

Do SME food processors with certification perform better environmentally, socially and economically? A case study from Kyrgyzstan’s dried fruits and nuts industry

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1. INTRODUCTION AND PROBLEM STATEMENT

- Kyrgyzstan’s dried fruits and nuts (walnuts, apricots, almonds, and pistachios) are central to rural livelihoods and small and medium food processing enterprises (SMEs)¹
- Global demand for **certified** sustainable food is rising rapidly².
- **Problem**
- Despite the potential, many SMEs in Kyrgyzstan struggle benefits of certification.
- Challenges include:
 - High costs of certification
 - Limited technical and managerial capacity³
 - Uncertainty over whether certification leads to higher returns
- **Research Gap**
- While much is known about certification in global agri-food, little evidence exists from Central Asia, where forest- and agroforestry-based SMEs dominate.
- Understanding the real impact of certification on SME performance is crucial for inclusive and sustainable value chain development.
- **Research Question**
- *How does certification affect the economic, environmental, and social performance of food processing SMEs in Kyrgyzstan?*

2. CONCEPTUAL FRAMEWORK OF RESEARCH

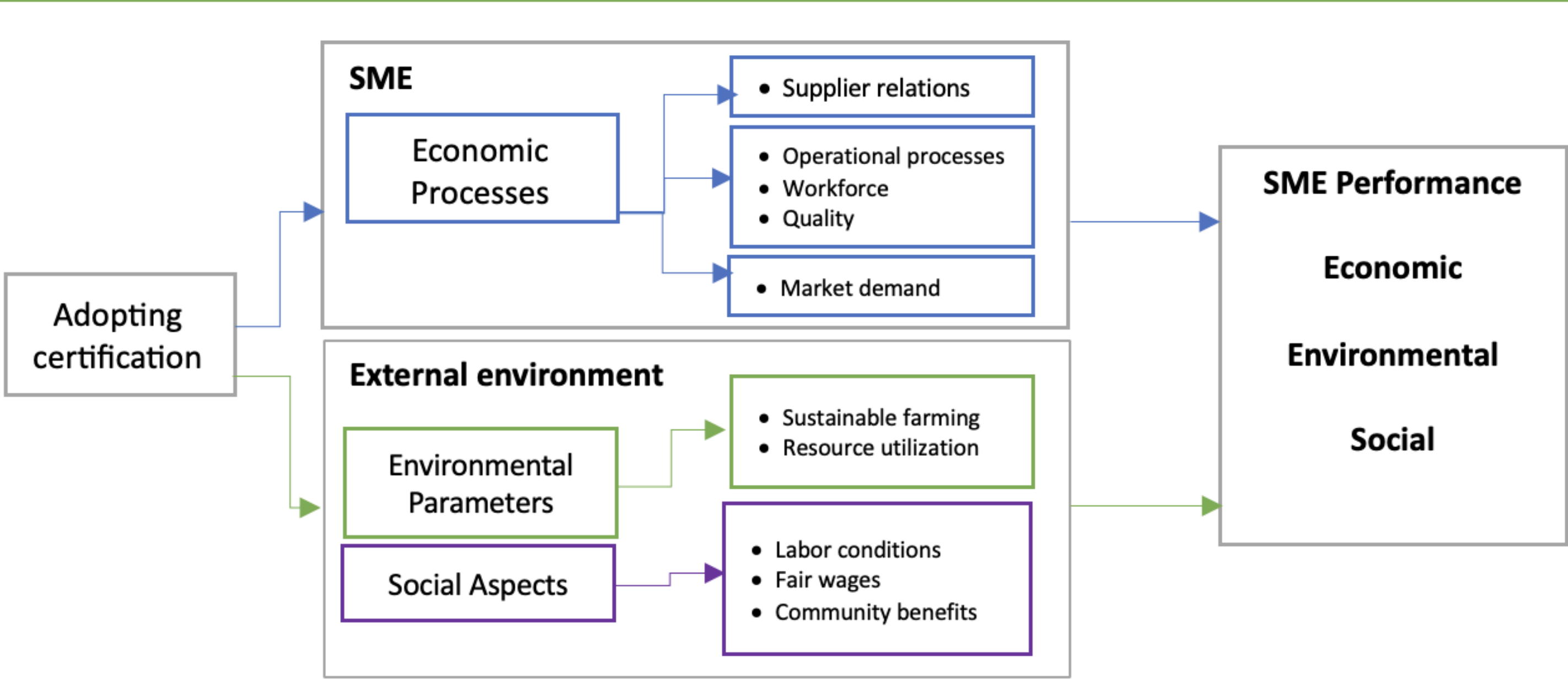


Fig. 1: Conceptual Framework. *Source:* own construct based on literature review

3. Methodology

- Multiple-case study design⁴
- Resource-Based View⁵
- Study area**
- Kyrgyzstan: Jalal-Abad & Batken
- Case selection:**
- In consultation with local communities, development stakeholders, and industry representatives
- Data collection**
- Semi-structured interviews (managers, workers, farmers, collectors)
- Facility and field observations
- Internal documents (protocols, financials, reports)

Tab. 1: Characteristics of case study food processing SMEs as of December 2024

SME	Region	Type	Product	Export markets	Type of certification	Funding
