ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES,

MBA IN GENERAL MANAGEMENT

FACTORS AFFECTING MARKET CHAIN PERFORMANCE OF AGRICULTURAL INPUTS:-THE CASE OF AGRICULTURAL COOPERATIVE UNIONS AROUND ADDIS ABABA

BY

Abayneh Tesfaye

June, 2018

Addis Ababa, Ethiopia

FACTORS AFFECTING MARKET CHAIN PERFORMANCE OF AGRICULTURAL INPUTS:-THE CASE OF AGRICULTURAL COOPERATIVE UNIONS AROUND ADDIS ABABA

A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF GENERAL BUSNESS ADMINSTRATION

BY

Abayneh Tesfaye

ID- SGS/0056/2009A

June, 2018

Addis Ababa, Ethiopia

FACTORS AFFECTING MARKET CHAIN PERFORMANCE OF AGRICULTURAL INPUTS:-THE CASE OF AGRICULTURAL COOPERATIVE UNIONS AROUND ADDIS ABABA

A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF GENERAL BUSNESS ADMINSTRATION

Approved by -BOARD OF EXAMINER

DEAN, GRADUATE STUDIES	Signature	Date
ADVISOR	Signature	Date
EXTERNAL EXAMINER	Signature	Date
INTERNAL EXAMINER	Signature	Date

Declaration

I, the undersigned, declare that this Master research thesis entitled Factors Affecting market chain performance of Agricultural input: the case of agricultural cooperative unions around Addis Ababa is submitted in partial fulfillment of the requirements for the degree of Masters of General Business Administration at St. Mary's University. This thesis is my original work, prepared under the guidance of Mohammed M (Ass. Prof), contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma.

Abayneh Tesfaye.   _____

St. Mary's University, Addis Ababa   Signature and Date

ENDORSMENT

I , hereby certify that I have read and evaluated this thesis entitled factors affecting market chain Performance of Agricultural input: the case of agricultural cooperative unions around Addis Ababa Area by Abayneh Tesfaye, under my guidance, I recommended it to be submitted as fulfilling his thesis requirement

Mohammed M (Ass. Prof.)   _____

St. Mary's University, Addis Ababa   Signature and Date

Table of Contents

ACKNOWLEDGEMENTS

ACRONYMS

ACE- Agricultural cooperatives in Ethiopia

AISE- Agricultural input supply Enterprise

ADIL- Agricultural Development Led Industrialization

ERS- Economic Resource Service

EAL- Ethiopian Amalgamated Limited

DBE- Development Bank of Ethiopia

ICA- International Cooperative Alliance

MOARD- Ministry of Agriculture and Rural Development

NEPAD- New Partnership for African Development

CAAD- Comprehensive African Agricultural Development

MOA- Ministry of Agriculture

NAIA- National Agricultural Input Supply Agency

NSIA- National Seed Industry Agency

NFIA- National Fertilizer industry Agency

SSA- Sub Saharan Africa

MFIS- Micro Finance Institution

MLR- Multiple linear regression

NEP- New Extensive program

GM-Genetically Modified

RTI- Royal Tropical Institute

SNV- Netherland Development organization

USAD- United States Developments of Agriculture

List of Tables

List of Figures and Diagrams

ABSTRACT

Market chain of Agricultural input is an approach that allows cooperative unions to respond to market competition challenges on input supply. Agricultural cooperatives are ideal means for Agricultural input marketing for small holder farmers. Therefore; the major concern of this thesis was to analyze factors affecting market chain performance of agricultural input and to measure the most determinant factors among the Legal, Marketing, service delivery and financial factors. The study uses explanatory research design with mixed approach of both qualitative and quantitative data. Sampling techniques of the study were probability and non probability sampling. To select cooperative unions of the study area convenience sampling from none probability sampling techniques were used and random sampling were followed from probability sampling to select 200 respondents from the total of 400 population of cooperative unions. Structured interview schedule and closed ended questionnaires were used for collecting the essential qualitative data and quantitative from the sampled respondents. To generate qualitative data structured interview were conducted. The quantitative data were analyzed using descriptive statistical tools, Pearson Correlation and Multiple Linear Regressions from inferential statistics. The major output of the study indicates that legal factor have negative significant relationship with market chain while marketing, service delivery and financial factors have positive significant relationship with market chain Performance *of the cooperative unions. In addition to this, the financial factor has the most determinant factor among the variables. Therefore, it is recommended that, the legal factors which is mainly bureaucracy and regulation should be flexible and compatible with relevant actors of the cooperative unions along the market chain to bring about change for efficient and effective delivery of agricultural inputs/services. Likewise, financial factors are the most determinant factor of market chain among independent variables.*

Key words:- market chain, Agricultural input, cooperative unions, legal factor, marketing factor, financial factor, service delivery factor.

CHAPTER ONE
INTRODUCTION

1.1-Background of the Study

Agricultural inputs are categorized into two types, consumable and capital input. Consumable input includes fertilizers, seeds, pesticides, diesel oil electricity, etc, and on the other hand, capital inputs include tractors, trailers, harvesters, threshers, pump sets and other implements. There are some general aspects of the rural market like underdeveloped markets, illiterate buyers, lack of communication facilities, many languages, vast spread of the market, storage, transport problems, seasonality and demand which are applicable to agricultural input markets as well(Singh, 2012). However, agricultural input markets differ from other product markets in many ways due to the nature of their products, the nature and location of users and the overall environment in which products are being bought and used. Agricultural inputs can be considered to be primarily yield saving or yield enhancing inputs. Their basic usefulness to the farmer and therefore their potential comes fundamentally from the quantity of yield they are able to raise or saves which gives the agronomic potential. Grow agriculture, farm inputs need to be available, affordable, accessible, and good quality through legally established market chain. Seeds, fertilizers, and agro-chemicals, are essential for improving the productivity and incomes of smallholder farmers (Singh, 2004).

One of the key elements of agricultural transformation towards more commercial agriculture is that the market mechanism becomes more important for many aspects of the farming business; not just for selling farm products but also for obtaining proper inputs credit, equipment and temporary labor, markets become the dominant coordination mechanism. Providing inputs like fertilizers, agrochemicals and seeds has traditionally been one of the main economic functions of agricultural sector. These sectors facilitate input access for farmers through bulk purchase, which lowers prices, or affiliation with larger group members (Pallant, 2001).

Agricultural input Market chain is used to describe the numerous links that connect all the actors and transactions involved in the movement of agricultural inputs from the supplier/ manufacturer to the final user(Farmer). Supporting these activities are services that enable the chain to operate efficiently. Agricultural inputs flow down the chain and money flows up the chain. The efficiency of the market chain is dependent upon how well information flows

between chain actors, their level of business linkage, and the ability of services to overcome problems (Mark, 2007).

In Ethiopia, the development of agricultural input markets has always been an important issue for the agricultural sector and its stakeholders within existing agricultural input market chain. Price and quality developments in the input markets affect the comparative advantage of agricultural production among regions and types of production; these developments also affect the income of farm households and can have implications beyond the farm level. Concerns regarding the concentration in input markets have been expressed by different stakeholder groups, including farmer unions, advocacy groups, and policy makers (Djurfeldt et al, 2006).

In the recent past, there have been many experiments in the ago-input sector in terms of new distribution and marketing channels and some players have attempted to deliver total solutions to farmers including farm and allied inputs. These new channels range from marketers own outlets to supermarkets to franchised outlets besides traditional mainstream channel of selling through distributors and dealers/retailers (Sukhpal, 2016).

According to Dereje et al., (2016), use of modern agricultural inputs has been extremely limited that causes lower production. Grower's continuous use of low yielding varieties will make it difficult for the government to achieve maximum agricultural growth. Designing appropriate intervention programs to address the continuing challenges of limited use of improved agricultural inputs requires an adequate understanding of the physical, technological, and cultural and socio- economic constraints associated with improved inputs use.

Ethiopian Agricultural Development-led Industrialization (ADLI) development strategy adopted by the country, which initially focused on food crops and natural resource management added market orientation to this strategy. Reasonably priced, adequately, timely and sustainable supplied agricultural inputs are necessary for the commercial transformation of Ethiopian agriculture. Major Improved Agricultural inputs such as seeds, agro chemicals, Fertilizers are fundamental part of the technology introduction services in agriculture sector. Most of these inputs are supplied through the agricultural input importers. Government policy is stimulating diversification of input provision, involving private sector (Gebremedhin *et al*., 2006).

A specialized market chain effort is required to reach the farmers who are spread across different corners of the country. Observed facts on small holder farmers and report of the cooperative unions show there are large annual Agricultural input supply fluctuations.

Therefore, the major concern of the paper is to identify major contributing factors for lower supply of agricultural inputs along the market chain of cooperative union's member small holder farmers around Addis Ababa Area that will be an input for and existing input suppliers and regulatory Authorities.

1.2-Statement of the Problem

Agricultural inputs are the basic requirements for agriculture to increase production and productivity. Availability of these inputs is important for attaining production targets in the sector. Agricultural growth necessary for economic transformation comes from extended input use especially modern agricultural production enhancing inputs like fertilizer, pesticide and seeds that represent improved input technologies. According to Minot and Benson, (2009), Developing countries bring remarkable increase in agricultural productivity in a short period of time through rapid uptake of yield increasing modern agricultural inputs.

Most of Ethiopian small holder farmers have been using low agricultural inputs which contributed for low productivity Dereje et al., (2016). To solve these problems, governmental organizations have been motivated to bring about change in agricultural production system by putting a benchmark for the establishment of affordable, accessible and available agricultural input through the established market chain. Hence, a strong need to improve agricultural productivity and production through the adoption and adaptation of improved agricultural technologies and techniques is critical by refining the existing agricultural input market chain

According to Dawit (2005), some of the constraints of cooperatives of input marketing are: low institutional capacity, inadequate qualified personnel, and lack of market information. Moreover, the prices of agricultural inputs are increasing where as availability of inputs is declining. These multiphase problems make difficult the overall activities of the cooperatives in input marketing system which affects small holder farmers. These problems forces farmers as usually price takers due to the fact that they have poor marketing skill and limited bargaining power. There have been attempts made by the government to improve the marketing skill and bargaining power of farmers through establishment of cooperatives and promoting other group action approaches.

