ginasunod pud sa inventory... ga inventory mo, dapat kumpleto kag... weekly ko ga inventory kay para, succeeding nga week, nga naa ko'y buly orders, na[kita] nako siya nga wala ko ga ran out." [It should be same as my ingredients, and you need to monitor them correctly. Nothing should be wasted or thrown away because, in our place, we weigh and measure everything in grams and scoop them properly. Nothing gets wasted because that's how we follow our inventory. If you are doing inventory, you need to do it completely. I do inventory weekly so that in the following week, when I have bulk orders, I can see that I didn't run out of anything.] -P2

"Sa akoang kakanin business, ang sekreto sa pag-manage sa gasto kay... magplano ug maayo sa inventory, dili mag

palit ug sobra para maka-save ug para mas maka sigurado ko nga dili magka-waste sa ingredients pinaagi sa tamang pag-process. Kanunay nako i-monitor ang daily expenses ug income para makita ang mga areas nga pwede i-adjust." [In my *kakanin* business, the secret to managing expenses is... planning the inventory well, not buying too much so I can save, and making sure there's no waste through proper processing. I always monitor daily expenses and income so I can see which areas need adjustment.] -P1

"Para maigo gyud siya, gi-kinilo man gud siya nako, kumbaga lahi-lahi man gud siya, dili siya same ug gidaghanon sa mga ingredients kumbaga sa sugar, brown sugar mu-palit ko'g mga duha ka kilo dayon katunga pud siya sa katong kinugay ug margarine ug... unsa pa." [To make everything exact, I weigh the ingredients. They vary because each dish uses different amounts. For example, for sugar and brown sugar, I buy around two kilos, and then I also get half of grated coconut, margarine and whatever else is needed.] -P8

"Possible pud nga naa pu'y ing-ana nga instances like, gamay ra akong nabanggod nga kamanting so naay sobra sugar, so i-preserve to nako para sa sunod napud nakong paghimog budbud, nga para di siya madaot." [It's really possible that there are instances like that, when I grate only a small amount of cassava, there's leftover sugar, so I just preserve it for the next time I make budbud so it won't spoil.] -P8

"Dili man gud siya ingon nga ma-bana pud gud, pag once nga kompleto, gatimbang ka. Naa ka'y gina-follow nga mga ingredients pila'y timbang, pila ka scoop." [It's not something you can just estimate. Once you follow the measurements and weigh everything, you know exactly how much of each ingredient, how many scoops, how much weight is needed.] -P2

"Mag-control ko sa akong mga ingredients, kana ra gyud. Kinahanglan, ma-rolling, ma-budgetan gyud kay adlaw-adlaw gyud mi mangompra." [I really make sure to control my ingredients. I need to roll, it has to be manage properly and budgeted because we buy supplies everyday.] -P1

"Ang akoang mga ingredients, mostly wala'y mabilin nga sobra kay na-measure naman gud nako kung sa kini nga putahe kay pilay kinahanglan nga rekados." [With my ingredients, there is usually nothing left over because I already measure how much each dish needs.] -P5

"Mag lista ko daan ug pila'y- unsa'y akoang palitonon sa akoang mga niluto, bahin sa mga asukar ilista nako, pila ka kilo akong magamit." [I make a list ahead of time of what I need to buy for the dishes I cook. For example, with sugar, I list how many kilos I'll use.] -P3

"Prioritize lang gyud kung unsay need, kung unsa lang gyud ang kulang nga gamiton sa pagluto." [Just prioritize what is needed, only what's lacking or needed for cooking.] -P5

The data suggest that inventory management plays a central role in cost control for *kakanin* vendors, with a strong focus on minimizing waste and optimizing stock levels. Vendors rely on manual systems like weighing and measuring ingredients to ensure they purchase only what is necessary for daily production, thereby avoiding overstocking or spoilage. This approach helps them maintain profitability by aligning purchases with actual sales needs. Regular inventory checks and adjustments to stock ensure that vendors are responsive to fluctuating market conditions and can adapt quickly without compromising product quality.

These practices highlight that, even without advanced technology, a simple, well-organized inventory system enables small food businesses to manage their resources efficiently and reduce unnecessary costs.

In the member checking process, all participants confirmed that the inventory management practices described in the study accurately reflect their daily operations. Vendors verified that they consistently measure ingredients, perform weekly inventory checks, and make purchases based on demand to avoid surplus. P8 particularly emphasized that unused ingredients are preserved for future use, ensuring that nothing is wasted. These confirmations from the vendors align with the findings, validating the accuracy of the data collected and reinforcing the consistency of their inventory management practices.

The data indicates that kakanin vendors use a systematic yet informal approach to inventory management, focusing on weighing ingredients and measuring portions to ensure minimal waste and proper stock levels. Vendors engage in weekly inventory checks and adjust their purchases based on observed demand, which helps manage costs and avoid overstocking. By purchasing only what is necessary for production, and making adjustments based on fluctuations in demand or ingredients prices, they effectively reduce waste and maintain cost efficiency. Despite not using formal inventory software, the practice of manual tracking is sufficient for these vendors, helping them meet daily production needs without overcommitting to excessive stock, thus maintaining profitability.

Raysid and Arifin (2021) findings highlight that effective inventory control and production planning significantly improve cost efficiency in small food enterprises, which aligns with the kakanin vendors' practice of buying only what is needed for daily production. Their emphasis on minimizing waste and optimizing stock mirrors the vendors' manual weighing and portioning methods observed in the study. This supports the conclusion that even simple, informal inventory systems can enhance profitability when consistency applied.

Ghosh and Bhowmick (2022) explains that traditional food MSMEs rely on practical, experience-based inventory methods to manage costs, directly matching the vendors' habit of weekly inventory checks and demand-based purchasing. Their study also shows that cost performance improves when businesses avoid overstocking, which is consistent with the vendors' efforts to prevent waste and preserve unused ingredients. This relevance confirms that manual, low-tech inventory practices remain effective for small-scale food businesses in controlling expenses and maintaining profit.

Regulating Production: Regulating Production captures the practice of cooking only according to expected demand or confirmed orders. Vendors intentionally limit production when prices are high or when demand is uncertain to avoid spoilage, unsold products, and wasted capital. This strategy ensures cost-efficiency by aligning output with market patterns.

“Diba sa pag sugod, ma-bana-bana nako ba ug unsa’y halinon nga, pananglitan karon, maka luto ko’g isa ka lutoan nako, unya mao ra pud na siya’y dali kay kay mahurot ingana ka lutuan. So mao ra pud na akoo nga aside sa- kay usahay naa man gud pud mga order na mga bilao, so ug naa pu’y ma-order nga mga bilao mao ra pud to- mag additional lang

pud ko ana. So mao na naa gyu’y ingon nga mabilin, isa ra ka tub amoa ra pud kan-on unya katong isa ka tub sobra naman kay’to sa profit pero kuan jud na siya kanang di ra pud na siya ingon nga- very rare na pud na siya nga panghitabo pud sa amoang business kay mao raman gud na kay ako man gu’ng gi-consider gud pagluto gyud namo para maayo pud sya’g [quality] sa mga tao ba... dili gyud ingon nga bahaw.”

[From the beginning, I’ve learned to estimate what sells. For example, if today I cook one batch, and that batch always sells quickly, then that’s what I follow—one batch at home a time. Sometimes we also get orders in bilao, so when there are bilao orders, I just add extra for those. That’s when leftovers can happen, but usually only one tub, and we just eat that at home. If there’s another tub left and that’s already profit, that’s fine—but that rarely happens in our business because we really make sure to cook properly so customers get wood-quality, fresh food, not something stale.] -P7

“Para ma-sure lang gyud nako nga, ug naa man gali sobra pero gamay lang- para wala gyu’y masayang, didto ko magsugod sa pagkuha ug kamanting, like ug mao ra gyud na ang kadaghanon. For example, mupalit ko’g duha ka kilo nga sugar tas one kilo nga kinugay then margarine ug kanang lubi, ing-ana, akong bana-banaon So mag base sa kamanting nga sobra man gani, mas maayo nga mu tam-is kaysag mu tab-ang, ing-ana bitaw.” [To make sure that if ever there are leftovers, they’re only very small so nothing is wasted, I always start by checking how much cassava I have. Whatever the amount is, that’s what I base all ingredients on. For example, if I buy two kilos of sugar, one kilo of muscovado sugar, margarine, and coconut, I estimate everything based on the amount of cassava. It’s better that nothing goes to waste. And if feel like something might be lacking, it’s better for the food to be a bit sweeter than bland.] -P8

“Kasagaran man pud, mahurot-hurot, depende sakong ibilin nga pananglitan, ana nga tindahan magbibilin ko ug mga 30 so 30 pieces ug dili siya mahurot, ako lang pud siyang i-reduce. Didto, magbutang lang kg 26, 25 or 20 nga mahurot jud siya kay aron di masayang pud ba.” [Usually, everything gets sold depending on how many pieces I leave at the store. For example, if I leave 30 pieces and they don’t sell out, then I reduce it next time. I’ll only put 26, 25 or even 20 so they will surely sell and nothing goes to waste.] -P6

“Para sa akoo, okay ra nako mag sobra sobra, di lang ko mag ran-out kay kung imoha man gyud ni... is continue, kanang wala bitaw ka ga[exeoct]- naa’y order sa wala, magbuhat man gud ko para kanang naa kay extras, mabaligya ra pud biya pud.” [For me, it’s okay to have excess as long as I don’t ran out. Since this business is continuous, and you never know when an unexpected order comes in, I make extra so I always have something on hand, and i can still sell those extras anyway.] -P2

“Wala kaayo ko nag manage man kay akoo naman gud siyang na-set gud, sugod pa gyud, naa na ko’y gina-sunod nga gidaghanon sa akong ingredients. Ug maghimo ko, dapat naka set na tanan, prepared na tanan, prepared na tanan.” [I don’t struggle much with managing things because everything has already been set from the start. I have specific measurements I follow for all the ingredients. So when i cook, everything is already pre-set and prepared.] -P8

"Naa'y adlaw nga mag luto lang gyud mi ug ginagmay nga igo-igo ra gyud siya mahurot. Dili nalang magpatuyang ug dinaghan. Naa man gyu'y adlaw muhinay, naa pu'y adlaw nga mukusog." [There are days when we only cook small batches—just enough so everything gets sold. We don't cook too much unnecessarily. There are really days when sales are slow and days when they're fast.] -P1

"Usahay, gina-kwinta nalang gyud namo, budget-budget nalang gyud. Halimbawa sa mga ingredients, adlaw-adlaw gyud na namo gins-rolling para gyud makita namo ang ginansya." [Sometimes, we really just compute everything and work strictly within our budget. For example, with the ingredients, we roll them every day so we can see our profits.] -P1

"Gikan pag luto nakog biko wala ju'y masayang... kanang unsay order, mao ra gyud na siya'y i-cater tanan, ug naay sobra, iapil nalang pud namo na para sa iyaha [customer] kay unsaon manang sobra." [Since I started cooking biko, nothing ever goes waste. Whatever is ordered, that's exactly what we prepare, all of it. And if there's extra, we just include it for the customer as well, because what else would we do with the leftovers.] -P4

The interpretation of the data shows that production planning is a practical strategy used by kakanin vendors to control waste and maintain profit. Sellers continually adjust the amount they cook depending on demand patterns they observe daily. They rely heavily on personal experience, sales history, and ingredient availability to decide whether to cook small or large batches. This indicates that production planning is not formal or calculated through written systems but through accumulated knowledge of customer flow. This theme directly answers the research question on how financial decisions are made, showing that day-to-day production volume is closely tied to their desire to avoid spoilage, maximize sales, and protect their small profit margins.