A	Jalal-Abad	P	Wild walnuts 90% Others (Capers, Almonds, Pistachios) 10%	Turkey 70% Uzbekistan 20% EU 10%	Organic (2021-2024)	own
B	Jalal-Abad	P	Wild walnuts, 90% Capers 5%, Dried apples 5%	EU 70% Turkey 20% Uzbekistan 10%	Organic (2017-2024)	own
C	Jalal-Abad	C	Wild walnuts 50% Almonds 40% Pistachios 10% Walnut oil 1%	Kyrgyzstan 10% Uzbekistan 86% U.S. 4%	Organic (2022-2023)	Grant
D	Batken	C	Dried apricots 90% Apricot oil 5% Apricot kurut* 5%	Kyrgyzstan 100%	Organic (2022-2023) Fairtrade (2018-2019)	Grant
E	Jalal-Abad	P	Wild walnuts 92% Dried prunes 5% Fresh cherries 3%	Kyrgyzstan 100%	No certification	No
F	Batken	P	Dried apricots 100%	Kyrgyzstan 90% Russia 5% Uzbekistan 5%	No certification	No

Notes: P = Private SME; C = Cooperative; “Capacity” refers to annual processing volume

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4. RESULTS

Tab 2: Performance of SMEs across Economic, Environmental, and Social dimensions

	Economic Performance	Environmental Performance	Social Performance
Privately Certified SMEs	Strong ✓ traceable sourcing ✓ protocols; ✓ trust of buyers; ✓ price premiums	Moderate ○ Focused on compliance rather than on environmental concerns to meet certification	Strong ✓ Improved hygiene, ✓ Structured labor practices ✓ Infrastructure investments ✓ Performance focused
Group-Certified Cooperatives	Moderate ✓ Improved coordination with farmers through training and documentation ○ Limited export due to lack of managerial capacity and short-term donor support	Strong ✓ Promoted composting, organic inputs, and sustainable harvesting ✓ Internal monitoring enabled collective ecological practices	Moderate ✓ Knowledge-sharing among producers ○ Informal labor practices ○ Gender imbalances
Non-Certified SMEs	Weak ○ Informal sourcing and low-cost production ○ No formal buyer relationships or export capacity	Weak ○ Depended on minimal compliance ○ Lack of internal initiatives / monitoring of practices	Weak ○ No formal labour contracts ○ Minimal attention to workforce well-being or community engagement

