

RURAL-URBAN AGRICULTURAL MARKETING LINKAGES of
SMALL-SCALE FARMERS FOR POVERTY REDUCTION: THE
CASE OF BALE ZONE

Research Paper

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We Researcher declare the entitle RURAL-URBAN AGRICULTURAL MARKETING LINKAGES FOR SMALL FARMERS AND POVERTY REDUCTION in Dinsho warada Bale zone and we declare that this study is our original work and has not been presented for a degree, a diploma or fellow ship to any other University and that all the materials used for this study have been duly acknowledged.

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Abstract

This research attempts to analyze rural-urban agricultural marketing linkages of small scale farmers for poverty reduction. A cross sectional survey using descriptive and explanatory survey research design was adopted with both quantitative and qualitative research approach and data were collected from both primary and secondary sources while most qualitative data investigated from focus group discussions as well as a structured schedule was used to collect the necessary primary data from all actors and semi structured self-administered interview was used to collect data from key informants.. The study targeted 230(60 females) respondents from which 134 producers, 60 traders (20 wholesalers, 30 retailers and 16 processors) and 30 end consumers were selected after applying Kothari formula for producers and its proportionate for other actors. All the questions provided for interviewing were returned. Findings revealed that a negative relationship ($r = -0.533$, $sig = 0.000$) between constraint and market linkage; a significant positive relationship ($r = 0.670$, $sig = 0.000$) between actors involved and market linkage and its contribution towards poverty reduction; and also significant positive relationship ($r = 0.476$, $sig = 0.000$) between market activities of potato and market linkage. Based on regression model, the main factors affecting market linkage chain in potato marketing in the study area were constraints, marketing activities and actors involved were fulfilled. It is concluded that potato processing is not well developed and constrained by many problems. Only small scale chips making and cooking of potato is made. The study recommends that the organizing and capacitating actors' involvement to enhance their negotiation power and skills as well as creating market linkage formulated at the Weredas level where noteworthy. On the other hand, different value chain actors should come together and discuss to solve the problems of small scale farmers market linkage. Besides, policy aiming should be provided to link farmers to markets, giving training for the farmers on reducing the constraints and cooperative development are recommended to improve effective production and marketing of potato.

Key Words: Market-Linkage, Smallholder Farmers, Potato, Market

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CHAPTER ONE

1. BACKGROUND OF THE STUDY

1.1 INTRODUCTION

Development of favorable marketing is crucial for successful agricultural development. Yet, agriculture in a large part of the developing world is still subsistence-based to a large degree. A significant amount of land is devoted to subsistence cropping. For instance, around 440 million farmers are engaged in subsistence agriculture (von Braun, 2010). Efforts to integrating such farmers into the factors and product markets is part of the overall development endeavors. Anshu, (2013) in his study on dynamics of diverse rural marketing strategies state that of three factors that govern rapid economic growth of any developing country planning a national marketing system and thereby increasing the size of the national market is essential to integrate the marketing systems with the needs and wants of the consumer with available resources. This is the hallmark of economic development.

To bring economic development and improve society well-being and reduce poverty in return different approaches have been adopted at different time. Previously in the 1960s after colonization, many Third World countries more emphasis was given to the urban and industrial development as strategic plan to achieve rapid development and catching up with the developed world. In the 1970s recognized that the desired development could not achieve in the rural areas and bring about the desired development. As a result many developing countries change their emphasis and rural development strategies like the Integrated Rural Development, became popular. The Integrated Rural Development is also not functional as it was lack integration with urban dimension in the development process. Urban centers are centers of modernization and development (Tegegne, 2001). However both rural and urban have their own potential and play key role in the overall economic development, they are not efficiently and effectively functioned without mutual

development of both urban and rural areas. Thus this mutual development revealed through rural-urban linkages.

According to Evans (1990), any discussions on development need to consider rural–urban linkages with regard to both economic development and structural transformation. Rural urban linkage play important role of the rural-urban linkages for poverty reduction (Global Monitoring Report, 2013). However the natures of this linkage are not homogenous as they take different form and are determined by different factors and the influence of these factors is different from one place to another and for different sectors.

In most low-income countries a better understanding of the opportunities and constraints of industrial and agricultural sector linkages was contribute to sustainable development through the adoption of appropriate economic and social policies as well as interventions. Thus ignoring this linkages leads to inefficiencies and causes growth inequality (World Bank, 2006).

Ethiopia is among low income country in which agriculture is a back bone of the economy. The sector is dominated by small-scale farmers who produce 94 % of crop and 98 % of coffee products. On the other hand the private and state commercial farms produce only 6% of crop and 2 % of coffee product. Therefore this particular sector determines the growth of all the other sectors and, consequently, the whole national economy (Atsbaha, and Tessema, 2010).

Being aware of the above mentioned fact for third world countries in general and Ethiopia in particular where the economic development is depends on agrarian economy, agricultural market linkage serves as the main rural urban linkages that shapes socio economic dynamics of the nation. But many farmers highlight the difficulties of market linkage they encounter when trying to sell their products. In order to deal with these difficulties nowadays marketing agriculture shift from traditional ad hoc selling marketing to marketing linkage (White, 2005).

Therefore addressing the rural-urban agricultural market linkages for small scale is necessary because the phenomenon of urbanization in the third world countries like

Ethiopia has been inevitable but unplanned. Since agriculture is a back bone of Ethiopian economy and the sector is dominated by small-scale farmers; therefore it is impossible to reduce poverty without enhancement of rural-urban agricultural market linkage of small scale farmers.

1.2. STATEMENT OF THE PROBLEM

The development policies and strategy of developing countries have addressed either urban or rural areas rather than the interdependencies between the two. Recently, there is a growing recognition of the importance of focusing on the mutual interdependencies, rather than the “separateness,” of rural and urban areas because the development of rural and urban rely on both “rural-based” and “urban-based” resources as well as the exchanges between the two areas (Ashley and Maxwell 2001).

By separately studying and forwarding clues for policy decision, the important linkages that exist between rural and urban activities is oversight. Furthermore it does not balance the linkage and development between two area (rural and urban) if they face ineffective and inefficient linkage. The report of World Bank (2006) the witness that ignoring rural–urban linkages leads to inefficiencies and causes growth-inhibiting inequality. Moreover each economy i.e. rural and urban depends on demand from each other.

Mewael (2016) state that the development strategies of Ethiopia, except the Plan for Accelerated and Sustained Development to End Poverty, have been formulated with either urban or rural focus. Tegegne (2005) argues that the development history of Ethiopia has been urban biased until the last decade and rural biased since recent years. Such kind of development strategy with unbalanced focus on either rural or urban centers as poles of economic growth and development undermines the fertile opportunities for sustainable economic development that could be tapped from coordinated rural-urban linkages.

Ethiopia is a predominantly agricultural country whose prospects for development rely on rural progress. Of its total population about 83% live in the rural areas depending on agriculture (CSA, 2005). In agrarian countries, agricultural marketing plays a pivotal role for the development of social cluster, village or national economy as a whole (Anshu, 2013). Thus in the country like Ethiopia where its economy mostly based on agriculture, agricultural marketing is the pivot of economic development and poverty reduction. Ethiopian's major population lives in rural areas and agriculture being their main livelihood. Given this major emphasis has been given to agriculture sector in Ethiopia. By taking this into account Ethiopia is adopted an Agricultural Development-led Industrialization (ADLI) development strategy and devise strategy for Sustainable Development and Poverty Reduction Program (SDPRP-2002/03-2004/05) but the potential to link rural and urban is limited (Yegremew, 2000).

Agricultural sector in Ethiopia is dominated by small-scale farmers. Relative to large commercial farmer small farmer face a problem of market linkage. According to Department of Agriculture Forestry and Fisheries (2012), the lack of market linkages represents a significant impediment to market access, especially for poor smallholder producers. The lack of market linkages substantially increases transaction costs, post-harvest losses, perpetuates farming as a social rather than business activity and reduces market efficiency. For any commodity, the marketing chain consists of multiple middlemen, each taking a margin at every stage of the chain, price variations in market place and it takes time and erratic.

The above evidence shows that the nature of agricultural marketing is not one way marketing rather it requires rural-urban linkages by its nature. However the way it perceived by policy makers and even in most cases developmental strategy oversight the importance of linking rural and urban through agricultural market and focus on agriculture for sustain rural development as mutually exclusive. Likewise in our country development researchers and practitioners have focused either on rural market development or on urban market development and even study about

rural-urban linkage oversight the potential of agricultural market linkage for small scale farmers and poverty reduction.

This study hopes to fill this gap and seeks to explore agricultural marketing linkage for small scale farmers and the effect of this linkage on poverty alleviation through a case study of Sinan Dinsho district. In addition the fact that there have been no agricultural marketing linkage studies in the area make the study relevance as the district is dominated by small scale farmers which is dominated by potato producers and breeders and therefore marketing linkage will have a crucial role for the small scale farmers and poverty reduction in the study area.

1.2.1 Objective of the study

The overall objective of this paper is to analysis rural urban agricultural marketing linkage for sustainable development and poverty alleviation.

1.2.1.1 Specific objectives

This paper, based on literature review, was specifically focus on the following specific objectives.

- ✓ To identify types of Agricultural marketing linkage practiced in the study area.
- ✓ To identify factors influencing market linkages of potato producers in selected study area.
- ✓ To examines the role of rural-urban agricultural marketing linkage on poverty reduction.
- ✓ To identify key decision area to improve rural urban agricultural marketing linkage

1.2.1.2. Basic research question

- ✓ What is type of agricultural marketing linkages practiced in the study area?
- ✓ What are the factors influencing market linkages of potato producers in selected study area?

- ✓ What is the impact of rural-urban agricultural marketing linkage on poverty reduction?
- ✓ What are key decision areas to improve rural urban agricultural marketing linkage?

1.3. Significance of the research

The significance of the study of rural urban agricultural market linkage lies in its potential to address the worldwide phenomenon of economic development and poverty reduction. Economic development play a crucial role in the generation of income, employment, wealth and thus in poverty alleviation. Thus identifying the nature, key decision area of the linkage and marketing linkage notion can be improved to reduce poverty, this study point out clues for improving useful linkage, and benefit local government in the study area in particular and development practitioner and policy maker in general. Assessing the role of the existing agricultural marketing linkage on the poverty reduction will have its contribution in filling the gap in the literature. The outcome of this study makes a modest contribution to research methodologies.

On top of this, finding of the research work could also give an insight for researchers and students interested in similar theme for further investigation in other areas or to conduct an in-depth study on agricultural marketing linkages or other related issues.

1.4. Scope of the research

In order to make the study manageable and meaning full it's important to clarify the scope of the study. The study is delimited conceptually, geographically and methodologically.

Conceptually; Rural-urban is a very wide concept, including many elements and explanatory variables that are related to each other in a complex way. The study, however, was focuses on the connection of the existing rural-urban agricultural

market linkages by considering (Constraints, Market Activities and Actors Involvement) variables and livelihood outcomes. Thus the study does not consider other aspects of rural urban linkage.

Geographically; geographically the study is limited to Dinsho worada Oromia region Bale Zole eastern part of Ethiopia. Thus the study may not represent the nature of other area which practice different agricultural activities.

1.5. Definitions of key concepts (This is optional.)

Traditional marketing; traditional marketing channels that practice ad hoc sales and buying of goods. In other words rural households sell their agricultural produce to urban households and trades in the market of small towns.

Agricultural Marketing linkage; approaches assume the development of profitable long-term mutual relationships rather than support for ad hoc sales. Market linkage is characterized by; Capable to place farmers in position to supply product to the market in terms of quantity and quality required and reliability of supply expected by the market and farmers respond to market changes. Thus, market linkage are capable of showing a benefit for all participant who is linked to farmers and the farmers, in turn, will need to be assured of higher net incomes from entering into a new linkage than they could obtain from existing market.

