Innovations

Market Linkage Strategy for Improving the Performance of Ethiopian Smallholder Farmers' Wheat Production: A Qualitative Study on Bale Zone Smallholder Farmers, Oromia Region

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Abstract: *Agriculture is the backbone of Ethiopia's economy, with smallholder farmers playing a key role in wheat production. While smallholder farmers' market participation enhances wheat productivity, inefficient market systems in the Bale Zone of Ethiopia constrain farmers' opportunities, exacerbating socioeconomic vulnerabilities and results in poor market performance. This study explores market linkage strategies to improve smallholder wheat farmers' performance, while critically examining barriers to effective market participation. Using a qualitative design, semi-structured interviews were conducted with 18 purposively selected farmers across five multipurpose cooperative societies. Data were analysed through a combination of thematically and content analysis using NVivo 14 version. The finding shows that three core factors influence market linkage practices: socioeconomic factors, weak stakeholder relationships, and external factors such as climate variability and crop diseases. To address these challenges, the study identified four strategic interventions: strengthening stakeholder networks, promoting supportive policy frameworks, adopting innovative marketing practices, and institutionalising cooperatives. By integrates stakeholder networking, social capital, and collective action concepts and highlights the central role of cooperatives as bridging institutions that connect farmers to markets. This research contributes theoretically an adapted understanding of market linkage strategies and practically provides a strategic roadmap for policy development of effective market linkage aimed at strengthening food security, market access, and sustainable livelihood for Ethiopian smallholder farmers.*

Keywords: *Market linkage strategy, Networking, Social ties, Collective action, Cooperatives society, and Performance*

1. Introduction

In this dynamic world, market linkage plays a significant role in shaping the livelihoods of smallholder farmers by linking them to markets (Kumar et al., 2023). Developing an economy reliant on a well-organised market is crucial for achieving long-term goals such as food safety and poverty reduction. Farmer participation in the market is instrumental in driving economic growth and fostering increased market-oriented production. AsJebesa (2019) notes, the establishment of an improved, well-functioning market system for agricultural inputs and outputs is vital for overall economic prosperity. An efficient agricultural market system drives economic growth through the development of productivity, optimises resource allocation, and inspires marketable production (Rai & Panigrahy, 2016).

Globally, agricultural trade has consistently grown, with developing countries playing a major role in importing and exporting food products (Glauber, 2020). In Ethiopia, agriculture remains the backbone of the economy, contributing 32.5%to the national Gross Domestic Product (GDP), and with grain production alone accounting for 21% (Jebesa, 2019; NBE, 2021). The sector is dominated by smallholder farmers; primarily, they are cultivating cereals such as wheat, maize, and teff for subsistence rather than commercialisation (Belachewet al., 2022). Among areas in Ethiopia, Bale Zone Wheat production is vital and widely known as the "wheat belt" of the country (Sultan, 2016). The region has favourable agro-ecological conditions that hold vast production opportunities for market demands (Biggeriet al., 2018; Niguset al., 2022).

Despite this potential, smallholder wheat farmers in Ethiopia encounter numerous challenges, including limited access to fertilisers, improved seeds, and modern farming technologies, as well asreliance on rain-fed agriculture and small landholdings (Minot et al., 2015; Mengistu, 2021; Biggeriet al., 2018). Inadequate farmer organisations, poor infrastructure, and expensive agricultural inputs further weaken both agricultural productivity and market access, slow down farmers' competitiveness, lower their bargaining power, and impede their integration into formal market channels (Hailuet al., 2016; Biggeriet al., 2018; Jebesa, 2019). Socio-economic factors such as farming experience, age, and access to credit have a significant influence on the extent of farmers' market participation, with the majority of the smallholder farmers consuming a larger portion of their wheat output than the market offers (Asrat & Anteneh, 2020; Shikur, 2022; Atinafuet al., 2022).

Structurally, the agricultural market in Ethiopia shows the features of nearly perfect competition due to numerous small producers and minimal product differentiation. Yet the process of trade from farm to market has a number of inefficiencies in the form of asymmetric information, price depression, and decreased wheat quality

from bulk mixing (Sykuta, 2013; Osborne, 2005). Policy interventions have at times exacerbated these issues, as seen in restrictions on wheat exports and inconsistent market regulations (Habteet al., 2020). More recently, global disruptions such as the Russia–Ukraine conflict have pushed Ethiopia to adopt an import substitution strategy centred on cluster farming and irrigation (Mohammed, 2022). Nevertheless, gaps in market participation remain, underscoring the need for coordinated action among stakeholders.

Strengthening market linkages through stakeholder networks to address these challenges is a significant system. Such networks provide smallholder farmers with access to agricultural inputs, financial services, and market information, enabling them to make informed decisions and integrate into value chains (Mishra et al., 2024). Evidence shows thatrobust distribution networks, efficient marketing arrangements, and fair pricing mechanisms are central to smallholder commercialisation and productivity (Singh et al., 2019).Alongside formal stakeholder networking, social capital has long played a significant role in Ethiopian agriculture. Traditional social institutions such as Idir, Debo, and Iqub have historically facilitated resource sharing, information, and cooperation, while the establishment of cooperatives since the 1950s marked a shift toward organised marketing (Abebaw & Haile, 2013). Later developments, including the Agricultural Marketing Corporation (AMC) and the Ethiopian Commodity Exchange (ECX), sought to stabilise prices and strengthen farmer–buyer relations, though persistent weak linkages have continued to undermine farmer access and production incentives (World Bank, 2018; Ulisido & Abebe, 2020; Biggeriet al., 2018).

The absence of effective market linkages not only impacts farmer livelihoods but also impedes agro industry development and the country's economic growth (FAO, 2017). While existing empirical studies underscored the necessity of transparent and efficient markets, collective marketing, and stronger coordination among stakeholders (Gebreselassieet al., 2017; Jebesa, 2019), few have integrated the dual roles of social capital and stakeholder networking as complementary strategies for market linkage development. Although emerging evidence highlights the importance of networks in facilitating market participation (Biggeri et al., 2018), there is still a major gap in applying these strategies. The context-specific and actionable strategies tailored to smallholder wheat farmers, particularly in the Bale Zone, remain limited (Ulisido & Abebe, 2020; Shikur, 2022). As a result, efforts to enhance productivity, reduce rural poverty, and promote sustainable access to markets remain constrained.

Against this backdrop, strengthening market linkage for smallholder wheat farmers in the Bale Zone is critical for Ethiopia’s food security and economic growth. Building

on prior research in farmers' market participation (Ochienget al., 2018; Bagchiet al., 2022), this study explores market linkage strategies for improving Ethiopian smallholder wheat farmers' performance through the lens of social capital, stakeholder networks, and cooperative structure. By focusing on how these mechanisms can be strategically leveraged to develop sustainable and actionable market linkage solutions in improving market performance and agricultural sustainability. Specifically, the study aims to:

- Identify factors affecting smallholder farmers' market linkage practices.
- Examine the effect of market linkage strategieson smallholder wheat farmers' market performance.
- Propose market linkage strategies that improve the performance of smallholder farmers' sustainable wheat production.

To achieve these objectives, the study addresses the following research questions:

- What factors affect the market linkage practices of smallholder farmers?
- What is the effect of market linkage strategies on the market performance of smallholder wheat farmers?
- Which specific strategies of market linkage can enhance the performance and sustainability of wheat production for smallholder farmers?

2. Theoretical Foundation of the Study

There is little consensus in the literature on what founds an effective market linkage strategy for smallholder farmers. While some frameworks have been proposed to offer efficiency gains through integration into value chains, others have failed to offer evidence for the multidimensional challenges smallholders face in contexts such as the wheat farming sector in Ethiopia (Hailegiorgis, 2017; Kangileet al., 2020). This study therefore adopts a holistic market linkage perspective that integrates economic, social, and environmental dimensions, recognising that effective market linkages must not only enhance production efficiency but also ensure sustainable market participation and long-term agricultural development (Begashawet al., 2019). The adopted framework provides a basis for analysing the multi-layered challenges to market access and for refiningor adopting existing theories of market linkage through six propositions centred on community social capital, stakeholder networks, and cooperative structures.

2.1. Factors Affecting Market Linkage

Understanding the determinants of market linkage practices is essential for designing strategies that enhances all holder farmers' participation in agricultural markets (Haile et al., 2022). Market linkages operate within agricultural value

chains, where outcomes in one segment influence others directly or indirectly (Pingaliet al., 2019). In Ethiopia, where smallholder agriculture remains a basis of rural economies, strengthening market linkages is critical for integrating farmers into high-value chains and addressing persistent food insecurity (Legesseet al., 2023).

Empirical studies identify that linkages are determined by a range of farmers' socioeconomic, institutional and external factors (Habteet al., 2020). Socioeconomic factors such as age, education, household, and landholding size significantly influence farmers' market participation decisions; for instance, older farmers benefited from greater experience, while educated farmers better process and utilise market information (Geremewe, 2019; Zewdie, 2022; Kenaet al., 2022). Institutional barriers, including limited extension services, market information gaps, and poor infrastructure, further constrain farmers' ability to benefit from market systems (Ojulu, 2021; Abate et al., 2016).These institutional supports and enabling policy environments are critical for fostering equitable market participation (Gemechu, 2017; Biggeriet al., 2018). Intermediaries, though sometimes necessary for linking wheat to markets, often exploit farmers through information asymmetries, undermining bargaining power (Gebreselassiéet al., 2017; Shikur, 2021). In addition, external factors such as macroeconomic instability and climate variability further complicate market linkage by increasing costs and volatility, discouraging market engagement (Yigezu, 2021; Alemu & Mengistu, 2019). Collectively, these interrelated factors highlight the need for integrated, stakeholder-driven interventions to strengthen market linkages and ensure equitable participation (Ebata &Huttel, 2015). As such, the study proposes:

Proposition 1: The factors influencing market linkage practices significantly influence smallholder wheat farmers' engagement in market linkage practices.

2.2. Farmers' Community Social Capital

Farmers' community social capital refers to the networks, resources, and norms of reciprocity that enable collaboration and collective action (Biresaw, 2019). Tsai and Ghoshal (1998) conceptualise social capital across three dimensions: cognitive social capital refers to shared beliefs, values, norms, and goals that foster cooperation (Yaméogoet al., 2018); relational social capital, focuses on the trust and commitment developed through interpersonal ties that lower transaction costs and encourages reciprocity (Xuet al., 2018; Liang et al., 2015); and structural social capital reflected in structural network that facilitate communication, information sharing, and resource mobilisation. In Ethiopia, traditional institutions such as Debo, Iddir, and Equb function as a vital rolein cultivating networks, enabling farmers to

share information, adopt best practices, and coordinate collective bargaining efforts (Biresaw, 2019; Zhang & Wu, 2023).