Agricultural cooperative federation is one of the actors that are responsible to supply agricultural inputs to the cooperative unions according to the existing demands of small holder farmers. However, according to five years of agricultural input distribution report of the

federation, there is high supply fluctuation which shows the existing agricultural input market chain could not satisfy the needs and demand of member farmers of the cooperatives. This indicated that there are different factors that are challenging these actors marketing system in supplying the inputs as per the requirement of cooperative unions and member farmers. Previous study conducted by Kassu (2009), analyzed agricultural input supply system and found that major factors influencing the Agricultural input supply systems are lack of availability of agricultural inputs, Lack of flexibility of policy on registration process, lack of organized input market and Absence of strong quarantine for imported products. Issues identified as a problem in the previous studied may not exist today or new changes and problem might have been encountered in due course. Therefore, this study focused on Factors affecting market chain to make agricultural input available for end users of the cooperative unions. It will also measure the dependent variable called agricultural input market chain Performance using independent variables developed from different literatures i.e legal, marketing, financial and service delivery factors, which is expected to attract other researchers to undertake further study in the area and important to be a background for regulatory improvement from government side, capacity and capability improvement for market chain actors and stakeholders in general. Hence it attempts to fill the existing gap of knowledge regarding the Agricultural input market chain system among cooperative unions.

1.4. Objective of the Study

1.4.1. General Objective of the Study
The general objective of the study is to analyze factors that affect market chain Performance of agricultural input around Addis Ababa Agricultural cooperative unions.

1.4.2. Specific Objective of the Study
1- To Analyze the effect of legal factor on agricultural input market chain Performance.

2- To examine the effect of marketing factor on agricultural input market chain Performance

3- To measure the effect of service delivery factor on agricultural input market chain Performance

4- To determine the effect of financial factor on agricultural input market chain Performance

5- To identify the most determinant factors among independent variables.

1.5. Significance of the Study

The information generated from this study will be used in the formulation of appropriate regulation in the area of agricultural input marketing activities through government cooperative and suppliers to promote input utilization in the development of smallholder's agriculture.

This study contributes to the identified farmer cooperatives to give full insight to overcome the existing input availability constraints. It provide information on factors involved in the system, their linkage and knowledge flow in input market, the influential factors for the smooth functioning of the system and enabling policy formulation environment towards input market chain system by giving special emphasis identified factors. The study also provides research, extension and development institutions with valuable information about market chain constraints. Finally the study will be used a basis on which further research could be carried out.

1.6. Limitations of the study

During Data Collection, due to the cooperatives federation company culture, Respondents was not expressed their feelings correctly what they think. In such cases, their practices and references were not assessed without limitation of bias**.** Some information's which is relevant to the study were confidential to the federation that was limitation of the research. Lack of sufficient availability of organized secondary data on the union and cooperative federation was major problem. Bureaucratic issues in the cooperative unions to get secondary data were another limitation to this study.

1.7. Delimitation of the Study

Agricultural input includes Seeds, Fertilizers, Pesticides, Farm Machinery and Equipment, Water/ Irrigation Structures, Animal Feeds, Veterinary Products and other fuels. But the scope of this study delimited to the major consumable agricultural inputs i.e seeds, fertilizers and agro chemicals/ Pesticides because of its marketable volume and major effect on production and productivity. The study was focused on small holders' horticultural crop producers around Addis Ababa agricultural cooperative union. To conduct this study in all agricultural input market chin actors, it was not a simple task that can be easily accomplished. Some of the actors including privet importers and international supplier companies are excluded to narrow the scope due to time and budget constraints**.** In addition to this the study is delimited to four independent variables to measure the dependent variable: The independent variables that used in this study to measure Market chain are Legal factor(bureaucracy and regulation) , marketing

factor(product availability and accessibility), financial factor(credit and collateral)   and service delivery factor(service type and service quality).

1.8. Organization of the Study

This study is structured into five chapters. The first chapter introduces the background of the research along with statement of the problem, hypothesis, objectives, significance, limitation and delimitation of the study. Chapter two considers review of related literature; chapter three described the methodology implemented; chapter four discussed result and findings; finally, chapter five covers the summary, conclusion and recommendation of the study.

1.9. Definition of Key Terms

Agricultural input-:- factors of production which enhancing and save production performance

Agricultural input Market chain:- is used to describe the numerous links that connect all the actors and transactions involved in the movement of agricultural inputs from the supplier/ manufacturer to the final user(Farmer).

Seed:- part of crop from which a new crop will grow(agronomic definition), botanically – fertilized ovule

Fertilizer;- Any substance , which are added to the soil to supplement the soil with those elements required in the nutrition of plants

Marketing: - is the social process by which individuals and groups obtain what they need and want through creating and exchanging products and value to each other's.

Product: - a product is anything that can be offered to a market for use or consumption that satisfies a want or need of consumers.

Distribution: - it is the set of firms and individuals that take title or assist in transferring title to a good or service as it moves from the producer to the consumer.

CHAPTER TWO
LITERATURE REVIEW

2.1- Theories of Agricultural input market chain

According to Panda (2007), agricultural marketing is the study of all the activities, agencies and policies involved in the procurement of farm inputs by farmers and the movement of the agricultural products from the farms to the consumers. Therefore, in the broadest sense, agricultural marketing entails the aggregate socio-economic, which includes all the primary activities of production, interactions geared towards the utilization of natural resources for human welfare. Agricultural marketing is complicated by the diverse nature of the products to be handled, and their perish ability. A further complication is the scattered nature of agricultural production in most tropical countries like Ethiopia is very large number of separate production units. According to the International Cooperative Alliance (1995), cooperative is an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise." Cooperative Marketing is an extension of the principles of cooperatives in the field of marketing. It is a process of marketing through a cooperative association formed voluntarily by its members to perform one or more marketing functions in respect of their produce.

2.1.1- Concepts of Agricultural Input

Agricultural production is determined by various input resources which can negatively or positively influence the level of output. In theory, a production function describes the combination of several inputs to produce a certain level of output. Such a relationship can also apply in a general economic sense, or can particularly be postulated in an agricultural economy setting. To optimize profits, producers combine inputs in adequate proportions and increase the scale of specialization and efficiency (Tiruneh, 2011).

It is unquestionable that, for every country in the world, agriculture is an indispensable sector that accelerates economic growth and development. Likewise, agriculture is the dominant sector and main stay of the worlds' population especially, in developing countries. To feed the rapidly growing population, therefore, smallholder farmers need to be productive using the existing limited land acreage by employing agricultural inputs (Pallant, 2001).

2.1.2. Concepts of Market chain

According to Mark *et al.,* (2004), a marketing chain is used to describe the numerous links that connect all actors and transactions involved in the movement of agricultural products from the farm to the consumer. It is the path one good follow from their source of original production to ultimate destination for final use. Functions conducted in a marketing chain have three things in common; they use up scarce resources, they can be performed better through specialization, and they can be shifted among channel members (FAO, 2005).

Market chain is the term used to describe the various links that connect all the actors and transactions involved in the movement of agricultural goods from the producer to the consumer (CIAT, 2004). Commodity chain is the chain that connects smallholder farmers to technologies that they need on one side of the chain and to the product markets of the commodity on the other side Market chain analysis, therefore, identifies and describes all points in the chain (producers, traders, transporters, processors, consumers), prices in and out at each point, functions performed at each point/ who does what?, market demand/ rising, constant, declining, approximate total demand in the channel, market constraints and opportunities for the product (Yonas *et al.,* 2016).

2.2. Agricultural Input Marketing Chain in Ethiopia

Ethiopian agricultural production system is highly dominated by traditional farming and use of modern agricultural inputs has been particularly limited that causes lower production. According to Dereje et al., (2016), Growers continuous use of low yielding varieties will make it difficult for the government to achieve maximum agricultural growth. Designing appropriate intervention programs to address the continuing challenges of limited use of improved agricultural inputs requires an adequate understanding of the physical, technological, and cultural and socio- economic constraints associated with improved inputs use.

Recognizing the need to increase the use of agricultural inputs, the federal Government of Ethiopia has taken several measures, including issuance of national fertilizer policy, liberalization of the market to allow private sector participation, deregulation of prices and expansion of extension services. The national fertilizer policy was issued in 1993 with the main aim of ensuring competitive fertilizer market and supporting the national fertilizer and extension systems. The Government completely deregulated fertilizer prices in 1998 and eliminated subsidy in 1997 in an attempt to create a fully competitive market (Howard et al, 1995).

Agricultural transformation in general and smallholders' in particular are issues that deserve much attention by policy makers and governments of different countries, economists and agricultural economists (Demeke, et al, 1997).

Roles of cooperative associations: occupies niches of market development and integrates them into the overall system of capitalism. Change the preferences, habits and characters of their members and thereby trigger economic development and social reform. Manage to exploit local knowledge as an otherwise costly production factor. Ease the pooling of resources and the buildup of power. Establish a class of cooperative entrepreneurs and allow this class to remain independent (Gebremedhin, 2006).

In Ethiopia, cooperatives can play an indispensable role by providing marketing options and information, enhancing bargaining power, importing and distributing agricultural inputs with fair price and exporting domestic products (Bernard et al., 2008). Efforts have been made to liberalize the input supply market and improve its competitiveness since 1991. Moreover, a strategy document on input and output marketing and implementation mechanisms prepared by the Ethiopian Ministry of Agriculture and Rural Development (MoARD) in 2004 emphasizes the critical role of an efficient and competitive input markets for agricultural development. According to Zewde (2004), Policy interventions, due to the insufficient rate of production and productivity and agricultural input marketing persistent poverty and poor nutritional status are common. This is due to different production paralyzing factors like absence of new agriculture issues like finance, logistics, storage, transportation and value chains

According to Dawit *et al.,* (2008), the current approach of distribution of seed through farmer's cooperative unions and affiliated primary societies has its own limitation, as procurement of inputs is the responsibility of these cooperatives and unions, which usually have shortage of skilled labour and capacity to handle the process. Moreover, the approach does not create any competition, as the suppliers remain the government enterprise, i.e. Ethiopian seed Enterprise Evaluation of Agricultural Cooperatives in Ethiopia (ACE) Program Activities, Cooperative Unions and their affiliated primary cooperative societies supported by the ACE program have played significant role in the input marketing USAID/Ethiopia (2005).