1.6. Organization of the Paper

The study was organized in to five parts. The first part which deals with the introductory part of the research was consists of the back ground, statement of the problem, objective, and definition of key terms, significance, delimitation and limitation of the study. The second part was present some important concepts which are relevant to the problems of the study. It encompasses definitions and different findings variable.

The third part was concentrated on the methodology of the study and consists of research design, sample design, sample size, instruments of data collection, procedures of data collection, methods of data analysis, validity and reliability of the questionnaires and the research ethics. The fourth part was dealt with data analysis and interpretation of the study. The last part but not the least one wascontain summary, conclusion and recommendation of the study.

CHAPTER TWO

2. Review of related literature

2.1. Definition of Rural Urban Linkage

Rural-urban linkages can be defined as the structural social, economic, cultural, and political relationships maintained between individuals and groups in the urban environment and those in rural areas (Lesetedi, 2003). Rural-urban linkages can also refer to spatial and sectoral flows that occur between rural and urban areas. Spatial flows include flows of people, goods, money, technology, knowledge, information, and waste. By contrast, sectoral flows include flows of agricultural products going to urban areas, and goods from urban manufacturing areas going to more rural areas. Typically, rural-urban linkages are often articulated in the nature and forms of migration, production, consumption, financial and some investment linkages that occur within the rural-urban symbiosis. The exchange of money, goods, visits including social activities, and communication with relatives and friends can all be used as indicators of rural-urban linkages (Braun, 2007). Therefore, the nature and form of these linkages are not homogenous as they are determined by both push and pull factors.

2.2 Rural–urban Continuum

According to Lichter and Brown (2011), the population of a country is divided into ‘rural’ and ‘urban’ according to particular features like according to the settlements they live in and the sector in which they earn their living. However, this definition ignores the existence of important interdependence of rural and urban. Nevertheless rural households rely on urban income sources, such as remittances and income derived from producing for consumption in the urban markets; urban households also rely on rural resources, especially in low-income countries. While rural specialists mention rural industrialization and ‘off-farm’ and ‘non-farm’ employment by way of ignoring the role of urban centers, urban specialists

completely ignore the role of agriculture for urban development. All settlements should be seen as occupying a space along a continuum, with respect to both their population size and economic activity.

Jane Jacobs (2000), also argued the importance this continuum and she state that the distinction between rural and urban is artificial in fact it difficult to make a distinction between ‘city-created work’ and ‘rural work’, as well as between ‘city consumption’ and ‘rural production’. Potts (1995) reported that the maintenance of rural–urban linkages and of rural assets acts as an emergency reserve in sub-Saharan Africa. These linkages persist long after migrants have left their home towns and even when the home villages are far removed from their nearest urban centers. For example, rural–urban linkages are sustained through livestock ownership and land tenure because migrant households that own livestock and land return home more often

2.3. The status of rural-urban linkages in Ethiopia

The status of rural-urban linkage could be identified by looking at spatial flows and sectoral linkages. In addition, the physical linkages or infrastructural linkages need to be ascertained.

Spatial flows

Flows of food items, industrial goods, labor, and capital are some indicators of the linkages that exist between the rural and urban parts of the country. The volume of marketed grain for example could be an indication of the grain flow. A study in 1996 indicated that the marketed grain was about 28.2 million quintals while estimates from the CSA excluding pulses and oil crops found out that the marketable surplus for 2001/02 was 14 million quintals (Wolday and Elleni, 2003). The latter represented 17% of the total production. This is an indication of a much lower flows of grains to markets (urban areas) vis a vis the potential. The bulk of

the production remains in rural areas for different purposes: consumption, seed and feed. Grain marketing is of course constrained by a number of factors such as subsistence production, poor infrastructure, lack of information, limited storage capacity of traders etc. (Tegegne, 2005).

The financial flow between rural and urban areas is an important manifestation of linkage. Financial intermediaries are important agents in streaming the flow of finance particularly from urban and rural. In this regard, the role of formal banks is limited since banks by nature will not be interested to finance rural people because they are believed to have high risks and transaction costs. This is also compounded by supervisory and capital adequacy requirements that penalize banks for lending to enterprises that lack traditional collateral (Wolday , 2002). Resource flows between urban and rural areas present a significant form of linkage in Ethiopia. In particular, cities rely on the surrounding rural areas for their resources and waste deposition.

Production Linkage

Agro-industries are the main types of industries with which agriculture will have significant forward linkages. The industrial structure in Ethiopia shows that food, beverage and textile industries account for 51% of the gross value of production in 1995/96 (Solomon, 2001). These industries together with leather and tobacco industries have strong potential linkages with the agricultural sector. This potential however is not realized in the country. The dependence of the industrial sector on imported raw material is shown in Table 3. The table shows that the ratio of imported inputs to total raw material cost for the years 1992/93- 1996/97. In 1996/97, the ratio was 84 %, 37 %, 17 % for tobacco, textiles and food products and beverage industries respectively. One of the reasons for such weak agriculture and industry linkage in terms of processing agricultural raw material is the subsistence nature of agriculture, which is not capable of producing surplus output to be used as industrial raw material.

The type of agriculture and the degree of intensification are critical factors affecting the extent of backward linkages (Livingston, 1997). Agriculture in Ethiopia is rain-

fed, subsistence and employs traditional tools and implements. The tools used by farmers are mostly homemade except the tip of the plough, which might be done by a blacksmith. There is no use of wheel driven transportation system that might require some transportation facilities. Agriculture depends on rainfall and there is negligible irrigation that might demand pumps and pump related equipments.

Consumption Linkage

Agriculture in Ethiopia is shown to have a stronger linkage with the consumptive sector rather than the productive industrial sector. This is evidenced from the marketed surplus of food that is tuned towards the service sector (Abebe, 2001). Teff is found out to be the single most important crop with the highest marketed surplus (Abebe, 2001). This is a crop that is geared directly for consumption.

The importance of consumptive linkage is also evidenced from a district level study. The general relationship between farm and non-farm in a district in Tigray showed that there is a high correlation between distributive trade and farm output (Tassew, 2000) as opposed to a negative correlation between farm output and service trade and small and micro enterprises.

Physical Linkage: Infrastructure

Physical (spatial) linkage is expressed through infrastructural development. The road infrastructure is the main form of infrastructure serving for more than 95 % of the volume of ton km and passenger km in the country (MEDAC, 1999). Thus the extent to which different parts of the country are served by the road network is an indication of their connectivity and rural-urban linkages.

Nearly 80 % of the population depends on the use of traditional modes of transport that is head and back loading, walking and animal transport which are slow, burdensome and time consuming (ERA, 2002).

2.4. Agricultural marketing system

Marketing systems are undergoing rapid transformation. Traditional marketing channels with ad hoc sales are being replaced by coordinated links between farmers, processors, retailers and others.

In broad terms, there are three basic market types that value chain projects can target: (i) “informal” markets, which have few regulations and often no taxation; (ii) more regulated “formal” markets, which operate using standard weights and measures and where transactions are agreed upon based on clearly defined legal frameworks; and (iii) structured public markets that are organized by public sector buyers who offer standardized contractual buying arrangements with specific conditions (e.g., buying a percentage of the total procurement from smallholder farmers). The complexity of the market system typically reflects the volume and value of trade, the types of products being traded, and the number of market actors who want to make use of the system. Types of exchange include barter, roadside stalls, fixed marketplaces, travelling salespersons, retail stores, auctions, commodity exchanges, stock exchanges, futures markets, and online marketplaces such as eBay (Robbins, 2011).

The agricultural marketing system is no more confined to regulated market only and the change in the dynamics in the agricultural economy has brought about changes in the marketing systems in the form of different alternative marketing systems such as Contract Farming, Direct Market, Futures Market, Spot markets, Group Marketing, Hub and Spoke model of terminal markets etc. These instruments have the potential to measure up to the challenges of modern agricultural production system. Hence, there is a need to tune the marketing system to the needs of the production system.

A typical marketing paradox is that buyers, such as supermarkets and processors, complain about inadequate supply while farmers complain about lack of markets. Clearly the buyers have not been too active in seeking out new suppliers, while farmers have lacked the skills and resources to identify new markets and the ability

to take advantage of identified markets through value addition activities such as grading, cleaning, sorting, packaging, bulking, and primary processing. Organizations working to link farmers to markets need to contact agro-food companies, traders, retailers and exporters and identify their product shortages. Successful market linkage developments for products with a relatively limited demand, or even for widely traded commodities with a large demand, may lead to the “fallacy of composition” or the “adding up” effect, with market potential being affected by the “over exuberance of market participants”.

2.5. Types of Agricultural marketing linkage

Different marketing linkages are exist in agricultural market and each of them have different likelihood of success. Likewise different types of linkages have both advantage and disadvantage on the livelihood of farmers. Nevertheless activities to link farmers to markets adopt either the “top-down” approach, which involves identifying market demand and then seeking a group of farmers to satisfy it or the “bottom-up” approach of identifying farmers to work with and then finding markets that they could supply. Whatever approach is adopted, the availability of markets is a sine qua non for successful linkage development.

A) Farmer to domestic trader. Traders have traditionally interacted with farmers on a one to- one basis, either buying from them at local markets or at the farm gate. Purchases at local markets can be relatively efficient if they enable the trader to buy sufficient quantity to achieve economies of scale with subsequent transport, which is usually the main marketing cost. On the other hand, purchases at village level can often be extremely inefficient and this can contribute to the high marketing costs that often lead to allegations of exploitation of farmers by traders. Such costs can be reduced if farmers can work together to assemble all their products at one location, for purchase by one or more traders. However, an arrangement such as this rarely develops without an external catalyst. It should not be forgotten that many traders experience significant cash flow constraints and while they may well have considered the idea of working more closely with farmers, the time taken to discuss

and make arrangements with them is often a transaction cost they cannot absorb (Dixie, 2005).

B) Farmer to retailer. Large supermarket chains will not usually want to work with individual farmers on a long-term basis. But most restaurants specially in African case are work with farmers. One of the important issues highlighted is the difficulty faced by many farmers in meeting quality specifications, even when in receipt of technical assistance from the company.

C) Linkages through cooperatives. Around the world there are notable examples of well-functioning marketing cooperatives. The very success of this relatively limited number of cooperatives is often used to justify further investment to try to replicate that success elsewhere. Unfortunately, with these honorable exceptions, the track record of cooperative development has often been disappointing. Reasons for this include the “nationalization” of cooperatives so that they become quasi-governmental bodies, often with a top-heavy hierarchical structure, and become used by politicians for political ends.

Inadequate management skills, combined with a tendency to expand activities beyond the capacity of the management to manage; elite capture, even when the cooperative is nominally independent of government; and an inability to replicate the work rate, business acumen and social capital of the competing private sector are other factors. Cooperatives are often set up with donor assistance on the usually false premise that “excessive” margins within marketing channels provide the scope for farmer members to capture some of that value. Rarely is research carried out to examine this hypothesis in detail prior to donor interventions. As a consequence, the picture that emerges in many countries is of cooperatives struggling along with donor support, only to experience major difficulties once that support is withdrawn.

D) Farmer to agro processor. One of the challenges that processors face is that investment in buildings and equipment necessitates full utilization of that capacity. Processing is therefore not necessarily viable for crops that have a limited growing season, unless they can be stored for a considerable time. One study looks at

processing of milk, which is available year-round, although production does fluctuate. Donor-inspired promotion of agro processing, now fortunately less common than in the past, often failed to take account of such seasonality issues. But mistakes continue to be made.

E) Farmer to exporter. Many characteristics of linkages exist while linking farmers to market through domestic trader. Given that high level of trust involved in business transactions, even if the trade extends beyond the country's borders. Beside domestic traders external catalysts also play vital role by identify new market potential and link farmers and traders who would not otherwise, have made contact. But exports to more sophisticated markets can involve farmers in considerable complexity and risk. The high quality, safety and logistical standards demanded by importers can be expensive and difficult, although not impossible, to achieve by smallholders. Farmers working on their own are unlikely to be able to develop a capacity to meet these standards. Linkages developed by commercial firms would thus appear essential for ongoing success in high-value markets, with companies providing technical training and on-farm monitoring.

