Developing a Value Chain Model to Economically Empower Banana Farmers in Developing Countries

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ABSTRACT

Based on the literature and theories, this study proposes 25 pillars of an integrated value chain model for economically empowered rural banana farming. Economic empowerment is the profitable return from farming ventures. These pillars confront the need for a competitive framework for the pre-production, production, post-harvest, and marketing of bananas. The examination of literature and theories such as M4P, Actor Network, and the Sustainable Livelihood Approach reveals fundamental pillars for the development of a value chain model for economically empowering banana farmers in developing countries. To access profitable returns, smallholder farmers require different forms of support from Non-Governmental Organizations (NGOs), financial service providers, retailers, village resource personnel, and the government. Economic empowerment is anchored on enablers such as expertise, inputs (seeds, fertilizer, tools), equipment and machinery, markets, fair prices, favorable trade terms, a robust local economy, access to credit, loans, gender inclusivity, savings, and insurance. The model generated from previous research requires an integrated approach to test its applicability. The review of theories and literature followed a systematic review of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) with 327 articles being the closest work. Further screening was performed based on title, abstract, and year, which led to the identification of knowledge gaps from 43 related articles that were based on strategies and models to promote value chains that economically empowered farmers. Existing research has not found a model that empowers farmers economically along the value chain. This is because a review of the literature shows that existing value chains are the source of problems. This is primarily because smallholder farmers have control over a few actors in the value chain. Smallholder farmers' voices continue to be subdued by manipulation in the order of the day.

Keywords: Economic returns, Smallholder banana farming, Value chains

INTRODUCTION

Despite stakeholder interventions, economically empowering smallholder banana farmers remains a challenge worldwide(Shonhe & Scoones, 2022). Management & Landscapes, (2020) described an agricultural value chain as the people and activities that carry a fundamental agricultural commodity such as corn, vegetables, or cotton from inputs and production in the field to the customer through processing, packaging, and distribution. Value chains follow four crucial stages: preproduction, production, post-harvest management, and marketing(Gebre et al., 2020). Key stakeholders in the value chain include smallholder farmers, buyers, processors, merchants, government agencies, non-governmental organizations, and private enterprises that provide technical, commercial, and financial services(Ramírez-Orellana et al., 2021). Any suggestion for a value chain model must examine the current value chain, its systemic obstacles, and possible actions(Ao et al., 2019). The role of players in the value chain in promoting the banana value chain has never been stated (Abdul-Rahaman & Abdulai, 2020). Past studies by Ao et al., (2019) and Ramírez-Orellana et al. (2021) agree that existing value chains are not supporting the economic empowerment of smallholder farmers.

Conceptual Literature

This section presents conceptual literature review.

Value Chains in Agriculture

Value chains in agriculture include all factors of production, such as land, labor, capital, technology, and inputs, as well as all economic activities along the value chain, such as input supply, production, transformation, handling, transport, marketing, and distribution, required to create, sell, and deliver a product to a particular destination(Ssennoga et al., 2019). Bunyasiri and Chatanavin (2021) stated that the mapping of the agricultural value chain comprises three levels or dimensions. These include fundamental processes (direct actors), partner networks (indirect players), and external influences (Sharma et al., 2021). Gebre et al. (2020) assert that by highlighting strengths and weaknesses throughout the value chain, this type of research assists in identifying potential corrective steps to enhance overall value chain performance, which tends to benefit all stakeholders along the chain. The total costs and values associated with any value chain are the sum of the costs and values incurred at each value chain level. For instance, if input costs are disproportionately high in relation to output, this cost inefficiency has an impact on the performance of the entire value chain(Kirimi et al., 2021). Similarly, if participants at stages above farm production levels charge proportionally greater charges for their services than the productivity of the commodities being handled, the entire performance of the value chain would be negatively impacted(Kaplinsky et al., 2020). According to Ssennoga et al. (2019), the competitiveness of any domestic commodity value chain is contingent on the efficiency of input supply, farm production, assembly, processing, and logistics up to the final delivery point, where goods compete internationally as exports or import substitutes. By analyzing the cost composition at each stage of the value chain and comparing these costs to global standards or benchmarks, the methodology can indicate international competitiveness and help identify the key stages at which costs could be reduced most effectively as a growth strategy for the sector(Muzira et al., 2019). However, farming families rarely earn their entire income from one source, making it difficult to economically enable farmers to increase their income (Shonhe & Scoones, 2022). They might also run a taxi service, take in laundry, sell animals and animal products, and collect firewood, in addition to selling one or more crops (Shonhe & Scoones, 2022). The majority of farming families also depend on the livestock and subsistence crops they raise and eat. Access to agricultural services, such as expertise, inputs (seeds, fertilizer, tools), equipment and machinery, markets, fair prices, favorable trade terms, access to credit, loans, savings, and insurance, are some of the factors that influence income (Melia, 2019).