2.3. Factors Affecting Agricultural Input Market Chain performance

Channel formation and the role of marketing institutions in the channel is a central topic for marketing theory. The continuing dependence on inputs for agricultural production makes their

rise in prices a threat to farmer's access. The rate of use of these inputs in agricultural production depends on their prices. To maintain a higher level of yields implies that adequate use of seeds and other inputs Current challenges for an optimal market chain performance include; the increasing variety of products, globalization, shorter product-life cycles and increased regulatory complexity. They all make it increasingly difficult for supply chains to achieve a strategic fit between what they do particularly well and the desired, variable customer needs. In general, the profitability of the market chain could be improved drastically via better delivery performance (improved responsiveness and reliability of deliveries, fewer stock-outs, higher product quality, more receiver-friendly loads) and increased information availability (better demand insight, more predictable order cycles, accurate, real-time). The potential for improvement when applying market concepts is based on the reduction of inventory-carrying (reduced overstocks, faster inventory turns) and transportation costs (pooling of transport), the reduction of indirect and direct labour costs and the increase of sales and sales margins (Wolday, 1999).

2.4.1. Legal Factors

According to Frank et al. (2007), Agriculture is the foundation of the national economy and plays a major role in the socio- economic development of the country. In agricultural transformation smallholders input requirement are an issues that deserve much attention by policy makers and governments of different countries and agricultural economists

i-Bureaucracy

In 2004, the Ministry of Agriculture and Rural Development (MoARD) was created by proclamation No. 380/2004, merging the Ministry of Agriculture (MoA) and the MoRD. The powers and duties of the Ministry included among others, to provide comprehensive support to private investors engaged in the agricultural sector, and to make the necessary support in capacity building in production, supply, distribution and marketing of agricultural inputs. Input supply system of the government was involved in higher bureaucratic processes. (MoARD, 2005).

ii-Input Regulation

Regulation is usually the imposition of rules on individuals and companies by government, but regulation is also adopted on a voluntary basis by companies, industry associations, and professions to maintain, for example, reputation or ethical standards (Damalas et al., 2017).

There are several possible motivations for the regulation of agricultural inputs. Regulation is often justified when input use implies externalities, such as dangers to the health of farmers or consumers, or hazards to the environment. Such regulation may restrict the use of dangerous chemicals, or may ban seed imports from countries with seed-borne diseases not present in the importing country.

Study in the Philippines, showed that when health costs are included in the analysis, the use of dangerous pesticides reduces rather than improves rice productivity In addition; regulation is sometimes justified with the argument that the government should perform screening or testing that will direct farmers towards the most appropriate inputs. Finally, regulatory systems often mandate and monitor the quality of inputs that are sold, to ensure they are unadulterated and correctly labeled (Rola and Pingali, 1993).

2.4.2. Marketing Factor

The supply of yield enhancing inputs in Sub Saharan Africa (SSA) is restricted and highly priced in relation to international market prices. Within SSA, fertilizer use is mainly confined to export cash crops. There are identified five pillars that are required to develop input markets and achieve market efficiency. Increasing supplies and market efficiency can reduce input prices. These five pillars are the policy environment; human capital development; access to finance; market information; and regulatory frame works. These generic components need to be adopted in the context of country-specific situations. Holistic improvements in all areas will reduce transaction costs and improve accessibility to fertilizers in rural areas (World Bank., 2004).

I-Product Availability

According to Wolde (2004), In 1996, Ambassel started to import fertilizer accounted for 35.1% of fertilizer import. Each of the three importers had its own distribution, wholesaling and retailing network. Three additional distributors/wholesalers, viz. Dinsho, Guna and Wondo joined the fertilizer business in 1996-97

Despite the growth in the total fertilizer consumption, the average nutrient used per hectare of cultivated area in Ethiopia is one of lowest in the world. For instance, fertilizer nutrient use per hectare of cultivated land is about 48kg in Kenya, 97kg for the world. (estimated average) and more than 200kg in Europe, compared to 17-20kg in Ethiopia. The picture of organic fertilizer is not any more encouraging. Because of fuel wood scarcity, rural households have been forced

to divert animal dung from its traditional role as a source of soil nutrient to direct burning as a source of fuel (World Bank., 2006).

II-Product Accessibility

According to Different studies Adugna (2009); Abay **(**2007), Accessibility is a continuous variable that is measured in kilometers which farmers waste time to buy their input from the market. Indicated particularly, rural communities in remote areas suffer from lack of transportation facilities.

Market access is an issue that many developing country governments, donors and nongovernmental organizations continue to grapple with. Agricultural markets are promoted as a possible pathway to rural development, as they are seen as important for economic growth and addressing poverty. Access to markets for smallholder rural farmers, however, is fraught with challenges. Market access issues present local to global connections that prove to be both opportunities and challenges for rural smallholder farmers (IFAD, 2003).

According to Byerlee et al., (1997), Given that physical availability of inputs is often an important constraint to access, with thin and unreliable rural distribution networks in most African countries, co-operatives act as a vehicle for input distribution Although access to Agricultural input and use had increased due to liberalization until 1996/97, major problems remained with the functioning of the fertilizer market, including poorly developed retail markets and so limited market access to retail outlet, credit supply that seemed to discourage competition and lead to market concentration resulting in uncertainty and risk to new entrants. The experience also attests that, while designing market policy reforms, critical attention needs to be accorded to institutional strategies that need to accompany the reform.

2.4.3. Financial Factor

strategic studies evaluate how to align the market chain with the actor's strategic objectives in order to create effectively functioning agricultural marketing system, Ethiopia developed agricultural marketing strategy in 2005 that encompasses supply and demand sides of inputs and outputs, targeting domestic and foreign markets, development of market infrastructure and information systems, developing and implementing regulatory frameworks, capacity building in terms of skill, knowledge and finance (Daniel, 2008).

I-Credit

According to Stoorvogel et al.,(1990), the role of Development Agents in input loans administration became thus significant with the advent of extension package program and since the regional government assumed responsibility for guaranteeing input loans. The increased involvement of the finance institutions should also lead to them absorbing the risks of these loans, thus gradually reducing the loan guarantees provided by the regional governments. The effectiveness of co-operatives in coordinating the provision of various services to smallholders, In addition to supplying inputs, co-operatives often provide technical assistance about the use of those inputs. Finally, co-operatives provide credit by supplying inputs on loan to be paid back when the harvest has been sold (Techane, 2002).

Sub-Saharan Africa has shown that male headed households have more access to land, education, and information on new technologies. There is clearly a case for improving current smallholder credit systems to ensure that a wider spectrum of smallholders are able to have access to credit, more especially female-headed households(Tesfaye et al., 2001).

II- Collateral

Credit administration and channeling system varies from region to region. In Oromya region, the credit required for the extension program is administered by the Agricultural Bureau at different levels. The agricultural bureaus assess loan requirement, process loan applications and issue purchase order to the suppliers. With regard to credit required for the regular program, the beneficiaries deal directly with the bank through their groups or service cooperative backed by the technical assistance from the cooperative promotion bureaus at different level. The regional governments use their administrative machinery at all level and apply administrative measures to enforce repayment. Although strenuous efforts are made by the regional governments to enforce repayments, loan recovery is still facing problems (CSA, 2005).

Inadequately competitive fertilizer market discourages entry into the business and limits investment in market infrastructure. Since companies usually operate in different localities essentially enjoying nearly monopoly power in their respective localities of operation (Demeke et al., 1997)

2.4.4. Service Delivery Factor

According to Anteneh (2008), typical services to the agricultural sector include: agricultural research, agricultural extension and information services; education and training; rural financing and insurance marketing of agricultural products and market promotion; input delivery services

for plant production regulatory services often provided by governments and technical support services i.e. all activities related to the provision of the technical and social infrastructure for agriculture (e.g. transport, supply of fuel and spare parts, planning of resettlement schemes etc.) Techane et al, (1999).

I-Service Quality

According to Alemu et al.,(2008). The major seed distribution system used by the ESE is wholesale and retail at its seed processing and distribution centers, and marketing through cooperatives. Small farmers are now the major clients of ESE, compared to the pre-1991 period where the major clients were the state farms and cooperatives. Currently, the demand for improved seeds is much higher than the supply.

II-Service Type

In Kenya, the informal market information is predominantly in place in providing accurate and timely information like friends and neighbors. The rationale, therefore, is farmers could not read magazines and sell their products accordingly; as a result they prefer the actual and on time market information service (Nkonya et al, 1997).

The evidence underscores the need for government intervention in promoting post-harvest technologies, credit, marketing and grain price support strategies. Type of service: this comprises the key features of an individual service such as agricultural extension, research, etc (Diao and Nin 2007).

2.5. Empirical Review

The development of functioning private markets is not a short-term objective. In many developing countries, particularly small countries at the lower end of the scale in terms of income, there is hardly what can be called 'a private sector' capable of important new initiatives. It takes time for this to come about. In larger countries with more developed economies, the private sector is often dominated by large traders who concentrate on import/export operations and in supplying urban areas, where the volume of business is large and profit margins significantly higher than in rural areas.(Johanes *et a., 2015)*

As Ephraim And Edward (2001), study in most African countries Agricultural input supply actors faces several market constraints like high transport cost, low demand, lack of market, limited market information system, lack of standardization and product quality, limited

knowledge and skill. These constraints affect potential yield of farmers caused by lack of timely availability of agricultural inputs.

Tesfaye et al.,(2001), reported that access to credit, education level and extension contact contributed positively in farmers adoption of improved wheat varieties.

According to Adugna (2009), the aim of the extension and technical service is to introduce farmers with new and improved agricultural inputs for better methods of increasing production and productivity in turn that increase marketable supply. So, this variable is assumed to have positive relation with farm input market

According to study by Million and belay (2004), adoption of organic fertilizer was influenced by access to credit, frequency of development agent visit(service delivery) influence fertilizer adoption positively

Techane (2002), Miss Interpretation of the existing policy and fail to apply practically can affect the agricultural input marketing channel of the agricultural sector. Policies well thought out can have a positive development impact on agricultural input marketing and supply chain. But some of office bureaucracy has negative effect on marketing system

Wolday (1999), indicated that price of inputs is significantly related to use of improved seeds. If the pricing regulation of inputs does not invite farmers, it will have negative effect on improved agricultural inputs use.