During the observation and member-checking process, the researchers found that kakanin vendors rely on practical, experience-based production planning to decide how much to cook each day. Vendors were observed adjusting their batch sizes according to expected demand, previous sales patterns, and ingredient availability, and participants later confirmed these behaviors during validation. They explained that they intentionally cook smaller amounts on slow days to prevent waste and prepare larger quantities when they anticipate higher sales on possible rush orders. Some vendors follow long-established measurements for ingredients, while others adjust more flexibility based on what is available.

The analysis shows that production planning supports two main financial goals: preventing waste and ensuring profit stability. Sellers reduce batch size during slow days and increase it when demand is high, which helps them manage ingredient usage efficiency. They also prepare extra during special events or possible rush orders. Sellers view production planning as a necessary tool because kakanin spoils easily and cannot be stored for long periods. The variation in batch size reflects how sellers manage risk—producing too much result in losses, while producing too little means missed sales. Therefore, production planning becomes a flexible technique that strengthens cost control and helps maintain balanced expenses.

Silva and Filho (2020) emphasize that small food enterprises use production planning mainly to reduce waste, which aligns with the

vendors' practice of adjusting batch sizes based on daily demand. Their study supports the finding that experience-based planning—rather than formal systems helps prevent spoilage in perishable products like kakanin. This reinforces the conclusion that flexible, practical production planning is essential for maintaining profit in small-scale food operations.

Similarly, Khan and Akhtar (2020) found that demand-based production planning improves cost efficiency and reduces spoilage, mirroring how vendors in the study cook smaller batches on slow days and larger amounts during high-demand periods. The study also highlights the role of sales history and anticipated customer flow, which matches the vendors' reliance on personal experience-based planning to decide how much to cook each day, preventing waste and maintaining profitability.

Portioning Products. Portioning Products refers to adjusting the size or number of portions to compensate for increased ingredient costs. Vendors reduce the size of each serving or adjust piece count to maintain price stability without losing customer satisfaction. This strategy allows them to control cost while preserving demand.

"Didto ka mu-reduce sa pila kabuok, like mu-ingon ko nga 'gagmayon nalang nako ang kadak-on sa imong puto or sa kutsinta', ana ra gyud ko. Dili ko mo-ingon nga 'mahal ni, mo-dako imong price', dili gyud kay mao mana imong naandan nga price. Basta akong price—pricing 750, 500, naa pa'y 300, naa pu'y gagmay tag 100." [So what you do is reduce the quantity. You tell them, "Ma'am the pieces are fewer now because the ingredients got more expensive," or you say, "We just made the puto or kutsinta smaller." That's really how you handle it. You should not say, "It's more expensive now, so the price is higher," because customers are already used to your usual prices. My pricing stays fixed— ₱750, ₱500, there's ₱300, and even small ones for ₱100.] -P5

"Dili gyud ta pwede mag reduce [sa price]. Kay karon December, mag mahal gyud ang ingredients, dili ka mag reduce sa imohang price pero mag-reduce ka sa pieces. Sa pieces, dili ka mag reduce sa price kay pananglitan mu-ingon ka nga ang imong bilao 'Ma'am dili nako ani Ma'am, 750' umya kasagaran sa imong customer is mao ra gyud na 750." [We really can't increase our prices. Because when December comes, the ingredients become more expensive. You can't make it 750 anymore," but most of your customers are already used to the ₱750 price.] -P5

Based on the participant's response, her approach to handling increases in the cost of ingredients is to avoid raising the price of her products. Instead, she reduces the quantity or size of the product. This strategy helps her maintain customers' loyalty because, in her view, increasing prices could make some customers question the value of the product and possibly look for cheaper alternatives. Even though she adjusts the product quantity, she ensures transparency by informing her customers ahead of time if there will be any changes in the amount or size of the product they order. This approach allows her to manage costs while maintaining trust with her customers, ensuring they are not caught off guard by any unexpected adjustments.

The researchers conducted member checking, and there were no issues with the responses or the data. The information provided was accurate and consistent with the findings. The researcher also conducted triangulation by asking some of her regular customers,

or “suki.” Based on their responses, they mentioned that they frequently place orders, especially during events. Aside from the delicious taste, they find the prices very reasonable. They also expressed confidence in the quality of the products, assuring that the food is cleanly prepared and that no shortcuts are taken with the ingredients.

The data analysis reveals that kakanin vendors use a strategic approach to manage rising ingredient costs by reducing the quantity or size of their products rather than increasing prices. This method allows them to maintain their usual price points, which customers are accustomed to, without creating dissatisfaction. By adjusting the quantity, vendors can manage costs while preserving customer loyalty, as they avoid the negative impact that price increases might have on their customers. This strategy also emphasizes transparency, as vendors inform customers about changes in product size, ensuring that customers are not caught off guard. Feedback from regular customers, who value the consistent pricing and quality, suggests that this approach successfully maintains trust and satisfaction. Therefore, by focusing on quantity adjustment rather than price hikes, vendors are able to sustain profitability while keeping their products affordable and maintaining long-term customer relationships.

Díaz-Méndez and García-Espejo (2023) discussion on shrinkflation directly relates to the vendor’s strategy of reducing product size instead of increasing prices. Their study supports the idea that portion reduction is a common market response to rising costs, especially when businesses want to avoid negative customer reactions to price increases. This makes the RRL relevant because it explains how size adjustments function as a cost-management tool while maintaining customer acceptance.

Salazar (2022) findings align strongly with the vendors’ practice of adjusting portion sizes to cope with inflation while keeping prices stable. The study emphasizes that small food entrepreneurs use this method to protect customer loyalty and avoid losing buyers exactly what your participant described. This makes the RRL highly relevant, as it validates that transparent portion adjustments are a practical survival strategy for maintaining trust, affordability, and profitability.

Strategic Purchasing: It involves the careful selection of suppliers and the timing of ingredient purchases to minimize costs. Vendors are mindful of when and where they buy ingredients to ensure they are getting the best prices while still maintaining product quality.

“Ug pila ka kilo akong paliton, ug mga duha ra ka kilo akong paliton, mao ra pud to akong paliton nga asukar para itimpla niya, para dili ko ma short sa akoang gasto.” [And whatever number of kilos I buy—if I only need to buy around two kilos—then that’s all the sugar I purchase to mix into it, so I won’t fall short on my expenses.] -P3

The data shows that the seller only purchases the exact ingredients and quantities that are necessary for the day’s operations. This approach helps to avoid waste and ensures that every purchase directly contributes to their business needs. By being mindful of the ingredients required and their quantities, the seller is able to maintain cost efficiency and minimize unnecessary expenses. This method reflects a practical strategy for managing resources, especially in a small business where every cent counts, ensuring

that nothing is wasted and all items bought are fully utilized in the business.

During the observation, the researchers noted that the participant consistently applies strategic purchasing practices by buying only the exact quantities of ingredients needed for daily production. The participant was observed being deliberate about where they source their materials and when they make purchases, often choosing suppliers that offer affordability without compromising product quality. The participant was explaining that they purchase only the specific number of kilos required to avoid overspending and ensure that expenses remain within their planned budget. This careful, measured approach to procurement reflects the vendors’ intentional efforts to prevent ingredient waste and ensure that all purchased materials directly contribute to the day’s operations.

The data suggests that strategic purchasing functions as a key cost-control mechanism among kakanin vendors. By limiting ingredient purchases to what is immediately necessary, sellers reduce the risk of spoilage and minimize unnecessary financial outflow, which is crucial for microenterprises with narrow profit margins. Their purchasing decisions are shaped by awareness of fluctuating prices, supplier reliability, and the need to balance quality with affordability. This pattern indicates that vendors rely on practical experience and economic intuition rather than formal financial systems. Ultimately, strategic purchasing supports the sustainability of their operations by aligning expenses with production needs, maximizing resource utilization, and safeguarding overall profitability.

Langit (2025) demonstrates that local food businesses in the Philippines actively engage in strategic sourcing and procurement practices, especially selecting reliable suppliers and purchasing only the quantities needed for production. These findings correlate strongly with the evidence of small-scale vendors buying exact quantities (e.g., two kilos of sugar) to avoid unnecessary expenses and waste. The study reinforces the idea that small food vendors’ procurement decisions are deliberate, aligned with daily production needs, and crucial for cost-efficiency in resource-constrained environments.

Makhitha (2019) emphasizes the importance of choosing reliable and cost-effective suppliers, which aligns with the vendor’s careful sourcing decisions and preference for affordable yet quality ingredients. The study supports the observation that supplier selection influences purchasing efficiency and helps maintain budget control. This connection shows that strong, strategic supplier relationships contribute to sustained profitability in small-scale food operations.

Controlling Production Costs reflect intentional strategies used by vendors to regulate operational uncertainty, echoing Transaction Cost Theory’s emphasis on internal mechanisms that reduce variability. Standardizing portion sizes, monitoring ingredient consumption, and adjusting recipes are methods that lower the internal cost of monitoring production and reduce waste. These practices create a predictable cost structure, which minimizes the need for continuous recalculation or renegotiation with suppliers. When vendors buy in bulk, substitute ingredients, or simplify recipes during price increases, they are actively lowering adaptation costs and stabilizing their financial risk. The findings show that micro-entrepreneurs treat cost control not only as a means of saving ingredients but as a structured way to protect themselves from volatile market conditions, aligning perfectly with Coase’s concept of internal efficiency systems.

Findings show that cost control is essential for maintaining stability in small-scale food production. Practical assistance for ven-

dors may involve training on portion control, yield optimization, and ingredient substitution without compromising product quality. Providing tools such as calibrated scoops, reusable ingredient logs, or waste monitoring sheets can help sellers reduce excess costs and maintain consistency in their products. Additionally, community-based strategies like group buying, shared transport arrangements, or supplier partnerships may lower procurement costs and stabilize raw material supply. These interventions can help sellers reduce unnecessary expenses and maintain better control over their operations.

4.3. Evaluating Profitability

This major category explains how *kakanin* vendors assess whether their business is profitable through simple, intuitive evaluation practices. Their profitability assessment relies on checking daily income, comparing costs against earnings, observing customer volume, monitoring capital growth, and recognizing seasonal fluctuations in demand. These approaches reflect experience-based financial judgment rather than formal accounting procedures, shaped by the realities of microenterprise operations. This category emerged from five subcategories: *Calculating Profit*, *Net Profit Calculation*, *Tracking Income*, and *Experiential Knowledge, Utilizing Technology*.

Calculating Profit. Calculating profit describes how vendors determine whether they earn beyond their production expenses by computing costs and expected earnings. Through these calculations, vendors assess whether their sales generate actual profit and confirm the financial viability of their business.

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"Before ko magluto, akoang [tan-awon] daan ug pila nga tindahan, pila kabuok ang iyang order ana i-total nako tanan, inig total nako tanan akong siyang i-plus then i-divide nako, paghuman nako ug divide usa pa nako mag kuan ug- kay kabalo naman ko ug pilay abuton sa isa ka kilo, pananglitan ang isa ka kilo, otsenta kabuok unya akoang kuan- ang akoang tindahan nga mabilinan- akong ma kuan kada adlaw is 500 kabuok, i-divide nako to siya, 500 divided by 80, makabalo nako ug pila ka kilo akong maluto. Ma-igo-igo ra gyud pud sa akoang ma customer." [Before I start cooking, I first check how many stores will buy and how many pieces they ordered. I total everything. After getting the total, I add everything up and then divide it. After dividing, that's when I calculate—because I already know how many pieces one kilo can produce. For example, if one kilo makes 80 pieces, and my daily allocation for the stores is 500 pieces, then I divide: 500 divided by 80. That tells me how many kilos I need to cook. That way, the amount I prepare matches what my customers need.] -P6

"Human naka ug kwinta sa tanan ingredients, sa imohang man-power, sa imohang other expenses, diba ga-patong ka ug 30%, so human ana, makita- dapat at the end of the day, imong kwintahon imong kita tapos kwaon nimo ang 30% ato niya. Mao na siya'ng sa pag mag-costing ka, mag-price ka sa imohang baligya, naa kay pursyento para paghuman nimo sa- at the end of day nimo nga pagpamaligya, dili ka mag-libog ug pila imohang kita, pila imohang ginansya." [After you calculate all your ingredients, your manpower, and your other expenses, you add a 30% markup, right? After

that, at the end of the day, when you compute your earnings, you take that 30%. That's how costing works—when you set the price of your products, you should always include a percentage so that when the day ends and you finish selling, you won't be confused about how much you earned and how much profit you made.] -P2

"Maka ginansya ra pud ko, pananglitan, magmahal ang asukar, i-reduce pud namo gamay ang kanang iyahang ingredients. Dili nami magpa mahal ug presyo kami nalang mu-adjust." [I can still make a profit. For example, when sugar becomes more expensive, we just reduce the ingredients a bit. We don't increase the selling price—we're the ones who adjust.] -P4

Participants demonstrate a rational profit evaluation framework rooted in the fundamental accounting equation: $\text{profit} = \text{total sales} - \text{total cost}$. However, the consistency and documentation depth vary, indicating emerging financial reasoning rather than full accounting practice.