Economic empowerment of smallholder farmers

Empowerment is the ability to make decisions and translate them into desired actions and outcomes. Domains, which are spheres of influence where people can organize and mobilize for the desired social and political change, are the pathways to empowerment (Abdul-Rahaman & Abdulai, 2020). To calculate empowerment in agriculture, Ao et al. (2019) defined five empowerment domains: 1) decisions on agricultural production, 2) access to productive resources, 3) decisions on how to use income, 4) leadership, and 5) time allocation. Empowerment domains are spheres of influence that give people and groups the ability to better organize and mobilize for desired social and political change. According to Abdul-Rahaman and Abdulai (2020), efficient farming practices, resilience, expansions, and profitability are signs of economic empowerment (Shonhe & Scoones, 2022). Millions of smallholders struggle to meet their basic needs and live in poverty. Therefore, increasing incomes and competitiveness are necessary for farmers to achieve and maintain a decent standard of living, invest in their farms, and continue to provide a sustainable crop to multinational corporations (Melia, 2019). Only a few published studies, including those by Ao et al. (2019), Gebre et al. (2020), and Abdul-Rahaman and Abdulai (2020), have focused on the factors influencing small-scale farmers' economic empowerment in agriculture. Additionally, the literature on circulation emphasizes female economic empowerment, while omitting the equally significant factor of male empowerment. Such recommendations might be false in situations where male farmers lack power. This study closes this gap by creating a value chain model to economically empower banana farmers in developing nations.

Theories on the value chain and economic empowerment of farmers

This section presents the theories underpinning this study. These are Porter’s value chain model, which makes markets work better for the poor (M4P) framework, Actor Network Theory, and the Sustainable Livelihood Approach.

Making markets work better for the poor (M4P) framework.

Many organizations and governments have adopted these policies for policy development. The M4P framework provides an inside for market systems and guiding actions aimed at improving the way market systems serve the poor by addressing market challenges and identifying the actors involved and their role in the value chain(Borsellino et al., 2020). It strengthens the link between what exists between value chain analysis and development interventions to improve opportunities available to the poor(FAO - Food and Agriculture Organization of the United Nationss, 2020). The M4P framework analyses value chain using three main concepts: the concept of filière, the porter framework, and the global approach. The filière concept encompasses mapping the flow of goods and identifying the different actors and activities involved in the value chain. Porter's framework, which he drew from the works of Porter (1985), focuses on the competitive advantage concept. This framework allows smallholder farmers to position themselves in markets and establish the relationship that exists between producers, suppliers, buyers, and competitors with the strategy of reducing cost. (FAO - Food and Agriculture Organization of the United Nationss, 2020). The global approach maps out all ranges of activities and constraints that take place along a chain by analyzing the breakdown of total value earnings achieved by the different actors in the chain. This provides the most accurate way to understand earnings distribution (Voora et al., 2020). Collectively, they describe the interactions and processes needed to deliver products to consumers and identify the constraints and opportunities for value chain upgrades. Breaking down core processes by actors into specific activities through pro-poor value chain mapping helps identify the poor as actors at different levels of the value chain. (Evaluation, 2020) identified that in an agricultural value chain, the poor are the primary producers, although they can be involved in other processes, such as small-scale traders or labor. (FAO - Food and Agriculture Organization of the United Nationss, 2020).

According to the model, earnings distribution should not be at the expense of rural smallholder farmers. In addition to farming, smallholder farmers can participate in other processes that may result in significant economic gains. Secondary stakeholders, such as the government, banks, and non-governmental organizations (NGOs), are needed to support value-added activities. With efficient markets, all value chain stakeholders, including consumers, gain from cost and quality competitiveness. According to this approach, access to competitive marketplaces is improved. Access to profitable marketplaces may be key to addressing rural poverty. This concept also emphasizes the importance of enhancing the existing markets. Smallholder farmers may organize cooperatives and other combined marketing initiatives to achieve market competitiveness. This was done to provide farmers with greater bargaining leverage. The model is based on market structures that ensure smallholder farmers' cost and quality competitiveness. Smallholder farmers can escape poverty if they receive real economic benefits. Smallholder farmers, however, remain trapped in manipulative value chains. Small-scale banana farmers are still being manipulated.

Actor Network Theory

The primary theoretical grounding derives from actor-network theory, which sees the evolving activities and goals of sustainable agricultural development as the product of self-reaffirming 'translation' (i.e., network building) on the part of NGOs, local organizations, academics, and professionals(Liu et al., 2019). Developed in a diffuse fashion in the late 1970s by sociologists Bruno Latour, Michel Callon, and John Law, actor-network theory primarily evolved as a reply to the theoretical limitations confronting sociological scholarship on the interaction between science, technology, and society(Ramírez-Orellana et al., 2021). Although Actor Network Theory was initially employed as a theoretical and methodological frame for untangling the messy relationship between the hard sciences and their social embeddedness(Gebre et al., 2020a), it has increasingly been used to analyze institutional behavior, the sociotechnical nature of 'projects' parented by organizations and the non-human objects and technologies which mediate group functioning (Taku-Forchu, 2019). Frequently misunderstood or oversimplified as another framework for analyzing 'social networks' and 'agency,' Actor Network Theory is something of a non-framework, in that it favors a methodological toolkit that champions heterogeneity of actors (or actants), open uncertainty about selection and constant dislocation (or churn) rather than static states (Agyekumhene et al., 2020).