F) Contract farming. As a form of agricultural production contract farming has been practiced for many years. There are many advantages with this mode of production for companies. Linking with small farmers enables those to overcome land constraints that would be present if they attempted to produce everything themselves. It is often more efficient than plantation agriculture and certainly more politically acceptable. Offsetting this is the ever-present risk, for many crops, of extra-contractual marketing by farmers. There are also complications associated with ensuring that production is to the required standard, and in organizing the supply of inputs to farmers and the collection of outputs.

2.6. Factors affecting agricultural marketing linkage

Agricultural marketing is two ways by its nature is that more than any other marketing it is affected by different factors. Many farmers in sub-Saharan Africa face significant difficulty when trying to bring their products to market. They also

complain about the low level of profit that they are able to earn from their products. One constantly hears complaints that “prices are too low,” “erratic price fluctuations,” as well as reports that denounce “unstructured markets” and “disorganized supply chains”. Moreover analyses of sub-Saharan Africa reveal less-than-optimal market mechanisms that strongly shape the poor adjustment between supply and demand for agricultural products: failing infrastructure for warehousing and transportation, weakness in the banking system with the absence of credit and insurance markets, non-competitive situations (a limited number of buyers in dominant and/or concentrated positions facing a multitude of disorganized sellers), asymmetries in access to and quality of information, rules and norms applied in a discriminatory fashion, formal and informal taxation leading to higher costs (lack of transparency in pricing and the factors that govern it). Agriculture is not merely about agricultural products: it involves all of the socio-economic processes and organizations that drive it, including the relations of production (differential access to the means of production such as land, money, equipment, labor), the balance of power between actors in both the supply chain and the markets that give actors more or less room to make choices and confront risks.

Agricultural systems are dependent on the weather, on the climate, the time period of biological growth process, and the perishable nature of numerous agricultural products. The supply of agricultural products is characterized by instability, both quantitative and qualitative. Added to the difficulty of mastering production is the weak elasticity and even rigidity of demand among buyers: no matter what happens, populations require agricultural products to feed themselves. This leads to an absence of spontaneous adjustment of supply to meet demand for agricultural products and to instability in pricing (agricultural markets have always been unstable).

Price instability is another difficulty faced by small farmers, after all process when farmers bring their product to the market they are not certain over the price for their product and even the price is unstable throughout the season. Beside this price from supply of agricultural input is uncertain and unstable too. These result with farmers’

motivation not to produce more, reduce farmers' purchasing power for non-agricultural product and adversely affect farmers' livelihood in return.

Beside price characteristics non-self-regulating nature of agricultural marketing is another difficult condition in agricultural marketing. There is no meeting point between supply and demand with optimal allocation of resources for the common good. The "invisible hand" is not only invisible, it is also often clumsy. In fact, if the invisible hand's regulating actions are hardly perceptible (because in agriculture more than in other sectors, the market is not regulated by itself), it can have very sharp claws! At the risk of taking an overly strong "pro-farmer" position against urban consumers, it is nevertheless urgent to find solutions to improve rural conditions, to preserve the stability of countries. Therefore the evidence from the literature shows that in one way or another agricultural marketing linkage various factors affect the effectiveness and efficiency of agricultural market.

2.7. Effect of agricultural marketing Linkages on small scale farmers

Agriculture remains the best opportunity for billions of people living in smallholder households to escape poverty. Studies show that income growth generated by agriculture is up to four times more effective in reducing poverty than growth in other sectors (Growth Commission, 2008).

Most individuals or households in low-income countries straddle the rural-urban divide through income and occupation diversification and migration. Time devoted to, as well as the income share derived from, non-farm and off-farm activities are therefore substantial parts of the lives of rural households. The most successful rural households use urban opportunities and exploit urban niches in addition to agricultural land resources. Such households combine agricultural production with non-farm and off-farm income-generating activities (Bah et al., 2003, Oseni, 2007). Thus linkages between two areas enhance the life of rural households. Beside effective linkage of two area improve the livelihood of urban household too. Among way of linking rural to urban market linkage is play vital role in creating effective linkages.

Jayne, 2000 highlight the effect of market linkage on small holder farmers, the author state that improved agricultural market linkages reduce post-harvest loses. Improvement of smallholder agriculture leads to a gradual decline in real food prices due to increased competition and lower costs in food marketing and processing. These changes improve the welfare of smallholder farmers in two ways: for consumers, low food prices increase the purchasing power for food, while for producers a decline in food prices enables the reallocation of limited household incomes to high-value non-food agribusiness sectors and more profitable non-farm enterprises. Beside its effect on household livelihood improved agricultural market linkage can create multiplier effects towards other sectors.

Apart from its positive effect lack of market linkages represents a significant impediment to market access, especially for poor smallholder producers. The lack of market linkages substantially increases transaction costs, post-harvest losses, perpetuates farming as a social rather than business activity and reduces market efficiency. For any one commodity, the marketing chain consists of multiple middlemen, each taking a margin at every stage of the chain, and price variations in space and time are often large and erratic (Birthal, et al. 2007).

At the time of inefficient market farmers are also at a disadvantage because they are more or less forced to accept the price the trader offers. They cannot compare the price they are offered with the prevailing local price because there is no local market. Even if they have access to information about the prices in urban markets they cannot really use that knowledge to negotiate with traders because they have no realistic idea of the costs faced by the traders in travelling to their farm or village (Lebo & Schelling, 2001).

2.8. CONCEPTUAL FRAME WORK

The focus of the paper is rural urban agricultural marketing linkages for small scale farmers and poverty reduction. More than ever before, marketing plays critical role in linking rural areas with intermediate cities and market towns and promotion of economic development and poverty reduction (Ravallion, 2005). The increment in

food grain production would stimulate growth in agricultural related sectors such as trade, transport, services and the like (Tegegne, 2001).

Rural urban linkage for agrarian economy is mostly the function of agricultural market linkage. Agricultural marketing linkage is modern market approach that shift from ad hoc sales traditional market approach to profitable long-term mutual relationships.

Regarding the factors that shape the strength, intensity and nature of linkages different variable were listed in different literature. For this research the following factors was considered;

Demographic characteristics like education, age and sex of may influence knowledge of markets, both in terms of current prices and in terms of likely future market developments.

Agriculture extension; agricultural extension workers in can link farmers to buyers by identifying traders and arranging for them to meet with the farmers. They provide service with regard to new marketing and issues in the market (Shepherd, 2004).

Credit access; Limited access to financial services is a major problem for farmers and certainly affects their ability to take advantage of market-oriented production opportunities. Lack of credit was the major constraint to group success and availability of suitable financing arrangements must be considered at an early market linkage approach (Shiferaw et al., 2006).

Government policy; Governments should concentrate on developing an environment that can enable the private sector to function in a competitive way. Incentives to invest are provided by good monetary policies, which can lead to low interest rates and stable exchange rates. Attention may also need to be paid to existing taxation and tariff structures that may discourage investment. Policy must be consistent, particularly where sizeable investments are made on the basis of policy changes (Kelly and Crawford, 2007).

Market Access; Market access for farmers' means, the ability to acquire farm inputs and farm services, and the capability to deliver agricultural produce to buyers (IFAD, 2010). Market access is also requires infrastructure, Most studies identify the lack of suitable infrastructure as a major constraint to market access.

Effects of market linkage on poverty reduction; market linkage are capable of showing a benefit for all participant who is linked to farmers and the farmers, in turn, will need to be assured of higher net incomes from entering into a new linkage than they could obtain from existing market. Strong linkage reduce poverty for small scale farmers by reducing post-harvest lose, increment of net income and improved welfare of smallholder farmers (Jayne, 2000). Market linkage provide the opportunity to generate income, contributing to a reduction in poverty and hunger in developing countries. Markets also drive production to meet consumer demand in terms of quantity and quality (van Schalkwyk et al., 2012). Sustainable access to markets is required to guarantee smallholders an increase in income and to lift them out of poverty.

CHAPTER THREE

3. Methodology

3.1. The Study Area and Agricultural product

Bale Zone is Located in south eastern part of Ethiopia, 430 km from the Addis Ababa (Capital city of Ethiopia) with the capital city of Robe. Bale zone is one of the 17 Zones of the Oromia National Regional State. It is the Second Largest Zone of the region after Borena and characterized by a wide variety of demographic land scopes.

The specific area of this study is in Sinana Dinsho district of Bale highlands, southeast Ethiopia. It is 400km far away from Addis Ababa; the capital city of Ethiopia. The Woreda is located in the coordinates of 7°10'-7°10'02''N Latitude and 39°05'-39°05'02''E Longitude. It has eight month rainy season from March to October receiving 600-1400mm annual rainfall depending on the altitude of the areas. The annual mean minimum and maximum temperature of the area is 20C and 200C, respectively. The people in the distinct practice crop-livestock mixed farming system. The integration of crop and livestock sectors is stronger in the Sinana sub district. Draught power and crop residues are the main linking elements in integrating crop livestock sectors, particularly in Sinana sub district of Bale highlands. Due to differences in climate and type of crops grown, mainly livestock production contributed to the livelihood of farmers in Dinsho sub district, whereas farmers in the Sinana sub district earned their livelihood mainly from crop cultivation. The total population of the Woreda is 39,124. The Woreda has 9 kebeles. The Kebele is the lowest administrative unit of the current Ethiopia comprising several villages in its local boundary (Israel et al. 2016).

3.2. Research approaches

Qualitative and quantitative researches are usually carried out for different reasons. Quantitative research is undertaken in order to generalize to a wider population, to make predictions or make explanations for causes of certain events. Qualitative research on the other hand is undertaken in order to make interpretations based on a particular situation and to understand events according to the informant's viewpoint. This would therefore imply different research methods for both types of research to come up with expected results. Many researchers, however, advocate the use of both approaches or mixed approach to improve research quality. The main concept behind the use of multiple-method approach is that it can counterbalance the weakness of each other. Combining both methods aims to attain the widest and most accurate representation of the reality and overcoming the limitation of one method by another and it allows a comprehensive understanding of the complex social world (Degefa, 2005).

Moreover Creswell et al. (2003) State that the application of multiple methods, both qualitative and quantitative, strengthens a given study as the findings of one method may be supported by the findings obtained by the other and particularly complex social phenomena have various dimensions and linkages in which they are best understood via a range of diverse methods.

Therefore, this study combines both qualitative research methods and quantitative household survey methods for the sake of understanding nature of agricultural marketing system and examining the effect agricultural marketing linkage on small scale farmers' poverty reduction.

3.3. Research design

This study focused on rural urban agricultural market linkage and the role it plays in poverty reduction. In order to understand properly the existing rural-urban agriculture marketing linkages and poverty reduction, predominantly a cross-sectional survey design was employed. This research design helps to gather data

from a relatively large number of cases at a particular point in time. In the context of this study, the “cross-sectional survey”, type of survey research design in which data will collect at one time for the purpose at hand was employed.

3.4. Sample Design and Sampling Technique

The study was conducted in DINSHO woreda. There are nine kebeles in the distinct in which a mixed farming activity is practiced.

Grinnell and William (1990), define sampling as a process of selecting people or cases to take part in the research study. It is true that census survey requires so much time, effort and money. To this end, social science research is generally about inferring patterns of behaviors within specific populations.