An observation made by the researcher during the interviews was that vendors carefully calculate production costs before setting prices. Participants described including all expenses, such as ingredients, labor, and other overhead, and then adding a fixed percentage as profit, as P2 explained with a 30% markup. Vendors also adjust ingredient quantities or production methods when costs change, like P4 shared about reducing sugar when its price rises, instead of raising the selling price. Additionally, some participants plan production based on customer orders and daily demand, ensuring that the amount prepared matches what will be sold, as P6 illustrated with their calculation of kilos and pieces.

The data show that the *kakanin* vendors carefully calculate their costs before setting prices to ensure profit. They include all expenses, such as ingredients, labor, and other overhead, and then add a markup percentage, like the 30% described by P2, to know their earnings clearly at the end of the day. Vendors also adjust their production methods when costs change, such as reducing ingredients instead of raising prices, as P4 shared. Moreover, they plan the amount to cook based on customer orders and daily demand, as P6 explained, making sure the quantity matches what will be sold. These practices indicate that vendors use a systematic approach to manage expenses, set prices accurately, and maintain profitability.

Moreno et al. (2023) reports that micro food businesses in Laguna use cost-based pricing in their pricing strategy, which aligns with our observation that the participants calculate total cost (ingredients, labor, overhead) and then add a markup.

Adelia et al. (2024) explores how MSMEs (micro, small enterprises) set their product prices using a cost-plus pricing method, precisely by calculating full costs (materials, labor, overhead) and then adding a margin which strongly supports the data that vendors do rational cost-based markups (e.g., 30%).

Net Profit Calculation: Net profit calculation describes how *kakanin* vendors determine their actual financial gain by computing the difference between their total earnings and the expenses incurred in producing their goods.

"Naa man ko'y ginusunod gyud nga mga ingredients sa gidaghanon then kato siya nakarecord to nako. Syempre sa ingredients, ibutang nalang, fix amount nga 700 akong gasto, muhalin ko'g 1,000 kapin so dili nako maghuna-huna sa labor kay importante lang dili lang ko lugi sa ingredients, since double purpose man akong paghimo ug budbud, dili raman gyud ko dira nagsalig." [I also follow specific ingredient measurements, and I have all of them recorded. For example, let's say my fixed ingredient cost is ₱700, and my sales reach ₱1,000 or more—then I don't think too much about labor anymore. What's important is that I don't lose money on the ingredients. Since making budbud serves a double purpose for me, I don't rely solely on it for income.] -P8

"Mao na siya'ng sa pag mag-costing ka, mag-price ka sa imohang baligya, naa kay porsiyento para paghuman nimo sa- at the end of day nimo nga pagpamaligya, dili ka mag-libog ug pila imohang kita, pila imohang ginansya." [That's how it is when you do costing and set the price of your products—you should include a percentage so that at the end of the day, after selling everything, you won't be confused about how much you earned and how much your actual profit is.] -P3

"Unahon sa gyud nimo ang expenses usa imohang profit kay di man mag silbe'g mag baligya ka nga wala kay- puros lang ka expenses, walay profit." [You must always prioritize your expenses first before your profit, because it's useless to sell something if all you have are expenses and no profit.] -P5

The participants prioritize covering all expenses first before considering profit, demonstrating a practical understanding of business sustainability. By tracking ingredient costs and sales, vendors can quickly determine their return on investment and make sure they are not operating at a loss. This approach indicates that even small-scale vendors have a strategic awareness of profit margins and use simple but effective methods to maintain financial stability and recover their initial investments efficiently.

An observation made by the researcher during the interview was that the kakanin vendors consistently referred to their recorded costs and daily sales when discussing profits. They demonstrated practical ways of monitoring their earnings, such as noting ingredient expenses, calculating markups, and comparing total sales against costs. Even without formal accounting tools, vendors showed a clear understanding of how to maintain profitability and recover their investments, adjusting their pricing and production based on actual sales and expenses.

The data show that kakanin vendors track their costs, set prices with a profit margin, and ensure expenses are covered first. They use recorded ingredient and sales data to estimate earnings and recover their investment, making their business financially sustainable.

Md. Abu Shehen (2024) vendors in this study are reported to be highly aware of their cost structures, they track their spending, negotiate ingredient prices, and continuously monitor their sales vs. costs to avoid losses. This provides a corroborating context to the findings like the kakanin vendors, these street food entrepreneurs do not rely on formal accounting, but they use on-the-ground, practical cost-tracking strategies to make sure they cover their production expenses and preserve their capital.

Doloroso (2023) investigates how micro-enterprises including food microbusinesses in Quezon City manage their finances. It finds that many micro-entrepreneurs engage in cost tracking, budgeting, and record-keeping despite limited resources and informal structures. According to the author, even micro firms without formal accounting systems systematically monitor their expenses and revenues to make sure they cover costs and operate sustainably. This aligns very closely with the observation that kakanin vendors "track ingredient costs and sales ensure costs are covered first, and recover their initial investment."

Tracking Income: Tracking income describes how vendors assess their profit by computing total sales and deducting all expenses to determine how much money remains. Through this process, vendors track their income to evaluate whether their business is financially sustainable and whether their efforts result in real profit.

"Iyahang ginansya ba, diha naman gyud nato makita kay kana mag total ka tanan sa expenses dira dayon ang katong mga profit mao na man to so kuhaan pud na, kanang profit kuhaan pa namo sa mga daily needs, mao na maka ingon ko nga igo ra gyud pud iyang ginansya nga kanang compare sa manarbaho ka daily." [The profit can already be seen there—after you total all the expenses, whatever is left is the profit. But from that profit, we still deduct our daily needs. That's why I can say that the profit is just enough, and when you compare it to having a regular daily job, it's about the same.] -P7

"Ug mahurot tanan akong baligya, ma kwenta man nako akong halin tanan, pila'y akong gasto, ug pila'y kuan nako..." [And when all my products are sold out, I can compute everything—my total sales, my total expenses, and how much is left...] -P3

"Cover sales are enough to cover your expenses." [The sales are enough to cover the expenses.] -P3

Profit is observed from net cash retained rather than structured revenue reports — reinforcing cash-flow-based financial interpretation.

An observation made by the researcher during the interviews was that kakanin vendors closely monitor their total sales and net income to evaluate profit. Participants, such as P3, explained that after selling all their products, they calculate total sales, subtract all expenses, and determine how much is left as profit. P7 emphasized that vendors also consider personal daily needs when assessing net income, showing that profit evaluation includes both business and personal financial perspectives.

The data show that kakanin vendors track their total sales and expenses to see how much profit they make. Participants explained that after selling all their products, they subtract all costs from the total sales to find out the remaining income. They also consider daily personal needs when looking at profit, showing that their calculations are practical and reflect both business and personal finances. This approach allows them to manage their earnings effectively and ensure their business can continue running.

Kamal et al. (2024) show that improving cash flow practices, like managing payables and optimizing daily sales (i.e., more effective cash cycle management), correlates with higher profitability. This aligns with the vendors' practice of focusing on net cash retained:

these small food businesses also emphasize daily liquidity and working capital (rather than just formal accounting income). Their profitability is strongly tied to how they manage cash flows from operations, which supports the observation that cash-flow-based interpretation of profit is not only common, but economically meaningful in food micro-enterprises.

Nasimiyu (2024) finds that cash accountability and rigorous cash-flow monitoring strongly contribute to profitability, liquidity, and financial stability in SMEs. The study shows that in resource-constrained businesses, profit derived from tight cash-flow supervision matters more than accrual-based income reporting. This supports the notion that small entrepreneurs naturally lean toward net cash retained to gauge their economic health.

Experiential Knowledge: Experiential knowledge describes how vendors evaluate profitability based on the familiarity and skills they have developed through years of selling rather than through formal calculations. Through repeated practice, they rely on remembered ingredient amounts and routine patterns to judge whether they are earning enough from their business.

“Gi bana-bana ra nako kay naanad naman pud ko kanang kabalo nako daan kay sa kadugay na pud nako ug pamaligya ani akaong gamay’ng negosyo.” [I just estimate because I’ve already gotten used to it—I already know from experience, since I’ve been running this small business for a long time.] -P1

“Wala ko naga-lista since akona raman, naa gud koy gi-follow lagi nga amount sa akong ingredients, ing-ana na-estimate na nako.” [I don’t make a written list since it’s just me. I already follow a set amount for my ingredients, so I’ve learned to estimate it that way.] -P8

Experience becomes the main guide for evaluating their income. Owners use what they remember and observe — instead of written records — to decide if their business is earning. This approach works when prices are stable, but it becomes uncertain when costs fluctuate.

During the interview, the researcher observed that many vendors relied on personal experience rather than written tracking when estimating their profit. They prepared their products based on what they had memorized over time, showing comfort and confidence in their usual routines. Instead of checking exact numbers, they depended on what they knew based on years of doing the same work. This showed that their understanding of profit was guided more by practice and familiarity than by formal calculations or documentation.

The data show that the *kakanin* vendors depend mostly on their experience when checking if they earn profit. Instead of writing down costs or doing actual calculations, they rely on memory and what they have learned from selling for many years. They estimate their profit based on the usual amount of ingredients they use and their daily routine. This makes their method easy for them, but it may also lead to mistakes because it is not based on exact records. The findings show that experience is their main guide in understanding how their business is doing.

Najera Ruiz and Collazzo (2020) found that while many micro and small firms do use management accounting tools, their use is highly informal based more on intuition and experience than

full formalization. Their interviews revealed that many business decisions (like planning, costing, and performance evaluation) are guided by owner-managers’ past experience, expectations, and simple metrics rather than structured, written systems. This supports the data, showing that *kakanin* vendors rely on their personal business experience and “what they remember” rather than formal accounting records to judge profitability and guide operations.

Amoako et al. (2019) found that many small enterprises rely on memory, habit, and daily routines rather than formal accounting documents to monitor profit and expenses, especially when their owners have limited bookkeeping skills. Their study shows that SME owners frequently estimate earnings based on experience and familiarity with their operations, mirroring how *kakanin* vendors in your study rely on remembered ingredient quantities and observed daily patterns to determine whether they earned profit. The authors emphasize that while this method feels “easy” and natural for owners, it also increases the risk of inaccurate profit assessment strongly echoing your finding that experience-based evaluation is convenient but prone to error.

Utilizing Technology: Utilizing technology describes how vendors incorporate digital applications to simplify the computation of expenses and profit.

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“Same sa akong giingon ganiha, naa koy App nga gina-follow, mu-automatic na siya ug calculate sa akong mga gasto.” [Just like I mentioned earlier, I have an app that I follow—it automatically calculates my expenses.] -P2

This demonstrates early digital adaptation. Although not automated accounting, it indicates growing willingness to adopt tools that allow clearer profit visibility.