Central to the understanding of Actor Network Theory is the concept of 'translation,' which is a manner of imposed collaboration by which actors enroll others into, or maintain their presence in, an 'actor-world'. Actor-worlds, which are often conflated with 'social networks,' are operational spaces within which actors continually renegotiate their roles and redefine their functions. Aggregate acts of translation maintain the coherence of the actor's world and recruit new support(Charumbira, 2019). This is done in several ways. Interessement, one form of translation, is the act of using enrolment to interest an actor by engaging in indirect incentivization. Another form of translation is the strategy of rendering involvement in the actor-world indispensable by creating a "geography of obligatory passage points"(Melkamu Bezabih, Delelegn Abera, Aberra Adie, 2020), through which recruits traverse without necessarily comprehending their contribution to the overall functioning of the actor-world. This form of translation relates to another form, namely Problematization, which involves the dismemberment of a larger problem into small manageable bits, but at the same time give the impression of being critical to the ultimate (re)solution of the larger 'problem'. Displacement is a set of roles and activities that keep members "busy," and which tend to breed new activities that distance the actor from the implications of the 'matter of concern'. Displacement is similar to the idea of institutionalization commonly found in the organizational ethnography literature(Melkamu Bezabih, Delelegn Abera, Aberra Adie, 2020). By engaging different actors, partnerships have the ambition to leverage divergent expertise and specialized roles that can complement each other and address the constraints faced by smallholders (Melkamu Bezabih, Delelegn Abera, Aberra Adie, 2020). This means there is need for network building to improve the economic returns of smallholder farmers. The theory states the importance of an integrated network of NGOs, local organizations, and traditional governance structures in improving the performance of smallholder farmers. This theory states that actors in value chains have heterogeneous interests, which may compromise the interests of smallholder farmers if they lack voice and bargaining power. Actors continuously negotiated their roles to be competitively positioned. The model states the need for the convergence of interests of stakeholders such as NGOs, government, village-based organizations, and government in competitive value chain development. The convergence helps in identifying areas of resource deficiency and collaboration to attain 'win' 'win' position. Smallholder farmers can negotiate with banks, insurance companies, and agri-businesses. However, business-oriented organizations have formalized rules, whereas smallholder farmers rely more on interpersonal relationships. Arrangements between smallholder farmers and these institutions often compromise the interests of smallholder farmers. This often calls for a reexamination of such arrangements. This is because farmers often lack a voice in bargaining along the value chain. Apart from this voice, farmers are exposed to risks, lack of ownership, and compromised returns. Non-human actors in value chains should be considered in value chain development. The theory states that apart from objects in value chains, there are subjects. This theory states that there are sharp divides between subjects and objects, humans and nonhumans, words and worlds, culture, and nature. The power of smallholder farmers is also influenced by socio-material settings, oral and written discourses, organizational frameworks, and cultural institutions. This model highlights the importance of configuring, enlarging, and nurturing spaces in which small farmers and marginalized people are empowered to adjust and adapt, resist, and reject modern and non-modern technologies, in order to practice the kinds of agriculture they consider sustainable, appropriate, and valuable.

Sustainable Livelihood Approach

The Sustainable Livelihoods Framework serves as a theoretical framework and analytical structure for exploring the agricultural programs observed here and their impact on the livelihood options of participating smallholder farmers (Chambers & Conway, 1992). In the last three decades, the multidimensional assessment of livelihoods has been an area of interest for researchers across disciplines (Chambers & Conway, 1992). A multidimensional assessment of rural livelihoods presents one with a more holistic representation of the people in a particular region-factors such as health, education, income, food security, resource distribution, and overall well-being. All these help policymakers link the realities of a particular region with national policies. Before the multidimensional approach, livelihood studies were confined to economic factors, such as the income of the individual or the households, and the per capita income or expenditure of a region or country (Management & Landscapes, 2020). This traditional approach to livelihood studies lacks the social and environmental dimensions of human activities. The multidimensional livelihood measurement approach is highly appropriate, particularly for understanding the complex nature of livelihoods in developing countries. Moreover, from 1990

onwards, the sustainable livelihood approach (SLA) has become very relevant because of the five capitals (human, social, financial, physical, and natural) along with the capability approach in the context of rural livelihood analysis among policymakers and practitioners. (Liu et al., 2019)

Rural smallholder farmers can attain a competitive advantage in their farming activities if they have both material and social assets. Assets include physical, natural, financial, social, and human capital. Any developmental efforts towards improving the well-being of rural smallholder farmers should consider the availability of these assets. Activities have been referred to as techniques in which capabilities and assets are collectively utilized to achieve economic returns. These activities should be socially and environmentally responsible. To recover from shocks and stress, smallholder farmers must have a strong resource base. Smallholder farmers should be able to handle and exploit livelihood opportunities. This includes gaining access to information, exercising foresight, innovating, collaborating with others, and exploring new conditions and resources.