Daniel (2008), indicated that access to market, extension service perception of improved seed variety were important variables influencing adoption and intensity of use of tef technology.

Akalu and Enyew (2006), result of economic model indicated that access to credit and extension service were important variables which has positive and significant relationship with improved onion production technology.

Techane(2002), analyzed factors influencing adoption and intensity of fertilizer use among small holder farms fourteen variables were found to be significant such as access to extension, services, access to input credit are significant and positively influencing

Sheahan and Barrett (2014), find that SSA farmers now purchase more agricultural inputs than in the 1990s, and much more than is generally asserted in the debate. Farmers are thus financing inputs somehow.

Hellerstein (2008), presented a short discussion of the industries upstream from agricultural input, noting that they appeared oligopolistic in structure, drawing specific attention to increased concentration of patent ownership in the crop seed sector, especially over traits for those seeds that had been genetically modified (GM).

Hovahannisyan (2012), follow-up review has no further discussion of the agricultural inputs sector one can speculate that this was either due to the fact that no GM crops are currently grown in the EU, and/or that the public policy focus in Europe has been almost entirely on price transmission and the perceived market power of food retailers.

Hammami et al., (2008), Financial factors have a strong impact on the configuration of Supply of agricultural input market. Such as corporate income taxes, transfer prices, currency exchange rates, are some of the key components that a supply chain design model in the delocalization context should take into account. Inclusion of financial considerations in market chain models is particularly advised for capital intensive activities.

Jonas *et al.,*(2008), study services of agro-input dealers are critical to farmers' access to affordable quantities of appropriate farm inputs in their local environments. rapid growth that characterize a typical technology adoption process positive correlation between the price at which agro-input dealers were willing to sell farm inputs and input sourcing distances or accessibility of inputs.

Freeman & Salim (2002), the analysis builds on findings, the impact of market access on aggregate agricultural productivity is observed at two levels: a direct effect through market-induced allocation of land to high value crops and an indirect effect through the intensification of input use to raise productivity

According to Hagmann *et al*., (2002), linkages between service providers in to service delivery system are critical to 'make the system work as a system'. The different roles and mandates of service providers need to be clarified and even more important; they need to 'learn to play the roles' and work together in synergistic way towards making a difference.

According to Aloyce , (2014).Results indicate that 88% of farmers reported delayed. The inputs become available during planting season when most of the household food stocks and income is exhausted and this makes top up price unaffordable. It was also observed that the top up price is more than stipulated cost sharing of 50% between farmers and the government.

Other pitfalls reported in the system include input adulteration and violation of NAIVS guidelines for input distribution. It is recommended that inputs and crop calenders be established that would ensure inputs arrived to beneficiaries ahead of the planting season In addition, efficient monitoring and evaluation system should be put in place to minimize inefficiency emanating from violation of NAIVS guidelines. Assessment of operational aspects of the input supply chain under national agriculture input voucher scheme (NAIVS) in Tanzania

Berto (2007) ,argue that the integration of crop seed and agrochemical firms may have biased the types of agricultural inputs introduced by the sector. In addition, business contracts such as tie-in contracts between agricultural input and complementary products such as herbicides may be exclusionary in nature and therefore grounds for antitrust scrutiny.

Dawit, (2005), the weak performance of the agricultural input markets in Ethiopia has been portrayed in various studies as a major impediment to growth in the agricultural sector and the overall economy with an inefficient marketing system, the surplus resulting from increased production benefits neither the farmers nor the country. Most of the agricultural production is undertaken by small scale producers scattered all over the country, engaged in different agricultural enterprises without specialization, and with limited marketable surplus.

Gebremeskel *et al.* (1998), studied as the marketing system is characterized with a long chain with many intermediaries. An intervention is required to shorten the marketing channel in order to reduce the marketing costs incurred at each level of marketing channel so that the benefits will go to the farmers.

The study on Kenya by Jonas et al.(2008), that although the number of agro-inputs dealers in Western Kenya has been growing, the growth is still a far from what is required to ensure that smallholder farmers, especially those in far away rural communities, have adequate access to agro-inputs. Besides, apart from limited business incentives, most of the agro-input dealers in the study area face numerous other problems (e.g., infrastructural challenges, low demand) in their businesses that hamper efficient agro input supply to smallholder rural farm households.

2.6. Conceptual Framework

In this study independent variable is represented by factors affecting agricultural input market chain and it will be grouped into four major factors namely Legal factors, marketing factors, financial service factor and service delivery factor which are selected to influence the dependent variable called agricultural input marketing chain. As a result, in many rural areas of larger and more developed countries the situation is not dissimilar to that of smaller and less developed countries.

the persistence of effects of market failures and the many factors related to the power configuration of the public agencies involved have often provided justification for continued government intervention in the agricultural input markets as 'interim measures'. Some interim measures have actually represented partial reversal of reform legal issues, marketing, service delivery and financial factors for effectiveness of the system (Johanes *et al., 2015)*

Framework of market chain with independent variable

| Legal Factors
       Bureaucracy
       Regulation
		Marketing Factor
		       Product availability
		       Product accessibility

	Agricultural Input Market Chain Performance	
Service Delivery Factor Service type Service quality		Financial Service Factor Credit Collateral
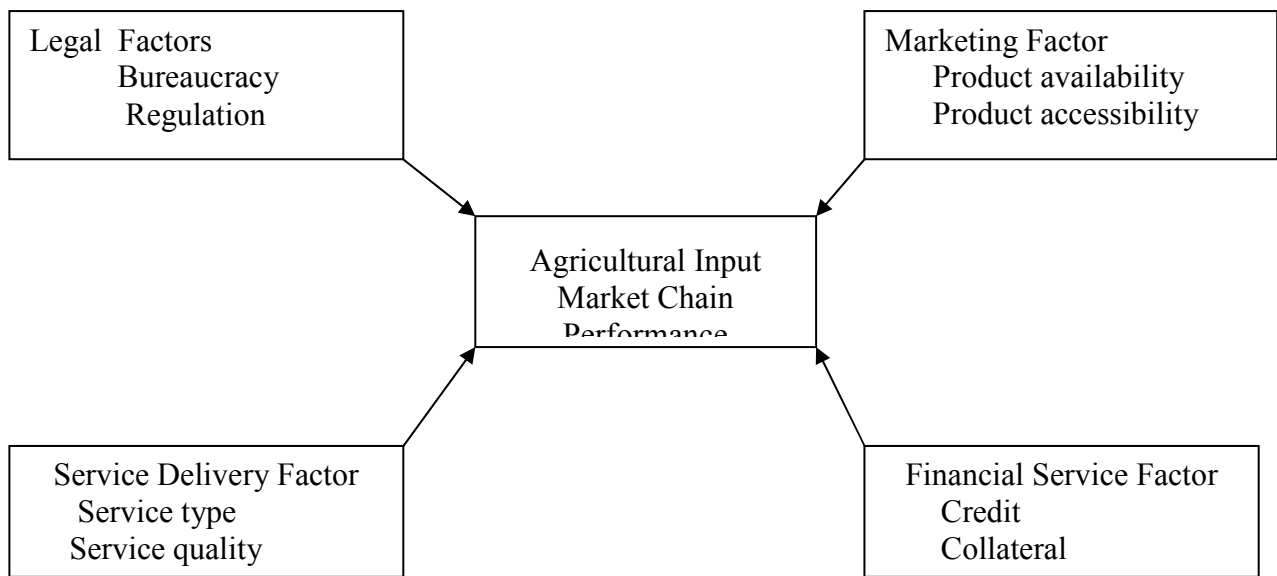
Fig 2.1- conceptual framework

Source:- Compiled and sketched by researcher based on review of related literature

2.7- Hypothesis of the Study

The following Hypothesis was developed regarding the determination of market chain of cooperative unions based on different theoretical and empirical reviews.$H0_1$. There is positive and significant relationship between legal factor and agricultural input market chain Performance

HA1. There is negative and significant relationship between legal factor and agricultural input market chain

$H0_2$. There is no positive and significant relationship between marketing factor and agricultural input market chain Performance

A2. There is positive and significant relationship between marketing factor and agricultural input market chain Performance

$H0_3$. There is no positive and significant relationship between service delivery factor and agricultural input market chain Performance

HA3 There is positive and significant relationship between service delivery factor and agricultural input market chain Performance

$H0_4$. There is no positive and significant relationship between financial factor and agricultural input market chain Performance

HA4. There is positive and significant relationship between financial factor and agricultural input market chain Performance

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Study Area

The study was conducted around Addis Ababa area agricultural cooperative unions which are found 50 km from Addis Ababa. The study area considers cooperative unions which are divided in to: Holeta area -Robi Merga agricultural cooperative union, Sebeta area- Melka Awash agricultural cooperative union, Sendafa area-Berka Aleltu agricultural cooperative union, Debrezeit area – Erer agricultural farmers cooperative union and the cooperative federation. The major role of agricultural cooperative federation is to import inputs and supply to cooperative unions and cooperative unions again distribute to their member small holder farmers.

3.2. Research Design

According to Kothari (2004), Research design is a blueprint for the overall research operations, making research as efficient as possible generating maximal information with minimal expenditure of effort, time and money. Research design stands for advance planning of the methods to be adopted for collecting the relevant data and the techniques to be used in their analysis, keeping the objective of the research and the availability of staff, time and money. Preparation of the research design should be done with great care as any error in it may upset the entire research.

The study used explanatory research design conducted in order to identify the extent and nature of cause-and-effects of relationships between agricultural input Market chain and different factors (Legal marketing, service delivery and financial). Explanatory research focuses on analysis of a situation or a specific problem to explain the patterns of causal relationships between variables Zikmund (2002).

3.3. Research Approach

According to Creswell,(2009), mixed research is an approach that combines both qualitative and quantitative research that Enables mutual collaboration of each other via the use of multiple sources of data. In this study, both qualitative and quantitative research approach were used.