An observation made by the researcher during the interview was that some vendors use technology, such as mobile applications, to help track expenses and compute profitability. Participant P2 explained that their app automatically calculates costs, reducing the need for manual computation and minimizing errors. During the interview, the researcher noted that the vendor regularly checks the app while preparing orders, demonstrating reliance on digital tools to manage finances.

The data show that the *kakanin* vendors who use technology rely on digital tools, such as mobile apps, to help calculate their expenses and estimate profit. By using these apps, they can automatically track costs and reduce errors that might happen with manual calculations. This allows them to monitor their earnings more efficiently and make faster decisions about pricing and production. The findings indicate that technology supports vendors in managing their business finances accurately and effectively, especially for those who want a more organized approach to profit analysis.

Domingo and Prado (2024) surveyed 20 food cart businesses in Cabanatuan City and found that, although there is a basic level of financial literacy among these micro-enterprises, there are significant gaps in record-keeping, budgeting, and revenue management. Their use of mobile apps to automatically track costs and estimate profit can be seen as a way to fill these gaps, improving record-keeping and reducing errors.

Sinaga et al. (2024) Surveying 520 SMEs in Indonesia's food & beverage sector, the authors examine how adoption of digital finance (including digital payments), digital marketing, and other digital tools impacts financial performance. They found a positive and significant relationship between digital adoption and firms' financial outcomes. Though not exactly "kakanin vendors," the study is in the same sector (food & beverage SMEs) and shows that digital tools contribute tangibly to better financial performance. This corroborates the finding that mobile apps for cost-tracking / profit estimation can be effective.

Evaluating Profitability practices reveal how vendors interpret financial outcomes with minimal formal accounting, reflecting Transaction Cost Theory's discussion of monitoring and evaluation costs. Many vendors assess profit informally through daily cash flow, restocking ability, or leftover capital, showing a preference for low-cost, high-speed evaluation methods rather than formal profit analysis. This choice is consistent with Coase's argument that firms adopt processes where the cost of monitoring does not exceed the benefits gained. Vendors only resort to more structured evaluation during larger sales periods or when preparing for significant expenses, indicating they adjust monitoring intensity based on risk. These findings suggest that profitability assessment among micro-enterprises is strategically informal, shaped by the desire to minimize the effort and complexity associated with detailed accounting while still maintaining a functional understanding of business performance.

Since profitability is often evaluated informally through daily cash flow or remaining capital, practical support should focus on helping vendors adopt simple, non-technical methods of evaluating their earnings. Introducing easy weekly cash summaries, envelope-based budgeting, or color-coded income-and-expense trackers can help sellers clearly identify whether their products are generating sustainable profit. Community workshops led by livelihood centers can also teach micro-entrepreneurs how to review their financial performance without requiring advanced accounting knowledge. These tools can guide vendors in deciding when to adjust prices, increase production, or improve efficiency, ultimately strengthening their business stability.

4.4. Experiencing Cost Challenges

This major category identifies the internal and external difficulties that affect cost stability and pricing decisions. Vendors encounter unpredictable ingredient prices, competitive pressures, and resource limitations that disrupt production and profit stability. This category emerged from three subcategories: *Facing Inflation*, *Fluctuating Market Price*, and *Encountering Limitations*.

Facing Inflation: This refers to the challenge business owners face when the cost of raw materials or key ingredients increases unexpectedly, affecting the overall production cost. For kakanin sellers, ingredients such as glutinous rice, coconut, and sugar are essential, and any rise in their prices directly impacts budgeting and pricing decisions.

"Parehas anang magtaas ang presyo sa mga ingredients, ang production cost mo-taas pud ug ako kay mag kinahanglan pud nga magtaas sa presyo sa mga kakanin pero kung... magtaas ko'g presyo, maglisod ko'g baligya kay basin mahal na para sa mga customers." [Like when the prices of ingredients increase, the production cost also goes up, and

I need to increase the price of the kakanin. But if I raise the price, it becomes harder to sell because it might already be too expensive for the customers.] -P3

"Kay kato panahon gataas ang harina, ga taas ang egg, ga taas ang mga presyo, mga raw cost ga taas." [Because during that time the price of flour was rising, eggs were rising, prices were rising — the raw costs were all going up.] -P2

The participants' responses highlight that raw-cost inflation is a major challenge in the costing practices of kakanin business owners. P2 and P3 both describe how rising prices of essential ingredients such as flour, eggs, and other raw materials directly increase production costs. This forces owners to make difficult decisions either absorb the higher expenses, which reduces profit margins, or raise the selling price of their products, which risks losing customers. Interpreting these responses shows that raw-cost inflation not only complicates budgeting and pricing but also creates tension between maintaining affordability for customers and sustaining business profitability.

During the interviews, the researchers observed that the portion sizes of the kakanin being sold were noticeably smaller than before. It was evident that the products no longer matched the size that customers were used to in earlier times, when ingredient prices were lower and the cost of production was more manageable. This change suggests that business owners are adjusting the quantity of their products as a strategy to cope with rising raw material costs, allowing them to manage expenses without drastically increasing selling prices. Such adjustments reflect how raw-cost inflation directly influences operational decisions, impacting not only pricing but also the value perceived by customers and the overall presentation of their products.

The analysis of the data confirms that raw-cost inflation is a major challenge faced by kakanin business owners in their costing practices. Participants P2 and P3 highlighted how rising prices of essential ingredients, such as flour, eggs, and sugar, directly increase production costs, forcing owners to make difficult decisions between absorbing expenses or raising product prices, both of which have implications for profitability and customer retention. The data clearly answers the research question by showing that unpredictable increases in ingredient costs create financial, operational, and strategic challenges that complicate consistent and sustainable costing practices for kakanin business owners.

Ali et al. (2021), in *Supply Chain Resilience Reactive Strategies for Food SMEs in Coping to COVID-19 Crisis*, discussed how increases in raw material costs negatively affect small food businesses. Their study showed that supply chain disruptions and rising input prices lead to higher product prices, which can reduce customer purchasing power. This reflects the challenges faced by kakanin sellers, who must adjust their pricing in response to rising raw material costs to maintain profitability while keeping products affordable.

Triwidatin (2022) examined how increases in raw material and labor costs affect small-scale enterprises (UMKM) in Bogor Regency. The study found that when raw material costs rise, many small businesses struggle to pass the full increase on to consumers, which squeezes their profit margins and can force a decline in product quality. This mirrors the challenges kakanin sellers face, who must carefully adjust their prices in response to rising ingredient costs while trying to maintain profitability.

Fluctuating Market Price: This refers to the difficulty for businesses to plan and maintain stable profits. When prices rise or fall unexpectedly, companies struggle with budgeting, managing inventory, and setting competitive prices. This unpredictability can also reduce customer confidence and disrupt supply chains, creating financial risk for both businesses and consumers.

"Sa tinuod lang, usahay maglisod gyud ko sa production kay kung magtaas ang presyo sa mga rekado sama sa pilit, lubi, ug asukal, maguba usahay ang plano sa gasto." [To be honest, I sometimes really struggle with production because when the prices of ingredients like sticky rice, coconut, and sugar go up, it sometimes ruins my cost plan.] -P2

"Ang presyo sa pilit usahay mo mahal... kung mahal ang rekado, kinahanglan pud unta ko mo pataas ug presyo." [The price of sticky rice sometimes becomes expensive... if the ingredients are expensive, I also need to increase my price.] -P1

The participants' responses show that fluctuating market prices create significant challenges for kakanin business owners, especially in maintaining consistent costing practices. Both P1 and P2 highlight that sudden increases in the prices of key ingredients such as glutinous rice, coconut, and sugar directly affect their production plans and pricing decisions. These unexpected price changes force them to either adjust their selling prices or absorb the additional cost, which disrupts profit stability. The struggle described by the participants indicates that price volatility does not only impact budgeting but also creates uncertainty in day-to-day operations, making it difficult to sustain predictable and manageable costing strategies.

During the interview, the participants' statements about rising costs of ingredients such as glutinous rice, coconut, and sugar were consistent with observable practices. For instance, some owners were seen adjusting portion sizes or modifying ingredient quality to cope with sudden price increases, confirming their struggle to maintain stable costing. An informal conversations with other sellers in the area echoed similar concerns about unpredictable supplier pricing, supporting the pattern seen in the primary responses.

The data indicate that fluctuating market prices serve as a significant barrier to effective costing practices among kakanin business owners. Sudden increases in the cost of key ingredients such as sticky rice, coconut, and sugar disrupt their planned budgets and create instability in production and pricing decisions. The consistency between participants' accounts, field observations, and informal conversations with other sellers confirms that price volatility is a recurring and tangible challenge. Overall, this theme demonstrates that unpredictable market conditions limit the business owners' ability to maintain stable costs, protect profit margins, and manage their operations efficiently.

Adapting Financial Plans to Food Price Volatility Lee (2024) examined how small food businesses adapt to fluctuating ingredient prices. The study highlighted that microentrepreneurs who rely on market-based pricing often struggle with price volatility, forcing them to adjust their prices more frequently to maintain profitability. It also showed that businesses with limited financial flexibility are particularly vulnerable to sudden price hikes. This aligns with the practices of kakanin sellers, who adjust their pricing when market prices fluctuate to avoid losses while keeping products affordable.

Widyastuti et al. (2018), in *Inhibiting Factors of Inventory Management: Study on Food and Beverage Micro, Small and Medium Enterprises*, examined how fluctuating ingredient prices affect small food businesses. Their study emphasized that microentrepreneurs often face challenges managing price volatility, which forces them to frequently adjust their prices to maintain profitability. The research also found that many small vendors lack the financial flexibility to absorb sudden increases in raw material costs. This aligns with the experiences of kakanin sellers, who adjust their pricing when market prices fluctuate to avoid losses while keeping products affordable.

Facing Market Competition: This refers to the challenge business owners face when competing with other sellers offering similar products within the same market. In a highly competitive environment, kakanin owners often feel pressured to lower or match prices to attract customers, even when their production costs are rising.

"Daghan na kaayo mi ug gaya-gaya. Daghan na bitaw'g kaparehas ug baligya kay naa ani nga baligya, wala may lain ma-suon kay kini laging filipino lagi daw." [There are already so many imitators. There are many selling the same products because once someone sells this, others will just copy since they say it's 'Filipino' anyway.] -P1

"Lisod ang pagpakig-kompetensya kay daghan pud biya ang nagbaligya ug biko. Kinahanglan gyud nga lami ug consistent akong produkto." [Competing is difficult because many people also sell biko. My product really has to be delicious and consistent.] -P7

The participants' responses show that market competition is a significant challenge that affects the costing practices of kakanin business owners. With many sellers offering similar products, as P1 noted, business owners feel pressured to match or lower prices to remain competitive. P7 also emphasized that maintaining consistent quality is necessary to stand out, which adds to production costs. This competition limits their ability to adjust prices based on actual expenses, especially when ingredient costs fluctuate. Overall, the data indicates that strong competition complicates pricing decisions and reduces profit stability.

The business owners admit that they cannot avoid comparing themselves to their competitors, as they are aware of the number of sellers offering similar products in the market. Despite this, they remain committed to maintaining the quality of their own products, recognizing that consistent quality helps retain loyal customers. This demonstrates that while competition exerts pressure to adjust prices or imitate others, prioritizing product excellence and reliability allows them to build trust, differentiate their brand, and sustain a steady customer base. It highlights the delicate balance kakanin owners maintain between responding to market pressures and preserving the integrity and reputation of their business.

The data shows that kakanin business owners face significant costing challenges primarily due to strong market competition. With many sellers offering similar products, owners feel pressured to match or lower their prices, limiting their ability to base pricing on actual production expenses. At the same time, they must maintain consistent product quality to stand out, which increases their costs and creates a tension between affordability and quality.

These conditions make pricing decisions more complex and reduce profit stability, indicating that competition heavily influences and complicates their overall costing practices.