Stakeholder Theory

In a company, a stakeholder is a member of "groups without whose support the organization would cease to exist" (Gebre et al., 2020). The definition of corporate responsibilities based on a classification of stakeholders to take into account has been criticized for creating a false dichotomy between the "shareholder model" and the "stakeholders model" stakeholder model or a false analogy between the obligations owed to shareholders and other interested parties. Any action performed by an organization or group may influence the private sector with whom they are associated. Parents, children, clients, owners, workers, associates, partners, contractors, and suppliers are examples of connected or closely connected individuals. Primary stakeholders, secondary stakeholders, and excluded stakeholders are three broad categories of stakeholders. (Krishnan et al., 2020).

Primary stakeholders are often internal stakeholders such as stockholders, customers, suppliers, creditors, and workers, who engage in economic interactions with the firm. Secondary stakeholders are often external stakeholders who, although not engaging in direct economic transactions with the firm, are influenced by or can influence its activities (such as the general public, communities, activist organizations, and the media(Kos & Kloppenburg, 2019). initially, excluded stakeholders, including children and the uninterested public, because they had no economic influence on the firm). Now that the term is anthropocentric, some groups, such as the general public, may be acknowledged as stakeholders, whereas others are excluded. According to this viewpoint, plants, animals, and even geology have no voice as stakeholders, but only a utilitarian value in connection with human groups and individuals (Ndlovu et al., 2021).

Figure 1 presents how the adopted theories are intertwined.

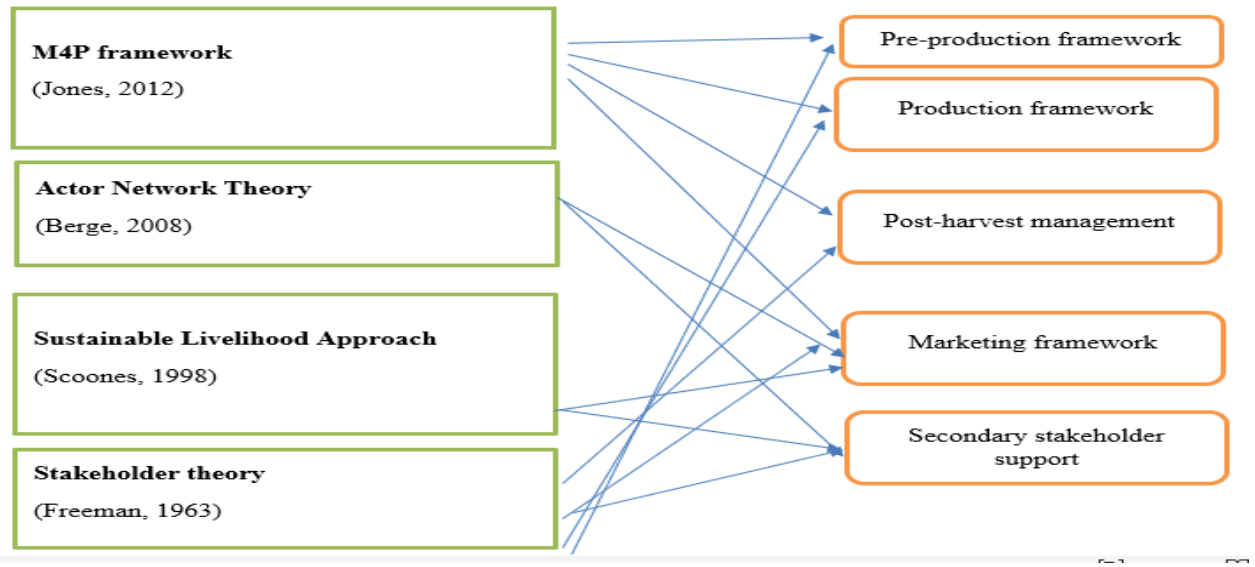

Figure 1 Adopted Theories Overview

From the analysis of M4P Theory, Actor Network Theory, Sustainable Livelihood Approach and the Stakeholder theory, it can be noted that these theories contributed to the key constructs and themes of the paper. The M4P framework is premised on benefits and value addition, Market Development and Market Penetration and Competitive Advantage, which are linked to the pre-production, production, post-harvest management, and marketing frameworks. Actor network theory is premised on network building, institutional behavior, stakeholder support, and non-human objects and technologies. This is linked to the marketing framework and secondary-stakeholder support. The Sustainable Livelihood Approach examines the Material Assets and Social Assets, Activities and Capabilities linked to marketing frameworks and secondary stakeholder support. Furthermore, stakeholder theory emphasizes the need for stakeholder support to attain profitable returns for farmers. There is a gap in how these theories contribute to improved economic returns for smallholders in the context of banana-farming rural communities.