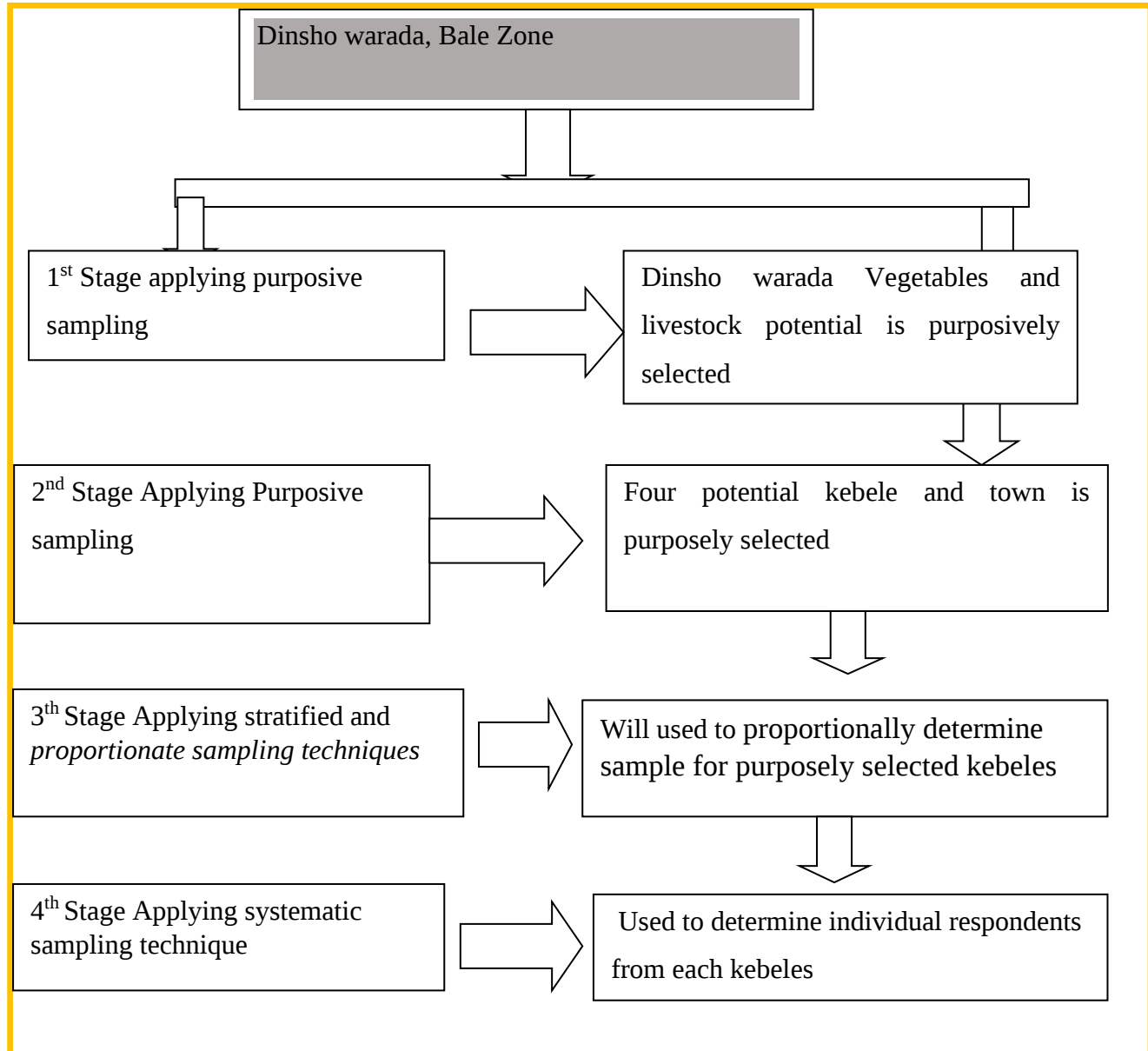
Because of the above reason, the study will employee both probability and non-probability sampling design. From non-probability sampling the purposive sampling technique was used. From probability sampling, multi stage sampling techniques was applied, proportionate stratified and systematic sampling technique used to select each individual farmer.

In the first stage, bale zone Dinsho warada is purposely selected for this study. The scenario behind is Dinsho potential warada in vegetables (potato) and livestock (sheep). In the second stage, from total 9 kebeles of the warada 4 kebeles that is rich in vegetable product and livestock and the town was selected purposively. Accordingly Kereari, Ayida, gojar and geysay are kebeles that produce high vegetables (potato) and rich in livestock product (sheep) was selected. In the third stage, finally proportional sampling technique was used to calculate the sample size from each kebeles including the town. Finally 134 household head was selected from purposely selected kebeles using systematic sampling. The registration list or roster of Kebles used as sampling frame for household heads selection.

In addition to this, traders were also selected through stratified random sampling technique from different types of agricultural trade activities in the study area. Thus, a total of 40 urban trader respondents were selected. The registration list of traders

from the Transport and Trade Office of the towns was the sample frame for this study. Besides there is unregistered traders in the town and they was included in the study by selecting them judgmentally.

Figure 1: Sample Design Process



3.4.1. Sample Size

According to Kothari (2004), sample size is the number of items to be selected from the universe to constitute a sample. Sample size is the determined total number of sampling units needed to be representative of the defined target population; that is the number of

elements (people or objects) that have to be included in a drawn sample to ensure appropriate representation of the defined target population.

To choose an appropriate sample size mainly four factors are taken in to consideration .These are: level of confidence (Z), Margin of error (E), variability of the population(s) and the number of groups within the samples (Thompson, 2011). In addition to this, the degree of precision desired, method of analysis, objective of research, cost, and time determine the type and size of the sample to be drawn.

Nevertheless, the sample respondents taken from traders (input supplier, wholesalers, retailers and processor) and end consumers was using probability proportionality size and the sample respondents taken from producers was applying using simplified formula provided by Kothari (2004) formula selected due to finite nature of population size and easiness of formula to measure the value of information to meet stated objectives.

Kothari(2004)formula: was used to determine sample size of the producers,

$$n = \frac{z^2 \cdot p \cdot q \cdot N}{e^2(N - 1) + Z^2 \cdot pq}$$

where,

n = sample size, N = the total household population.

z = value of standard variant at 95% (1.96) confidence interval,

p = sample proportion (0.05),

q= 1-p, e = the estimate which should be within 0.03ofthe true value,

Table 3. 1: Sample size for study respondents

Name of selected Kebeles	Potato producer households	Numbers of sampled households
Karrari	1762	36
Gojjara	1515	31
Ayida	1579	32

Abekara	1751	35
Total	6607	134

After determination of total number of sample respondents, sample producers were selected based on proportion to sample size from each kebeles. Therefore, total sample numbers of producers were 134. In addition, 50 traders (20 whole sellers and 30 retailers), 16 processors and 30 end consumers were taken using snowball method based on variability of the population characteristics. Hence, 230 sample respondents were used for the study. Using a multi-stage sampling procedure and semi-structured questionnaires, four unique quantitative cross-sectional data-sets were collected between. Qualitative data was also collected using field guides, key-informant interviews and focus group discussions.

3.5. Type and Source of Data

Both qualitative and quantitative types of data was used. Primary and secondary source of data will used to meet the objective of the study.

Primary Data; According to Kothari (2004), Primary data are fresh data that are gathered for first time and happened to be original in character. Primary data source will collect from farmers, urban resident and traders through the use of schedule and structured interview.

Secondary Data; secondary data is historical data previously collected and assembled for some research problem or opportunity situation other than the current situation. Secondary data source was books, journals, published and unpublished article, reports of the Central Statistical Authority (CSA), report of the Rural Development Bureau of the Wereda

3.6. Method of Data Collection

Data was collected from farmers, urban resident, trades and government bodies through schedule and interview.

A) Schedule

Schedule will design separately to collect data from rural households, urban households and traders. Most of the items of the schedule were close ended with some partially open-ended items. The questionnaire, which was prepared and proof read, was translated in to the local language (Afaan Oromo language). The schedule was pilot in order to determine the clarity and understandability of the question and to assess whether the questionnaire is able to collect the intended information. The final version was prepared after incorporating the necessary modifications.

Trained enumerators who were supervised by the researcher administered the questionnaire. It is commonly agreed that the collection of quality data to satisfactorily answer research questions and achieve the objectives depends on the experience, socio-cultural background, academic status and motivation of the enumerators. Hence, well-trained and highly motivated enumerators were recruited to carry out the survey. Enumerator's was selected based on their understanding the socio-cultural context and communicate in Afaan Oromo language to avoid cultural and linguistic barriers while interviewing the local community and the recruited enumerator was trained on the objective of research. During this time, detailed information was collected from the respondents.

B) Interview

Interview was conducted to collect primary data from kebele manager, chairperson, and different sector officials were interviewed on the activities related to rural-urban linkages. Moreover information regarding quality of agricultural product, demand in the market and agriculture market linkage hindering factors and other was collected from these different parties.

3.7. Methods of Data Analysis

Descriptive analysis was used to reduce the data in to a summary format by tabulation (the data arranged in a table format) and measure of central tendency and dispersion (mean and standard deviation), frequency distribution, and percentage was used. Moreover, histogram

was used to describe the general benefits received because of being a member of the cooperative. The reason for using descriptive statistics was to compare the different factors based their mean value. Besides, the interview questions were analyzed using descriptive narrations through concurrent triangulation strategy.

The study has three independent variables: market activities, constraints and actors involved factors; it is market linkage and its contribution towards poverty reduction as a dependent variable. Like Demies (2016), the researcher considers, for his measure, an inherent assumption, which states that with the usage of any Likert scale that although the scale is truly ordinal in nature, it is assumed to be on an interval scale with which statistical properties such as the mean can be justifiably used. It is an assumption made quite frequently in empirical studies (Edmindson, 2005). Accordingly, the paper applies mean and standard deviation as the best measures for analysis based on the mean range developed by Al-Sayaad et al. (2006, cited in Demise , 2016) of the following table:

Table 3.3: Five-Scaled Likert's Criterion

No.	Mean Range	Response Options
1	[1.00, 1.80)	Strongly Disagree
2	[1.80, 2.60)	Disagree
3	[2.60, 3.40)	Neutral
4	[3.40, 4.20)	Agree
5	[4.20, 5.00]	Strongly Agree

Source: Al-Sayaad et al. (2006, Cited in Demis, A. 2016)

Standard deviation is a widely used measurement of variability or diversity used in statistics and probability theory. It shows how much variation or "dispersion" there is from the average (mean, or expected value). A low standard deviation indicates that the data points tend to be very close to the mean, whereas high standard deviation indicates that the data are spread out over a large range of values. The minimum and maximum values are also considered to show that exact answers of the respondents of the questionnaire; because

they are not all incorporated in that mean (average) value only. The sample mean is to show the majority of respondents as best predictors of the population and hence to infer for others (i.e., the whole onion producers in Dugda Wereda in this particular study).

3.8. Inferential Analysis

According to Sekaran (2000), inferential statistics allows to infer from the data through analysis of relationship between two or more variables and how several independent variables might explain the variance in a dependent variable. The following inferential statistics were used in this study.

3.8.1. The Pearson product moment correlation coefficient

According to Phyllis and his associates (2007), inferences have important role in management research. This is because conclusions are normally established on the bases of results. Such generalization were therefore, be made for the population from the samples. They state that the Pearson product moment correlation coefficient is a widely used statistical method for obtaining an index of the relationships between two variables when the relationships between the variables is linear and when the two variables correlations are continuous. To ascertain a statistically significant relationship between variables with market value chain product, the product moment correlation coefficient was used.

Table 3.4: Rule of Thumb for about the Strength of Correlation of Coefficients

Range of Coefficient Description of Strength	Range of Coefficient Description of Strength
$\pm.81$ to ± 1.00	Very strong
$\pm.61$ to $\pm .80$	Strong
$\pm.41$ to $\pm.60$	Moderate
$\pm.21$ to $\pm.40$	Weak
$\pm.00$ to $\pm.20$	None

Source: (Bhattacharjee, 2012; cited in Demise, 2016)

In the study Pearson product moment correlation coefficient was used to determine the following relationships.