Empirical evidence shows that higher levels of social capital are associated with greater participation in cooperatives, improved market access, and better performance among smallholder wheat farmers (Mojo et al., 2015; Jebesa, 2019; Silvertet al., 2022). Beyond access to resources like production inputs, training, and agricultural technologies, social capital fosters advanced adoption and sustainable livelihood strategies. Taken together, the evidence suggests that farmers' community social capital is integral to enhancing cooperative effectiveness and improving market participation, leading to two key propositions supporting the development of effective market linkage strategies:

Proposition 2: Social capital within smallholder wheat farming communities significantly enhances the effectiveness of cooperative societies in facilitating market engagement.

Proposition 3: Farmers' community social capital plays an essential role in shaping the smallholder wheat farmers' market performance.

2.3. Farmers and Stakeholders Networking

Farmers-stakeholder networking strengthens cooperatives and enhancing the performance of smallholder farmers by expanding access to information, resources, and services crucial for market integration (Novkovic, 2013). An empirical study in Ethiopia reveals that cooperatives with strong stakeholder networks typically secure better prices, inputs, and services, though such benefits are unevenly distributed due to power asymmetries within value chains(Fischer & Qaim, 2012; Mohammed & Lee, 2015). While infrastructure development and collective marketing groups reduce post-harvest losses (Gabre-Madhin, 2009), inequitable governance risks reinforcing dependency rather than empowering farmers.

Government agencies, NGOs, and development partners are critical in building systematic and equitable networks (Getahun, 2020; Deng et al., 2021).Government support through training, extension services, and subsidies has been shown to enhance smallholder productivity (Hidayatiet al., 2021), while NGOs serve as intermediaries by facilitating donor funding, coordinating capacity-building programs, and strengthening ties between farmers to research institutions and agribusinesses (Zewdie, 2022). Despite risks of exploitation, networks with traders and input suppliers are also essential because they provide access to technologies and value-added services like storage, packaging, and finance (Benitez-Altunaet al., 2024).Ultimately, their effectiveness depends on the extent they foster trust, inclusivity, and long-term collaboration rather than short-term transactional ties

(Francesconi & Heerink, 2011; Ofolsha, 2022). On this basis, the study advances two propositions:

Proposition 4: Stakeholders' networking with farmers significantly enhances the effectiveness of cooperative societies in facilitating market engagement.

Proposition 5: Stakeholders' networking with farmers plays a significant role in shaping the performance of smallholder wheat farmers.

2.4. Agricultural Cooperative Societies

Agricultural cooperative societies, as voluntary and democratically governed institutions, play a pivotal role in enhancing smallholder farmers' performance by facilitating access to markets, disseminating knowledge, and providing input services. They reduce transaction costs and improve farmers' bargaining power in markets, thereby raising productivity and income (Menezes, 2023; Minyattahet al., 2022).

In Ethiopia, cooperatives have been found to strengthen farmers' technical efficiency, bargaining power, and access to productive resources and extension services (Abebaw & Haile, 2013; Ma et al., 2018; Wossenet al., 2017).They also serve as platforms for training and capacity-building, equipping members with essential technical and marketing skills (Ndagiet al., 2023). However, studies reveal issues like low participation rates, limited awareness, and governance challenges that hinder cooperatives' effectiveness (Etefa, 2022). Therefore, strengthening the function of cooperative societies is essential to address inequities and ensure that the benefits of market linkages are more widely shared. Based on this review, the study proposes the following:

Proposition 6: The role played by cooperative societies significantly influences the performance of smallholder farmers.

Therefore this conceptual basis integrates economic social and institutional perspectives to address critical gaps in the literature where market linkage strategies are often studied in isolation. By situating cooperatives, stakeholder networks, and community social capital within a holistic framework, the study highlights how smallholder farmers can transition from subsistence to commercial production (Huoet al., 2022; Walkermanet al., 2015). This study not only refines theoretical understanding but also generates practical insights for policymakers, agribusinesses, and farmer organisations to design interventions that enhance sustainable smallholder participation in agricultural markets.

3. Methodology

1.1. Research Context

The research was undertaken within the Bale Zone of Ethiopia, which is an area of strategic importance for wheat production and highly representative of the challenges faced by smallholder farmers in the country. Ethiopia is the largest producer of wheat in Sub-Saharan Africa, where wheat cultivation primarily occurs on smallholder farms in the rain-fed areas of the southern and central highland parts (Niguset al., 2022). The Bale Zone is particularly relevant given its agro-ecological diversity, demographic variability, and the critical role it plays in national wheat supply. To capture the realities of these smallholder farmers, the research employed a cross-sectional design, which is widely used in agricultural and development research for assessing relationships among constructs at a single point in time (Saunderset al., 2019). Data were collected over four months from smallholder wheat farmers across multiple cooperatives, ensuring sufficient variability to reflect local conditions while providing a robust basis for examining market linkage strategies. This approach was chosen because it allows for efficient analysis of patterns and associations within resource-constrained contexts, where longitudinal data collection is often unfeasible, while still yielding insights applicable to policy and practice.

1.2. The Study Design and Setting

This study employed a qualitative, exploratory design to investigate market linkage strategies of Ethiopian smallholder wheat farmers. A qualitative approach was appropriate as it allows in-depth exploration of farmers' lived experiences and socio-economic determinants shaping their market decisions, and the perceived effects on market performance (Creswell & Poth, 2018). Given the limited research on market linkage strategies in Ethiopia, an exploratory design was particularly applied for uncovering context-specific opportunities and challenges of farmers' market access, while generating actionable insights for policy and practice directly relevant for enhancing practical market linkage interventions.

Aligned with an interpretivist approach, the study prioritised understanding social phenomena through participants' subjective perspectives. An inductive reasoning approach was adopted to enable patterns and themes to emerge directly from the data rather than imposing pre-existing theoretical assumptions (Bryman, 2016). The Straussian version of grounded theory (Corbin & Strauss, 2014) was applied to systematically examine the evolving dynamics of market linkages through iterative coding and constant comparison. This analytical strategy was particularly effective in enabling the deep exploration of how smallholder farmers adapt to evolving market conditions while simultaneously enabling the refinement of theoretical propositions. This integration of methodological rigour and contextual sensitivity

advances both theory and actionable strategies for enhancing smallholder wheat farmers' market participation.

1.3. Participants and Sampling

The study was conducted with smallholder farmers in Ethiopia's Bale Zone, a region purposively selected for its central role in wheat production and market participation. A multi-stage, criterion-based purposive sampling method was applied to ensure the collection of rich and relevant data aligned with research objectives. Given time and resource constraints, non-probability sampling was chosen, where individuals with particular experiences were chosen rather than statistical representativeness. Then, five multipurpose cooperatives (Elabid Ali, Dureti Tullu, Alage, Salka, and Sanbitu) were chosen purposively because of their engagement in wheat production, supply of agricultural inputs, and participation in the market. Finally, within these cooperatives, participants, including role model farmers, cooperative leaders, and committee members, were selected using a maximum variation approach to capture a broad spectrum of perspectives and ensure depth of insight into market linkage dynamics.

The sample size was selected based on the principle of theoretical saturation (Francis et al., 2010). While Creswell (1998) suggests 20–30 participants for grounded theory research, this study primarily aimed for 20 participants, selecting four smallholder farmers from each of the five multipurpose cooperatives. This study's theoretical saturation was attained after 15 interviews, and an additional three interviews were conducted, resulting in a final sample of 18 participants. This aligns with Hennink and Kaiser's (2022) recommendation that 9–17 interviews are sufficient to reach qualitative saturation when participants are information-rich and diverse. The purposive inclusion of participants across multiple cooperative roles ensured comprehensive coverage of market linkage experiences.

1.4. Data Collection Techniques

Data collection was carried out over a period of four months, from June to September 2024. Semi-structured interview data were used. This instrument enabled the generation of flexibility, depth, and insightful data on market linkage practices. The same fundamental interview questions were posed to all participants. This consistency is reflected in the data collected from all the participants. To ensure linguistic accuracy and accessibility, the interview guide was translated into Afaan Oromoo, the local language of the study area.

Before full-scale data collection, the instrument underwent rigorous pre-testing involving experts from the Bale Zone cooperative societies, a value chain expert from the Bale Zone Agricultural Office, and academic reviewers. Their feedback

pointed out that some questions, particularly those related to market linkage, were overly technical and inaccessible to smallholder farmers. Revision was therefore made to simplify technical terms, introduce locally meaningful phrasing, and incorporate probing elements to explore farmers' collaborations, social ties, and cooperative activities. For instance, ''stakeholder networking'' was rephrased as ''relationships with stakeholders and other farmers,'' ensuring cultural and linguistic resonance. Input from a linguistics expert further strengthened the translation, correcting errors and refining phrasing for accuracy and cultural relevance. This process enhanced the instrument's construct validity by ensuring that participants clearly understood the questions and could meaningfully engage with them.

A pilot test was then conducted with five purposively selected smallholder farmers (one from each of five multipurpose cooperatives)to enable the evaluation of the instrument and interview method. Interviews were conducted in local languages (Afaan Oromoo) and lasted around 80minutes;allow ample time to assess clarity, flow, and participants' comprehension. The pilot interviews generated important insights into market linkage strategies among smallholder farmers. Farmers identified themes such as local cooperatives, stakeholder networks, personal connections, and informal traders as primary means of accessing markets (Table 1). Notably, many farmers lacked familiarity with formal market linkage mechanisms, relying instead on informal systems to sell their produce. These emergent themes highlighted the importance of refining the instrument to capture both formal and informal practices. Based on the pilot, the final instrument had 31 main and 40 probing questions designed to comprehensively address the study objectives while remaining accessible to participants.