Kim and Jung (2024), in *Spatial Differentiation in Food Service Pricing: An Explorative Study With Web-Scraped Data*, explored how food vendors adjust their prices in competitive delivery-app markets. Their study found that vendors monitor competitors' prices and strategically modify their own prices to stay competitive while protecting profit margins. This aligns with the pricing behaviors of kakanin sellers, who compare their prices with nearby competitors before deciding on their own price adjustments.

Domingo (2018), in *Product, Pricing and Promotional Strategies of Restaurants in Nueva Ecija: An Assessment*, found that in highly competitive local food markets, small restaurant owners are pressured to keep prices lower than competitors while still covering costs. The study indicated that vendors often engage in competitive pricing strategies, reducing prices to attract customers but risking lower profit margins. This reflects the challenges kakanin sellers face in maintaining profitability while staying competitive.

The recurring costing challenges—such as unstable ingredient prices, lack of formal costing tools, and difficulty allocating overhead—illustrate the high environmental uncertainty described in Transaction Cost Theory. Micro-entrepreneurs in informal markets face volatile input costs, irregular supply chains, and limited institutional support, all of which increase the cost of forecasting, monitoring, and planning. These challenges reinforce Coase's argument that firms must constantly adapt to fluctuations and choose governance structures that help them survive instability. The vendors' struggles reflect a market environment where transaction costs are inherently high, forcing them to rely on simplified systems and rapid adaptations to protect their earnings. The findings show that costing challenges are not merely technical problems but structural barriers shaped by the nature of informal microenterprise operations.

The study highlights challenges such as rising ingredient prices, lack of financial tools, and unstable supply costs. Practical implications include providing stable supplier linkages, barangay-level wholesale access, and updated local price monitoring dashboards that vendors can use to anticipate cost changes. Training sessions on managing inflation, planning for fluctuating costs, and identifying alternative ingredients may also help sellers adapt more confidently. By improving access to information and resources, support institutions can reduce the uncertainty vendors face and help them plan their costing more accurately.

4.5. Responding to Costing Challenges

This category shows how small kakanin business owners in Pagadian City deal with problems in figuring out the cost of their products. The data show that kakanin vendors face difficulties like changing ingredient prices, competition, and keeping good quality while still making a profit. To manage these problems, they watch prices closely, set their product costs carefully, and make sure their products stay good while selling at the right price. Three subcategories emerged from participants' responses: Price Monitoring, Cost-Based Pricing, and Quality-Based Pricing.

Price Monitoring: This refers to the practice of regularly checking and tracking the selling prices of kakanin products to ensure they remain competitive and profitable. Vendors observe market trends, monitor competitor prices, and adjust their own prices accordingly. This helps them respond to changes in ingredient costs, customer demand, and local market conditions. Through price monitoring,

business owners aim to maintain a balance between affordability for customers and adequate profit margins for their operations.

"Sa tinuod lang, dili gyud sayon ang pag dumala sa mga balik-balik nga problema tungkol sa presyo, labi na kung ang presyo sa mga rekado sig'e'g usab... pero ang akong gibuhay kay mag lista ko sa mga presyo kada semana kay akoo gyud i-monitor kung pila gyud ang presyo sa saging, asukal, ug uban pang rekado." [To be honest, it's really not easy to handle the recurring problems related to prices, especially when the prices of ingredients keep changing... but what I do is list down the prices every week so I can monitor how much the bananas, sugar, and other ingredients really cost.] -P1

"Ang akong gibuhay kay ako gyung gi-monitor ang presyo sa mga ingredients matag semana. Kung makita nako nga taas ang presyo sa mga ingredients... maghinay-hinay lang pud ko'g adjust sa presyo." [What I do is really monitor the prices of the ingredients every week. If I see that the prices of the ingredients are high... I also make price adjustments gradually.] -P3

"Ang pag-monitor daan sa presyo sa materials mao'y nakatambag nako makasabay sa pagtaas sa presyo." [Monitoring the prices of the materials ahead of time is what helped me keep up with the price increases.] -P7

The participants show that keeping track of prices is very important for small kakanin vendors. By checking the prices of ingredients like bananas and sugar regularly, they can decide the right selling price and still make a profit. Watching prices every week helps them change their prices little by little, instead of all at once, so they don't lose customers. This shows that vendors try to manage their costs while keeping products affordable. It also shows that their daily work depends a lot on market changes, because ingredient prices affect how they set their prices and run their business.

An observation made by the researcher during the interviews was that vendors consistently monitor the prices of ingredients and competitor products. This practice allows them to adjust their selling prices in response to market changes, ensuring their kakanin remains affordable for customers while still maintaining reasonable profit margins.

The data show that the kakanin vendors actively engage in price monitoring as a key strategy to manage their businesses. By regularly checking ingredient costs and observing competitor pricing, they are able to make timely adjustments to their selling prices. This practice helps them cope with fluctuating market conditions, maintain product affordability for customers, and secure reasonable profit margins, demonstrating their proactive approach to sustaining profitability and competitiveness.

Gómez Talal et al. (2024) found that restaurants that monitor customer responses to pricing and adjust prices dynamically are able to remain competitive while maintaining profitability. Their study showed that businesses that regularly track price sensitivity and customer feedback can make timely price adjustments without negatively affecting customer satisfaction. This supports the practices of kakanin sellers, who monitor market prices and customer reactions before adjusting their prices to stay competitive and sustain profit.

Melchor et al. (2025), in *Operational Cost Control in Food and Beverage Establishments: Awareness, Practices, and Challenges in Southern Oriental Mindoro, Philippines*, examined how small food businesses manage costs and adjust prices. Their study highlighted that vendors who monitor ingredient costs and control operational expenses are better able to make timely price adjustments while maintaining customer satisfaction. This reflects the practices of *kakanin* sellers, who adjust their prices based on supply costs and market conditions to balance profitability with customer retention.

Cost-Based Pricing: This refers to the practice of setting the selling price of *kakanin* products primarily based on the total cost of production. Vendors calculate all expenses, including ingredients, labor, and other operational costs, and then add a markup to ensure a profit. This method ensures that the price covers all costs while providing a predictable profit margin, helping vendors maintain financial stability and avoid losses even when market conditions fluctuate.

"Sa una parehas ra ang presyo sa tanan nakong bilao, pero... karon gi-usab nako ug gibahin-bahin ang presyo base sa aktwal nga gasto sa mga rekado aron mas makabawi ug mas epektibo ang paggamit sa akong puhunan." [Before, the price of all my trays was the same, but... now I've changed it and divided the prices based on the actual cost of the ingredients so I can recover more and use my capital more effectively.] -P4

"Ginasunod nalang jud nako ang costing aron makasiguro nga naa gyud ginansya." [I just really follow the costing to make sure that there is profit.] -P2

"Magdependi ra gyud na's mga rekado if mahal." [It really depends on the ingredients if they are expensive.] -P4

The participants consistently base their product prices on the total cost of production. They carefully calculate expenses for ingredients, labor, and other operational needs, then add a markup to secure profit. The participants adjust their prices when ingredient costs increase, showing that they are attentive to changes in the market and committed to maintaining financial stability. This practice allows them to avoid losses, recover investments efficiently, and ensure that their business remains sustainable while meeting customer demand.

An observation made by the researcher during the interviews was that vendors consistently apply a cost-based approach to pricing, carefully calculating all expenses and adjusting their selling prices according to changes in ingredient costs. This demonstrates that cost-based pricing serves as a practical and reliable strategy for sustaining small-scale *kakanin* businesses.

The data show that the *kakanin* vendors set their prices mainly based on how much it costs to make their products. They add a small extra amount to make a profit while making sure all expenses, like ingredients and labor, are covered. Vendors adjust prices when ingredient costs change, which helps them manage their money well and avoid losing profit. This shows that cost-based pricing is a practical way for small *kakanin* businesses to stay financially stable and earn enough to keep running.

Jumawid et al. (2025) examined how micro foodservice businesses in Pagadian City determine their pricing using a cost-based pricing approach. Their study showed that vendors who carefully calculate the total cost of production—including both direct costs

like ingredients and indirect costs like overhead—are better able to set competitive and sustainable prices. This mirrors the practices of *kakanin* sellers, who base their prices on the cost of ingredients and other expenses to ensure fairness and maintain profitability.

Anjani et al. (2021) explored how micro food businesses determine pricing strategies using a cost-based approach. Their study found that cost-based pricing enables small vendors to maintain reasonable profit margins while keeping their products affordable for customers. This reflects the practice of *kakanin* sellers, who calculate the total cost of production—including ingredients and overhead—to set prices that ensure profitability without driving away their regular customers.

Quality-Based Pricing: This refers to the practice of setting the selling price of *kakanin* products based on their perceived quality rather than just the cost of production. Vendors consider factors such as taste, freshness, appearance, and ingredients when determining the price. Higher-quality products are often priced higher because customers are willing to pay more for better taste or presentation. This strategy allows vendors to differentiate their products from competitors and maintain a balance between customer satisfaction and profit.

"Sa akong pagpresyo, ginabase nako sa kalidad ug kadak-on sa kutsinta, kung... gamay ra ug simple kuan mas ubos ang presyo, pero kung... dako ug mas nindot ang kalidad, mas taas gamay ang presyo aron patas sa kalidad sa produkto." [In setting my prices, I base them on the quality and size of the kutsinta. If it's small and simple, the price is lower, but if it's bigger and of better quality, the price is slightly higher to match the product's quality.] -P6

"Gi-usab nako ang pag presyo base sa kalidad sa puto. Kung mapalpak ang batch, dili nako ipataas ang presyo aron magpabilin ang pagsalig sa customers." [I adjusted the pricing based on the quality of the puto. If a batch fails, I don't increase the price to maintain the customers' trust.] -P5

The participants indicated that they adjust their product prices based on the quality of the *kakanin* they sell. They consider aspects such as taste, size, appearance, and consistency when determining prices. Higher-quality products are priced slightly higher because customers are willing to pay more for better quality, while lower-quality or smaller items are priced lower to remain affordable. Participants also emphasized that maintaining consistent quality helps preserve customer trust and loyalty.

An observation made by the researcher during the interviews was that vendors consistently consider the quality of their *kakanin* as a key factor in pricing. They carefully assess the size, taste, appearance, and freshness of their products before setting prices, and adjust them according to customer expectations and perceived value. Vendors also emphasized maintaining customer trust by avoiding price increases for batches that do not meet quality standards. This demonstrates that quality-based pricing is not only a strategy for profit but also a way to build loyalty and differentiate their products from competitors.

The data show that *kakanin* vendors set prices based on product quality, including taste, size, and appearance. Higher-quality items are priced higher, while failed batches are not overcharged to

maintain customer trust. This approach helps vendors earn fair profit and keep customers satisfied.

The Influence of Product Quality on Pricing Decisions Oktavian and Wahyudi (2022) examined how product quality affects consumer-related decisions, showing that higher-quality products often allow sellers to set higher prices because customers see them as more valuable. Their findings showed that when vendors focus on improving quality, customers are more willing to pay a slightly higher price and are more likely to stay loyal. This aligns with the practices of many kakanin sellers, who adjust their prices based on the freshness, taste, and overall quality of their products, knowing that customers are willing to pay more for better-quality goods.

Konuk (2019) examined how perceived food quality, price fairness, and perceived value affect customer satisfaction and repurchase intentions in organic food restaurants. The study found that when customers perceive food as high quality and fairly priced, they are more willing to pay slightly higher prices and are more likely to return or recommend the restaurant. This supports the approach of kakanin sellers, who adjust their prices based on the quality, freshness, and presentation of their products to maintain customer trust and loyalty.