The qualitative approach used to analyze the data generated from the interview and quantitative approach was used to analyze the data generated from likert scale questioners.

3.4. Types and Sources of Data

In order to conduct this study qualitative and quantitative data type were used. The researcher used both primary and secondary data sources. Primary data source were collected from response of the selected sample respondents by using questionnaires and structured interviews. Secondary data was also utilized from secondary documents of selected cooperative unions around Addis Ababa area agricultural cooperatives unions.

3.5 Study Population and Sample Size Determination

3.5.1- Study Population

According to Saunders *et al.*,(2009),population of the study is full set of cases from which sample is taken. It is the entire group of individuals which are the concern for the study within the area. The study considered total population of 400 employees from the cooperative unions which are found around Addis Ababa area agricultural cooperative unions. Therefore, the target populations of this study were staffs of the cooperative federation, cooperative union and small holder farmers that are member of the cooperatives unions.

3.5.2- Sample Size Determination

Sample is sub group or part of a larger population which is included in the study (Saunders et al., 2009). There are several approaches to determine sample size. In this study, a simplified formula that is Yamane (1967) was used as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where

n = Sample size

N = Population size of the study

e = Errors of limits at 5% (0.05)

N = 400.

$$n = \frac{400}{1 + 400(0.05)^2}$$

$$n = \frac{400}{1 + 400(0.0025)}$$

$$n = \frac{400}{1 + 1}$$

$n = \frac{400}{1+1} = 200$

Therefore, the sample size for this study was 200 respondents

3.6. Sampling Technique

To develop sampling frame for the study, both probability and non-probability sampling techniques were used. Non probability sampling is known as purposive or judgment sampling in which items for the sample are selected deliberately by the researcher instead of using the techniques of random sampling (Muzammil *et al*., 2010). To select cooperative unions which are distribution around Addis Ababa area, none probability convenience sampling technique has been employed. This ensured professional judgment to select cases that would best enable to answer the research question and meet the research objective using the population list of cooperative unions.

The intended sample sizes were selected by proportional stratified sampling technique.
$n_0 / N = 200/400 = 0.5$ which means 50% of each cooperative unions was selected proportionally from each study area which was taken as strata.

Table 3.1- Proportion of respondent in each cooperative unions

s/n	Categories	Study area	Total population	Proportion of respondents
1	Cooperative union employees and primary cooperative members	Sebeta	96	48
		Holeta	109	54
		Sendafa	67	34
		Debrezeit	106	53
2	Cooperative federation/supplier	Addis Ababa office	22	11
	Total		400	200

Source: own survey, 2018

Finally based on the sampling frame from each cooperative union, Random sampling technique has been used from probability sampling. From the total sample, the researcher selected with

equal ratio from each study area in order to have equal respondents of proportions from heterogeneous type so that the sample was representative and valid to generalize the result.

3.7. Methods of Data collection

In the course of data collection, both primary and secondary data collection procedures were employed. The questioners were organized in to two parts; demographic and subject matter based which was prepared with five point Likert scales ranging from strongly disagree to strongly agree. According to Robson (2002), likert scale method is preferred to make questions interesting to respondents there by enhance their cooperation and ultimately to ensure maximum response rate. The questioners were reviewed by the advisor, corrected as per the comments and distributed for respondents.

Primary data was collected from sample respondents through questionnaires and structured interview for 11 cooperative federation staffs which was designed to generate data on legal, marketing, service delivery and financial factors that are supposed to be important variables for the study.

Secondary data was collected from related stakeholders' records such as Agricultural cooperative   federation and cooperative unions to see availability problem of cooperative unions. The data collection process was handled by the researcher himself.

3.8. Validity and Reliability

3.8.1- validity Test
According to Kothari (2004), validity is the most critical criterion that indicates the degree to which an instrument measures what it is supposed to measure. It is determined whether the findings are accurate from the stand point of the researchers and readers (Johon, 2009). Content validity of the study was assured by research advisor and experts on the area of market chain. The representativeness of the sample and the item where evaluated by the advisor as it measures the interest or concept it intended to measure.

3.8.2-Reliability
According to Gill and Johnson (2002), reliability measurement refers to its consistency; that is, the extent to which a measuring device will produce the same results when applied more than one to the same person under similar conditions. There for reliability is one of the major

criteria for evaluating research instruments. Reliability measure the internal consistency of the model. In this research, cronbach's alpha as been used to test the reliability of the measure. In order to be reliable cronbach's Alpha (α) with the value greater than 0.700 is very acceptable (Field, 2009). From the table 4.1 below result of cronbach's Alpha is above the cut point for all variables which is acceptable. Hence the response generated for all variable' used in this research were reliable enough for data analysis.

Table 3.2- Reliability Test

Reliability Statistics

Variable	Cronbach's Alpha	N of Items
Legal factor	.743	8
Marketing Factor	.870	8
Service delivery Factor	.900	8
Financial Factor	.743	8
Market chain Performance	.985	4

Source: own Survey (2015).

3.9. Method of Data Analysis

To meet the intended purpose of the study, the collected data were checked for completeness and arranged to enable coding before starting analysis of data. In order to obtain those required descriptive and inferential result, the study has employed statistical software known as statistical package for social science (SPSS VERSION 20). Quantitative data was analyzed to generate descriptive and inferential statistics result. Pearson Correlation and multiple linear regression model was used to analyze the relationship exists between independent and dependent variables. The overall qualitative data of the study was presented in a narrative analysis approach which helps to present fragmented data of the research in brief and summarized manner.

Multiple Linear Regression (MLR) analysis technique used to analyze the influence among variables (*i.e.* single dependent variable and several independent variables) with the object of using the independent variables whose values are known to predict the single dependent value (Hair *et al*., 1998).

The prediction of Y is accomplished by the following equation

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \ldots \ldots \beta_t + e.$$

Where:

Y: Dependent variable (market chain Performance)

β_0: Intercept

$\beta_1, \ldots \ldots \beta_t$: Vectors of estimated coefficient of the explanatory variables

$X_1, \ldots \ldots \ldots X_4$: Vectors of explanatory variables (independent variables)

X_1 = legal factor

X_2 = marketing factor

X_3 = service delivery factor

X_4 = Financial factor

e = errors linked to usage of data (error term).

3.10. Ethical Consideration

The researcher considered the study area culture and norms in the process of conducting this study. In this process the researcher was not put any statements that can expose the selected farmers' cooperatives to unexpected crisis and the response of the respondents was remain confidential.

CHAPTER FOUR
RESULT AND DISCUSSION

4.1 -Introduction

This chapter encompasses the descriptive and inferential statistical analysis of the data to achieve the specific objectives of the study and to test hypothesis formulated in chapter one along scientifically valid research procedure. Classical Assumptions and statistical parameters tested in order to examine the significance of model and variables to predict the dependent variables. In order to address the objective of the study, data collection instrument such as, questionnaire and interview were used. Hence, the chapter is all about presentation, analysis and interpretation of the study findings.

4.1.1-Response Rate
Out of 200 questioners distributed, 193 were filled correctly and collected from respondents. Seven questioners were missed due to different reasons. As a result the response rate was 96% which is good enough to make conclusion of the result and reliability test was checked.

4.2-Descriptive statistics

4.2.1 Basic Socio-demographic characteristics of sample respondents

Table 4.1-Distribution of Demographic characteristics

characteristics	Range	Frequency	Percent	Valid Percent	Cumulative Percent
Gender	male	113	58.5	58.5	58.5
	female	80	41.5	41.5	100.0
	Total	**193**	**100.0**	**100.0**	
Age	18-20	1	.5	.5	.5
	21-30	35	18.1	18.1	18.7
	31-40	104	53.9	53.9	72.5
	41-50	53	27.5	27.5	100.0
	Total	**193**	**100.0**	**100.0**	
Marital status	married	25	13.0	13.0	13.0
	single	168	87.0	87.0	100.0
	Total	**193**	**100.0**	**100.0**	
Family size	3-4	12	6.2	6.2	6.2
	5-6	112	58.0	58.0	64.2
	>6	69	35.8	35.8	100.0
	Total	**193**	**100.0**	**100.0**	
Education	primary education	4	2.1	2.1	2.1

	secondary education	29	15.0	15.0	17.1
	certificate/diploma	84	43.5	43.5	60.6
	degree and above	76	39.4	39.4	100.0
	Total	**193**	**100.0**	**100.0**	
Job position	manager	9	4.7	4.7	4.7
	finance/sales	51	26.4	26.4	31.1
	procurement	31	16.1	16.1	47.2
	store manager	22	11.4	11.4	58.5
	member farmer	80	41.5	41.5	100.0
	Total	**193**	**100.0**	**100.0**	

Source:- own survey result (2018)

Table 4.2 above gives an overview of the demographics of respondents. Gender, Age, Educational background, marital status, job position of the sampled respondent were analyzed and discussed in relation to their influence on the topic. These aspects are important because the main marketing activities are coordinated by the household head of the farmers and the decisions are more likely to be influenced by such demographic aspects

Gender Distribution

The table above shows the gender distribution in the sample respondents of the cooperatives union. Accordingly, 113 (58.5%) of the respondents are males and the rest 80 (41.5%) are females. This shows that majority of the respondents are male. Sex of the respondents is important in determining the household capabilities in marketing of Agricultural input because mostly mans are more involved in the agricultural production process.

Age of the respondents

From the above table 4.2- the majority of the respondents fall within the age range of 31-40 are 104 of the total respondents which account 53.9%. Respondents with age group of 41-50 total of 53 makes 27.5% of the total respondents. The rest went to the age ranges of 18-20 and 21-30 comprising 0.5% and 18.1% of the respondents, respectively. Age of respondents was one of the demographic characteristics that need to be analyzed in order to get experience based information with respect to agricultural input market chain.

Marital Status

From the table above 87% of respondents are unmarried while 13 % are married.

Family size

Higher number of family active labor force leads to decisions to take risk for participation in agricultural production. The majority of respondent's ranges with family size of 5-6 total of 112 accounts 58%, family size above 6 are 69 accounts 35% and 3-4 are 12 accounts 6%. Therefore, family size contributes to the variation in agricultural production and input demand and marketing system.