Table 1: Pilot test result of Identified codes

Initial code	Quotes	Extended and detailed codes
1. Supply of Agricultural Inputs	"Having relationships/networks with these stakeholders has helped me to obtain reliable supply of agricultural inputs at the right time, place, quality and quantity..."	This code encapsulates instances where respondents highlight the diverse range of agricultural inputs provided by suppliers, such as seeds, fertilizers, and other necessary resources. The network with suppliers facilitates a comprehensive support system for varied farming needs.
2. Age/Experience Impact	"I have a long age/experience in wheat farming and wheat marketing."	This code refers to the influence of a farmer's age and experience in wheat farming and marketing on the strategic use of this knowledge to establish and

		enhance relationships with stakeholders.
3. Horizontal Linkages with Cooperative Societies:	"Cluster farming (this activity plays an important role in producing and marketing of our product)."	Highlights the significance of horizontal collaborations, specifically through cluster farming and cooperative societies, as a strategic means to achieve cooperative growth and enhance overall productivity.
……	…….	……

Following the pilot test, for the main data collection, a formal letter of institutional endorsement from the Bale Zone Agricultural Office legitimised the research process, building trust and facilitating access to participants. A total of 18 face-to-face interviews were conducted, each lasting 80–90 minutes. Ten interviews were audio-recorded with consent and transcribed, while eight were documented through detailed field notes due to participants' preference. Field notes and reflective memos (Table 2) were systematically maintained to capture non-verbal cues and analytical insights, adding depth to subsequent coding and interpretation. The collection process was guided by theoretical sampling criteria, and the researchers simultaneously collected, coded, and analysed the data to develop emergent theories (Glaser & Strauss, 1967).

Table 2: Sample of the study memo

Participant 01 has faced a low level of capacity therefore it needs the support of those stakeholders to fill their shortage in production……..
Participant 01 smallholder farmers determine productivity in terms of quantity of producing more quintals than quality or efficiency…….
Participant 2 due to a shortage of income needs the relationship with other actors to get support.
These participants are not satisfied with the marketing facilities provided to them because it's not sufficient to serve the wheat production and market……
Participant 03: Finds relationship-building crucial for creating market access and opportunities…..
Participant 06: Dissatisfied with current marketing facilities and needs improved infrastructure for wheat production.
Participant 07: Benefits from engaging with local cooperatives for collective bargaining power and shared resources.
Participant 09: Has limited access to credit and needs financial support mechanisms like microfinance.
Participant 10: Benefits from training programs and needs continued education on

best agricultural practices.
Participant 08: Faces high input costs and requires subsidized inputs and financial assistance……

1.5. Analytical Approach

The collected interview data from 18 smallholder farmers in the Bale Zone, Ethiopia, were transcribed and translated from Afaan Oromoo to English using Brislin's (1970) back-translation method, with participant review to ensure accuracy and credibility. The study data analysis employed thematic and content analysis, guided by the constant comparative method of grounded theory (Glaser & Strauss, 1967), and supported by NVivo 14 for systematic coding and organisation. In addition, Excel analysis was used to present content analyses of coded data through bar charts.

The coding process involved open, axial, and selective coding. Through open coding, 290 initial nodes were generated, capturing diverse experiences of farmers' participation in market linkages. Axial coding condensed these into 33 categories, reflecting relationships among economic, social, and institutional factors. Selective coding then abstracted these into 12 higher-order themes (Table3) that informed a theoretical model of market linkage strategies. The model reached theoretical saturation by the 15th interview, indicating stability and completeness.

Analytical rigour was maintained through memos, charts, and tables, which facilitated reflexivity and consistency. Beyond the inductive process, six theoretically derived propositions were tested deductively, assessing their alignment with the data. This phase not only confirmed consistent patterns but also surfaced contradictory cases, thereby refining the explanatory adequacy and empirical relevance of the model (Gilgun, 2019). The integration of inductive coding outcomes with deductive testing ensured both the generation of grounded insights and the validation of theoretical propositions.

Table 3: The themes developed from a set of interview-coded data

No	Themes
1	The benefit of Stakeholders' Relationship
2	Factors Affecting Smallholder Market Linkage Practice
3	Functional Aspect of Stakeholders Networking
4	Effect of Market Linkage Strategies
5	Intervention Strategies of Cooperative Societies
6	Level of Factors Effect
7	Local Community Impact of Improved Farmers' Performance
8	Market Linkage Strategies

9	Measurement and Networking Approach
10	Sales Methods Utilised by Smallholder Farmers
11	Smallholder Farmer's Perception of Networking
12	Structural Aspects of Stakeholders Networking

1.6. Ensuring Rigour of the Study

The study rigorously addressed ethical and methodological standards to ensure credibility and trustworthiness. Informed consent was obtained from all participants after explanations were provided in their native language, Afaan Oromoo, thereby reducing risks of misunderstanding and promoting genuine voluntarism. Confidentiality was preserved through data anonymisation, with interview transcripts coded and securely stored. Transparency and honesty were maintained by keeping participants informed and planning to share findings through community forums, ensuring mutual benefits from the study outcomes.

Methodological rigour was secured through multiple strategies of validity and reliability. Instrument validity was established via literature review, expert consultation, and pilot testing, which enhanced construct clarity and contextual relevance. Ecological validity was considered by aligning questions with the study's theoretical framework and the lived realities of smallholder farmers in Bale Zone, Ethiopia, thereby enhancing contextual authenticity. Credibility was further reinforced through participants' checking, maximum variability of data sources, and thick description to enable transferability. Reliability was strengthened by a standardised interview protocol, consistency in questioning, and a maintained audit trail supported by academic reviewer oversight, ensuring methodological transparency and dependability.

To minimise researcher bias and enhance replicability, NVivo 14 was employed for systematic thematic coding, with iterative refinement of codes ensuring analytical precision. The integration of these strategies ensured that findings on market linkage strategies for Ethiopian smallholder farmers are both methodologically sound and contextually credible.

2. Results

4.1. The Respondents' Profiles

We examined 18 smallholder wheat farmers from the Bale Zone of Ethiopia, and analysed how their demographic and socio-economic characteristics influence wheat production and market participation. Key variables assessed include age, gender, education level, farming experience, farm size, production output, and income levels (Table 4).

Table 4: Respondent demographic and socio-economic factors

Profile of the Respondents	Category	Frequency	Percentage (%)
Age	30-40	7	38.89
	41-50	5	27.78
	51+	6	33.33
Gender	Male	16	88.89
	Female	2	11.11
Education Level	Un-schooling	6	33.33
	Grade 1–6	4	22.22
	Grade 7–8	4	22.22
	Grade 9–10	4	22.22
	Diploma	1	5.56
Farm Land Size	1 hectare	3	16.67
	2 hectares	9	50.00
	2.5 hectares	4	22.22
	3 hectares	4	22.22
Experience	< 10 years	4	22.22
	10–20 years	8	44.44
	21–30 years	4	22.22
	31+ years	4	22.22
Wheat Produced (2022)	< 100 quintals	6	33.33
	100–150 quintals	9	50.00
	> 150 quintals	3	16.67
Income Earned (2022)	< 200,000 Birr	2	11.11
	200,000–300,000 Birr	9	50.00
	> 300,000 Birr	7	38.89

Source: Nvivo 14 version and Excel qualitative analysis 2024.

To begin with the age distribution as displays in Table 4, the age distribution indicates a balanced mix of young, middle-aged, and older farmers, with the majority (38.89%) aged 30–40 years, followed by (33.33%) over 51 years and (27.78%) between 41–50 years, this indicating a combination of youthful energy and experienced farmers. However, this balanced age structure suggests that farmers need to be supported through training and resource access; the younger potential may remain underutilised, while older farmers may be less receptive to new practices.

In addition, gender distribution shows substantial male dominance (88.89%) and low female representation (11.11%), indicating a cultural barrier that could limit inclusive market participation. Addressing these gender disparities through increasing female involvement benefits this sector by leading to more robust and inclusive market systems. Similarly, educational levels present another critical barrier to effective market engagement. One-third (33.33%) of respondents lack formal education, while only 5.56% have a diploma. The limited educational result suggests barriers to accessing advanced training and adopting modern agricultural practices. To narrow this gap, it is important to implement targeted agricultural training programs that can develop the farmers' knowledge and skills that improve their market engagement.

In terms of farming experience, the result shows that44.44% have 10-20 years of experience, with 22.22% farming less than10 years, indicating deep experience provides a strong base of local knowledge and relatively small new young entrant into wheat farming signals potential challenges in generational continuity. This suggests that interventions should focus on integrating existing traditional knowledge with entirely new systems. Moreover, farm size remains a structural constraint, with 50% of farmers cultivating 2 hectares, reflecting a common plot size for smallholder farms in the region. A smaller proportion of farmers of 15% cultivates on 1 hectare. This variability and lesser land access highlight the need for market intervention strategies that address the different scales of farming operations.

The production levels also illustrate disparities in performance; 50% of farmers produce 100–150 quintals of wheat annually, while 33.33% produce less than 100 quintals. These differences indicate constraints in farm productivity and resource utilisation. The limited number of high-output farmers displays that there is considerable untapped potential for growing productivity across the board could widen market gaps if not addressed through inclusive interventions.

Finally, income distribution reinforces this socio-economic stratification. While50% earn 200,000 Birr - 300,000 Birr, 38.89%earn over 300,000 Birr, and 11.11% earn less than 200,000 Birr, this result stresses the need for targeted support to improve production and market access. Addressing these socio-economic factors through tailored financial support and equitable market access mechanisms could bolster productivity and market engagement among Bale Zone's smallholder farmers.

Taken together, these findings reveal that gender exclusion, low education, small landholdings, productivity disparities, and income inequality are undermining the potential of Bale Zone's smallholder farmers to benefit from wheat markets.

Accordingly, these results highlight the necessity of context-sensitive and differentiated market linkage strategies that account for farmer heterogeneity and actively address systemic inequities. The next section builds on this foundation by discussing the thematic findings on factors influencing market linkage practices, the effects of current strategies, and potential pathways for improvement. To enhance the clarity of our analysis, extracts from the original interview are integrated to demonstrate how the coding process informed theme development.

4.2. Factors Influencing Smallholder Farmers' Market Linkage Practices

This identified theme focused on the factors driving the market linkage practice of Ethiopian smallholder wheat farmers, aligned with the first research objective. Three broad sub-themes emerged: (1) Socioeconomic factors, (2) Stakeholder relationship challenges, and (3) External challenges. These factors significantly shaped farmers' ability to participate in the market and benefit from market linkages.

1. Socioeconomic Factors

The socioeconomic factors significantly influenced smallholder farmers' networking strategies and market participation. As shown in Figure 1, education, farming experience, income levels, and family structure each contributed substantially to farmers' market linkage practices. Farmers emphasised that their education level affects their engagement with technical knowledge and market opportunities. One farmer (Code-05) remarked: "Lack of education influences my understanding about wheat production and marketing sciences". This highlights how educational gaps constrain farmers' ability to interpret market information, dropping their bargaining position and limiting adaptive capacity. Additionally, family size influenced farmers' capacity to participate in collaborative marketing practices. As one of the respondents (Code-16) stated, "Having a large family has helped me to divide the role of wheat production and market" This points out the enabling role of family labour in overcoming labour bottlenecks and facilitating participation in marketing activities.