- ✓ The relationship between marketing activities and market linkage of potato
- ✓ The relationship between actors involvement and market linkage and its contribution towards poverty reduction
- ✓ The relationship between constraints and market linkage and its contribution towards poverty reduction

3.8.2. Multiple Linear Regression Analysis

Linear regression is a method of estimating or predicting a value on some dependent variable given the values of one or more independent variables. Like correlations, statistical regression examines the association or relationship between variables. Unlike correlations, however, the primary purpose of regression is prediction (Geoffrey, David & David, 2005). In this study multiple regressions model was employed. Multiple regression analysis takes into account the inter correlation among all variables involved.

Regression Functions

In order to make the study more effective and predicting the stated variables, the equation of regression was used and generally built around two sets variables, namely dependent variable (market linkage) and independent variables (Marketing activities, actors and constraints) factors.

The model used was explicitly expressed as;

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where:

Y is the response or dependent variable- market linkage

X₁= marketing activities,

X₂= actors involvement,

X₃= constraints are the explanatory variables. e = estimated error

β_0 is the intercept term- constant which would be equal to the mean if all slope coefficients are 0.

β_1 , β_2 , , and β_3 , are the coefficients associated with each independent variable which measures the change in the mean value of Y, per unit change in their respective independent variables.

Accordingly, this statistical technique was used to explain the following relationships. Regress market linkage (as dependent variable) on the selected linear combination of the independent variables using multiple regressions.

3.9. Research Validity and Reliability

Marczyk, Demtiao and Festinger (2005 p103-6) argues that validity is the concept that refers to what the test or measurement strategy measures and how well it does so. Conceptually, validity seeks to answer the following question: “Does the instrument or measurement approach measure what it is supposed to measure?” So, the first pretest was given after the draft questionnaire is written in order to eliminate the possible mistakes; the second pre-test will also give after the questionnaire is finalized. The questionnaire will ready to be handed out to consumers. It was distributed to farmers’ household head and agricultural product traders to mark out the flaws in the questionnaire. Then, its finalized version was given to consumers to be filled out. To secure reliability of the study standardized questionnaire was designed whereby relevant information was obtained. To this end, Cronbach's Alpha reliability test was conducted by distributing the questionnaire to 30 samples from the total sample of the study.

3.10. Research Ethics

In relation to the ethical issues considered while conducting the research, the researcher was addressed the following. First, the researcher was collected the data appropriately and made conclusions being only based on the data collected not with his personal intuition. Second, the researcher was tried to free him from bias by refraining from asking leading questions that can distort the response to a predetermined generalization. Third, the researcher was appreciated the efforts made by the respondents by carefully including their responses in the research and keeping their anonymity.

CHAPTER FOUR

4. DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

4.1. Introduction

This chapter presents and discusses the findings of the study. The chapter also presents the analysis and interpretation of results. The presentations are done according to the specific objectives and hypotheses. The first section presents the response rates. The second section presents the background information of the respondents. The third section presents descriptive and inferential statistical results along the study objectives. However, completion rate in survey research refers to the number of people who answered the survey divided by the number of people in the sample. It is usually expressed in the form of a percentage. In this study, the sample size was 230 (of which 60 are females) members of respondents.

The analysis of the results follows the study's objectives. This was achieved by identify types of Agricultural marketing linkage practiced by potato producers and value chain actors the study area. The factors influencing market linkages of potato producers and rural-urban agricultural marketing linkage on poverty reduction.

4.1.1 Descriptive analysis

In this section, demographic, social and economic characteristics of producers, traders and consumers were asked about their level of education, family size, sex and age.

4.2. *Demographic, Social and Economic Characteristics of Respondents*

Producers, traders and consumers were asked about their level of education, family size, sex and age. This information was required to ensure that the sample that participated in the study have similar distribution of the respondents by characteristics to that of the population it was drawn from. This determines the accuracy and representatives of information drawn from the sample to the population. Findings regarding their level of education, sex, size of family and age are presented in Table 4.2

Table 4.2 1 Showing the Background Information of the Respondent

Characteristics	Category	Frequency	Percentage
Size of Family	Less than 5	88	38.3
	6-10	107	46.5
	11-16	32	13.9
	17 and above	3	1.3
	Total	230	100
Level Of Education	1-4 Grade	82	35.7
	5-8 Grade	29	12.6
	9-10 Grade	59	25.7
	Diploma and above	6	2.6
	Certificate	4	1.7
	Can Write and Read	50	21.7
	Total	230	100
Age	Less than 25 years	30	13
	25-34 years	43	18.7
	35-44 years	64	27.8
	45-54 years	85	37
	55 years and above	8	3.5
	Total	230	100
Sex	Male	170	73.9
	Female	60	26.1
	Total	230	100

Source: Own Survey Data, 2021

Rural-urban linkages enhance sustainable linkages channel resources from producers to consumers creating economic benefits for the locality. The household provides a major source of labor for agricultural activities. As it can be observed from the above table, 107 (46.5 percent) of the total number of household members are found between 6-10; while 88 (38.3 percent) of the household members were below 5, 32 (13.5 percent) and 3 (1.3 percent) of the total household members are found between 11-16 and above the category

of 17 respectively. It was also observed that family labor is one of the major sources of labor in the area, hence that is a reason for the highest percentage in the 6-10 number of family size. Besides the other implication that majority of actors in the study have moderate family members and the majority were found under the active age group.

According to the results in Table 4.1, 82 (35.7%) of the respondent only knows reading and writing, 59 (25.7%) and 29 (12.6%) of the respondents were grade 9-10 and 5-8 level respectively whereas the remaining insignificant number of respondents are joined higher education. This shows that, though education is a crucial factor for skill development and enhancing effective production and marketing decisions that most of the study respondents especially farmers were not adequately educated. This may causes for the producer producing, handling, sorting, grading and transporting their product in a traditional way. Attainment of education was found to have a positive relationship with the individual's attitudes towards change agents and as such favorable attitude to innovativeness. The level of education of respondents enhances the assimilation and adoption of new agricultural innovation, including marketing.

As depicted in Table 4.1, with regard to age, the results in the table shows that 85 (37%), 64(27.8%) and 43(18.7%) of the study respondents were between 45 - 54 years, 35-44 years and 25-34 years of age respectively. This indicates that most respondents are in their most productive age group. Thus, from the age category of respondents, the above table shows that the total (230) respondents are those range from the age 25 to 55 of the three age categories (table 4.1). It concentrates to the three mentioned age categories. This could be as a result of the fact that they are in their active working age. It could also be said that respondents in these age group tend to provide more effort by partaking in onion marketing. Therefore, they are mostly engaged in marketing activities in order to earn their living. And the other implication, this might have been driven by most of the time onion production takes place by active forces. The findings were consistent with those of Yohana, Elia Sintoo (2015) in a study on factors affecting income of smallholder sunflower farmers in singida region, Tanzania a case study of sunflower farmers in singida rural district, where it was established that majority of farmers across the study area were middle aged ranging between 26-55 years with an average of 45years of age.

In addition, as can be seen from the above table, the majority of respondents are males that constitute 170 (79.9 %) and the remaining 60 (26.1%) are females out of the total 280 respondents. Therefore, more respondents to the sample questionnaire were males. The

result indicates that more males are involved in farming than females, although some women also participated in farm activities. This could be attributed to the fact that males are mostly involved in farming and marketing of the agriculture products in the area. This is probably men are in charge of family activities involving cash transactions while women are in charge of taking care of their homes and children and therefore, spending most of the times at home.

Table 4.2 2 Proportion of potato market linkage actors by Kebeles

Kebeles	Actors	Frequency	Percent
Kerrarri	Producers	30	65.21739
	Wholesalers	4	8.695652
	Retailers	5	10.86957
	Consumers	5	10.86957
	Processors	2	4.347826
	Total	46	100
Gojjara	Producers	28	50
	Wholesalers	8	14.28571
	Retailers	7	12.5
	Consumers	8	14.28571
	Processors	5	8.928571
	Total	56	100
Ayida	Producers	43	55.84416
	Wholesalers	9	11.68831
	Retailers	10	12.98701
	Consumers	9	11.68831
	Processors	6	7.792208
	Total	77	100
Abekera	Producers	30	58.82353
	Wholesalers	4	7.843137
	Retailers	7	13.72549
	Consumers	7	13.72549
	Processors	3	5.882353
	Total	51	100

Source: Computed from respondent's survey data (2021)

The above table 4.2 stated that out of 230 respondents Producers 30, 28, 43 and 30, Wholesalers 4, 8, 9 and 4, Retailers 5, 7, 10 and 7, Consumers 5, 8, 9 and 7 and Processors 2, 5, 6 and 3 and total 46, 56, 77 and 51 are from Kerrarri, Gojjara, Ayida and Abekera respectively. As it is shown the majority of respondents are found in Ayida Kebele. Whereas; producers, wholesalers, retailers, consumers and processors were distributed in the Weredas according to their proportion.

4.4. Results of Measures of Central Tendency and Dispersion

There are a number of challenges that affect the agricultural market linkage associated with different factors. This part explains the descriptive statistics calculated on the basis of the factors that affect the benefit obtained from agricultural market linkage. The results for measures of central tendency and dispersion were obtained from the sample of respondents in these Worada are shown in the following tables.

4.4.1. Descriptive Analysis of the Study Variables

Table 4.4 1; Descriptive Statistics on Constraints factors

	N	Minimum	Maximum	Mean	Std. Deviation
Availability of Improved seeds	230	1	5	2.98	1.288
Far Market place	230	1	5	3.08	1.396
Lack of Advanced technology	230	1	5	3.22	1.373
Poor rural- urban Road network connectivity and transport links	230	1	5	3.89	0.884
Costs of inputs	230	1	5	3.89	0.884
Financial assets and linkage to financial services	230	2	5	4.17	0.731
Perishability nature of the product	230	1	5	3.7	1.008
Lack of extension services	230	1	5	4.1	0.878
Average	230	1.125	5	3.62875	1.05525

Source: Survey Questionnaire, 2021

According to the criterion set under table 4.4.1, the mean value falls to “agree level” of the respondents. It has also the overall minimum mean value of 2.98 that rounds to 1 strongly disagree level and maximum of 5 strongly agree level for these factors scale items of the variable. This implies that in the study area agricultural market linkages were affected by those production factors, these results in the reduction of the benefits obtained from market linkage in the study area.

As it can be seen in table above, **financial assets and linkage to financial services** has gone high which is the predominant constraint of the market linkages for potato producers in the study area and can lead to low productivity and the mean scores is 4.17. This is followed by lack of extension services, Costs of inputs and poor rural- urban road network connectivity and transport can affect the market linkage negatively. Their mean score are 4.17, 3.89 and 3.89 respectively. Followed to this Potato’s Perishability nature is a problem encountered in the study area. Optimization of the practices for the potato results in a significant decrease of Post-harvest losses and decreasing in Post-harvest losses was be instrumental in market stability and exploiting opportunities.

The other items, lack of advanced technology, far market place availability of improved seeds for potato value chain are the main challenges that hinder the activities of the product in the study area. The table above shows that, the mean scores of 3.22 and 2.98 respectively.

Overall, the above table presents the constraints affect the market linkage. The overall mean score of this variable is 3.62875.

When the above responses compared with the interview conducted with the concerned bodies, it was confirmed that there are problems related to these factors in the study area. The interviewees are pointed out the constraints widely observed were; financial assets and linkage to financial services, market, cost of inputs and Pest disease are the major production constraints in the area. Furthermore, lack of government support and absence of labor force in the market in the production period were mentioned among the key constraints to onion producer farmers in the study area.

This result agrees with the findings of Muluneh and Bekele et al. (2015) Challenges and Opportunities of Marketing Fruit and Vegetables at Logia, North eastern Ethiopia. Disease and pest problems, weak support on fruit and vegetable marketing in the town, lack of

access to creditor financial service, insufficient product handling techniques, limited supply agricultural inputs, are some of the problems raised by onion, tomato and banana producers as well.