Empirical Literature Review

A study conducted in East Africa by Gebre et al., (2020) on innovating to compete smallholder farmers' agency and markets in East Africa found that there has been an increased focus on small-scale farmers to meet the requirements of buyers such as processors, exporters, and supermarkets. However, the study found that only 20% of small-scale farmers were organized in value chains. Gebre et al., (2020) found that 75% of agricultural production in East Africa is produced by small-scale farmers. Despite this enormous contribution, the contribution of smallholder farming activities to the overall economic growth remains meager. The service sector is driving growth in East African countries including Uganda and Kenya(Gebre et al., 2020).

Efforts have been made to organize farmers into cooperatives in Kenya to improve their efficiency and effectiveness. Agricultural reforms in the early 1990s were meant to eliminate the inefficiencies of state-led agricultural and marketing systems(Kirimi et al., 2021). This has mainly been replaced by producer-driven cooperative systems. In the early years, cooperative systems performed competitively; however, over the course of time, they were affected by political interference. One successful case was the Kilimanjaro Native Cooperative. After the Arusha Declaration in 1967, cooperatives were viewed as vehicles for further socialist policies. This development has affected the performance of these cooperatives(Kirimi et al., 2021). The same effects were observed in countries such as Uganda. Cooperatives continue to be affected by mismanagement and political interference. Within the context of East African countries, cooperatives are far from models of sustainable value chains. Despite the new wave of success under the Cooperative Societies Act in Kenya, very few small-scale farmers belong to these institutions. The Act is premised on independence, member control, and democracy in governance. However, major policies are formulated mainly in the context of large formal farmers. Their existence and sustainability are often undermined. This means that mainstream policies are blind to the majority of farmers, and (Kirimi et al., 2021). Kirimi et al. (2021) found that efforts to formalize the operations of small-scale farmers have remained fruitless. Their study found that some farmers have been doing informal exports of agricultural commodities to neighboring countries. Formalizing exports of small-scale farmers has been failing because of many requirements and standardization procedures. Smallholder farmers opted to participate in established markets informally (Kirimi et al., 2021).

A study by Ssennoga et al., (2019) the Bukonzo Joint Cooperative Society and Nyakatonzi Cooperative Union in Uganda provided insight into market participation based on informality and social networks. These banana farmers were benefiting from decentralized government policies, better roads, communication network and improved technologies (Ssennoga et al., 2019). Despite benefiting from informality, banana producers in Kabarole in Uganda are disadvantaged in bargaining for higher prices mainly due to perishability of bananas, lack of access to ideal storage facilities and lack of capacity to process the product. In addition, farmers continue to lack price and market information, which makes them at the messy of intermediaries. Due to these challenges, smallholder farmers strive to enter larger and better-paying urban markets. (Ssennoga et al., 2019)

Muzira et al., (2019) found that, to guard against market access limitations, smallholder farmers consulted relatives in cities to obtain correct market and price information, share information at the village level, establish collection centers, and identify trusted individuals within their community to transact on behalf of community members. Despite these efforts, limited economic benefits have accrued(Muzira et al., 2019). In

addition, these market governance mechanisms are underpinned by social networks and are not based on written rules and policies that often do not endure(Muzira et al., 2019). Cooperatives have often proved to be good in boosting smallholder farmers' market access. The fact that most farmers shun to be part of these arrangements explains the shortcomings of these challenges. This shows the need to rethink sustainable models that benefit farmers, and ultimately the economy. (Muzira et al., 2019).

A study Bunyasiri & Chatanavin, (2021) in South Africa focused on the struggles of smallholder farmers using modern agricultural value chains in South Africa. Their study found that smallholder farmers' value chain participation was affected by limited access to loans, limited access to insurance, limited access to profitable markets, and limited capacity to conduct milling and agro-processing. (Bunyasiri & Chatanavin, 2021).

A study by Sinha et al., (2020) established the factors influencing the successful inclusion of smallholder farmers in modern value chains in Uganda. This study mainly focused on pig, banana, and fish value chains. The study found that sustainable ad inclusive value chains are based on smallholder farmers with defined market outlets(Sinha et al., 2020). The study found that smallholder farmers delivered their commodities on an ad hoc basis with limited establishment of ready markets. Since the banana was a staple food in Uganda, there were many traders for the product due to high demand. Banana buyers include local traders, bicycle traders, local consumers, local markets, and urban traders. Different channels in most instances have different contributions to the profitability of smallholder farmers; (Sinha et al., 2020). buyers usually determine prices, which are often very low. The production of bananas is affected by diseases and pests, including bacterial wilt. However, the study found that most farmers had business relationships with buyers, which formed an inclusive value chain(Sinha et al., 2020). Open competition is also observed. It was observed that farmers who were more educated, had more arable land, and had access to phones and the Internet had better profits. In addition, farmers who were investing in soil fertility had a better yield, and (Sinha et al., 2020). there are growing efforts towards the value addition of bananas. The government of Uganda established the Presidential Initiative Banana Industrial Development, which aimed to set up state-of-the-art banana processing enterprises in Uganda(Sinha et al., 2020). These initiatives were intended to exploit opportunities in the international market. The biggest challenges in value addition efforts as well as the exploitation of international markets were the high operating costs, high volume requirements, and specific logistical capabilities. Bananas are highly perishable; hence, there is a need for innovations in processing into long-lasting products, and(Sinha et al., 2020) when farmers sell individually, they find themselves in the very long chain of agents. This means they will have many different middlemen between the farmer and the retailer, which implies that farmers get low prices for the product, and (Sinha et al., 2020). some farmers were selling in groups, thereby being able to supply large retail outlets. The most common challenges in accessing profitable markets are poor road infrastructure, declining soil fertility, increasing land pressure, fluctuating seasonal prices, post-harvest losses, pests, and diseases. Organized value chains were seen to improve farmers' profitability (Sinha et al., 2020)