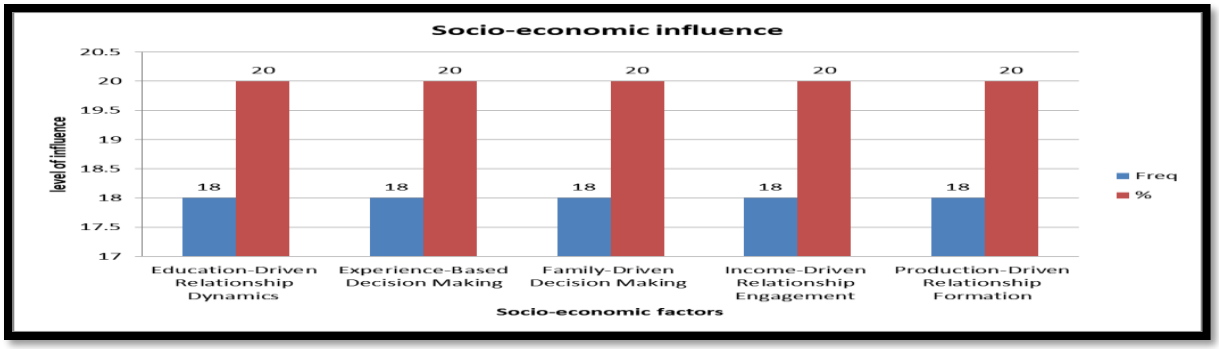

Figure 1: Farmer's Socio-economic factors influence market linkage practice
Source: Nvivo 14 version and excel qualitative analysis 2024.

Furthermore, income and production volume emerged as significant determinants. Asone farmer (Code-13) explained: "My low production income forces me to establish relationships with stakeholders to get support in my wheat farming", reflecting how resource constraints make farmers to seek external partnerships. Equally, production shortfalls necessitated collective action, as stated by one farmer (Code 14): "The lack of overall wheat production in quantity affects the relationship with stakeholders. So this enforces me to organise with other farmers". This indicates farmers with higher incomes had better access to the market, while those with poorer production levels faced challenges in sustaining market linkages, often challenging to improve their bargaining power. Experience similarly conditioned how farmers engaged with stakeholders. As one respondent (Code-15) observed, "My experience influences my decisions on whether to work or not with stakeholders in relationships/networks", underscoring the importance of trust and learned judgment in navigating often asymmetric market relationships.

These finding shows that socioeconomic factors strongly influence farmers' market linkage practices, either encouraging or limiting their involvement. While education and income deficiencies limit autonomy and bargaining power, household resources and experiential knowledge can act as compensatory assets. This underscores the need for specialised policy interventions that not only address structural inequalities but also leverage existing capacities to strengthen smallholder farmers' market participation.

2. Challenges in Farmer-Stakeholder Relationships

The explored challenges that affect networking decisions between farmers and stakeholders. Stakeholder dynamics traders, cooperatives, fellow farmers, government agencies, and input suppliers, posed significant challenges to farmers' market linkage practices. The identified key stakeholder-related issues are presented as follows.

Influence of Agents and Traders: As shown in Figure 2, farmers indicated that they encountered traders' challenges such as misinformation (32.43%), dominance by powerful wheat dealers (45.95%), and price manipulation (21.62%). These factors undermined market transparency and weakened farmers' negotiating power. As one farmer (Code-01) observed, "Those agents create price competition, pressure the market, and divert customers to exploit our profits". This testimony shows how traders' practices not only decrease the profitability of farmers but also deplete trust and transparency in the supply chain. Such manipulation caused artificial scarcity and price volatility, thus the call for tighter market governance and enhanced information accessibility to secure smallholder farmers and improve their market participation.

Figure 2: Agents/traders challenges
Source: Nvivo 14 version and Excel qualitative analysis 2024.

Challenges within Cooperative Societies: Instead of providing collective security, in Figure 3 cooperatives were frequently perceived as reinforcing exclusionary practices, with farmers citingunfair decision-making (28.57%), ineffective management (21.43%), lack of skill development (5.36%), resource misuse (17.86%),and high membership fees (10.71%) hindered farmers from accessing benefits from cooperatives. One farmer (Code-09) shared their experience, noting, "Administrative inequalities within cooperatives allow committee members to unfairly use members' resources". This testimony reveals how governance failures and elite capture discourage farmers from participation. These findings highlight the need for skill development programs and trust-building initiatives to encourage cooperation.

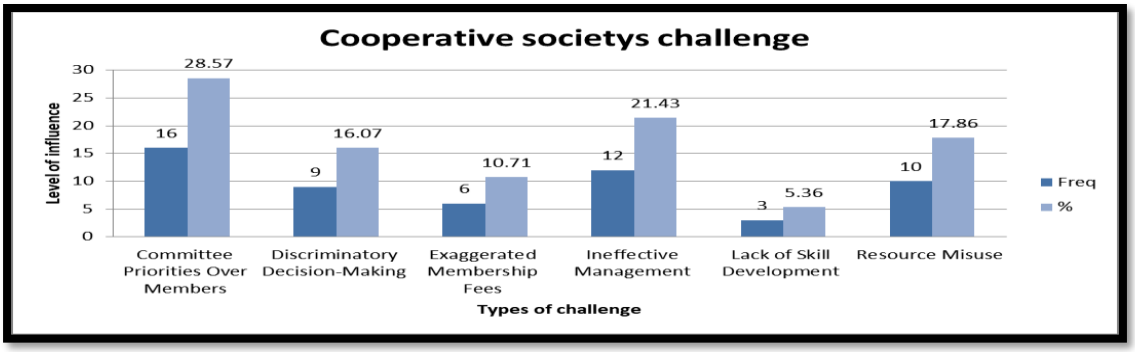

Figure 3: Cooperative societies' challenges
Source: NVivo14 version and Excel qualitative analysis 2024.

Challenges with Fellow Farmers: Peer-level dynamics also constrained farmers' market linkage practice, as illustrated in Figure 4, with opportunistic behaviour (56.25%), disparities in knowledge and resources (21.88%),and resistance to technology adoption (21.88%), creating mistrust among farmers. One participant (Code-06) described, "I encountered fellow farmers' social problems of the culture to resist adopting new farming techniques or technologies and self-centredness". This statement points to creating cultural norms and divergent capacities that fragment group cohesion, weakening collaborative potential. Addressing this requires not only technical training but also social interventions aimed at fostering mutual accountability and trust.

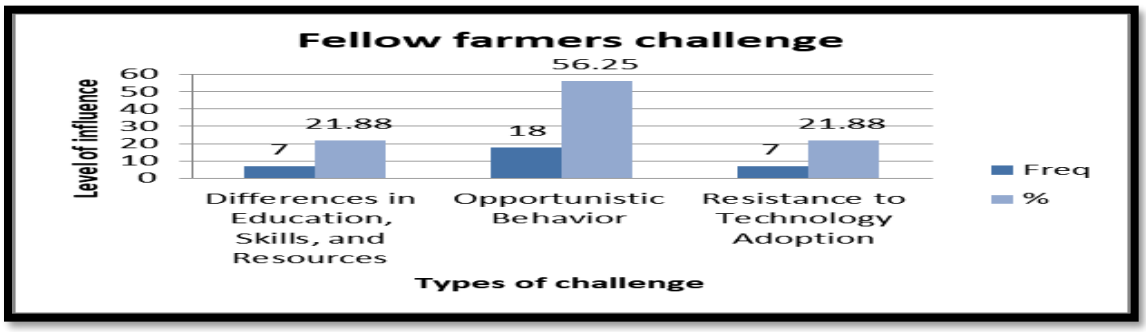

Figure 4: Fellow farmers' challenges
Source: NVivo 14 version and Excel qualitative analysis 2024.

Government-Related Challenges: As shown in Figure 5, institutional constraints were equally relevant, with farmers citing bureaucratic hurdles (30%), exclusion from policy discussions (11.67%), restrictive policies (18.33%), taxation (23.33%) and political influences (16.67%) complicated farmers' market access. One farmer (Code-11) described this difficulty: "I faced a complex bureaucracy […] and political exploitation (stakeholders like the agriculture office and village

administration have sometimes affected our relationship when they support agriculture for political needs)". This testimony exposes challenges that restrict farmers from market participation and decision-making processes. These findings indicate a pressing need for governance reforms to institutionalise farmer participation in policy design and reduce political interference in resource allocation.

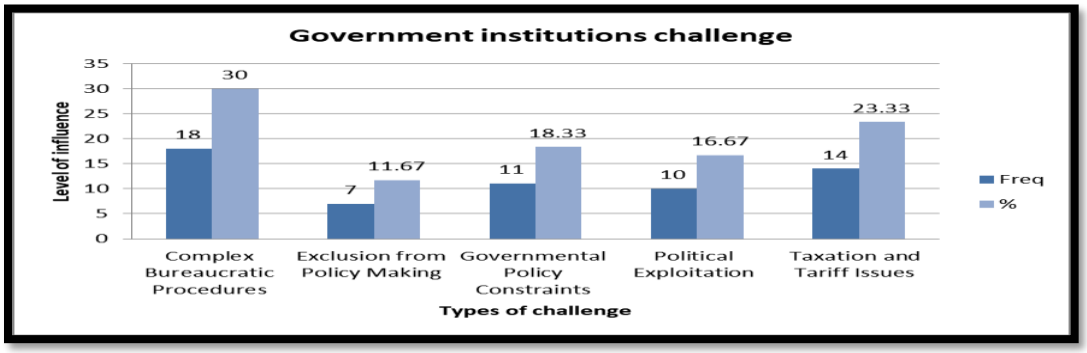

Figure 5: Government institution challenges
Source: NVivo 14 version and Excel qualitative analysis 2024.

Input Supplier Challenges: Finally, input market inefficiencies compounded farmers' vulnerability, with inflation-driven price increases (31.25%), delayed deliveries (22.92%), and unreliable suppliers (31.25%) affecting farmers' ability to access quality inputs (Figure 6). As one participant (Code-10) stated, "Inflation of agricultural inputs and equipment, dishonesty of vendors/suppliers, misinformation, and putting personal interests first are challenges that arise from suppliers". These testimonies highlight how supply chain fragmentation not only increases production costs but also undermines farmers' capacity to compete in volatile markets. Strengthening input supply chains through oversight, regulation, and cooperative purchasing schemes could help stabilise access to essential inputs.