Table 4.4 2: Descriptive Statistics on Market Assortment Factors

Descriptive Statistics						
	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Middlemen exploit potato farmers unfairly	230	1	5	864	3.76	1.306
Knowledge regarding the existing distribution chains	230	1	5	879	3.82	1.298
I want to sell my product directly to my customers	230	1	5	888	3.86	1.267
Good market linkages	230	1	5	898	3.9	1.137
There are a lot of middle men involved in potato marketing	230	1	5	877	3.81	1.001
Every time I am not interesting with brokers	230	1	5	876	3.81	1.001
Lack of alternative market places to sell my product	230	1	5	934	4.06	1.047
The mode of transport to the market is not appropriate	230	1	5	846	3.68	1.098
Average	230	1	5	882.75	3.8375	1.14425

As can be seen from the above table, the first item of market assortment factor which says “lack of alternative market places to sell potato” and “good market linkages” has the highest mean value 4.06 and 3.9 respectively. They have also the minimum value of 1 at strongly disagree level and maximum value of 5, strongly agree level. According to Fifth-Scaled Likert’s Criteria of Al-Sayaad et al. (2006) of Table 4.5, the mean value falls on the response scale of agree. So, it implies that most actors involved were affected by good market linkage and Lack of alternative market places to sell potato. And these ideas were

shared in the study by Ponguru, and Nagalla (2016), reported on Value Chain and Market Analysis of Vegetables in Ethiopia – especially in onion and tomato product. A Review, that good market linkages are the major constraints of vegetable marketing in Ethiopia. On the other hand, the result of lack of alternative market places to sell potato stated that they have no alternative place to sell their onion product rather it is simply sales the product to the middlemen.

Besides, the market constraints which states “I want to sell my product directly to my customers and middlemen exploit potato actors unfairly have means value of 3.86, and 3.76, respectively. These means values also have a response scale equivalence of agree with the construct item. From this, one can say that middlemen exploit potato producer farmers unfairly and also the middleman takes the lion share of the potato market. In such a way that in potato marketing large number of middlemen highly involved.

Turning to the minimum and maximum values of Table above, it shows 1 as minimum and 5 as maximum that implies the existence of respondents from strongly disagree to strongly agree, respectively. The item “I want to sell my product directly to my customers” respondents stated that they want to sale their product without the involvement of any third party (brokers, and middlemen). The other implication could be that the potato producers have unsatisfied with the involvement of middlemen in potato marketing, rather they want direct deliver their products to the market. However, the other actors are still buying and selling the potato product and on contrary they are satisfied with the marketing activities involved in the business.

The scale item, “every time I am not interesting with brokers and there are a lot of middle men involved in potato marketing have mean value of 3.81 and standard deviation of 1.001. It has the minimum value of 1 (strongly disagree) and maximum value of 5 (strongly agree). Similarly, the mean value (3.81) has the equivalence response scale of agree in such a way that due to their unfair practices of the middlemen producers farmers have develop negative attitudes about the middlemen involvement in potato marketing.

Knowledge regarding the existing distribution chains is the other distribution factors that affect potato product value chain in the study area. Respondents showed their level of agreement on this item has mean value of 3.82 and the standard deviation of 1.298. This mean value also has a response scale equivalence of agree with the construct item. From this, one can say that the potato actors are selling their potato product to middlemen

(intermediaries) who come to their farming and marketing areas with a minimum selling price and then they tried to add value on the product. Depending on data we can say that majority of the respondents they know the existing distributional chains to place their products to the final consumers and gain additional market.

Table 4.5 above presents the marketing assortment factors affecting potato market linkage. The overall mean score of this variable is 3.8375. According to the criterion set and stated above the mean value is falls to “agree level” of the respondents. It has also the overall minimum mean value of 3.68 and maximum mean value of 4.06 that rounds to 5 strongly agree level for the eight distribution factors scale items of the variable.

The interview conducted with key-informants about marketing that affect the potato farmer’s market linkage. They confirmed that there is highly involvement of the marketing activities. Especially in vegetable marketing middlemen participate in large scale, the lion share of the market taken by the middleman (brokers) as explained. The final factors related to distribution which affects the marketing of potato product in the study were, don’t have one’s own selling and showing place or dealers. That means the value with the small scale is added in the study area.

4.6 Actors Involvement Factors

Table 4.6 1: Descriptive Statistics on Actors Involvement Factors

Descriptive Statistics						
	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Actors are the price taker of their potato product in the market.	230	1	5	907	3.94	1.007
Customers prefer cheaply priced potato products	230	1	5	920	4.00	0.916
Price Information in the market	230	1	5	896	3.9	0.975
Lack of access to different trade show and other selling promotional programs	230	1	5	832	3.62	1.405

There are one's own sales force	230	1	5	977	4.25	0.927
High cost of promotion and distribution	230	1	5	953	4.14	0.837
Average	230	1	5	914.16	3.975	1.011
				7	1667	

Source: Survey Questionnaire, 2021

As shown in the table above, actor involvement factor consisted of six items. From these factors Actors are the price taker of their potato product in the market. Customers prefer cheaply priced potato products, there is Price Information in the market, High cost of promotion and distribution, there is one's own sales force, and Lack of access to different trade show and other selling promotional programs are critical factors that affect the market linkage of potato in the study are. The mean scores and standard deviations clearly show respondents agreement on the variables. That is mean values are 3.94 4.00, 3.90, 3.62, 4.25 and 4.14 respectively.

Table 4.8 above presents that the actor's involvement factors affecting market linkage, the overall mean score of this variable is 3.975. According to the criterion set, the mean value falls to "agree level" of the respondents. It has also the overall minimum mean value of 1 that is strongly disagree level and maximum of 5 strongly agree level for the factors scale items of the variable.

This mean value also has a response scale equivalence of agree with the construct item. From this, one can say that the potato actors have a significant effect on the market value addition process. Depending on data we can say that majority of the respondents are involved and have a role in market value activities directly or indirectly.

According to the interview with the Key-informants; regarding actor's involvement factors, the major factors that affect the potato product market linkage in the study area were diseases followed by low price due to the perishable nature of the product and lack of potato product price information in the market were the most determinate factors that hinder in the study area. The Key-informants indicated that farmers are the price taker of their own product is the other determinate factors that hinder the sales volume of potato product. These results the framers forced to follow the price that set by the traders.

Moreover, respondents replied that, lack of coordination among the potato producer's results to easily exploit by traders. They also inform that actors are important to add the value of the product but the price is high due to the market value addition.

This finding agree with Hailegiorgis et al. (2016), conducted Market Chain Actors and Their Role in Vegetable Market Chain in Dugda Woreda, Ethiopia; The survey result indicated that more than 95 percent of farmers have a linkage with potential buyers (wholesalers) firms and they do not be acquainted with their actual buyers during selling their vegetable due to high involvement of brokers/middlemen in vegetable market. Smallholder farmers do not have any power or say on price determination (price takers).

In Sri Lanka, Vegetable price fluctuate during the year based on supply, with the highest and lowest prices recorded during the month which mark the beginning of the cultivation and harvest seasons, respectively(Sanayayake,1977).

4.7. Contribution of market linkage for small-scale farmers

Table 4.7 1: Descriptive Statistics on Benefit Obtained from market linkage

Contribution	N	Minimum	Maximum	Mean	Std. Deviation
Reduce post-harvest loses	230	1	5	4.25	.927
Increment of net income	230	1	5	4.14	.837
Improved welfare of smallholder farmers	230	1	5	3.72	1.133
High profitability	230	1	5	3.56	1.279
Contributions to Value Added	230	1	5	4.00	1.000
Benefited from Value is added	230	1	5	4.11	1.078
Work to add value	230	1	5	3.49	1.301
Marketing Effectiveness	230	1	5	4.16	.982
Good Relationships with actors	230	1	5	4.11	1.186
Average Satisfaction from Value Addition	230	1	5	4.00	1.000

The dependent variable in this study is benefit obtained from Market linkage termed as poverty reduction in this study which is expected to be affected by explanatory variables. As shown in the table above, contribution obtained from market linkage consisted of ten items; from these contribution are reduce post-harvest loses, increment of net income, improved welfare of smallholder farmers, paid for processed potato product, high profitability, contributions to value added, benefited from value is added, work to add value, marketing effectiveness that good relationships with actors that affect the market linkage of potato producers in the study area. The mean scores and standard deviations clearly show respondents agreement on the variables. That is mean values are 3.62, 4.25, 4.14, 3.72, 3.56, 4.00, 4.11, 3.49, 4.16 and 4.11 respectively.

The above table presents that the contribution from market linkage consisted; the overall mean score of this variable is 4.00. According to the criterion set, the mean value falls to “agree level” of the respondents. It has also the overall minimum mean value of 1 that is strongly disagree level and maximum of 5 strongly agree level for the factors scale items of the variable. This shows that market linkage contribute for poverty reduction.

In addition, according to the interview with the key-informants; though there is a constraint that hinders the performance of market linkage activities, those traders are benefited from the chain involvement of potato marketing and value addition

4.4 Results of Inferential Statistics

In this section, the results of inferential statistics are presented. For the purpose of assessing the objectives of the study, Pearson’s Product Moment Correlation Coefficient and regression analyses were performed. With the aid of these statistical techniques, conclusions are drawn with regard to the sample and decisions are made with respect to the research objectives.

4.4.1. Correlation Analysis

In order to determine the influence of marketing assortment, actors in the chain and constraint on market linkage, correlation analysis was conducted. Pearson correlation coefficient (r) was used to determine the strength of the relationship between them. The coefficient of determination was used to determine the effect of marketing assortment,

actors in the chain and constraint on market linkage. The significance of the coefficient (p) was used to test the objective by comparing p to the critical significance level at 0.05 or 0.01. This procedure was applied in testing the other objectives and thus, a lengthy introduction is not repeated in the subsequent sections of the testing. The results are summarized in Table below;

Table 4.8 1: The Relationship between Independent Variables and Market linkage

Correlations		Market linkage contribution for poverty reduction	Impacts Constraints	Impacts of Actors involved in the Market Value Chain	Impacts of Market Activities
Market linkage contribution for poverty reduction	Pearson Correlation	1	-.533**	.670**	0.476
	Sig. (2-tailed)		.000	.000	.000
	N	230	230	230	230
Impacts of market and other Constraint	Pearson Correlation	-.533**	1	-.532**	-.337**
	Sig. (2-tailed)	.000		.000	.000
	N	230	230	230	230
Impacts of Actors involved in the Market Value Chain	Pearson Correlation	.670**	-.532**	1	.418**
	Sig. (2-tailed)	.000	.000		.000
	N	230	230	230	230
Impacts of Market Activities	Pearson Correlation	.476**	-.337**	.418**	1**
	Sig. (2-tailed)	.000	.000	.000	
	N	230	230	230	230

** . Correlation is significant at the 0.01 level (2-tailed). Source: Primary Data, 2021

According to the results in Tables 4.11 above, Constraint on market linkage and benefited from market linkage was found to have a significant negative relationship ($r = -0.533$, $p < 0.01$). Thus, the hypothesis that stated that Constraint on market linkage would have a significant influence on market linkage is partially accepted. This means Constraint on value chain has a negative effect on Potato market linkage. This practically implies that Potato Value chain removes with a negative Constraint on value chain.

According to the results in in the above table, Actors in the chain and benefited from market linkage addition was found to have a significant positive relationship ($r = 0.670$, $p < 0.01$). Thus, the hypothesis that stated that actors would have a significant positive influence on market linkage is accepted. This means that actors have a positive effect on market linkage in the study area. This practically implies that fair actors in terms of quality and quantity involved in the market improve market value chain addition for the selected product in the study area.

The result in the table also shows marketing activities and linkage was found to have a significant positive relationship ($r = 0.476$, $p < 0.01$). Thus, the hypothesis that stated that marketing activities would have a significant influence on market linkage is accepted. This means that marketing activities has a positive effect on market linkage of the selected product in the study area. This practically implies that as the improved marketing system of the product increase market linkage which increase its contribution to poverty reduction in return chain for the product would improve.