The responses of vendors such as adjusting recipe proportions, modifying product sizes, switching brands, or increasing prices demonstrate active adaptation strategies aligned with Transaction Cost Theory. These responses represent attempts to reduce the impact of uncertainty, maintain market stability, and preserve customer relationships despite financial pressures. When vendors choose cost-saving adjustments rather than immediate price increases, they are attempting to minimize negotiation and enforcement costs with customers. When they eventually raise prices, they do so cautiously to avoid transaction breakdowns. These adaptive behaviors support Coase's idea that firms reorganize internal processes and modify exchange terms to minimize total transaction costs. Overall, the responses reveal that micro-entrepreneurs continuously balance economic survival with social obligations, using flexible strategies to navigate a volatile marketplace.

The ways vendors respond to costing challenges—such as adjusting product size, altering recipes, or shifting ingredient brands—show a need for structured guidance on managing changes without losing quality or customer trust. Practical actions may include developing recipe modification guides, menu engineering strategies, and communication templates that help sellers explain price or size changes to customers clearly and respectfully. Training on branding, customer retention, and product consistency can also help vendors maintain loyalty even when adjustments are necessary. These supports can empower micro-entrepreneurs to respond more strategically and sustainably during financial or market disruptions.

■ CHAPTER 4

5. Summary of findings, Conclusions, Recommendations

This chapter presents the summary of the key findings derived from the interviews with kakanin business owners in Pagadian City. The research focused on their financial decision-making practices, specifically their costing and pricing strategies

5.1. Summary of Findings

The study's key findings are a summary of the participants' responses during the interview.

1. How do kakanin business owners calculate the direct cost of ingredients?

Kakanin business owners calculate direct costs through a combination of Estimating Costs, where they rely on familiarity with recipes and past production experience; Itemizing Ingredients, which they use for precise costing when producing bulk orders or when ingredient prices fluctuate; Recording Expenses, where they maintain simple handwritten lists or receipts to track purchased materials; and Computing Totals, where they use calculators or mobile apps to ensure accuracy in dividing total costs per batch or per piece. These updated subcategories show that their direct cost computation shifts between informal and semi-formal methods depending on the level of accuracy required.

2. How do kakanin business owners account for indirect costs?

Business owners account for indirect costs through Allocating Overhead, which involves dividing gas, electricity, water, and other utilities across batches; Including Overhead, where they add small fixed amounts to selling prices to ensure overhead recovery; Applying Percentages, especially for those using mobile apps that automatically compute labor and utility cost shares; and Adjusting Charges, where they increase prices or adjust portions when overhead costs rise. These updated subcategories show that vendors integrate overhead in practical and flexible ways to prevent losses despite not using formal accounting systems.

3. How do kakanin business owners determine their selling price?

Selling prices are determined through the subcategories Applying Mark-Up, where vendors add a fixed amount or percentage to ensure profit; Benchmarking Prices, where they observe and compare competitor prices to stay competitive; and Considering Market, where they evaluate customer affordability, demand, and local buying behavior. These methods show that price-setting is a balance between cost recovery, competition, and customer expectations.

4. How do kakanin business owners control the cost associated with their production?

Production costs are controlled through Monitoring Inventory, ensuring ingredients are tracked to avoid spoilage or shortages; Regulating Production, adjusting the volume cooked based on demand to prevent waste; Portioning Products, standardizing sizes and quantities to maintain consistent cost per piece; and Strategic Purchasing, buying ingredients in bulk or from cheaper suppliers to minimize expenses. These methods help vendors stay cost-efficient and maintain steady profit margins despite unstable ingredient prices.

5. How do kakanin business owners analyze the profitability of their products?

Kakanin vendors evaluate profitability through five interrelated methods: Calculating Profit, where they compute earnings by comparing daily sales with total expenses; Net Profit Calculation, identifying the remaining income after deducting both direct and indirect costs; Tracking Income, using notebooks or simple records to monitor sales patterns; Experiential Knowledge, relying on intuition and familiarity with expected earnings to judge whether the day's profit is sufficient; and Using Tools, where some employ mobile applications or calculators for more accurate summaries. These subcategories show that profit evaluation is mostly informal yet functional, blending practical computation with experience-based assessment to guide daily financial decisions.

6. What challenges do kakanin business owners face in costing practices?

Vendors experience challenges classified into Facing Inflation, where rising ingredient and utility costs make accurate costing difficult; Fluctuating Market Price, as unstable prices for sugar, coconut, rice, and other raw materials disrupt consistent pricing; and Encountering Limitations, including limited capital, lack of financial tools, and restricted supplier options. These subcategories illustrate that cost challenges stem from both economic conditions and structural constraints in small-scale business operations.

7. How do kakanin business owners address the challenges in costing practices?

The responses they provided fit into the Responses to Costing Challenges category. They use Price Monitoring to keep an eye on ingredient prices and change their buying and pricing choices based on what they see. They also use Cost-Based Pricing, which means changing prices when the cost of ingredients or overhead goes up. Lastly, they use Quality-Based Pricing, which means they keep the taste and quality of their kakanin so that customers will pay their prices even when the market changes. These answers show that vendors deal with problems by making practical changes to keep their businesses profitable.

6. Conclusion

Based on the results, small-scale kakanin business owners in Pagadian City describe and apply their costing management practices through practical, flexible, and experience-driven methods that allow them to operate effectively despite limited resources. They compute direct and indirect costs using a mix of estimation, itemized calculation, simple recordkeeping, and basic digital tools; set selling prices through mark-ups, competitor benchmarking, and market considerations; control production costs by monitoring inventory, regulating production, portioning products, and purchasing strategically; and evaluate profitability through profit calculations, income tracking, and experiential judgment. Although challenged by inflation, fluctuating market prices, and operational limitations, they respond through price monitoring, cost-based pricing, and maintaining product quality. Overall, the findings show that kakanin vendors rely on informal yet functional costing practices that support daily decision-making and sustain their businesses, effectively answering the central question on how they describe and apply their costing management practices.

7. Recommendations

Based on the findings of this study, the following recommendations may help improve current practices:

1. Business owners could join training sessions on financial management to better understand costing, budgeting, and pricing strategies. This might allow them to manage their finances more effectively and improve their daily operations.
2. Adapting digital tools for inventory tracking and financial management may help increase accuracy in recording expenses and pricing, leading to more informed business decisions.
3. Financial institutions and local government agencies could consider offering financial literacy workshops or providing access to microloans for small-scale businesses. Such support may help them manage cash flow more effectively and invest in improved financial practices.
4. Future researchers could explore how technology adoption, such as cloud-based accounting or inventory management software, can help small-scale food businesses like kakanin vendors improve their financial decision-making and operational efficiency.

By considering these recommendations, kakanin vendors in Pagadian City may strengthen their financial practices, enhance profitability, and ensure the long-term sustainability of their businesses. This research contributes valuable insights into the financial management practices of small food enterprises and provides practical solutions for overcoming common challenges in the industry.

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The Role of Artificial Intelligence in Enhancing Communication Competence and Digital Literacy: A Qualitative Study of University Students in Bangladesh

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Abstract

Artificial Intelligence (AI) is increasingly reshaping higher education by supporting communication, learning, and digital literacy development. This qualitative study explores how AI tools influence communication competence and digital literacy among university students in Bangladesh. Data were collected from 56 students through semi-structured online questionnaires, classroom observations, and post-observation reflective discussions. Thematic analysis shows that AI tools such as ChatGPT, Grammarly, translation applications, and AI-supported learning platforms help students improve grammatical accuracy, vocabulary use, clarity of expression, academic writing, and communication confidence. The findings also indicate that AI encourages self-directed learning and strengthens students' ability to navigate digital platforms and solve academic problems. However, the study identifies challenges related to digital inequality, data privacy, algorithmic bias, academic integrity, and over-reliance on AI-generated content. The study concludes that AI can enhance communication competence and digital literacy when used as a complementary educational tool supported by ethical guidelines, faculty training, and equitable access.

Artificial intelligence

Bangladesh

Communication Competence

digital-literacy

Higher Education

university students

AI USE STATEMENT

No generative AI was used for analysis or results.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY

Not applicable for this article.

ETHICS

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CONSENT

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TRIAL REG.

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Abstract

Artificial Intelligence (AI) is increasingly reshaping higher education by supporting communication, learning, and digital literacy development. This qualitative study explores how AI tools influence communication competence and digital literacy among university students in Bangladesh. Data were collected from 56 students through semi-structured online questionnaires, classroom observations, and post-observation reflective discussions. Thematic analysis shows that AI tools such as ChatGPT, Grammarly, translation applications, and AI-supported learning platforms help students improve grammatical accuracy, vocabulary use, clarity of expression, academic writing, and communication confidence. The findings also indicate that AI encourages self-directed learning and strengthens students' ability to navigate digital platforms and solve academic problems. However, the study identifies challenges related to digital inequality, data privacy, algorithmic bias, academic integrity, and over-reliance on AI-generated content. The study concludes that AI can enhance communication competence and digital literacy when used as a complementary educational tool supported by ethical guidelines, faculty training, and equitable access.

Keywords: Artificial intelligence, Bangladesh, Communication Competence, digital-literacy, Higher Education, university students

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1. Introduction

Artificial Intelligence (AI) is increasingly being integrated into higher education, transforming communication practices, learning approaches, and digital literacy development. AI utilizes adaptive algorithms and natural language processing to enable personalized learning experiences, enhance efficiency in interactions, and foster inclusive educational environments. Broadly defined, AI refers to digital systems capable of performing tasks that require human-like intelligence, including learning, decision-making, and pattern recognition (Chiu et al., 2023). The application of AI in education has led to enhanced productivity (Gao & Feng, 2023) and improvements in communication competence (Davenport & Kalakota, 2019). AI-driven technologies, such as intelligent tutoring systems and learning management systems, support personalized learning, automated assessments, and real-time academic assistance (Lin et al., 2023). These tools promote stronger teacher-student interactions and create more flexible learning environments (Kamalov et al., 2023). Notably, the development of generative AI tools like ChatGPT has introduced virtual academic assistants, offering instant feedback, language practice, research assistance, and content generation (Memarian & Doleck, 2023a; Kohnke et al., 2023). Despite these advancements, AI remains a complementary tool that cannot replace human educators (Yu, 2024). Contemporary scholarship has increasingly called for a reconceptualization of communication competence to encompass AI-mediated interactions, recognizing that students must now

navigate both human and machine communication contexts (Xi, 2025).

The proliferation of AI in academic settings has fundamentally altered how students access information, engage with course materials, and develop essential competencies for their professional futures. Generative AI platforms, in particular, have demonstrated remarkable capabilities in supporting writing development, language acquisition, and critical thinking through iterative feedback and scaffolding (Montenegro-Rueda et al., 2023). These tools enable students to refine their communication skills through continuous practice and real-time corrections, thereby accelerating the development of linguistic accuracy and expressive clarity (Stepanenko & Stupak, 2023). Empirical evidence suggests that AI-powered language learning tools significantly enhance students' communicative competence by providing personalized, adaptive feedback that traditional instructional methods cannot replicate (Zhang, 2025). Furthermore, AI-powered learning analytics provide educators with valuable insights into student progress, enabling timely interventions and personalized support that traditional pedagogical approaches cannot easily replicate (Firat, 2023). The integration of AI into higher education also promotes digital literacy, as students must develop the competencies to navigate, evaluate, and utilize digital platforms effectively (George & Wooden, 2023). This dual benefit—enhancing both communication skills and technological proficiency—positions AI as a transformative force in contemporary education.