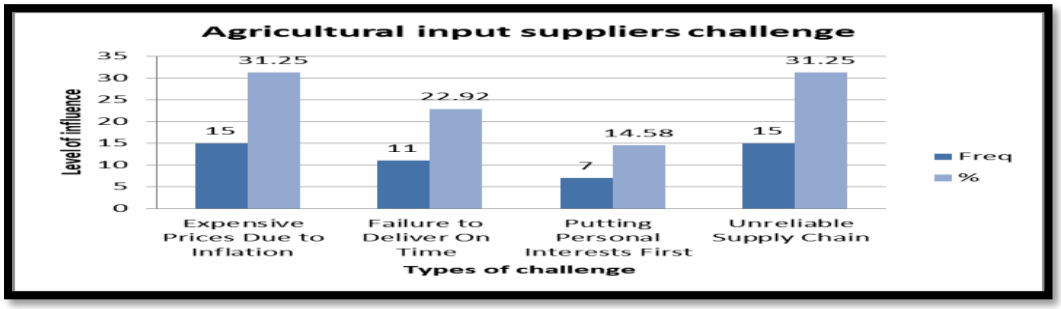

Figure 6: Agricultural input supplier challenges
Source: NVivo 14 version and Excel qualitative analysis 2024.

3. Other Potential Factors Affecting Farmers' Uplift

Beyond direct stakeholder relationships, broader external factors influenced farmers' market linkage practices. The identified significant barriers are presented in Figure 7.

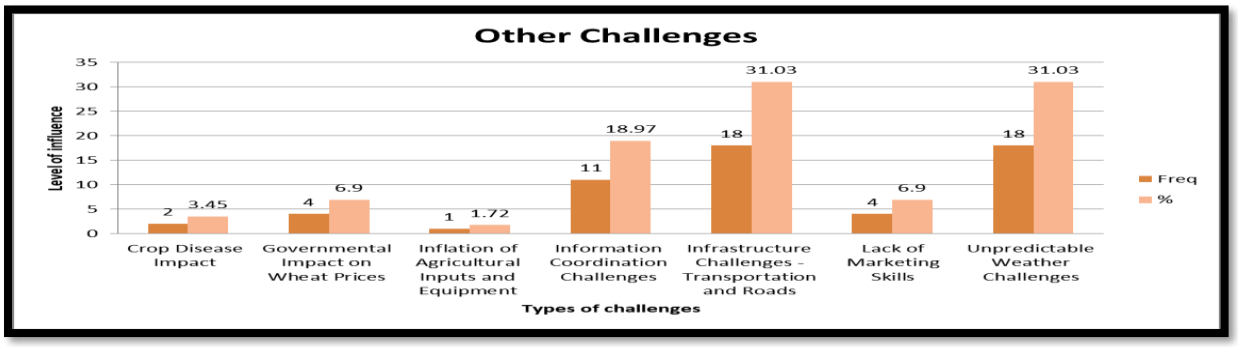

Figure 7: Other challenges influence farmers' market linkage practice
Source: NVivo 14 version and Excel qualitative analysis 2024.

The most pressing challenges identified included unpredictable weather conditions (31.03%) and crop diseases (3.45%), both of which undermine farming outputs; inflation of agricultural inputs (1.72%) and government influence on wheat pricing (6.9%), causing financial insecurity, infrastructure challenges, particularly poor roads and transportation (31.03%), which restricted accessibility to markets; information coordination issues (18.97%) and limited marketing skills (6.9%), lowering farmers' capacity for effective participation. One farmer (Code-15) described these factors: "Lack of coordinated information on wheat production, inflation of agricultural inputs and equipment, lack of development infrastructure, government pressure on wheat prices, and weather and rainfall impacts are factors that affect the uplifting of my productivity". This testimony illustrates how structural, environmental and operational challenges substantially affect smallholder farmers' engagement and performance in market systems. Addressing these challenges is vital for improving farmers' market participation and overall agricultural success.

4.3. Effect of Market Linkage Strategies and Performance of Smallholder Wheat Farmers

This theme deals with how the market linkage strategies shape the performance of smallholder wheat farmers in the Bale Zone, which aligns with the study's second objective. The analysis reveals three interrelated dimensions: stakeholder relationships, cooperative societies, and social capital effects. While these strategies enhance productivity, income, and market participation, their effects are shaped by the quality of engagement and the structural challenges farmers face.

1. Effects of Stakeholders' Relationships on Farmers' Performance

The analysis highlighted that stakeholder relationships emerged as a decisive factor in shaping smallholder performance. The findings suggest that collaboration with stakeholders enhances production capacity, stabilises incomes, and improves market efficiency. However, the extent of these benefits is uneven, depending on farmers' access to networks and the responsiveness of stakeholders to local needs.

Stakeholder-Driven Market Expansion and Income Optimisation: Stakeholder engagement was consistently associated with improved market access and income optimisation. The analysis displayed in Figure 8 revealed that farmers experienced reduced costs (20%), improved pricing conditions (37.14%), and greater supply chain efficiency (42.86%). These improvements were attributed to services such as market information provision, warehousing, transportation, and product standardisation. As one farmer (Code-08) explained: "Getting market information, equipment services such as warehousing, transportation, and wheat standards measurement tools from stakeholders enables me to market wheat better and reduce unnecessary expenses". This perspective illustrates how stakeholder interventions directly reduce transaction costs while simultaneously strengthening market participation. This emphasises the essential role of stakeholder collaboration in market expansion and financial sustainability for smallholder farmers.

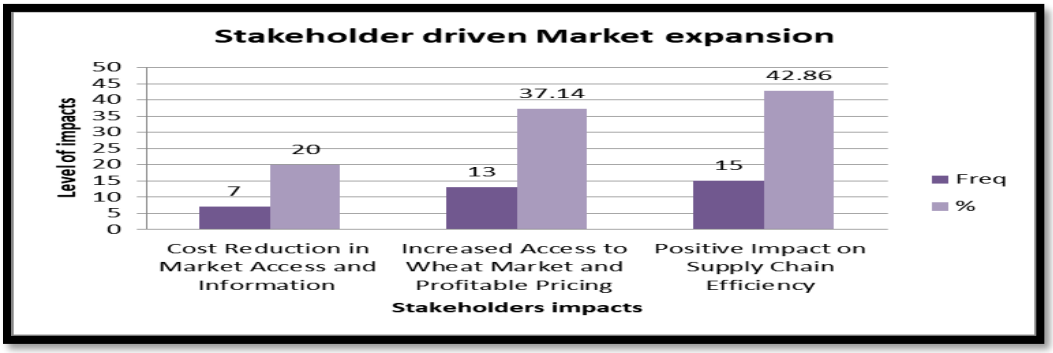

Figure 8: Stakeholders' driven market expansion
Source: NVivo 14 version and Excel qualitative analysis 2024.

Stakeholder-Driven Wheat Productivity Performance: -Stakeholder support was also linked to notable improvements in wheat productivity (Figure 9). A large proportion of respondents (77.27%) reported substantial gains in both yield quality and quantity, while 22.73% identified knowledge transfer and skill development as central to sustaining productivity growth. As one farmer (Code-07) noted: "Relationships with stakeholders have increased my wheat productivity performance, both quality and quantity. This is because stakeholders have provided us with material, knowledge, and information support". Such testimonies underscore

the catalytic role of stakeholders in providing critical inputs, extension services, and advisory support. However, they also highlight a dependency dynamic: without consistent stakeholder engagement, many farmers lack the resources and expertise to maintain productivity improvements independently.

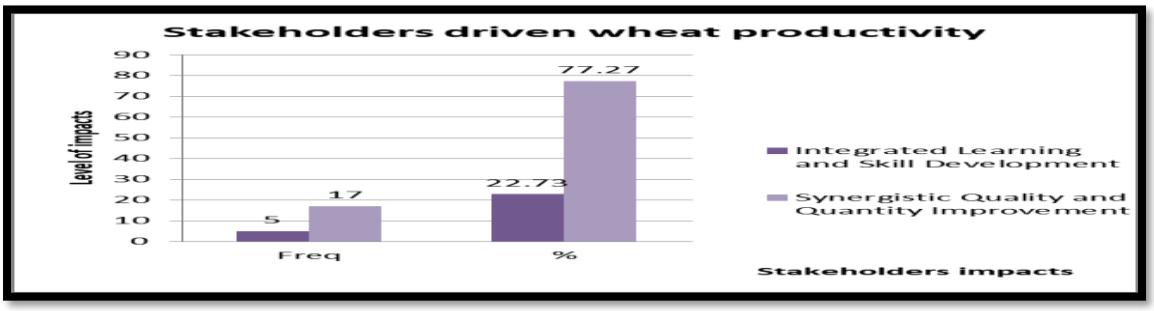

Figure 9: Stakeholders' driven wheat production
Source: NVivo 14 version and Excel qualitative analysis 2024.

2. Effect of Social Ties on Farmers' Performance

Social relationships were revealed to be central in influencing wheat production and market engagement among smallholder farmers. Close social relationships have enabled knowledge exchange, collective problem-solving, and access to essential farming inputs, thus enhancing both production efficiency and market participation. We identified two dimensions social ties effect: community-driven wheat productivity and community-driven market enhancement.

Community-Driven Wheat Productivity: -Communal labour-sharing traditions like 'debo/jigie' were reported as vital for reducing production constraints. As shown in Figure 10, over half of respondents (51.85%) indicated that mutual labour-sharing increased their wheat productivity, accompanied by cultural collaboration (25.93%) and shared societal working culture (22.22%). One farmer (Code-02) stated, "Our traditional social relationships with the farmer in the form of 'debo/jigie' helped me to share labour to grow wheat… [and] increase the productivity of wheat farming in quantity and quality". This finding illustrates how cultural traditions serve as practical mechanisms for improving agricultural productivity, reinforcing the importance of social capital in smallholder farming improves their efficiency.

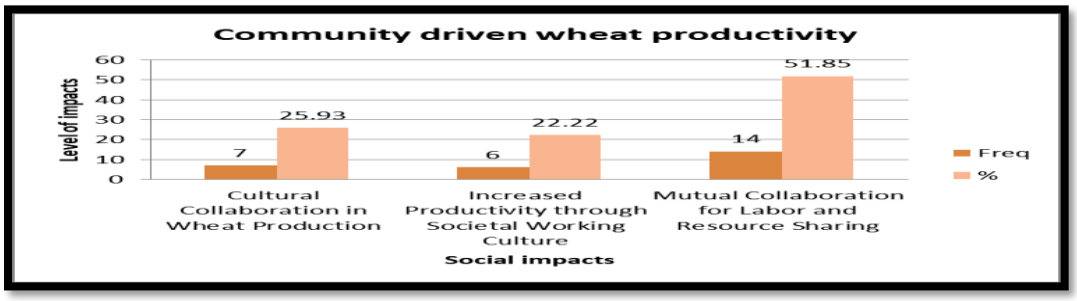

Figure 10: Community-driven wheat productivity
Source: NVivo 14 version and excel qualitative analysis 2024.