● Strong effect / ● Moderate effect / ● Weak effect

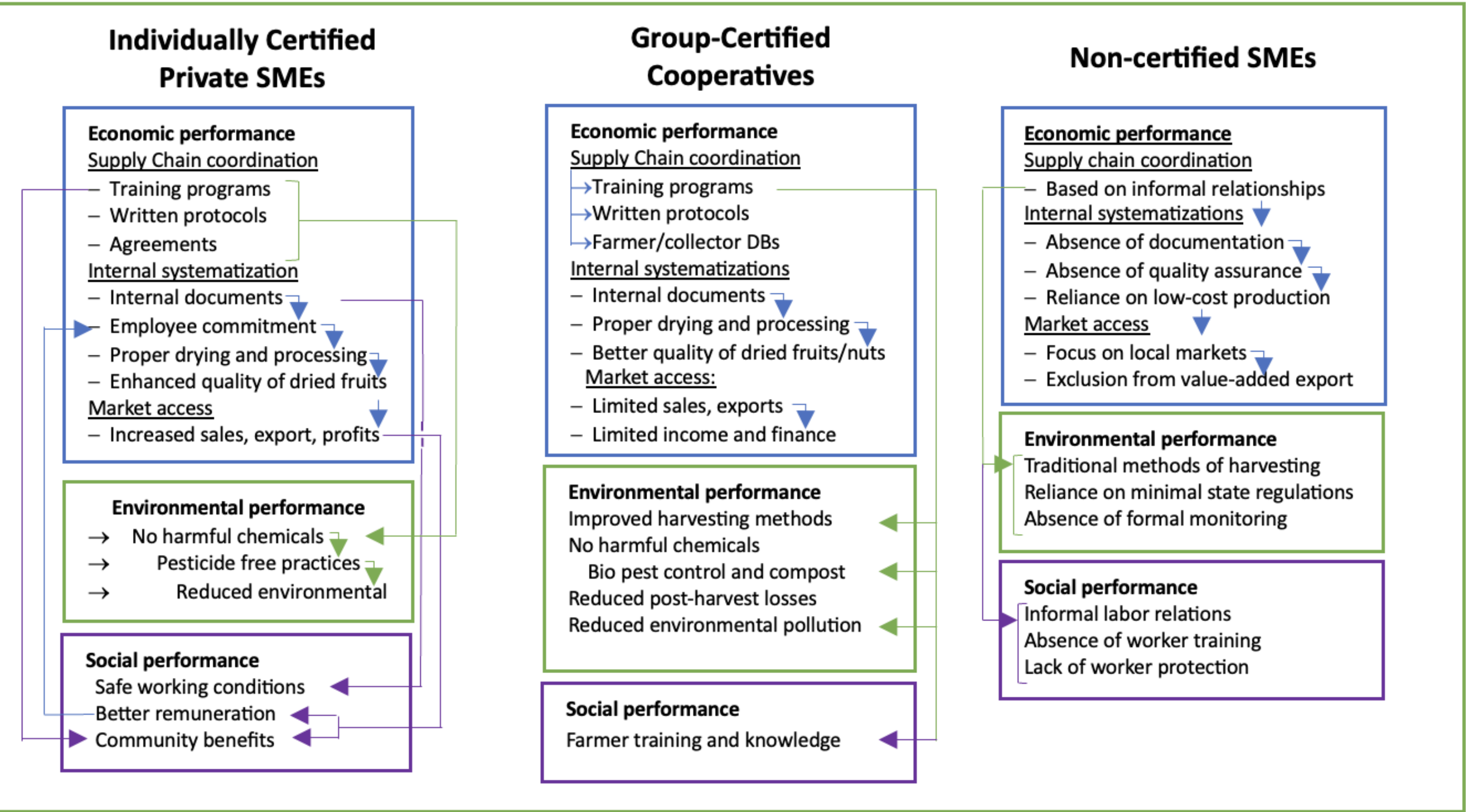


Fig. 2: Causal Mechanisms of Certification Effects on SME Performance

5. Conclusion

- Certification improves SME’s economic, environmental, and social performance of SMEs.
- Privately certified SMEs achieved the highest value through export contracts and premiums.
- Cooperatives showed strong environmental gains but struggled to capture economic and social benefits.
- Non-certified SMEs remained confined to low-value domestic markets with minimal sustainability practices.
- Effectiveness of certification depends on internal capacities, managerial skills, and long-term support.
- Policy should prioritize capacity-building, labor formalization, and sustained support to foster inclusive and sustainable agri-food value chains.

6. References

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