Level of Education

The assessment in this study, Education is one of the important demographics which increases farmer's ability to use production enhancing agricultural inputs in a better way. Therefore, in this study, as indicated in Table 4.2, 44% of the sample respondents were Certificate and diploma, 39% were above degree, 15% had secondary education, and 4% had primary school education. From the data presented, number of higher education is 80% which is important to have the knowledge of market chain and marketing

Job position

From the table above majority of the respondents are member farmers which accounts 41.5% who is directly involved in the market chin as end user of agricultural inputs. 26.4 % of respondents are from the Finance and marketing department of the cooperative federation and unions who are expected to have general awareness of the market chain of agricultural inputs.

Table 4.2- Land holding characteristics

Characteristics	Range	Frequency	Percent	Valid Percent	Cumulative Percent
Land size	below 0.5 hectar	7	3.6	3.6	3.6
	0.5-1.5 hectar	24	12.4	12.4	16.1
	1.5-2.0hectar	72	37.3	37.3	53.4
	above 2.0	79	40.9	40.9	94.3
	landless	11	5.7	5.7	100
	Total	193	100	100	

Source:- Own analysis result (2018)

Land is one of the most important determinants of agricultural production and input consumption as well. It was assumed that larger the farm size, higher is the possibility to use a combination of improved agricultural inputs (Roy et al., 1999). In the study area, the size of the land owned differed from respondents. As shown the table above 2 hectare land holders accounts 40.9% and landless respondents account 5.7 %. Below 0.5 hectare account 3.6 % and between 0.5-1.5 hectare holders account 37.3 %. Therefore majority of the respondents are

land holder of above 2 hectare whom involve actively participate in the market chain of agricultural inputs.

Table 4.3-   Mean Result of variables

Factors	N	Grand Mean	Std. Deviation
Market chain Performance	193	2.5441	0.965873
legal factor	193	1.934575	0.616365
Marketing factor	193	2.138588	0.651141
Service delivery actor	193	3.213075	0.699783
Financial factor	193	3.281088	0.670975

Source own survey, 2018

From the table above of mean result, Market chain performance has 2.54 grand mean with standard deviation of 0.965. This shows that as stated initially the market chain performance of cooperative unions has performance problem Due to different factors.

The average mean value of the legal factor is 1.935 with standard deviation of 0.616 which implies that majority of respondents were disagreed on the legal factor questions no significant variability. The result indicates that bureaucracy and regulation of the cooperatives union have effect on their system. This result is in line with Techane (2002), some of office bureaucracy has negative effect on marketing system so that the mean result of respondants were disagreed on their responses.

The Average means result of marketing factor is 2.138 with standard deviation of 0.651 which indicates majority of responders are above disagreement . The average mean value for the Majority of respondents for Service delivery and financial factors are above neutral that means they agreed on the service and financial factors which will have positive effect on their system.

4.3 -Correlation analysis

By using the Pearson correlation coefficient the study identified the existence of relationship between market chain and hypothesized explanatory variables, the causality of these independent and dependent variable was established at 95% confidence level. Therefore, this correlation analysis helped to determine whether a statistically significant relationship exist between market chain and predictors variables (i.e. legal, marketing, service delivery and financial factors).

A correlation refers to a quantifiable relationship between two variables, and the statistic that provides an index of that relationship is called a correlation coefficient r, which is a measure of relationship between two interval or ratio variables (Akroush, 2003).

The correlation coefficient is scaled between -1 and +1. When r is close to 0 implies that there is little relationship between the variables. Whereas -1 and +1 shows strong negative and a strong positive relationship between dependent and independent variables

According to Cohen (1998), strength of correlations can be interpreted as correlation coefficient which is $\pm$ 0.10 to $\pm$ .29 small (weak), $\pm$ 0.30 to $\pm$ 0.49 medium (moderate) and $\pm$ 0.50 to $\pm$ 1.0 large(strong) . Hence, Financial factor have a strong, positive and significant correlation with market chain (r=0.702, p<0.05).

Table 4.4- Correlation Analysis

		Market chain Performance	Financial factor	legal factor	marketing factor	service delivery factor
Market chain performance	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	193				
Financial factor	Pearson Correlation	0.702**	1			
	Sig. (2-tailed)	.000				
	N	193	193			
Legal factor	Pearson Correlation	-0.316**	-.172*	1		
	Sig. (2-tailed)	.000	.017			
	N	193	193	193		
Marketing factor	Pearson Correlation	0.631**	.462**	-.332**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	193	193	193	193	
Service delivery	Pearson Correlation	0.381**	.310**	-.086	.308**	1

| factor | Sig. (2-tailed) | .000 | .000 | .236 | .000 | |
| | N | 193 | 193 | 193 | 193 | 193 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source- Own survey, 2018

From the above table, The result of this study indicates that Marketing factor have strong positive significant correlation with Agricultural input market chain (r=0.631, p<0.01,).

Legal factor has moderate negative significant relationship with market chain(r=0.316, p<0.05). Like that of financial and marketing factors, service delivery factor have moderate positive significant correlation (r=0.381, p<0.01) With Agricultural input market chain.

The aim of conducting this study is to examine factors that affect agricultural input market chain of cooperative unions and determine which factors have a considerable impact on market chain. To this effort the study was undertaken by reviewing secondary data written on related topics, collecting and analyzing primary data through survey questionnaires. To check the level of market chain and to measure the relationship with the factors which are hypothesized to influence market chain, thirty six questions were raised on all dependent and independent variables. According to the data analysis performed using both qualitative and quantitative methods findings show that all of the predictor variables are statistically significant to explain the market chain.

The first specific objective of the study was to analyze the effect of legal factor on agricultural input market chain Performance. The Results from the regression model above shows that Legal factor has medium strength of negative significant correlation with market chain(Rho= -*0.316*, P=0.00) and Regression result of beta coefficient (β= -0.132, sig. 0.018) which means keeping other factors constant, one unit increase in legal factor will decrease market chain by 0.132 unit which concedes with the interview result of the cooperative federations stated as bureaucracy and Regulation delay the marketing process of the unions. This result is in line with Techane (2002), Miss Interpretation of the existing policy and fail to apply practically can affect the agricultural input marketing channel of the agricultural sector and some of office bureaucracy has negative effect on marketing system (Wolday (1999); Dionne *et al.,* (2016) Bureaucracy and Regulation was some controversial issues of positive or negative effect on market chain. It needs further study on identifying the effect.

However, the finding supports the Alternative hypothesis. The second specific objective of the study was to examine the effect of marketing factor on agricultural input market chain Performance. The study revealed that marketing factors which focus on input availability and accessibility for the cooperative unions has the correlation result of marketing factor (Rho=0. 631, P=0.00) is strong positive and significant which implies the relationship of marketing factors and market chain is direct and positive. Regression result of beta coefficient (β= 0.398, sig. 0.000). Keeping other factor constant, one unit increase in marketing factor brings 0.398 unit increase of the market chain. From the interview result most of the cooperative federation staff respond, as input availability and accessibility increases market chain efficiency will also increases and become smooth system. This result concedes with Alemu et al.,(2008), indicated that access to market were important variables influencing adoption input technology. As agricultural inputs are available among the supplies in the country with nearness to the cooperatives, the market chain system becomes simple to the cooperative unions involved in the agricultural input marketing system. According to Freeman & Salim (2002), study results Input availability and accessibility problem was difficult as farmers' resources are limited and have other priorities to allocate their money. Delayed inputs had consequences on continued dependence on poor quality seeds and low adoption of production technologies. Therefore the finding supports Alternative hypothesis

The Third specific objective of the study was to determine the effect of service delivery factor on agricultural input market chain Performance. from the analysis Correlation result(Rho=0.381, Pr=0.00) and Regression result (β= 0.205, sig. 0.015) shows service delivery factor has medium strength positive and significant relationship with market chain Performance, the regression result of beta coefficient shows that keeping other factor constant, as a unit increment on service delivery will increase market chain by 0.205. The interview result of the cooperative federation supports this result as multi stage after sales and extension service enhance efficiency of the market chin. This result matches with study result of Akalu and Enyew (2006), Using economic model indicated that access to extension service was important variables which have positive and significant relationship with improved onion seed production and distribution technology. Therefore the finding supports Alternative hypothesis

The fourth specific objective of the study was to measure the effect of financial factor on agricultural input market chain Performance. The correlation coefficient of financial factors (Rho=0.702, Pr=0.000) and Regression result (β= 0.581, sig. 0.000) which implies Financial

Factor has strong positive significant relationship with market chain Performance and from beta coefficient of regression result keeping other factor constant, a unit increase in financial factor increases market chain by o.581 unit which is similar to the majority of cooperative federation interview Reponses, as there is available credit and collateral service there will be fast transaction on the market chain input flow. The result of this study is directly related to the study conducted by Hammami et al., (2008), which states as financial factors have a strong impact on the configuration of Supply of agricultural input market. Therefore the finding supports Alternative hypothesis

4.4- Regression Analysis

In order to determine how independent variable predicts the dependent variable, multiple linear regression analysis was conducted. Regression analysis is a statistical method to deal with the formulation of mathematical model depicting relationship amongst variables which can be used for the purpose of prediction of the value of dependent variable, given the value of the independent (Kothari,2004). Therefore by using multiple linear regressions analysis effort was made to determine the predictive power of the independent variables (i.e. legal factor, marketing factor, service delivery factor and financial factor).

4.4.1- Test of Regression Assumption
Statistical tests relay up on a certain assumption about the variables used in the analysis. When this assumption does not meet the result may not be trustworthy, resulting in type I or type II, over or under estimation of significance or effect size. Prior to the analysis, regression assumptions were cheeked (Field, 2009)

1-Normality of residuals
Normality of data should be tested before running the regression analysis because multiple regressions require that the independent variables in the analysis be normally distributed. According to David, (2012), if the residuals are normally distributed, the Histogram which should be bell- shaped and thus this study implemented graphical method to test the normality of the data. From the Histogram 4.1 the residual distribution is normal curve demonstrating as the area under curve represents within the standard deviation of 3 in which the data witness to the normality assumption.