4.4.2. Regression Analysis

In order to determine the extent to which constraints, actors and marketing activities influence market linkage and its contribution to poverty reduction, the regression analysis was conducted. The results are discussed and summarized in the following sub-titles. In this section, the research questions that address the level that constraints, actors and marketing activities influence the effectiveness of benefit obtained market linkage was considered.

In the process of multiple regression analysis, the association between the criterion variable (benefit obtained from market linkage) and the predictor variables (constraints, actors and marketing activities) has been estimated using Pearson product moment correlation coefficient.

Table 4.14 1: Coefficients' Table on Multiple Regression of the Research Model

	Unstandardized Coefficients		Standard ized Coefficients	T	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	23.935	2.097		11.412	.000	19.802	28.068		
Impacts of Constraint	-.137	.035	-.213	-3.900	.000	-.206	-.068	.701	1.427
Impacts of Actors involved in the Market linkage	.340	.041	.470	8.308	.000	.260	.421	.652	1.533
Impacts of Market activities	.288	.070	.208	4.087	.000	.149	.427	.807	1.239
Dependent Variable: Benefited from Market linkage ^a									

Source: Primary Data, 2021

Generally, the study discussed four major assumptions that must be fulfilled for one to analyze data using multiple linear regression models. Here follows presentation of the hypothesis testing. Based on the above table using “ β ” (standardized) coefficients, the regression equation of the research model becomes in the form:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$

$$\text{Benefit} = 23.935 - 0.213 * X_1 + 0.470 * X_2 + 0.208 * X_3$$

Where,

Y is the response or dependent variable- Benefited from Market linkage

β_0 = constant which would be equal to the mean if all slope coefficients are 0.

X_1 = Impacts of Constraint

X_2 = Impacts of Actors involved in the Market linkage/ Value Chain

X_3 = Impacts of Market system

The table above further shows that, all the explanatory variables included in this study can significantly explain at 95 percent confidence level to the variation on the dependent variable. The standardized beta coefficient column shows the contribution that an individual variable makes to the model. The beta weight is the amount of the dependent variable decrease when the independent variable increases by one standard deviation (all other independent variables are held constant). As these are standardized we can compare them.

The individual effects of the independent variables can be explained by their respective beta coefficients. This regression equation has its own interpretation to the research model with assessing of factors affecting the benefits obtained through market linkage towards study area. Accordingly, $-.213 * X_1$ means that one unit increase in constraint factors (or one standard deviation), keeping other variables constant, results 21.3 percent decreases the Benefit obtained from market linkage. This is the partial effect of constraints factor on market linkage of potato product. With regard to $0.47 * X_2$, in the assumption of keeping stable other variables, one unit increase in actors involvement (i.e., 1 standard deviation), brings about 47 percent increase on benefit obtained from market linkage. The third variable was market system, $0.208 * X_3$, in the assumption of keeping stable other variables, 1 percent change (increase) in market system factor (i.e., 1 standard deviation), brings about 20.8 percent increase on benefit obtained from market linkage. Therefore, one can say that all those variables have significant effect on benefit obtained from market linkage in the study area.

4.4.1. Model Summary and Regression Coefficient

Table 4.15 1: Model Summary of Regression Analysis among market, Actors and Constraints Predicting Market linkage and its contribution

Model Summary^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square	F Change	df1	df2	Sig. F Change	

					Change					
1	.727 ^a	.528	.522	2.621	.528	84.206	3	226	.000	1.557
a. Predictors: (Constant), Impacts of Market system and other Constraint, Impacts of Actors involved in the Market linkage										
b. Dependent Variable: Benefited from Market linkage										

Source: Primary Data, 2021

From the table above, “R” has a score of .727. It is a multiple correlation coefficient between dependent and independent variables of the study. “R” represents the value of the multiple correlation coefficients between the predictors and the outcome (Field, 2005). Here, this “R” value represents the simple correlation impacts of market system, impacts of constraint, impacts of actors involved in the market linkage factors and benefited from market linkage. Overall, they have strong correlation. That means R or coefficient of correlation of the model is .727 or 72.7 percent and again the table indicates $R^2 = .528$. R square is the correlation between the dependent and independent variable values of the research, is also called the squared multiple correlation coefficient or the coefficient of determination since $(R)^2 = (.727)^2 = .528$. Where as Adjusted R-Square or coefficient of determination of the model is .522 or 52.2 percent So, table 4.15 above with Adjusted R-Square = .522 means that the total variation in the dependent variable (benefits obtained from market value) is explained or caused by 52.2 percent of the change (increase) in all independent variables: impacts of market system, impacts of constraint, impacts of actors involved in the market linkage factors in connection with potato producers in Dinsho worada. In other words, the corollary of this is that 47.8 percent of the variation in overall potato product market linkage cannot be explained by these three independent variables. So, there must be other factors that are not incorporated in the model to explain market linkage and its contribution in poverty reduction analysis in the study area.

4.4.1. ANOVA Summary

The ANOVA the table below tells about the story of how the regression equation accounts for variability in the response variable, which is the dependent variable “benefit obtained

from market linkage” for this thesis due to a change in the independent variables (impacts of market system, impacts of constraint, impacts of actors involved in the market value chain) factors.

Table 4.16 1: ANOVA Summary Table of multiple regression analysis for marketing system, Actors and Constraints Predicting Market linkage and its contributions

ANOVA^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1734.947	3	578.316	84.206	.000 ^b
	Residual	1552.135	226	6.868		
	Total	3287.083	229			
a. Dependent Variable: Benefited from Market linkage						
b. Predictors: (Constant), Impacts of Market Activities, Impacts of market and other Constraint, Impacts of Actors involved in the Market linkage						

Source: Primary Data, 2021

In the above ANOVA table, the column labeled “sum of squares” describes the variability in the sales volume value of the regression. The Regression Sum of Squares is the difference between Total Sum of Squares and Residual Sum of Squares ($TSS - RSS = 3287.083 - 1552.135 = 1734.947$). Here, each sum of squares (i.e., Regression, Residual, and Total under the source column) has a corresponding degrees of freedom (DF) associated with it. Total degrees of freedom is $n - 1$ ($= 230 - 1 = 229$), one less than the number of observations. The Regression degree of freedom for the above table is 3, which is the number of independent factors in the model of this thesis. The residual sum of squares (residual for leftover) is sometimes known in the literatures as Error Sum of Squares is that part still cannot be accounted for after the regression model is fitted. It has 226 degrees of freedom ($= 229 - 3$) for this research paper. The mean squares are the sums of squares divided by the corresponding degrees of freedom. The regression model has a mean square of 578.316 ($= 1734.947 / 3$), and the residual’s mean square is 6.868 ($= 1552.135 / 226$). In general, the above ANOVA table shows a strong relationship between the dependent and independent variables of the study with F-statistic or F-ratio of 84.206 for the overall analysis, and is worth-mentioning that the F-value is highly significant (as $p = .000 < .05$).

4.4.1. Hypothesis Testing

Hypothesis testing is the method of testing whether claims or hypotheses regarding a population are likely to be true. The goal of hypothesis testing is to determine the likelihood that a population parameter, such as the mean, is likely to be true. Here there are two hypotheses: null (H_0), and alternative (H_a). The null hypothesis (H_0), stated as the null, is a statement about a population parameter, such as the population mean, that is assumed to be true. The null hypothesis is a starting point.

An alternative hypothesis (H_a) is a statement that directly contradicts a null hypothesis by stating that the actual value of a population parameter is less than, greater than, or not equal to the value stated in the null hypothesis. The significance (sig.) value expresses a value to accept or reject the (null) hypotheses. It is also called the p-value. The p-value is the probability that the correlation is one just by chance. Therefore, the smaller the p-value, the better will. The general rule is: reject H_0 if $p < .05$ and accept H_0 if $p \geq .05$ (Pallant, 2007).

In this part of the study, proof of the null hypothesis is made based on in the table below for the variables independent factors either to accept or reject. Because, to test the research hypotheses already set in chapter 1, it is possible to find out if the independent variables are significant predictors of the dependent variables. For this test of relationships and in that way our hypotheses, the regression analysis was applied for this thesis.

Table4.17 1: Independent Variables with their Coefficients and P-Value

	Unstandardized Coefficients	Standardized Coefficients	T	Sig.
Independent Variables	B	B		
Impacts of Constraint	-.137	-.213	-3.900	.000
Impacts of Actors involved in the Market Value Chain	.340	.470	8.308	.000
Impacts of Market Activities	.288	.208	4.087	.000

Source: (SPSS Output of Survey Data, 2021).

In the course of identifying factors influencing market linkage and its contribution to poverty reduction, the main task is exploring which factors potentially influence and how (the direction of the relationship) these factors are related with the dependent variables.

Dependent variables

Benefit Obtained from Market linkage: It is continuous dependent variable used in the multiple linear regression model equation. It was measured in likert scale. According to Anol (2012), likert scale is a very popular rating scale for measuring ordinal data in social science research. This scale includes likert items that are simply- worded statements to which respondents can indicate their extent of agreement or disagreement on a five scale ranging from strongly disagree to strongly agree. For this part of the research, it is better to state again what the three hypotheses were under the introduction part of the study.

Independent variables

Hypothesis 1:

H_{a1}: Marketing system of potato has significant effect on market linkage and benefit obtained from market linkage.

H₀₁: Marketing system of potato has not significant effect on market linkage and benefit obtained from potato market value chain.

Table 4.17 of Beta value shows that a production factor has a positive impact on agricultural market linkage benefit obtained from market linkage with a value of 0.208. Since the p value is less than 0.05 (at $p = .000$) or even strictly $p < .01$, the value is highly significant. Thus, we reject the null hypothesis (H_{1o}) and, instead, accept the alternative hypothesis (H_{1a}) that says marketing system have significant effect on agricultural market linkage and benefit obtained from market value chain.

Hypothesis 2:

H_{2o} : Constraints have positive impact on agricultural market linkage and its contribution towards poverty reduction.

H_{2a} : Constraints factors have negative agricultural market linkage and benefit obtained from market linkage.

The beta value of constraint factors shows - 0.213. Though this coefficient has a negative impact on the dependent variable on benefit obtained agricultural market linkage, since the p value is less than 0.05 (at $p = .000$) or even the value is significant. Thus, we reject the null hypothesis (H_{2o}) and, instead, accept the alternative hypothesis (H_{2a}) that says Constraints factors have negative impact on agricultural market linkage and the benefit obtained from market value chain.

Hypothesis 3:

H_{03} : Actors involvement factors have significant effect on agricultural market linkage and benefit obtained from market linkage in the study area.

H_{3a} : Actors involvement factors have significant effect on agricultural market linkage and benefit obtained from potato value chain in the study area.

Table 4.17 depicts that the beta coefficient of promotional factors as 0 .470. This value has a positive effect on the dependent variable benefit obtained from agricultural market linkage. Since the value of $p = .000$ is less than .05, the coefficient of Actors involvement factors have highly significant effect on agricultural market linkage and the benefit obtained from market linkage. Based on this, we fail to accept the null hypothesis (H_{03}) and, in turn, we accept the alternative hypothesis (H_{3a}) stating that Actors involvement factors have significant effect on agricultural market linkage and benefit obtained from market linkage in the study area.

CHAPTER FIVE

4. SUMMARY, CONCLUSIONS, RECOMMENDATIONS AND FUTURE IMPLICATION

This part of the study presents about summary of the major research findings, conclusions and possible recommendations.

5.1. Summary of Major Findings

The collected data was analyzed using both descriptive and inferential statistics. And the study constituted three specific objectives alongside the research questions and each of them met through different analysis methods. Based on the analysis, discussion and related issues of the research, the following summaries are made accordingly:

The study employed a mixed method specifically a sequential exploratory method. Using qualitative methods, semi-structured interview to be exact, to help the researcher get insights of factors that are affecting the agricultural market linkage then used structured schedule to collect explanatory data and analyze the cause and effect relationship between the earlier identified factors and market linkage and its contribution to poverty reduction using multiple linear regression models.