A study by Mjonono, (2020) on agricultural value chain financing and development found that the agricultural value chain is becoming increasingly complex, mainly due to market changes, climate change, technological advancements, and government policies. Mjonono, (2020) found that financing remains a critical factor in the value chain. Furthermore, the study found that value chain actors have unique financial needs that should be addressed if sustainable value chain initiatives are to be achieved. The study concluded that there was a need for unique models and financing by the government, development finance institutions, micro finance institutions, and international development partners. Mjonono, (2020) found that financing for value chain development can occur through value chain players and outsiders. External actors, including banks and microfinance institutions, are critical to sustainable value chain financing. This implies that sustainable agriculture funding is aimed at ending sustainable development goal numbers that seek to end hunger, achieve food security, improve nutrition, and promote sustainable agriculture (Mjonono, 2020).

One study Doherty & Kittipanya-Ngam, (2021) found the existence of intermediaries in the development of sustainable smallholder farming. Examples cited include efforts by TechnoServe in Malawi and Tanzania, which supported and enhanced smallholder farmers' income through processing business, supply business, and out-grower models. TechnoServe is a non-governmental organization that is making efforts towards financing farmers and linking smallholder farmers to markets(Eriyatno et al., 2021). Another example noted was BRAC,

which was based in Bangladesh and aimed at developing sustainable agriculture for farmers across the globe. The organization was mainly focused on training farmers, developing technical service providers, enabling the availability of inputs, providing loan schemes, and developing linkages between farmers and markets. (Doherty & Kittipanya-Ngam, 2021)

A study by Eriyatno et al., (2021) on banana value chains in Central Africa found weak linkages within banana value chains. The major reason for this is poor linkages and integration among the value chain actors. Value chains had little or minimal involvement with regional and international high-value markets. Agro-processing efforts are based on rudimentary techniques that often compromise the quality output. Most of the processed outputs were for local consumption in local markets. The integration of value chain actors failed to address the exorbitant transport, handling, and storage costs. Alho et al., (2021) found that efficiency and effectiveness in collective marketing, processing techniques, and penetration into high-value markets were the only solutions for Central Africa's banana smallholder farmers. Alho et al., (2021) noted that supply chains with new networks of integration and more heterogeneous structures have arisen, with small suppliers from developed countries operating in both low value and, in some cases, higher-value specialized niche operations through new arrangements focused on ethical trade standards.

Sharma et al., (2021) found that the role in agricultural trade financing is crucial in African economies. Most African governments offer free inputs to smallholder farmers. In addition, some governments have created cheaper forms of credit for farmers. In some instances, governments have created local and foreign markets for production. This led to the establishment of marketing boards. During the 1990s, most governments in Africa and other developing countries implemented market reforms to increase market access for local producers, while attracting foreign direct investments (Sharma et al., 2021). Gebre et al., (2020)discovered that only a small number of large companies in certain industries were able to respond, and most small producers were excluded.

Rahman et al., (2020) noted that despite globalization moving from fragmented economies to a unit trading bloc, weaker market players, such as small farmers in Africa, have been pushed out. Despite the increased market opportunities emanating from globalization, this development has become a threat to small farmers in Africa. Agricultural exports from small-scale farmers have not matched the encouraging world economic growth records of the past decades. Small-scale farmers do not benefit from World Trade Organizations(Ncube, 2020). Additionally, the global market is becoming too demanding for smallholder farmers to match. The global market is demanding high-quality products, convenient, environmentally safe products, and traceability, which can only be met through value(Shonhe & Scoones, 2022). Viceisza et al., (2020) After the ineffective promotion of small producers by market reforms, the focus turned to external linkages in value chains. However, these efforts were hampered by governance constraints and a lack of clarification regarding the positions of intermediaries. Viceisza et al., (2020) noted that participating in contract farming with exporters or overseas buyers is a significant route for rural farm households in developed countries to benefit from agri-food exports and increased value in the export sectors. However, whether smallholder farmers benefit from trading is determined by the degree to which they are involved in contract-farming agreements and the effect that participating in contract-farming has on their income and well-being(Krishnan et al., 2020; Viceisza et al., 2020).