Histogram
Dependent Variable: market chain

Mean = -2.37E-16
Std. Dev. = 0.990
N = 193
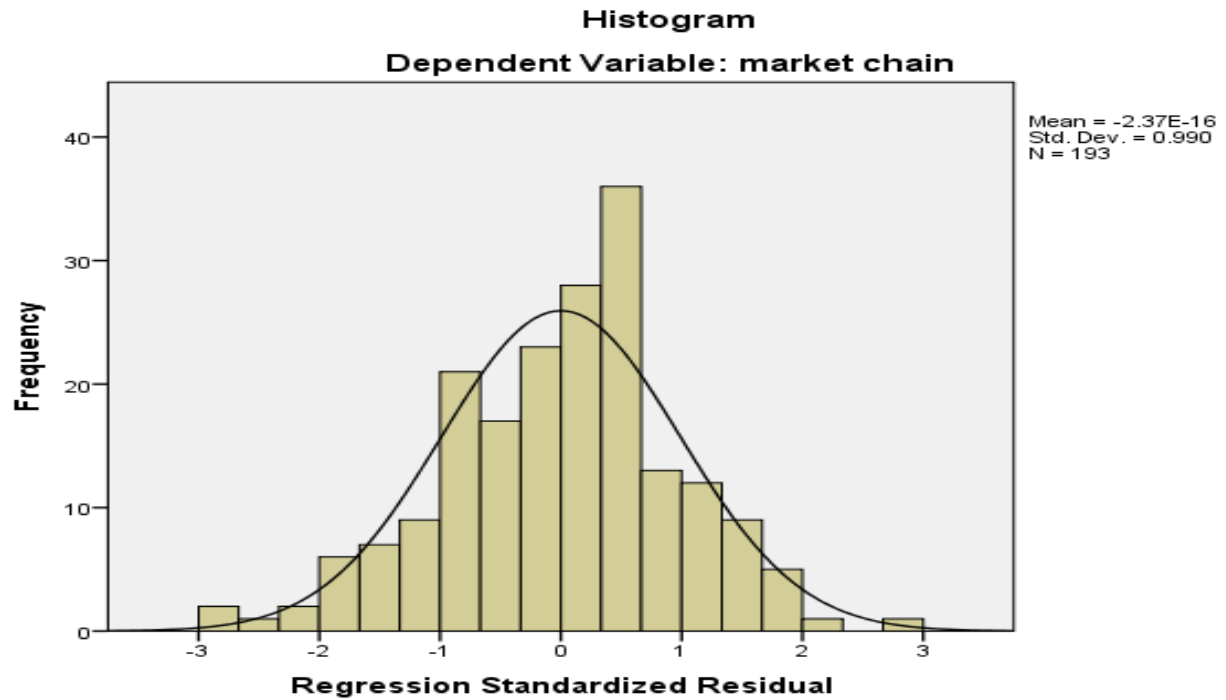
Diagram 1 Histogram- Normality

Source: - own survey SPSS output, 2018

2-Linearity test

Linearity refers the degree to which the change in the dependent variable is related to change in the independent variables. Normal p-p plot shows that the point generally flow the normal (diagonal) line which is no strong deviation, This indicates that the residual are normally distributed in which inferences made about the population parameters from the sample statistics tends to be valid. Therefore in a perfect normally distributed data set, all points lied on the line.

34

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: market chain
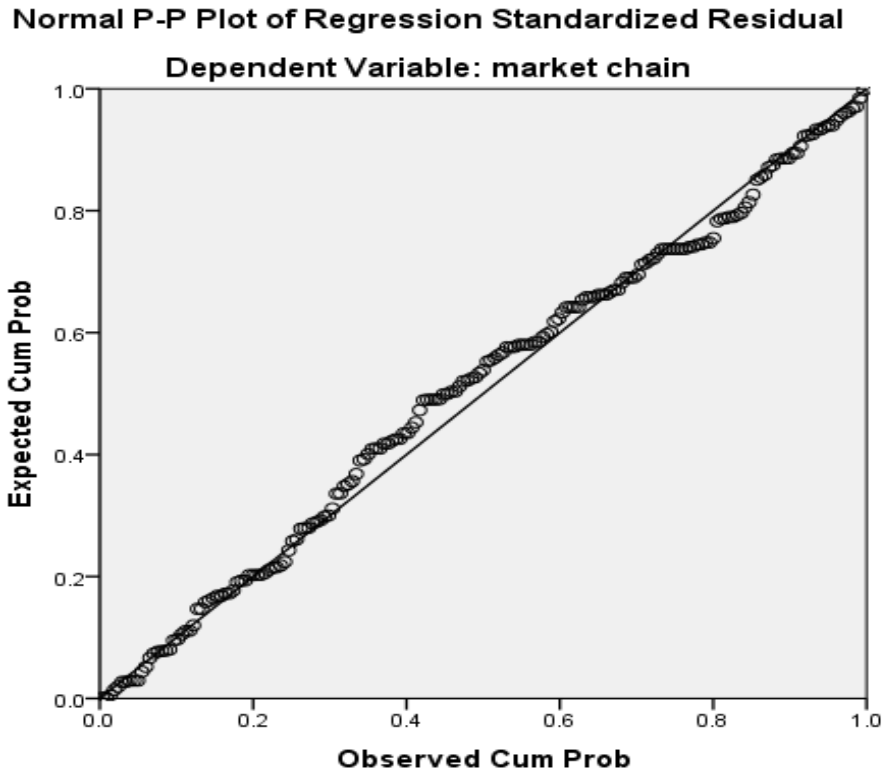
Figure 4.1 Normal P-P plots

Source: - own survey SPSS output, 2018

3- Multicollinearity Test

Table 4.5 - Multicollinearity Test

Independent variables	Collinearity Statistics	
	Tolerance	VIF
legal factor	.889	1.125
marketing factor	.693	1.442
service delivery factor	.869	1.151
financial factor	.755	1.325

Source: Own survey, 2018

In Regression, multicollinearity occurs when there is high correlation within independent variable; this is because highly correlated independent variables are explaining the same part of the variation in the dependent variable (Hair et al., 2006). According to Pallant (2005), cut-off points for determining the presence of multicollinearity is tolerance value of less than 0.10, and VIF value of above 10. Tolerance of 1 indicates no multicollinearity and tolerance values approaching 0 indicate a severe multicollinearity problem. As shown in Table 4.5 above, the

result of each variable had a tolerance value of more than 0.1 and VIF of less than ten, hence multicollinearity would not interfere the outcome of multiple regression analysis.

4- Autocollinearity

Table 4.6- Autocollinearity

Model	Durbin-Watson
1	1.625

Source: Own survey, 2018

The Durbin Watson Test is a measure of autocorrelation in residuals of regression analysis. Autocorrelation can lead to underestimates of the standard error and can cause to think predictors are significant when they are not. It can be tested by the Durbin-Watson statistics which ranges from 0 to 4 and state as residual are independent if closer to 2. A rule of thumb is test statistic values in the range of 1.5 to 2.5 are relatively normal (Field, 2009). From the Table 4.6 above the value of Durbin – Watson value is 1.625 which is between the normal value of $1.5 < d < 2.5$ shows there is no autocorrelation.

4.4.2-Regression Analysis model summery

Regression Analysis allows us to examine the substantive impact of one or more variables on another by using the component of the equation for the "best- fit" Regression line. The "Model summery" and "ANOVA" gives goodness of fit and significance measure

Table 4.7-Regression Analysis model summery

Model Summary[b]									
Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R^2 Change	F Change	df1	df2	Sig. of Change	
1	.797[a]	.635	.627	1.89074	.635	81.678	4	188	.000	1.625
a. Predictors: (Constant), financial factor, legal factor, service delivery factor, marketing factor										
b. Dependent Variable: market chain performance										

Source: Own survey, 2018

From table 4.7 above, coefficient of R^2 obtained from the estimated model is 0.635, Reveling that 63.5% of every single independent variable explains the variation in the dependent variable.

Adjusted R square is the modification of R^2 which tells us the proportion of variance in the dependent variable that is accounted by the independent variables. In this case, the coefficient of determination of Adj. R^2 is 0.627; this implies that about 62.7% of variation explained by only the independent variables that actually affect market chain. The remaining 37.3% is explained by other exogenous factors denoted by Error Term "e" which are not considered in the study.

Table 4.8 ANOVA Result

ANOVA[a]					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1167.960	4	291.990	81.678	.000[b]
Residual	672.082	188	3.575		
Total	1840.041	192			
a. Dependent Variable: market chain performance					
b. Predictors: (Constant), financial factor, legal factor, service delivery factor, marketing factor					

Source: Own survey, 2018

ANOVA can be used in cases where multiple independent variables are considered, and it allows the analyst to estimate their joint effects on the dependent variable (Hair, 2003). The ANOVA summery table for the regression analysis is observed that the significance level is less than 0.05 ($p<0.05$). Therefore, the F test results demonstrated that the models is acceptable from statistical perspective and confirmed the overall significant P value is 0.000 which shows independent variables (legal, marketing, service delivery and financial factors) were significant joint predictors of market chain Performance. But it doesn't mean that all these factors have equally significant relationship with market chain. Besides, the F statistics $(4, 188) = 81.678$ which is used to measure the overall test of significance of the model was presented.

4.4.3- Regression Analysis of coefficients

Table 4.9 -Regression analysis of Coefficient

Coefficients[a]						
Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
(Constant)	-2.993	1.383			-2.164	.032
legal factor	-.132	.055	-.112		-2.395	.018
marketing factor	.398	.064	.329		6.220	.000
service delivery factor	.205	.083	.116		2.463	.015
financial factor	.581	.060	.494		9.746	.000
Dependent Variable: market chain Performance						

Source: - own survey, 2018

Analyses of important independent variables which are expected to have influence on market chain performance of agricultural input were presented by the regression analysis. In this section, the hypothesized independent variables were put to Multiple Linear Regression (MLR) to identify the influence of each independent variable on market chain performance of agricultural input. These variables were selected on the basis of theoretical explanations and the result of various empirical studies.

From the table 4.9 above, the findings revealed that marketing factor ($\beta = 0.398$; P<.05); have positive effect on market chain performance. According to interview result of cooperative federation staff members, Agricultural inputs supply is one of the valuable functions that cooperatives unions perform. Availability and accessibility of inputs in the country are the major problem for the cooperative union's member farmers.