Community-Driven Market Enhancement: - Beyond production, social networks also strengthened market performance. As revealed in Figure 11, Farmers reported that connections within the community facilitated fair pricing (22.45%), enhancing financial stability (32.65%), and promoting market information sharing (36.73%). Although collaborative risk mitigation strategies (8.16%) were observed less frequently, they still contributed to reducing market uncertainties. One farmer (Code-01) explained: "The community of farmers' connections has helped me to share market information and determine reasonable prices… [Which] has improved my income from wheat product supply" These testimonies underscore how trust-based networks provide market intelligence and bargaining support. However, their effectiveness depends on reciprocity and cohesion within communities, both of which may weaken under competitive market pressures.

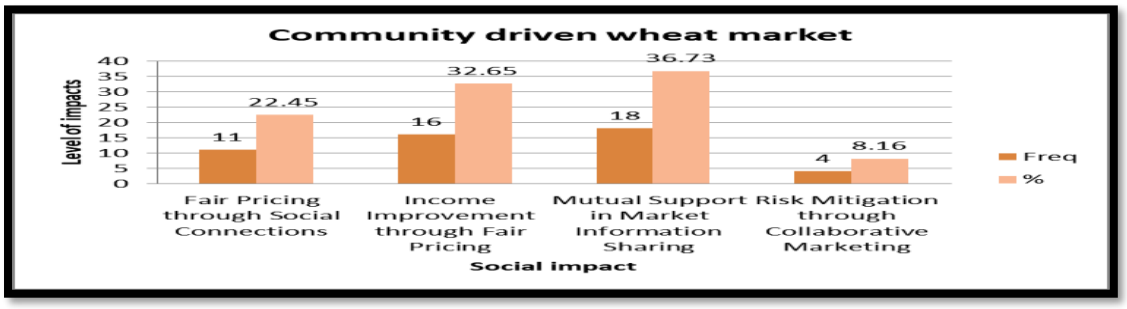

Figure 11: Community-driven wheat market
Source: NVivo 14 version and Excel qualitative analysis 2024.

3. Cooperative Societies' Effect on Farmers' Performance

Cooperative societies were found to be critical institutional actors that formalise collective action and enhance smallholder farmers' market position. They strengthened bargaining power, reduced transaction costs, and facilitated structured linkages to markets. However, their effectiveness varied, reflecting disparities in governance capacity and inclusivity. Two dimensions of cooperative

influence were identified: collective marketing and cooperative-led market arrangements.

Cooperative Societies and Collective Marketing: -Participation in cooperatives was strongly associated with improved price negotiation and bargaining capacity. Findings showed in Figure 12 that 16.67% of farmers reported benefits in price negotiations, 20% in bargaining skills, and 30% in cost reduction. Collective sales further contributed to income improvements (16.67%). As one farmer (Code-16)noted: "The multipurpose cooperative societies are important to perform smallholders' collective marketing for an efficient price, improve income, increase bargaining power, reduce marketing costs, and share the market risk" These insights confirm that cooperatives serve as protective mechanisms against individual market vulnerability. Yet, the evidence also suggests limitations, as benefits were not universal and some farmers expressed concerns about unequal distribution of advantages within cooperatives.

Figure 12: Effect of cooperative societies' collective marketing
Source: NVivo 14 version and Excel qualitative analysis 2024.

Cooperative Societies and Market Arrangements: - Cooperatives also played a central role in shaping market structures by providing storage, logistics, and coordinated sales. Findings in Figure 13revealed that 32.73% of farmers benefited from centralised cooperative-led market structures, 30.91% from enhanced storage and logistical sevices, and 18.18% from cost reductions and income growth, while 12.73% benefited from expanded market linkages. Although bargaining strategies (5.45%) were observed less frequently, they still contributed to improved pricing outcomes. One farmer (Code-04) emphasised: "The cooperative helps me store my wheat until market conditions are favourable, reducing my losses and ensuring better income". This finding reinforces the importance of cooperative-led market coordination in stabilising farmers' economic prospects. However, such benefits depend on cooperative governance; this may be constrained by limited capital and management inefficiencies.

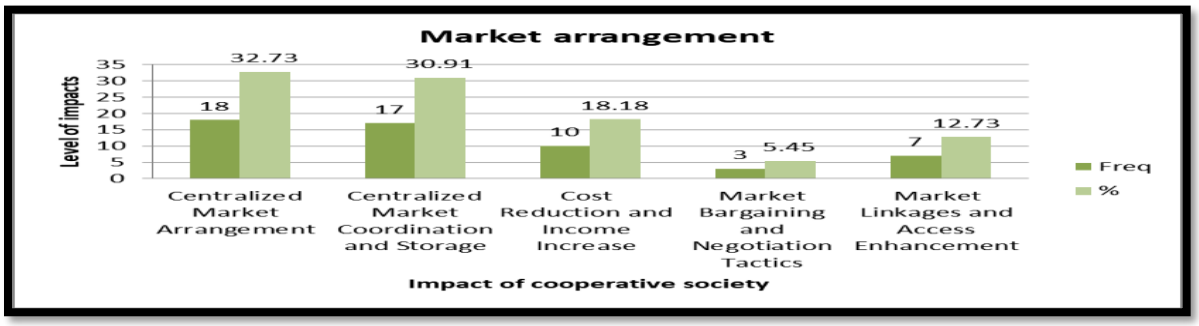

Figure 13: Effect of cooperative societies' market arrangement
Source: NVivo 14 version and Excel qualitative analysis 2024.

4.4.Market Linkage Strategies for Improving Smallholder Wheat Productivity

The study examined market linkage approaches designed to improve smallholder wheat productivity by making ready marketing processes, enhancing market access, and expanding sales opportunities. Four interrelated intervention strategies were identified: strategic networking, government policies, farmers' institutionalisation, and marketing strategies. Each represents a distinct but complementary pathway for addressing systemic barriers to productivity and sustainable market engagement.

(1) Strategic Networking

Networking strategy emerged as a critical enabler of market linkages among smallholder wheat farmers in the Bale Zone. As shown in Figure 14, the three main types of networking strategies identified operate through horizontal, vertical, and integrated supply chain relationships. Horizontal collaboration within cooperative societies (58.06%)enables farmers to pool resources, engage in collective bargaining, and access markets more efficiently. One farmer (Code-16) explained how these mechanisms operate in practice: "Horizontal linkages assist me to produce with a group of farmers who have similar needs to get capacities in the production and marketing of wheat". This highlights how peer-based structures create a platform for joint learning and collective efficiency.

Vertical linkages with traders, government institutions, and buyers (19.35%) provided access to training, extension services, and market information, while integrated upstream and downstream networks (22.58%) ensured smoother transaction flows. As another participant (Code-13) stressed, "Vertical linkage helps me to get service with agricultural inputs and equipment supply, training and extension service, and market information". These insights underscore the necessity of strengthening both cooperative-based horizontal structures and vertical

integration into broader value chains to improve production sustainability in the Bale Zone.

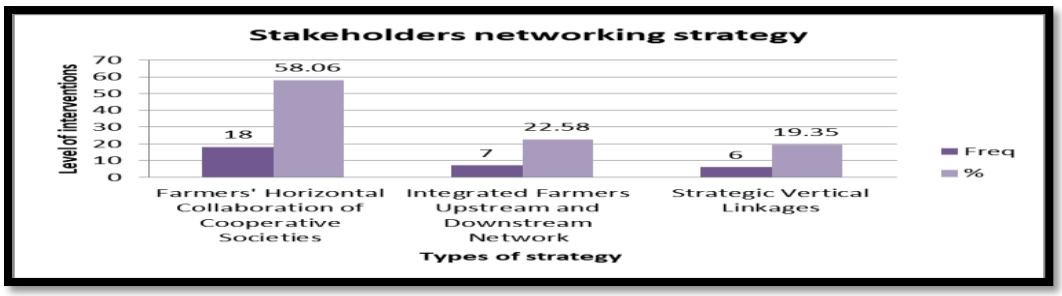

Figure 14: Strategy for networking stakeholders with farmers
Source: NVivo 14 version and Excel qualitative analysis 2024.

Furthermore, as shown in Figure 15, strategic networking also generated three core benefits: adaptability (33.33%), information exchange (33.33%), and resource access (33.33%). Beyond facilitating resilience to market shocks, networks enhanced transparency by enabling farmers to make informed decisions. One farmer (Code-16) reflection captures this empowerment function:"Naturally, I have limited power and capacity to produce and market wheat, and networking strategies are very important to gain support from stakeholders. Therefore, this strategy serves me to mobilise, motivate, and protect by supporting me in terms of knowledge, resources, and information". These findings indicate networking as a vital empowerment tool, mobilising collective resources and securing stakeholder support to strengthen farmers' market participation, resilience, and sustainability.

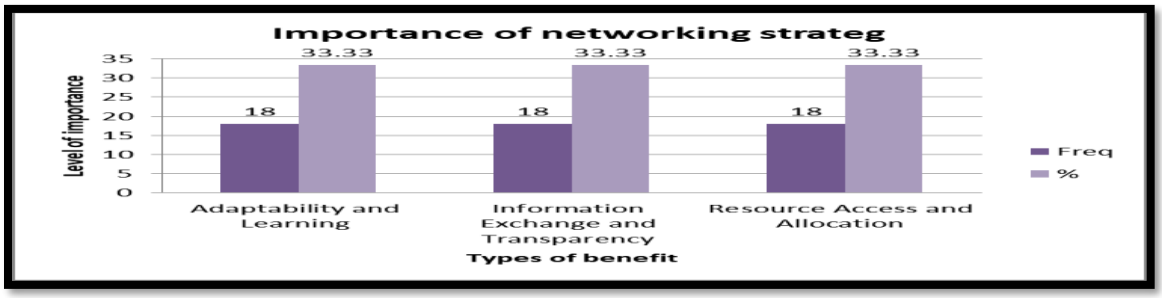

Figure 15: Importance of networking stakeholders with farmers
Source: NVivo 14 version and Excel qualitative analysis 2024.

(2) Strategic Government Policies

We identified two key subcategories of government policies influencing market linkages: strategic government policy support and policies facilitating market access for farmers.