However, the adoption of AI in education is not without significant challenges. Ethical concerns surrounding data privacy, algorithmic transparency, and academic integrity have emerged as critical issues requiring careful consideration (Nguyen et al., 2023; Zhao & Gómez Fariñas, 2023). The digital divide further complicates AI integration, as students from resource-constrained backgrounds may lack equitable access to the technologies that are becoming increasingly central to academic success (Veluvali & Suriseti, 2022). These challenges are particularly pronounced in developing countries like Bangladesh, where infrastructural limitations and varying levels of technological readiness create disparities in AI adoption and utilization (Kamalov et al., 2023). Research from other developing regions, such as West Africa, has similarly highlighted the complex interplay between affective, behavioral, cognitive, and ethical dimensions of AI literacy, underscoring the need for context-sensitive approaches to AI integration (Asghar et al., 2025). Existing research primarily focuses on the technological aspects of AI, overlooking its impact on communication competence and digital literacy in specific socio-educational contexts, such as Bangladesh. This study aims to bridge this gap by investigating the role of AI-driven tools in enhancing communication competence and digital literacy among university students in Bangladesh. The study is guided by Communication Competence Theory, which focuses on the ability to communicate effectively and appropriately across various contexts. This framework emphasizes the importance of linguistic accuracy, clarity, adaptability, and interactional effectiveness—dimensions that are increasingly mediated by AI in contemporary learning environments.

2. Literature Review

Artificial Intelligence has become an essential force in higher education, influencing how students engage with learning, develop communication skills, and enhance their digital literacy. AI is broadly defined as the ability of digital systems to perform tasks traditionally requiring human intelligence, such as problem-solving, learning, and decision-making. This technology has been widely acknowledged for its capacity to improve educational outcomes (Chiu et al., 2023; Davenport & Kalakota, 2019). Over the past few years, AI-driven tools like intelligent tutoring systems, AI-powered Learning Management Systems (LMS), and generative AI platforms such as ChatGPT have revolutionized education by providing customized learning, immediate feedback, and adaptable instructional assistance (Lin et al., 2023; Memarian & Doleck, 2023a; Kohnke et al., 2023).

Research globally has shown that AI boosts productivity, encourages self-regulated learning, and enhances interaction between students and teachers (Gao & Feng, 2023; Kamalov et al., 2023). AI tools like Grammarly and writing assistants support students in improving their language skills, including grammar, vocabulary, and clarity, which are all vital for effective communication. These improvements align with communication competence, a multifaceted concept encompassing clarity, adaptability, and effective interactions (Davenport & Kalakota, 2019; Memarian & Doleck, 2023a). Furthermore, AI plays a crucial role in enhancing students' digital literacy by enabling them to effectively use digital platforms, critically analyze information, and apply technology for academic problem-solving (Firat, 2023; George & Wooden, 2023).

However, despite these advantages, integrating AI in education presents several challenges. Ethical issues such as data privacy, algorithmic biases, and maintaining academic integrity remain

concerns (Nguyen et al., 2023; Zhao & Gómez Fariñas, 2023). These issues are even more pronounced in developing countries, where limited infrastructure and digital inequalities may hinder widespread access to AI tools (Kamalov et al., 2023; Veluvali & Suriseti, 2022). In Bangladesh, the adoption of AI in higher education is still in its infancy, and there is a significant gap in research regarding how AI impacts communication skills and learning behaviors within this specific context. Much of the existing research has been focused on technological implementation, rather than exploring the socio-educational effects of AI adoption (Montenegro-Rueda et al., 2023; Memarian & Doleck, 2023b).

Communication Competence Theory offers a valuable perspective on understanding AI's role in education. This theory emphasizes the importance of communicating effectively and appropriately across various situations, incorporating key aspects such as linguistic precision, clarity, adaptability, and effective interaction (Yu, 2024). Studies suggest that AI-enhanced learning environments help students develop these skills by providing instant feedback, enabling collaboration, and guiding structured communication exercises (Stepanenko & Stupak, 2023; Kohnke et al., 2023).

AI also supports student engagement by fostering an interactive learning environment. AI-powered tools help facilitate real-time feedback, encourage collaborative learning, and provide more engaging content delivery, leading to a more dynamic educational experience (Llovet & González-Rodríguez, 2023; Ruiz-Rojas et al., 2023). Observations indicate that students who regularly use AI tools tend to display greater confidence in academic discussions and presentations, which reflects their improved ability to communicate ideas effectively (Memarian & Doleck, 2023a; Lin et al., 2023).

To conclude, the literature emphasizes AI's transformative potential in higher education, but it also acknowledges the challenges, particularly concerning ethics and digital equity. Effective integration of AI requires context-specific strategies, institutional policies, and initiatives aimed at enhancing digital literacy, especially in resource-limited settings like Bangladesh. Although promising, more research is needed to fully understand how AI affects communication competence, digital literacy, and student engagement, particularly in developing countries where AI adoption is still evolving (Chiu et al., 2023; Kamalov et al., 2023; Yu, 2024).

3. Research Problem

Although prior studies demonstrate that AI significantly enhances the educational process through personalized learning, intelligent tutoring systems, and improved teacher–student collaboration (Kamalov et al., 2023; Lin et al., 2023), the existing literature remains largely technology-centric and lacks sufficient focus on communication competence development among university students, particularly in developing countries like Bangladesh.

AI-driven tools such as Learning Management Systems (LMS), virtual classrooms, and generative AI applications have improved student engagement, facilitated uninterrupted learning, and supported customized educational content (Veluvali & Suriseti, 2022; Montenegro-Rueda et al., 2023). However, despite these advancements, there is limited empirical understanding of how these technologies influence students' communication skills, digital literacy, and interactive learning behaviors within higher education contexts.

Furthermore, the rapid integration of AI in education raises critical concerns regarding data privacy, algorithmic transparency, and ethical usage (Nguyen et al., 2023; Zhao & Gómez Fariñas, 2023). The issue is further complicated by the digital divide, particularly in resource-constrained educational environments, where unequal access to AI tools may hinder equitable learning opportunities (Kamalov et al., 2023).

In the context of Bangladesh, where higher education institutions are increasingly adopting digital technologies, there is a significant research gap in understanding:

- How do AI tools contribute to communication competence?
- How do students adapt to AI-driven learning environments?
- How do ethical and infrastructural challenges influence this integration?

Therefore, this study seeks to bridge this gap by examining the role of AI in shaping communication competence among university students in Bangladesh and addressing the associated opportunities and challenges.

4. Research Focus

This study examines the transformative role of AI-driven technologies in higher education, with particular emphasis on communication competence, digital literacy, and student engagement. It aims to explore how AI tools facilitate interactive learning, enhance communication processes, and support the development of essential academic and professional skills among university students.

At the same time, the study critically investigates the challenges associated with AI adoption, including ethical concerns, data privacy, algorithmic bias, and unequal access to technology. By integrating both opportunities and constraints, the research provides a balanced and context-specific analysis relevant to the higher education landscape in Bangladesh.

The findings are expected to contribute to the development of practical recommendations for policymakers, educators, and institutions, enabling the effective and ethical integration of AI in teaching, learning, and academic communication.

5. Research Aim

The primary aim of this study is to analyze the impact of AI-driven technologies on the development of communication competence among university students in Bangladesh, with a focus on identifying both opportunities and challenges associated with AI integration in higher education.

Research Objectives:

1. To explore how AI tools influence communication competence among university students
2. To examine the role of AI in developing digital literacy
3. To identify challenges and ethical concerns in AI integration

6. Research Methodology

6.1. Research Design

This study adopts a qualitative-dominant design, as the primary objective is to explore participants' lived experiences, perceptions,

and contextual interpretations of AI use in higher education. Although the questionnaire included structured items, the study is qualitative in nature, as the analysis primarily focused on open-ended responses, classroom observations, and thematic interpretation. The core analysis is based on qualitative data derived from open-ended responses, observations, and reflective discussions, ensuring an in-depth interpretive understanding rather than statistical generalization.

The study involved 56 university students from both public and private universities in Bangladesh, selected through purposive sampling. Participants were chosen based on their exposure to AI tools in academic activities and their willingness to share experiences.

6.2. Data Collection Methods

Data were collected using:

- Semi-structured online questionnaires (including open-ended questions)
- Classroom observations
- Post-observation reflective discussions

6.2.1. Data Analysis

The data were analyzed using thematic analysis, categorization, and theme development related to communication competence, digital literacy, and AI integration in learning.

6.2.2. Ethical Considerations

Participation was voluntary, anonymous, and based on informed consent. Confidentiality and ethical research standards were strictly maintained.

This study employed a qualitative-dominant mixed-methods approach to explore the role of AI-driven technologies in shaping communication competence and learning practices in higher education. The integration of multiple data collection methods enabled a comprehensive and in-depth understanding of participants' experiences and perceptions.

6.3. Survey Instrument

Data were collected through an online questionnaire comprising both closed-ended and open-ended questions. The questionnaire was developed based on an extensive review of existing literature on AI applications in education. To ensure clarity, relevance, and reliability, a pilot study was conducted before the main data collection phase, allowing refinement of the instrument and improvement of feedback mechanisms.

The final questionnaire consisted of 32 structured items measured on a Likert scale ranging from "Strongly agree" to "Strongly disagree," alongside 10 open-ended questions designed to capture participants' detailed perspectives, experiences, and attitudes toward the use of AI tools in higher education.

While the structured items provided supportive descriptive insights, the open-ended responses formed the primary qualitative data source, enabling deeper exploration of themes related to communication competence, digital literacy, and AI integration.

6.3.1. Classroom Observations

In addition to the survey, classroom observations were conducted to examine the practical use of AI technologies in real educational settings. A structured observation framework was developed before data collection, incorporating key indicators such as:

Table 1. Participants' Profile Characteristics

Profile Characteristics	Category	Number of Participants
Level of Study	Undergraduate	40
	Postgraduate (Master's)	16
	Total	56
Field of Study	Business Studies	10
	English Language	12
	Computer Science	8
	Islamic Studies	6
	Electronic & Communication Engineering	5
	Law	5
	Pharmacy	4
	Civil Engineering	6
	Total	56
Type of University	Public University	10
	Private University	46
	Total	56
Experience with AI Tools	Less than 1 year	15
	1–2 years	18
	2–3 years	13
	More than 3 years	10
	Total	56
Frequency of AI Use in Learning	Daily	9
	Often (several times a week)	17
	Sometimes	23
	Rarely	7
	Total	56
Common AI Tools Used	ChatGPT / Generative AI	26
	Grammarly / Writing Assistants	12
	LMS with AI Features	8
	Translation Tools	6
	Others	4
	Total	56

Source: based on the author's development.

- Teacher–student interaction
- Student engagement
- Use of AI tools in instructional delivery
- Quality of learning materials
- Assessment practices
- Ethical considerations (e.g., privacy, bias, transparency)

These indicators were evaluated along a continuum from "Positive impact" to "Adverse effect," allowing systematic documentation of AI's role in classroom dynamics. During the observation phase, the researcher recorded the frequency and nature of AI usage, as well as its influence on communication patterns, instructional effectiveness, and student participation.

6.3.2. Post-Observation Reflection

Following each observation session, post-observation discussions were conducted with participants to gather reflective feedback on the use of AI in teaching and learning. These discussions helped identify strengths, challenges, and areas for improvement in AI integration, adding further depth to the qualitative findings.

6.3.3. Data Analysis (Detailed)

The qualitative data obtained from open-ended survey responses, observations, and post-observation reflections were analyzed using thematic analysis. This involved coding the data, identifying recurring patterns, and developing key themes related to communication competence, digital literacy, and AI usage.

6.3.4. Methodological Justification

Although the study incorporated structured survey elements, its primary emphasis remained on qualitative interpretation, as the research aimed to understand participants' experiences, perceptions, and contextual realities rather than to test hypotheses or establish statistical relationships.

7. Findings and Discussion

The thematic analysis of qualitative data collected from open-ended survey responses, classroom observations, and post-observation reflections revealed several recurring patterns regarding the role of AI-driven technologies in higher education. The findings are organized into key themes reflecting students' experiences, perceptions, and challenges in using AI tools for communication and learning. This finding aligns with Communication Competence Theory, as AI tools enhance

students' linguistic accuracy, clarity, and confidence—core components of effective communication in academic contexts.