The heart of any value chain model proposal is through analysis of the current value chain, the existing systemic problems, and the proposed interventions that are necessary. Evidence from the literature indicates a weak analysis of the field under investigation. The models used in Africa show that despite their perennial banana farming agricultural activities, smallholder banana farmers remain impoverished. Smallholder farmers continue to be marginalized along the value chain, with limited opportunities to increase their income margins from pre-production to marketing. This implies that existing value chains are the source of the problem at hand, which is global in nature.

Conceptual Model: Integrated Value Chain Model for Profitable Banana Rural Farming

This study identified a conceptual model for an integrated value chain for lucrative banana farming in rural areas.

Smallholder Banana Farming Pre-Production Framework and Economic Empowerment

There are crucial preproduction frameworks in the value chains of smallholder agricultural operations(Ssennoga et al., 2019). There is a requirement for labor availability for land preparation, the usage of and access to high-quality planting material, and societal support. Small-scale farmers demand social assistance, and (Gebre et al., 2020b). gender, partnerships, and networks are critical factors in the pre-production framework. (Sidawi et al., 2021). Past studies that include Gebre et al. (2020) noted that access to labor in land preparation affects smallholder farmers ability to have profitable output.

Smallholder Banana Farming Production Framework and Economic Empowerment

At the production stage, critical factors affect banana production. The availability of cost-competitive labor for plantation management ((Sidawi et al., 2021)soil fertility),(Ndlovu et al., 2021) water/moisture management ((Muzira et al., 2019)), adapting to climate variability, good crop management practices, access to fertilizers, and the management of pests and diseases ((Kirimi et al., 2021)) are critical factors in profitable smallholder farming returns ((Gebre et al., 2020b)). Production management practices employed for pest and disease control include the elimination of infected plants, use of disease-free planting materials, disinfection of cutting instruments and tools, early removal of male flower buds, and strict quarantine(Liu et al., 2019). Uncompetitive management of the production stage compromises farmers' ability to produce quality in markets with profitable returns (Muzira et al., 2019).

Smallholder Banana Farming Post-Harvest Management Framework and Economic Empowerment

A post-harvest management framework influences the value chains of small-scale agricultural operations ((Voora et al., 2020). Adequate infrastructure for pre-packaging (Gebre et al., 2022b), proper mechanisms for storage, and availability of transport to minimize post-harvest losses ((Alho et al., 2021) value additions and avoiding physical, mechanical, and physiological damages) are critical factors in profitable farming returns that help farmers escape poverty (Wang et al., 2021). Post-harvest losses are a significant problem for the value chains of frying bananas and plantains (Ndlovu et al., 2021). Post-harvest losses of fresh produce are often caused by mechanical, physiological, pathological, or environmental factors (Damas, 2020). Hence, the maximization of economic returns should consider a competitive post-harvest management framework (Abdul-Rahaman & Abdulai, 2020).

Smallholder Banana Farming Marketing Framework and Economic Empowerment

The efforts of chain leaders to connect producers to both adjacent and distant markets have enabled producers to realize greater profits ((Bunyasiri & Chatanavin, 2021). In addition, they are guaranteed a market for goods. In order to address post-harvest restrictions associated with processing and marketing, value chain operators and public sector institutions must increase their cooperative investments. (Sinha et al., 2020). Banana is a perishable product; thus, its processing and marketing rely on infrastructure that facilitates transportation, storage, and marketing. (Ssennoga et al., 2019)Improving the road network and warehouses is essential for decreasing post-harvest losses, cutting transaction costs, and maximizing banana commercialization. (Gebre et al., 2020b).

Stakeholder Support in Smallholder Banana Farming and Economic Empowerment

Tax rebates, low-cost lending, and other institutional incentives may be used to encourage private sector participation in agro-processing and infrastructure co-funding (Bunyasiri & Chatanavin, 2021). It is possible to improve ties between suppliers of technical, business, and financial services by bringing them together with producers, processors, and dealers at business roundtables and promoting the provision of complementary services (Ssennoga et al., 2019). There are key stakeholders in the value chain, including smallholder farmers, buyers, processors, and traders, along with service providers from outside the chain (secondary stakeholders) such as government agencies, non-governmental organizations (NGOs), and private businesses providing

technical, business, and financial services (Gebremedhn, et al. 2019). Partner support in banana value chains provides technical and financial support for a more profitable yield (Ssennoga et al., 2019).

CONCLUSIONS AND RECOMMENDATIONS

The core of every suggested value chain model is an examination of the present value chain, existing systemic challenges, and the required interventions. Literature-based evidence indicates a poor analysis of the investigated area(Gebre et al., 2020b). Existing value chain models and the literature demonstrate that VC systems are nonexistent, particularly in the context of African nations such as Zimbabwe. Prior research focused mostly on the relationship between agribusiness and small-scale farmers (Ao et al., 2019). In all prior research, it has been observed that the function of value chain participants in fostering banana VCs has not been well characterized. This research identified 25 pillars of an integrated value chain model for profitable banana rural farming based on the evaluated literature and ideas. Figure 1.1 presents the 25 Pillar Integrated Value Chain Model for profitable banana rural farming.