As displayed in Figure 16, government intervention was also evident in promoting farmers' associations (17.43%), enhancing extension services (16.51%), and encouraging cluster farming (13.76%) to improve productivity and market access. Policies aimed at reducing wheat imports (15.60%) further strengthened local production. However, comparatively low emphasis on financial support (6.42%), input subsidies (6.42%), and mechanisation (7.34%) reveals critical gaps in address in farmers' immediate constraints. One of the participants(Code-01) highlighted that: "Organise smallholder farmers in multipurpose cooperatives, cluster farming, expansion of market opportunities, establishment of a centre of market information, and provision of credit services, subsidies, new agricultural technologies and extension services need close government support to preserve". This perspective highlights both the perceived value of government support and dissatisfaction with current policy implementation, particularly regarding credit and technology services.

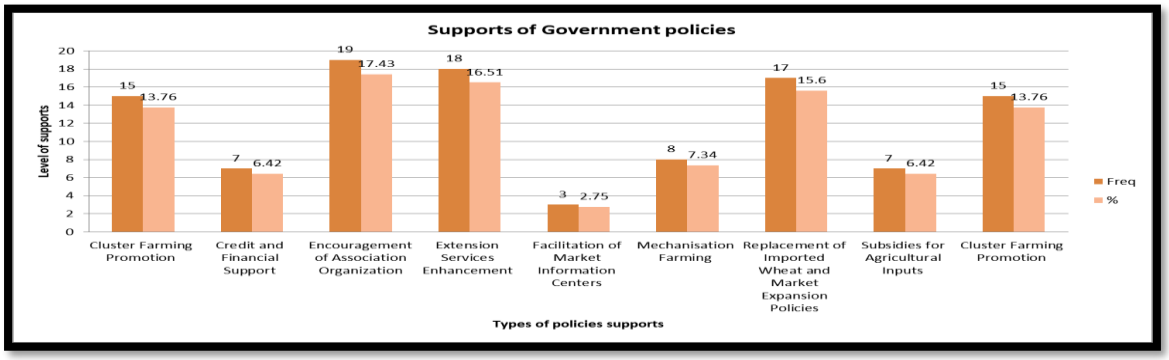

Figure 16: Government policy strategy in smallholder wheat farmers' production
Source: NVivo 14 version and Excel qualitative analysis 2024.

Moreover, as illustrated in Figure 17, the analysis emphasised policies aimed at connecting farmers to markets primarily focused on enhancing access through cooperative societies (51.61%) and increasing production via cluster farming (48.39%). Cooperatives provided farmers with better market entry points, collective bargaining power, and shared resources, while cluster farming fostered collaboration, economies of scale, and streamlined supply chains. One participant (Code-06) highlighted that:"Organising in multipurpose cooperatives and cluster farming will help me to supply wheat products at the needed market and build market connections with potential buyers". These findings indicated that while current policies provide a foundation for collaboration, they remain limited by uneven support in finance and mechanisation, raising concerns about their long-term sustainability without deeper structural reforms.

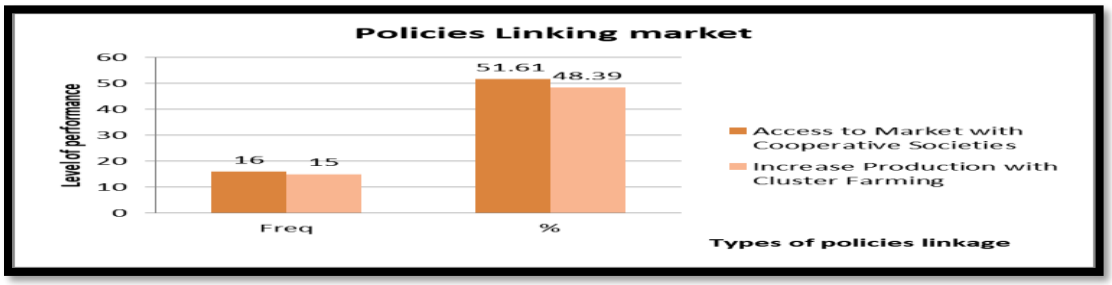

Figure 17: Government policy strategy in linking farmers and the market
Source: NVivo 14 version and Excel qualitative analysis 2024.

(3) Farmers' Institutionalisation Strategies

The data revealed three institutionalisation strategies as shown in Figure 18: formalising farmer organisations (37.78%), promoting cluster farming for standardisation and market access (20%), and improving strategic planning and coordination among cooperatives (42.22%). These strategies aimed to enhance governance, streamline operations, and optimise resource use to strengthen agricultural frameworks. One participant (Code-16) noted the advantages of collective approaches:"Farmers' cooperatives and cluster farming are institutional strategies that improved my wheat production and marketing... Working in an association will enable us to obtain what we cannot do and obtain individually in the form of subsidies or purchases for agricultural equipment". This perspective illustrates how institutionalisation enables resource pooling and bargaining power, which are otherwise unattainable at the individual level. Such evidence indicates that institutionalisation not only improves production efficiency and market access but also fosters resilience and sustainability by embedding smallholders within stronger market linkages.

Figure 18: Institutionalisation strategies
Source: NVivo 14 version and Excel qualitative analysis 2024.

(4) Marketing Strategy

Market participation depended on farmers' capacity to align production with market requirements, as shown in Figure 19, including market demand awareness (23.81%), market information utilisation (16.67%), price sensitivity (13.10%), product type consideration (8.33%), quality standards (20.24%), and quantity management

(17.86%). These factors collectively highlight the growing need for evidence-based production decisions and adherence to quality benchmarks. However, qualitative evidence indicates that farmers often lacked a structured approach to market analysis. As one farmer (Code-02) reflected:"While farmers recognise these requirements, their approach often lacks systematic analysis, which could enhance production and marketing efficiency."This highlights a persistent gap between recognition and implementation, suggesting that interventions must prioritise capacity-building in systematic market analysis, information management, and quality assurance if smallholders are to remain competitive.

Figure 19: Strategies of market requirement
Source: NVivo 14 version and Excel qualitative analysis 2024.

The study further found that smallholders employed diverse marketing strategies as illustrated in Figure 20,with fair pricing (29.51%) and demand-based supply (29.51%) emerging as dominant practices, complemented by sustainable linkages (21.31%) and market information collection (19.67%). Farmers highlighted the importance of these strategies in shaping competitiveness. One participant (Code-06) noted that:"I was trying to provide the needed quality wheat production, set the fair selling price of wheat, and create sustainable market linkages in comparison to fellow farmers. If the wheat marketing strategies are developed accordingly, […] I hope to get the desired outcomes". This testimony demonstrates both an awareness of market-oriented strategies and the aspiration for improved outcomes through their effective application. Critically, while farmers are already engaging with pricing, supply alignment, and quality standards, their practices remain fragmented and inconsistent. Strengthening these strategies through institutional support and structured training could therefore transform individual efforts into collective competitiveness, ensuring stability and sustainability in wheat marketing.

Figure 20: Strategies of market utilisation
Source: NVivo 14 version and Excel qualitative analysis 2024.

5. Discussion of Findings and Managerial Implications

This study employed a qualitative approach to examine market linkage strategies that can enhance the performance of smallholder wheat farmers in Ethiopia's Bale Zone. The findings reveal that a variation in farmers' demographics, landholding sizes, labour use, and education levels constrains their effective market participation. With 50% respondents producing only 100–150 quintals of wheat annually on two hectares, small-scale operations, low educational attainment, and limited production capacity hinder economic stability and market competitiveness. These results categorise farmers as smallholder farmers with definitions provided by the World Bank and FAO regarding smallholder farmers as those working below two hectares of land (Dixon et al., 2004). Such characteristics highlight the structural limitations of subsistence-oriented farming and reinforce the need for tailored market linkage strategies that address farmer heterogeneity. Strengthening cooperatives, improving resource access, and integrating farmers into markets emerge as critical pathways to move beyond subsistence farming and promote agricultural transformation (Jiang et al., 2024; Belete & Nigatu, 2023). To provide clear insights, the study findings discussion is provided alongside the main research objectives and propositions.

On factors affecting farmers' market linkage practices, which emphasised the first study objectives, the findings of the study identified three primary factors affecting smallholder farmers' market participation: socioeconomic status, stakeholder-related challenges, and other potential factors. Socioeconomic factors like education, household size, farming experience, and income each accounted for around 20% of influence on farmers' market linkage practices. Lack of education prevents farmers from being able to interact with market systems and benefit from opportunities, as the findings of Ojulu (2021) also support the importance of education and extension services. Farming experience, on the other hand, positively affects market entry, as concluded by Jebesa (2019). Family size impacts the availability of labour, while income establishes farmers' readiness to engage with

markets, as supported by the study of Chen et al. (2023). These findings suggest that smallholder farmers need interventions raising education, on-farm learning, and resource access to bolster the resilience of smallholder farmers in markets.

Regarding stakeholder-related challenges, findings reveal that smallholder farmers are faced with market irregularities mainly because of misinformation (32.43%) and the dominance of powerful wheat dealers (45.95%), which limits their bargaining power and fair access to markets, confirming the study results of Abate et al. (2019). Cooperatives also often fail to deliver sufficient support to farmers due to selfish leadership (28.57%) and weak management practices (21.43%), leading to a loss of trust, as reported by Kinatiet al. (2024). Opportunistic farmer behaviour (56.25%) also hinders collective action, in line with the study of Ma et al. (2024). Added to this are bureaucratic inefficiency (30%) and restrictive policies (11.67%), which reinforce structural exclusion. Addressing these constraints requires reforms that democratise cooperative governance, rebalance market power, and strengthen institutional accountability.

Concerning external factors, the finding shows that infrastructural deficiencies (31.03%), unpredictable weather patterns (31.03%), and poor information coordination (18.97%) pose significant barriers to market access. The results support current literature on the adverse effects of poor infrastructure on the resilience of farmers to climate variability (Slayi, 2023; Kumar et al., 2024) and market volatility. The absence of reliable market information further exposes farmers to exploitation by intermediaries. The results pointed out that overcoming these challenges involves investments in infrastructure, better weather forecasting, and more market information systems enhance smallholder farmers' linkages and long-term viability.

Collectively, these results provide strong empirical support for Proposition 1, confirming that socioeconomic, stakeholders, and external factors are not peripheral but central to shaping smallholder wheat farmers' engagement in market linkages. However, not all factors exert uniform effects across farmers. As a result, Proposition 1 is refined to address that market linkage engagement is determined by enabling or constraining structures.

Proposition 1: Smallholder wheat farmers' engagement in market linkage activities is significantly shaped by socioeconomic, stakeholders, and external factors that jointly influence the effectiveness of their market participation.