■ THEME 1: ENHANCEMENT OF COMMUNICATION COMPETENCE THROUGH AI TOOLS

One of the most prominent findings indicates that AI-driven tools significantly contribute to the development of students' communication competence. Participants reported that tools such as generative AI and writing assistants helped improve their academic writing, vocabulary usage, grammatical accuracy, and clarity of expression.

Students particularly emphasized the role of AI in:

- Structuring assignments and reports
- Practicing formal and professional communication
- Receiving instant feedback on language use

Classroom observations further confirmed that students who frequently used AI tools demonstrated greater confidence in presentations and interactive discussions. AI-supported learning environments encouraged active participation and idea articulation, especially among students who previously experienced communication barriers.

■ THEME 2: DIGITAL LITERACY AND SELF-DIRECTED LEARNING

The findings reveal that AI tools play a crucial role in enhancing students' digital literacy and independent learning capabilities. Participants indicated that regular use of AI applications improved their ability to:

- Navigate digital platforms
- Evaluate information critically
- Utilize technology for academic problem-solving

Students reported increased reliance on AI for exploring complex topics, generating ideas, and accessing personalized learning support. Observational data also showed that AI integration promoted self-directed learning behaviors, where students actively engaged in knowledge exploration beyond traditional classroom instruction.

■ THEME 3: INCREASED STUDENT ENGAGEMENT AND INTERACTIVE LEARNING

Another key theme highlights the role of AI in fostering student engagement and interactive learning environments. AI-supported tools enabled more dynamic classroom interactions by:

- Facilitating real-time feedback
- Supporting collaborative learning activities
- Enhancing visual and interactive content delivery

Students expressed that AI made learning more accessible, flexible, and engaging, particularly in courses requiring communication and analytical thinking. Observations indicated that classrooms incorporating AI tools experienced higher levels of participation and improved teacher–student interaction.

■ THEME 4: ETHICAL CONCERNS AND CHALLENGES IN AI INTEGRATION

Despite the positive outcomes, participants raised several concerns regarding the use of AI in education. The most frequently mentioned challenges include:

- Data privacy and security risks
- Over-reliance on AI tools, potentially limiting critical thinking
- Bias and lack of transparency in AI-generated outputs
- Academic integrity issues, particularly in assignments

Students and educators expressed uncertainty about the ethical boundaries of AI usage, highlighting the need for clear institutional guidelines. Observations also revealed inconsistencies in how AI tools were used and monitored across different classrooms.

■ THEME 5: DIGITAL DIVIDE AND ACCESSIBILITY ISSUES

The study identified a significant disparity in access to AI technologies among students. While some participants reported frequent and effective use of AI tools, others faced limitations due to:

- Lack of access to reliable internet
- Limited familiarity with advanced AI tools
- Institutional constraints in adopting AI technologies

This digital divide affects the equitable development of communication competence and digital skills among students, particularly in resource-constrained settings within Bangladesh.

■ THEME 6: FUTURE POTENTIAL OF AI IN HIGHER EDUCATION

Participants expressed optimism regarding the future applications of AI in education. They highlighted several potential developments, including:

- AI-powered personalized learning systems
- Advanced virtual tutoring and mentoring
- Automated feedback mechanisms for communication skills
- Integration of AI in curriculum design and assessment

Students and educators agreed that, if implemented responsibly, AI has the potential to transform higher education by enhancing both academic performance and communication competence.

7.1. Overall Interpretation

The findings align with Communication Competence Theory, as AI-driven tools contribute to key dimensions of communication competence, including linguistic accuracy, clarity of expression, adaptability, and interactional effectiveness. The use of AI in academic writing, presentations, and collaborative learning environments demonstrates how technology mediates communication processes and enhances students' ability to communicate effectively across academic contexts.

7.2. Contribution of the Study

This study makes several important contributions to the existing literature on Artificial Intelligence in education. First, it provides empirical qualitative evidence on the role of AI-driven technologies in enhancing communication competence and digital literacy among university students, addressing a gap in current research that is largely technology-focused.

Second, the study contributes a context-specific analysis from Bangladesh, offering insights into how AI is adopted and experienced within a developing country context characterized by digital inequality and evolving technological infrastructure.

Third, by applying Communication Competence Theory, the study extends theoretical understanding by demonstrating how AI tools support not only linguistic accuracy but also adaptability, interactional effectiveness, and communication confidence in academic environments.

Finally, the study offers practical and policy-relevant implications for educators, institutions, and policymakers, emphasizing the need for ethical AI integration, digital literacy development, and equitable access to technology in higher education.

8. Conclusion

This study explored the role of AI-driven technologies in shaping communication competence, digital literacy, and learning engagement among university students in Bangladesh. The findings reveal that AI tools significantly enhance students' communication abilities by improving writing quality, language accuracy, and confidence in academic interactions. Additionally, AI facilitates self-directed learning and strengthens digital literacy, enabling students to navigate complex information environments more effectively.

The integration of AI in higher education also contributes to more interactive and engaging learning experiences. AI-supported platforms encourage active participation, foster collaborative learning, and improve the overall quality of instructional delivery. These findings indicate that AI has the potential to transform traditional educational practices by promoting adaptive, student-centered learning environments.

However, the study also highlights several critical challenges associated with AI adoption. Ethical concerns, including data privacy, algorithmic bias, and academic integrity, remain significant issues that require careful attention. Furthermore, the digital divide continues to limit equitable access to AI technologies, particularly among students from resource-constrained backgrounds. These challenges underscore the need for a balanced and responsible approach to AI integration in higher education.

In the context of Bangladesh, where digital transformation in education is rapidly evolving, this study contributes to a deeper understanding of how AI can support the development of communication competence while also identifying the barriers that must be addressed. The findings emphasize that AI should be used as a complementary tool to enhance, rather than replace, human interaction and pedagogical practices.

8.1. Policy Recommendations

Based on the findings of this study, several policy recommendations are proposed to support the effective and ethical integration of AI in higher education in Bangladesh.

8.1.1. Development of Institutional AI Guidelines

Higher education institutions must establish comprehensive and clear policies governing the use of AI tools in academic settings

to ensure responsible and transparent adoption. These guidelines should explicitly address ethical usage of AI, academic integrity and plagiarism concerns, and data privacy and security protocols. Without such structured policy frameworks, institutions risk inconsistent application of AI tools, potential misuse, and erosion of academic standards. A well-defined policy approach will not only protect students and faculty but also foster an environment where AI technologies can be leveraged confidently and ethically, ensuring that their integration aligns with institutional values and educational objectives while safeguarding against potential risks associated with unregulated AI usage.

8.1.2. Integration of AI Literacy into Curriculum

Universities should systematically incorporate AI literacy and digital skills training across academic curricula to prepare students for technology-enhanced learning environments and future professional contexts. Such integration will enable students to use AI tools effectively and ethically, develop critical thinking alongside technological competence, and enhance their communication skills through AI-supported learning experiences. By embedding AI education into course offerings, institutions can ensure that students graduate with the necessary competencies to navigate an increasingly AI-mediated world, rather than relying on self-directed and potentially superficial engagement with these technologies. This curricular approach will empower students to become discerning consumers and ethical users of AI, capable of leveraging these tools to augment their learning without compromising their intellectual development.

8.1.3. Faculty Training and Capacity Building

Educators must be provided with sustained professional development opportunities to understand AI tools and their pedagogical applications, integrate AI into teaching strategies effectively, and guide students in the responsible use of AI. Faculty readiness remains essential for successful AI adoption, as instructors serve as the primary mediators between students and emerging educational technologies. Comprehensive training programs should move beyond basic technical familiarization to address pedagogical integration, ethical considerations, and assessment strategies that account for AI usage. When faculty members are adequately prepared, they can model appropriate AI utilization, design meaningful learning activities that incorporate AI tools, and help students navigate the complex ethical terrain associated with AI-assisted academic work.

8.1.4. Bridging the Digital Divide

Government and institutional stakeholders should undertake concerted initiatives to reduce disparities in access to AI technologies by improving digital infrastructure, providing affordable internet access, and ensuring availability of AI-enabled learning platforms across all regions and institutions. The digital divide represents one of the most significant barriers to equitable AI integration in Bangladesh's higher education system, with students in rural areas and resource-constrained institutions facing substantial disadvantages. Addressing these infrastructural inequalities requires coordinated investment in connectivity, hardware, and software resources, alongside targeted support for underserved institutions. Such efforts will promote equitable learning opportunities for all students, ensuring that the benefits of AI-enhanced education are not reserved for those at privileged institutions but are accessible across the diverse landscape of Bangladeshi higher education.

8.1.5. Promoting Ethical and Transparent AI Use

There exists a pressing need to establish robust mechanisms for monitoring AI usage in academic work, ensuring transparency in AI-generated outputs, and minimizing bias and misinformation in AI applications. Ethical governance will enhance trust in AI-based educational practices and protect the integrity of academic institutions. Institutions should develop frameworks for auditing AI tools, implementing transparency requirements for AI-generated content, and creating accountability structures that address potential harms. These mechanisms should be developed collaboratively with students, faculty, and technology experts to ensure they are practical, proportionate, and responsive to emerging challenges. By prioritizing ethical governance, institutions can harness AI's benefits while mitigating its risks, building a foundation of trust that supports sustainable technology adoption.

8.1.6. Encouraging Research and Innovation

Universities should actively promote further research on AI in education, particularly within the Bangladeshi context, to explore long-term impacts of AI on learning outcomes, develop localized AI solutions that address specific educational challenges, and inform evidence-based policy decisions. The rapid evolution of AI technologies demands continuous inquiry into their effects, applications, and implications for higher education. Research initiatives should be interdisciplinary, bringing together educators, technologists, social scientists, and policymakers to generate comprehensive insights. By investing in research capacity and fostering innovation, Bangladeshi universities can contribute to the global knowledge base while simultaneously developing contextually appropriate approaches to AI integration that reflect local needs, values, and aspirations. This research agenda will ensure that policy development remains grounded in empirical evidence rather than technological enthusiasm or unfounded concerns.

8.2. Limitations and Future Research

8.2.1. Limitations of the Study

Although this study provides meaningful insights into the role of AI-driven technologies in enhancing communication competence and digital literacy among university students in Bangladesh, several limitations should be acknowledged.

First, the study adopts a qualitative-dominant design, which prioritizes depth of understanding over statistical generalization. Therefore, the findings cannot be generalized to all university students in Bangladesh or other international contexts.

Second, the research relies partly on self-reported data collected through questionnaires and interviews. Such data may be influenced by participants' personal perceptions, subjective interpretations, or varying levels of familiarity with AI tools, which may introduce response bias. Although classroom observations were conducted to improve data triangulation, some level of researcher interpretation remains unavoidable in qualitative analysis.

Third, the sample size ($N = 56$) and its distribution across selected universities may not fully represent the diversity of higher education institutions in Bangladesh, particularly institutions in rural or less technologically advanced regions. This may limit the broader applicability of the findings.

Finally, the rapid evolution of AI technologies means that students' usage patterns, tools, and educational applications are continuously changing. As a result, the findings represent a snapshot of current practices rather than a permanent or stable phenomenon.

8.2.2. Future Research Directions

Future studies should build upon these findings in several important ways. First, large-scale quantitative or mixed-methods studies could be conducted to examine the relationship between AI usage and communication competence across a broader student population in Bangladesh, allowing for greater generalizability.

Second, comparative research between public and private universities, as well as urban and rural institutions, could provide deeper insights into how institutional and infrastructural differences influence AI adoption and digital literacy development.

Third, future research should include multiple stakeholder perspectives, such as faculty members, curriculum developers, and educational policymakers, to develop a more comprehensive understanding of AI integration in higher education.

Fourth, longitudinal studies are recommended to investigate the long-term effects of AI use on students' communication competence, critical thinking abilities, and academic performance over time.

Finally, further studies should explore the ethical, legal, and regulatory dimensions of AI in education, particularly in developing country contexts like Bangladesh, where institutional policies and governance frameworks are still evolving.

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