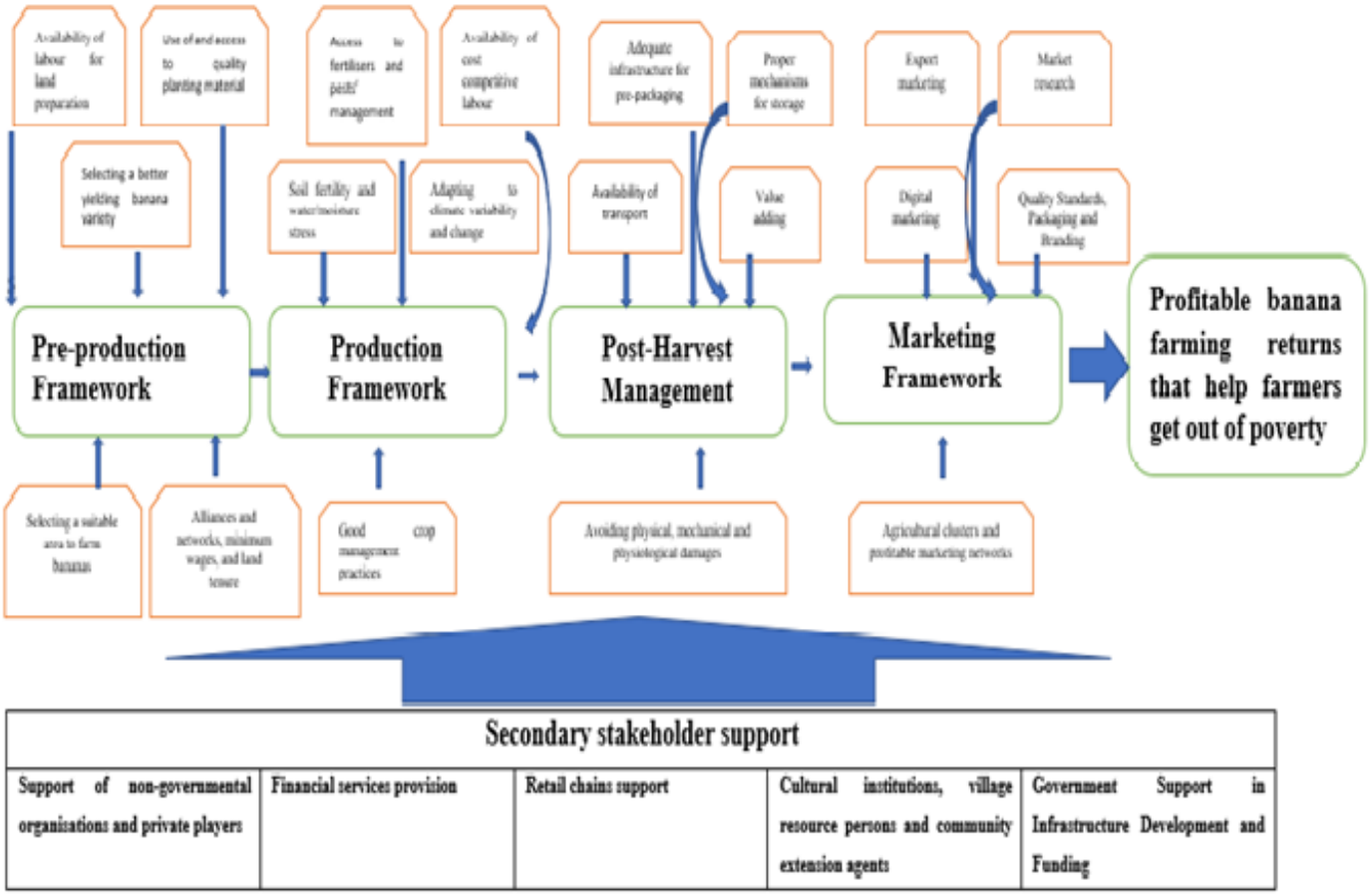

Figure 1 The 25 Pillar Integrated Value Chain Model for Profitable Banana Rural Farming

Source: (Researchers, 2025)

In addition, the examination of the M4P Theory, the Actor Network Theory, and the Sustainable Livelihood Approach revealed that these theories contributed to these fundamental concepts. The M4P framework is based on beneficiation and value addition, market development and market penetration, and competitive advantage, which are connected to the pre-production framework, production framework, post-harvest management framework, and marketing framework; the (Messages, 2020). actor network theory is predicated on network construction, institutional behavior, and stakeholder support, as well as non-human objects and technology. (Bridging the Gap Between Smallholder Farmers and Market, 2019). The Sustainable Livelihood Approach examines Material and Social Assets, Activities, and Capabilities that are related to marketing frameworks and secondary stakeholder support.(Sharma et al., 2021). Stakeholder theory highlights the necessity for stakeholder support in order for farmers to achieve economic returns. Empirical investigation is required to

establish whether implementation of the aforementioned value chain elements results in economically empowering banana farmers in developing countries such as Zimbabwe.

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