Next, the study findings focused on the effects of market linkage strategies on smallholder farmers' wheat market performance, which is the second objective of the study. The study found that market linkage strategies significantly influence

smallholder farmers' wheat production and market performance. Strengthened market access, resource availability, and information exchange improve farmers' participation and profitability. The results show that stakeholder relationships, social ties, and cooperative societies top the list of influential variables that shape market performance. The study points out that the initial impact is social ties that provide value like cultural collaboration (25.93%) and shared labour (51.85%) that enable farmers to lower costs and optimise productivity, while social networks also support fair pricing (22.45%), income improvement (32.65%), market information sharing (36.73%), and risk mitigation (8.16%). These findings affirm Biresaw's (2019) argument that social capital fosters collective action and reduces transaction costs, but they extend the literature by demonstrating its concrete effects on wheat market performance in Ethiopia.

Accordingly, the findings support Propositions 2 and 3, which assert that social capital within smallholder wheat farming communities enhances the effectiveness of cooperative societies in facilitating market engagement and farmers' performance. Despite overall positive effects, the analysis reveals variability in the impact of social capital, particularly in market risk mitigation, which was less commonly observed (8.16%). This suggests that some farmers may not fully benefit from social ties due to weak integration. As a result, we refined propositions:

Proposition 2: Well-organised social capital within smallholder wheat farming communities increases the effectiveness of cooperatives in facilitating farmers' market engagement.

Proposition 3: Farmers' collaborative social capital within their communities significantly influences the market performance of smallholder wheat farmers.

Other effects were related to the stakeholders' relationship effect of the market linkage strategy, with cooperatives, government agencies, NGOs, and traders in shaping market outcomes. Collaborations in these domains enhance farmers' skills (22.73%), reduce market access costs (20%), and make the supply chain more efficient (42.86%). The findings are aligned with the study of Dibaba and Goshu (2018) and Biggeriet al. (2018), who stress the role of stakeholder engagement in enabling wheat production and value chain integration. As well as the study of Ali et al. (2019) shows that strong networks enable collective selling, value addition, and knowledge exchange. This study's finding reveals that linking stakeholder networking to the farmer improves performance and cooperative effectiveness, thereby strengthening the embedded institutional support as a pathway to sustainable agricultural development.

Hence, the finding supports that stakeholder–farmer relationships are not peripheral but central mechanisms for building efficiency, competitiveness, and resilience in wheat farming. However, stakeholders' impact is not uniform; those who got advantages were positive, and others were not towards the stakeholders' relationship. This shows conditional dynamics. We therefore refined:

Proposition 4: Stakeholders' relationship networking with farmers significantly enhances the effectiveness of cooperative societies in facilitating collective market engagement.

Proposition 5: Functional stakeholder–farmer relationship networks significantly shape the performance of smallholder wheat farmers.

Furthermore, the analysis demonstrates that cooperatives play an important role in enhancing smallholder farmers' market participation, particularly through collective marketing, improved price negotiation (6.67%), cost reduction (30%), and income enhancement (16.67%). These findings corroborate earlier evidence that farmer cooperatives strengthen smallholders' bargaining power and economic engagement by reducing transaction costs and creating economies of scale (Guyalo & Ifa, 2023; Getnetet al., 2018). However, the results also expose important contradictions in cooperative performance. Specifically, low levels of member participation and persistent external interference undermine the effectiveness of these institutions, limiting their capacity to deliver sustained benefits. This rigidity suggests that while cooperatives are theoretically positioned to empower farmers, their practical effectiveness is contingent upon internal governance, membership commitment, and insulation from political or external control. In this regard, the study supports proposition 6 and refines it. This indicates that strengthening cooperative structures is not merely complementary but essential to achieving equitable and durable market outcomes for smallholders.

Proposition 6: Well-governed farmers' cooperatives significantly enhance the performance of smallholder wheat farmers.

Finally, the findings addressing the third study objective propose a multi-dimensional market linkage strategy for smallholder wheat farmers, includes networking, institutionalisation, strategic government policy, and marketing improvement. The stakeholder networking approach boosts cooperation among smallholder farmers, increases bargaining power and reduces transaction costs through the possibility of better terms of trade. Networked farmer relations with financial institutions, suppliers, and traders increase the availability of resources and competitiveness (Williams et al., 2023). The findings are aligned with research that quotes the importance of networks for agri-commercialisation (Getahun, 2020;

Spielmanet al., 2011). Strengthening these networks can mitigate market risks and facilitate long-term sustainability. However, while networking facilitates resilience, its effectiveness depends on the quality and sustainability of stakeholder collaboration, which remains underdeveloped in the Ethiopian context.

Regards strategic government policies, it plays a critical enabling role through promoting cooperative societies, extension services, and cluster farming that enhance market linkages. However, gaps remain in mechanisation (7.34%), financial support (6.42%), input subsidies (6.42%), and market information centers (2.75%).In line with a prior study, this result limits farmers' ability to scale production (Alemuet al., 2024). Cooperative societies (51.61%) and cluster farming (48.39%) remain crucial in reducing market entry barriers, yet further enhancements are needed. These findings align with previous studies emphasising the necessity of inclusive government interventions that address the entire wheat value chain (Gebresel assiéet al., 2017; Abate et al., 2022). The result suggests that a more integrated policy framework is necessary to benefit farmers effectively.

Institutionalisation strategies further enhance farmers' participation in formal markets, with cooperative governance (42.22%) and cluster farming (20%) improving bargaining power and reducing fragmentation. This aligns with literature stressing the benefits of formalised farmer organisations in lowering transaction costs and expanding market access (Abate et al., 2016; Getahun & Milkias, 2021). Nevertheless, institutionalisation in practice faces governance inefficiencies and weak accountability, which may undermine sustainability if not addressed.

Furthermore, the study highlights the importance of marketing approaches, including market demand awareness (23.81%), product quality standards (20.24%), and market information utilisation (16.67%). Ensuring fair pricing (29.51%), demand-based supply (29.51%), and stable market linkages (21.31%) is essential for improving market coordination. Prior research emphasises that these factors enhance smallholder farmers' competitiveness and mitigate price volatility (Abate et al., 2022). Yet, marketing remains reactive rather than strategic, with limited integration into broader value chain governance. Therefore, the study underscores that a more integrated framework linking state policy, farmer organisations, and market actors is required to deliver sustainable outcomes in wheat production and food security.

5.2.Managerial Implications of the study

This study advances theoretical understanding of market linkage strategies by integrating net working theory, social capital theory, and collective action theory. This study uses a multidisciplinary approach, in contrast to earlier research that

adopts a single theoretical perspective. It conceptualises cooperatives as bridging mechanisms between farmers' social ties and wider stakeholder networks. This multidimensional approach fills gaps in existing literature nonagricultural markets by emphasising the collective structures necessary for sustainable smallholder farmers integration, thereby offering a holistic model for policymakers and practitioners addressing rural market challenges.

Methodologically, the study contributes by combining thematic and content analysis with a Straussian grounded theory approach. This design captures context-specific dynamics and farmers' lived experiences, often overlooked in quantitative studies. It not only reinforces the rigour of qualitative inquiry in agricultural marketing but also provides groundwork for future mixed-method research capable of testing emergent qualitative insights at scale.

Practically, the study provides actionable strategies for improving market performance, such as enabling peer-to-peer coordination, improving cooperative governance, expanding access to market information, and strengthening farmers' bargaining power. These interventions have the potential to improve pricing outcomes, minimise transaction costs, and enhance value-added market participation. Policy implications include the government and development partners investing in rural infrastructure, expanding extension services, and making financial facilitation mechanisms accessible. The study's findings provide a roadmap for multi-stakeholder collaboration across farmers, government agencies, NGOs, and cooperatives to bridge market linkage gaps and support sustainable agricultural practices, unlike most previous studies considered only traditional players (suppliers and local firms). The alignment of these interventions with national development objectives and the Sustainable Development Goals (particularly SDG 2 and SDG 8) will further promote food security, rural employment, and sustainable economic growth.

Managerially, the study highlights the decisive need for reforms in the governance of cooperative societies. These include financial transparency, leadership development, and active member participation to strengthen collective bargaining and market access. Partnerships with government institutions, NGOs, traders, agricultural input suppliers and agro-processors are necessary to provide support services like finance, market information, and logistics. Addressing information asymmetry through digital and extension services is crucial for informed decision-making, while targeted training in production and market skills can enhance farmers' competitiveness. Strengthening social networks and peer collaboration improves knowledge exchange and collective action, while improved infrastructure, credit access, and enabling policy frameworks remain foundational to effective

market linkages. Collectively, these implications offer a strategic roadmap for sustainable agricultural development and better market linkages for small-scale farmers.

6. Conclusion

This study examined market linkage strategies determining the wheat productivity and market participation of smallholder farmers in Ethiopia's Bale Zone. The results indicate that while linkages with cooperatives, government agencies, NGOs, and traders can enhance access to markets, resources, and fairer pricing, their effectiveness is undermined by persistent structural barriers, including limited infrastructure, weak stakeholder coordination, and economic constraints. Socio-economic conditions, institutional relationships, and external shocks such as climate variability and market fluctuations emerged as decisive factors influencing farmers' market linkage practices. Strengthening institutional networks, ensuring timely access to market information, and promoting mechanisation require not only policy reform but also locally grounded, multi-actor collaboration. By situating market linkage strategies within broader socio-economic and environmental contexts, this study highlights the need for integrated market linkage strategies that move beyond transactional access to markets and toward sustainable, inclusive agricultural development among smallholder wheat farmers in Ethiopia.

7. Limitations of the Study and Directions for Future Research

This study offers valuable insights into market linkage strategies for smallholder wheat farmers in Ethiopia's Bale Zone, however several limitations should be acknowledged. The geographical focus on the Bale Zone limits the generalizability of the findings to other East African regions with different socio-economic and environmental situations, suggesting thoughtful consideration should be exercised when applying this study finding in other regions. Future research should therefore extend to multiple regions to capture broader variations in farming and market conditions. Furthermore, this study does not provide a comparative analysis of different market linkage strategies, making it difficult to evaluate their comparative effectiveness. Future research should adopt a comparative approach to measure various market linkage strategies and identify the most effective models for specific contexts. Finally, while key determinants of market linkages were identified, their effects were not quantified. Integrating quantitative methods in future work would strengthen the evidence base by assessing the magnitude and significance of these factors. Expanding the scope of research in this way will provide a more comprehensive market linkage strategy and provide actionable insights for stakeholders aiming to improve smallholder farmers' market performance.

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Data Availability Statement
The data of this study will be made available based on request.

Conflicts of Interest
The authors declare no conflicts of interest.

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