In the study, the demographic variables are taken for discussion. These demographic variables include gender, age, marital status, and level of education. Moreover, some other variable items to the demographic profile were added to explore more information assumed relevant for the study. These were: names of recognized improved potato varieties, Proportion of potato warehouse and store facilities, value chain actors by Weredas, value chain map, and calendar.

According to the findings from the descriptive statistics on variables of the study, in the study area the critical challenges were constraints factors such as, lack of extension services far market place, lack of advanced technology, poor rural- urban road network connectivity and transport links has reduced activities, the prevalence of diseases regularly disturbed, nature of product and availability of improved seeds were the major factors affecting market linkage in the study area with an aggregate mean value of 3.62875. Based on their respective beta value this factor also have a negative relationship with the benefit

obtained from market linkage which is termed as poverty reduction in this study with a magnitude of a percentage change (increase) in constraint factors causes about 21.3 percent decrease in benefit obtained from market linkage.

Followed to this the third factors are marketing system factors such as middlemen exploit potato farmers unfairly, there is knowledge regarding the existing distribution chains, I want to sell potato directly to my customers, there is market linkages, there are a lot of middle men involved in potato marketing, every time I am not interesting with brokers, the mode of transport to the market is inappropriate and there is alternative market places to sell my product with an aggregate mean value of **3.8375** were marketing factors affecting market linkage in the study area.. As per the regression result table 4.17 the market value chain and marketing system factors has the positive relationship.

The final factor this study considered was actor involvement factors such as; actors are the price taker of their potato product in the market, customers prefer cheaply priced potato products, there is price information in the market, lack of access to different trade show and other selling promotional programs, there is one's own sales force and modern warehouse and high cost of distribution are the factors affects the market linkage of potato in the study area with an aggregate mean value **3.975**. (See table 4.8). According to the regression result, it has a positive relationship with the market value chain and a 1 unit increment or a percentage change on this variable was cause about 47 percent decreases (change) on market linkage.

The other thing that must be summarized here should be the overall fitness of the model; this fact has been confirmed by different types of statistical results.

The first way is the ANOVA test that produced a P-value of 0.000 which is below the alpha level, i.e. 0.05. That means the overall independent variables have statistically significant relationship with that of the dependent variable, i.e. market linkage and its contribution towards poverty reduction.

Turning to the findings from the correlation and regression analyses, the highest positive correlation score of 0.670 between benefit obtained from market linkage and Impacts of Actors involved in the Market linkage was seen and found significant at the 0.05 level ($p < 0.01$). The next correlation -0.533 is seen between benefit obtained from market linkage

and Impacts of constraints involved in the Market linkage factors. Followed by 0.476 were contribution from market linkage and Impacts of marketing activities involved in the Market linkage factors. According to the regression model summary, Adjusted R-Square =.522 means that all independent variables together explain the total variance of the dependent variable market linkage by 52.2 percent.

On top of this, the formulated hypotheses were tested using the regression analysis. The result of analysis showed that all entire null hypotheses were rejected, while the alternative hypotheses were accepted. Hence the result of the hypotheses test summarized as follow.

- ✓ Actor's involvement factors have significant effect on market linkage and its contribution towards poverty alleviation in the study area.
- ✓ Constraints have positive impact on market linkage and its contribution towards poverty alleviation.
- ✓ Marketing activities of potato have significant effect on market linkage and its contribution towards poverty alleviation

5.2. Conclusions

The general purpose of this study was to analysis rural-urban agricultural market linkage and its contribution towards poverty reduction to this end, the study sought to identify the most important factors that are behind market linkage analysis in the study area.

Based on the objective of this thesis, the following conclusions are drawn from the above findings, and summary of the study.

The major potato market has both backward and forward market linkage and value chain actors include input (seed, fertilizer, fungicide, farm implement) suppliers, producers, wholesalers, brokers, retailers and consumers.

The study found out that dinsho warada is the center of the potato supply for different areas in the country. Farmers of the area have long experience of good- quality potato production for consumption purposes. Farmers of the area have comparative advantage in terms of harvesting time. Along with increasing the traditional supply system, introducing improved production and marketing system can significantly contribute to the improvement of small-scale farmers market linkage. The potato producers can then be linked with ware potato producers to create access to market for their business.

Farmers are not getting adequate advisory service to increase potato productivity. Production of potato is both for seed as well as consumption. This system of production is serious constraint for the establishment of economically viable seed sector. Potato processing is not well developed and constrained by many problems and only small scale chips making and cooking of potato is made. Potato is also damaged when transported due to inadequate transportation facility and poor handling. Farmers grow potato mainly for marketing purpose. The role of potato for food security is also significant.

Potato price fluctuates based on the season of harvest. Wholesalers are the value chain regulators and the role of producers in value chain management is minimal. As the result of descriptive statistics depicted of the actors in the study area the potato market linkage is affected by the above listed explanatory variables. As most of the respondents response in each items and variables inclined in to agree. This implies that the potato product market linkage is affected by all independent factors.

From the qualitative analysis that elicit from the interview, the potato growers in the study area are also affected by cost of inputs, Pest and disease, soil fertility reduction and, Cost of production, lack of improved seeds, farmers are the price taker of their onion product in

the market, high price fluctuation, lack of access to different trade show and other selling promotional programs, lack of one's own sales force, poor market linkage, unfairly exploitation of middlemen, high involvement of middlemen, lack of storage facilities, and poor road network are major factors affecting market value chain in the study area.

This implies that the study explanatory variables have significant effect on analysis of agricultural marketing linkage in the study area. The mechanisms on how to improve those factors and other relevant challenges in connection with the finding of this research are forwarded in the recommendation part of the following section.

5.3. Recommendations

Based on the results of research that has been done, suggestions that can be given is concerned bodies to further improve agricultural market linkage. On the basis of this conclusions and findings, the following recommendations were drawn:

Rural-urban Agricultural market linkages in Ethiopia in general and in the study area and its surrounding areas in particular are by and large weak owing to factors such as exclusive promotion of urban or rural-based developments (at the expense of the other) and insufficient trade links between Towns and the countryside.

The goal in linking farmers to markets is not to link the most vulnerable farmers with the highest value or most dynamic markets, but to invest in ways that enable specific types of farmers, and communities of farmers, to access markets that match their capacities, production, investment, and risk profiles. This is a key distinction that extension must make when deciding how to best support smallholder farmers. Most smallholder farmers, many living in remote rural areas, are unlikely to be able to link to formal markets and many was always struggle to link consistently, even to local informal markets. Therefore the government should design the strategy that enables smallholder's farmers to link to market. Extension must be able to recognize different farmer segments and find ways to work effectively with these types of farmers. Extension teams have several approaches they can take to support different types of players in a territory—many of them involving co-investment by the farmers. Support from extension projects and programs may be quite limited as compared with the investment options that may be available to farmers, local businesses, and the local government. Therefore, projects should focus less on meager subsidies and more on agricultural market linkages that improve farmers' livelihoods.

In The brokerage system in the area should calls for special attention and needs to be controlled for the betterment of the farmers. The brokers need to be registered and recognized by relevant authorities and get trusted while connecting the farmers with the buyers. Eliminate the negative consequence of the middlemen by linking farmers to consumers. And the government, the cooperative and other relevant bodies should facilitate to establish sustainable marketing linkage between producers and consumer cooperatives and facilitate the linkage of producers to relevant markets regionally, nationally and internationally. And create a marketing linkage between the government institutions (university, military camp, and other sectors which are consumed onion product) with Woredas potato growers. Because in the Woredas potato produced in large scale, this helps the institutions can purchase large amount of product from single producers rather than collect the product from a single individual producers in the market.

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Appendix

Questionnaire

Respected Sir / Madam

I am pursuing a Research work on the topic “RURAL-URBAN AGRICULTURAL MARKETING LINKAGES of SMALL-SCALE FARMERS FOR POVERTY REDUCTION: THE CASE OF BALE ZONE”. Please be frank and fair while filling up the questionnaire. It is assured that the information supplied by you will be kept strictly confidential and used only for research purposes.

Instructions

- Participation in the study is voluntary which is based on your own interest and willingness.
- The information you provide for this study will be strictly confidential and used for an academic purpose only.
- Your valuable input is crucial to achieve the purpose of the study.
- Your honest and open response is greatly appreciated.
- There is no need of write name
- Put only ‘✓’ mark in the box corresponding to your response and short notes in the blank space.

Thank you!

Identifications:

1. Date of interview_____/_____/_____
2. Name of enumerator _____
3. Educational career _____
4. Questionnaire identification number_____
5. Name of kebele-----
6. Name of Wereda-----

PART I

PERSONAL BIO DATA OF RESPONDENTS

This part of the questionnaire deals with the demographic information. Please answer all items on this answer sheet. Put “✓” for close ended items

Background information:

1. Sex of the respondent: Male _____ Female _____
2. Educational level: Illiterate _____ First cycle (1-4 grade) _____
2nd cycle (5-8 grade) _____ High school complete _____ Preparatory _____
Diploma and above _____
3. Age of the respondent a) Under 25-year _____ b) 25 – 34 years _____
c) 35- 44 years _____ d) 45- 54 years _____ e) Above 55 years _____
4. What is your major occupation? a) Farming _____ b) Government employee _____
c) daily labor _____ d) Petty trader _____ e) Specify, if other _____ .
5. Any source of income additional to your major income _____
6. How many family members you have in your house including you _____

Part IV: General Agricultural Marketing Linkages Analysis Questions

Please indicate the degree to which these after you read each of the factors, evaluate them in relation to your product and then put a tick mark (✓) under the choices below. Where, 1 = strongly disagree, 2 = Disagree, 3= Neutral, 4 = Agree, 5 = Strongly Agree.

Please indicate the degree to which you agree with the following statements concerning product factors.

A. Constraints Related Factors

Variables	NO.	Description	Response Options				
			1	2	3	4	5
Constraints	1	Availability of Improved seeds					
	2	Cost of production and selling has gone high					
	3	Inadequate supply of inputs					
	4	Lack of Advanced technology					
	5	Climate change has reduced our activities					
	6	The prevalence of diseases regularly disturbed us					
	7	Potato has Perishability nature					
	8	Lack of extension services					
	9	Poor rural- urban Road network connectivity and transport links					
	10	Inadequate modern warehouse and cold storage facilities					

B. Marketing Assortment Related Factors

Variables	NO.	Description	Response Options				
			1	2	3	4	5
Marketing Assortment factors	1	Price fluctuation is high					
	2	Delay in payment from the customers side					
	1	Low price of the product					
	2	Farmers are the price taker of their potato product in the market.					
	3	Customers prefer cheaply priced potato products					
	4	Lack of Price Information in the market					
	5	Lack of willingness to cooperate with other to fix good selling price					
	6	Promote the product only the final time of harvesting					
	7	Lack of access to different trade show and other selling promotional programs					
	8	Lack of one's own sales force					
	9	High cost of promotion and distribution					

C. Actors Involvement Related Factors

Variables	NO.	Description	Response Options				
			1	2	3	4	5
Actors Involvement	1	Weak market linkages					
	2	lack of knowledge regarding the existing distribution chains					
	3	I want to sell my product directly to my customers					
	4	Middlemen exploit potato farmers unfairly					
	5	There are a lot of middle men involved in potato					

		marketing					
	6	Every time I am not interesting with brokers					
	7	Lack of alternative market places to sell my product					
	8	The mode of transport to the market is inappropriate					

Finally, write any ideas or comment about potato production and marketing sales volume that you feel: _____

-----End of Questionnaire-----

Thank you again for your cooperation!!!!!!!

Appendix II:

Interview questions

MADA WALABU UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
Interview questions

(Key-informants).

1. What problems did producer and marketer face?

2. What remedies has been taken in order to solve (minimize) the existing problems in relation to the above issues?

3. Is the trend of value addition trend? If no; what are the reasons? _____

4. What is your opinion in order to improve market value addition? _____

THANK YOU!!!!