"Without input there is failed production or inaccessible input is considered as unavailable inputs for the farmer".

"Timely inputs supply is responsibility of the federation for the cooperative unions. But due to stock availability problem from the local supplier we are not meeting the requirement of unions demand". They have planned to import inputs, but shortage of foreign currency was a bottle neck to access from international supplier. Insufficient delivery of inputs may force farmers to search alternative market source (local market) where the quality of inputs is in question and

exposed to higher price. As the product availability and accessibility of input increases, market chain system becomes more smooth and flexible.

Service delivery factor (β = 0.205; P<.05); have positive effect on market chain Performance. According to the cooperative federation staff interview result, extension service for the member farmer is one of their tasks. Farmers' proximity to agricultural extension services would have positive influence on market chain Performance for agricultural inputs due to increased adoption rate of farmers on improved agricultural inputs.

Financial factor (β = 0.581; P<.05) have a positive as well as significant relationship with market chain performance and During interview, participants of the cooperative federations are seriously underlined that the input credit distributed was very limited which does not exceed from few farmers. Therefore, the majority of the farmers remained without getting pesticide credit. However, fertilizer suppliers confirmed that there is no input shortage in their stock rather the problem emerged due to lack of using allocated loan fully by the unions. From the interview result, the reason why they underuse yearly allocated loan for fertilizer is due to collateral in the loan agreement. Inability for timely settlement of the debt from the member causes shortage of finance for the unions to access next season inputs. Lack of input credit is not associated only with access and utilization it also associated with debt Settlement. If a member farmer did not settle previously utilized debt, it will not get input credit for coming crop seasons. This, in return, disfavored the majority of the farmers. As result, as finance in terms of credit and collateral improved it increase market chain system.

Legal factor (β = -0.132; P<0.05) which is a negative and significant relationship with market chain. Based on the Interview response of respondents concerning Legal factors, Most of the cooperative federation respondents' interview result indicates that office bureaucracy and regulation of the cooperative and government affect the market chain of the cooperative unions causing for input delivery delay.

"To deliver seasonal based inputs for the farmer the long multistage process of the cooperative federation and government office are our headache". A multiple actors in the regulatory institutions in the public, private, farmer based organization with established responsibility hinder the flexibility of the market chain process. Similarly as Regulatory issues of the government and the federation become tighter; flexibility and simplicity of the market system become declined.

As stated earlier, this study aims to identify the most contributing independent variables in the prediction of the market chain. Thus, the strength of each predictor (independent variables) influencing the market chain Performance can be investigated via un standardized beta coefficient. The highest standardized beta coefficient of the independent variables shows the level of effect on the market chain. As a result, a financial factor has the highest standardized beta coefficient of 0.494 which accounts 49.4% of the market chain was determined by the financial factor. This was also supported by the interview result of the cooperative federation staff members as finance is the major factor for their marketing system. The Fifth specific objective of the study was to identify the most determinant factors among independent variables. Further analysis was conducted using regression analysis to identify the highest determinate independent variables.

The regression coefficient explains the average amount of change in the dependent variable that is caused by a unit change in the independent variable. From the standardized beta coefficient which is unit less used to compare the most determinant factors, the larger the value of Beta coefficient independent variable has, the more powerful in predicting the dependent variable. As shown on table above, the standardized coefficient of four independent variable; legal, marketing, service and financial are -0.112, 0.329, 0.116, 0.494 and their significance level are 0.018, 0.000, 0.015 and 0.000 respectively which are less than 0.05. From this the larger coefficient that is financial factor is the most determinant factor among independent variables.

The Regression analysis of the causal effects of each indifferent variable can be sorted out and estimated by the following equation:-

$Y = \beta 0 + \beta 1 X1 + \beta 2 X2 + \beta 3 X3 + \beta 4 X4 + e$

Y(Market chain Performance)= -2.993+(-0.132)legal+0.398marketig + 0.205service +0.581financial+e

Since coefficient of all predictor variables (legal factor, marketing factor, service delivery factor and financial factors) are statistically significant at less than five percent. Therefore, based on this hypothesis were tested as shown on table 4.10 below.

4.5- Hypothesis Testing

Table 4.10-Summary of Hypothesis Result

Hypotheses No	Hypotheses	Results	Reason
Ho1	There is positive and significant relationship between legal factor and agricultural input market chain Performance	**Ho1 Rejected HA1 Accepted**	Correlation results, Rho=-*0.316*, P=0.00, Alpha=0.05 Regression result β= -0.132, sig. 0.018
Ho2	There is no positive and significant relationship between marketing factor and agricultural input market chain Performance	**H02 Rejected HA2 Accepted**	Correlation results, Rho=0.631, P=0.00, Alpha=0.05 Regression result β= 0.398, sig. 0.000
Ho3	There is no positive and significant relationship between service delivery factor and agricultural input market chain Performance	**H03 Rejected HA3 Accepted**	Correlation results, Rho=0.381, Pr=0.00, Alpha=0.05 Regression result β= 0.205, sig. 0.015
Ho4	There is no positive and significant relationship between financial factor and agricultural input market chain Performance	**H03 Rejected HA4 Accepted**	Correlation results, Rho=0.702, Pr=0.00, Alpha=0.05 Regression result β= 0.581, sig. 0.000

Source:-Own survey, 2018

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The first part of the analysis presents the results of the demographic characteristics of respondents of the study area by using Descriptive statistics. The result of demographic characteristics was presented by using frequency and percentage statistics to determine response of staffs and members of the cooperative union. According to the result of the study, most of respondents are male with age of 31-40 years and diploma or certificate holders who are basically informed on agricultural input market chain. 40.9 % of respondents are land holder of 2 and above hectare. This indicates majority of the respondents involve in the agricultural input market chain directly or indirectly.

Consequently, the study analyzed significant factors affecting the marketing system, among hypothesized factors legal factors mainly focused on bureaucracy and regulation of the cooperative unions have negative relationship with the market chain performance of the cooperative unions. This means the market chain performance of the cooperative union affected by the existence of office extended bureaucracy and regulatory issues of the cooperative federation and the government.

Marketing factors of the cooperative unions focused on product availability and accessibility as well as financial factor which is focused on credit and collateral have strong positive relationship with market chain of the cooperatives. As these factors increased the market chain system will also improved and facilitated. Service delivery factors have positive relationship with the market chain performance of the cooperative with moderate relationship strength.

Moreover, as per the results of the analysis, the relative influence of different explanatory variables on market chain was analyzed. A total of four (4) explanatory variables were included into the analysis, among all independent variables, financial factor is the most determinant factor of the market chain with standardized beta coefficient of 0.494. From the study result all independent variables (Legal factor, marketing factor, service delivery factor and financial factor) had shown significant influence on the dependent variable (input market chain Performance), so that null hypothesis for all variables was rejected and Alternative hypothesis accepted.

5.2 -Conclusion

To have sustainable agricultural production and productivity, Agricultural input has to reach for small holder farmers timely with the required quantity. To achieve this aims market chain actor's synergistic synchronization with the end users farmers is an important point. As the analysis result shows legal (bureaucracy and Regulation) influence (β = -0.132; P<0.05) on the market chain performance, marketing factor (β = 0.398; P<.05); service delivery factor (β = 0.205; P<.05); Financial factor (β = 0.581; P<.05) have a positive as well as significant relationship with market chain and one independent variable legal factor (β = -0.132; P<0.05) which is a negative and significant relationship with market chain Performance.

Availability of Agricultural inputs like seed, fertilizer, and pesticides marketing in line with efficient extension service would lead to ensure improved production and productivity. However, the marketing of these production enhancing inputs were constrained with various factors. These factors together with several situational and socioeconomic factors have effect on market chain system of the cooperative union.

From the findings and interview result shows all independent factors (legal, marketing, service delivery and financial factor) are important to determine market chain Performance of the cooperative unions. Legal factor has negative relationship while marketing, service delivery and financial factors have positive relationship with market chain system of cooperative unions.

Since the study result shows financial factor is the major determinant factor among independent variables, credit and collateral service is found to be serious point to increase or decrease unions input market chain Performance and farmers' productivity in the sector. The positive relationship with market chain shows as the financial factors increased, the market chain Performance become improved. So, this will upgrade the majority of small scale farmers' production system and livelihood status. Therefore, reducing the legal factor mainly office complicated bureaucracy and improving financial factor considered as important intervention in the cooperative unions market system.

5.3- Recommendations

Based on the research findings of this study, the following points are recommended to improve the input market chain system of the cooperative unions. The study shows there is legal (bureaucracy and Regulation) influence on the market chain system of agricultural inputs, so the cooperative federations and the government should improve on the office bureaucracy and

regulation issues of agricultural input to enhance marketing system. For the strength of the market system, the existence of strong and flexible linkage among cooperative union market chain actors within the system has to be important in a way that to transfer knowledge about market chain and provision of agricultural inputs in efficient and effective manner. Therefore, reducing office complicated bureaucracy and irrelevant paper work has to be reduced with the aim of bringing functional and logical legal framework implementation to reverse the existing market chain problem of the cooperatives.

❖ The Government should take in to consideration of the above important variables when various Agricultural input policies and regulations designed to implement for the increment of agricultural productivity through cooperative unions particularly in the study area and in general in the country especially on inputs like pesticides fertilizers and improved seeds.

❖ The source of finance for agricultural input access for small holder farmer is from cash crop sales and off farm income. This can be good as short term solution to alleviate the financial problem of the cooperatives unions' member farmers. As the study shows whenever there is access of good finance, the market chain of the cooperative unions become efficient. So to keep successful market chain through financial strength for the small holders, there should be vertical and horizontal integrations for the access of credit financial factor ($\beta = 0.581$; $P<.05$) with considerable collateral among the cooperative unions and federations to solve their permanent input problems.

❖ Agricultural input market Policy makers should address the problem of small holder farmers through cooperative unions by giving practical priority for agricultural input availability and accessibility mainly for fertilizer, pesticides and seeds sourcing from import or local manufacturing.

❖ Agricultural input regulation of the ministry of agriculture and cooperative federation should be practical and applicable to protect the small holder farmers from market abuse and saves their environment as a whole by intervention of the identified factors.

Recommendation for future research

Factors affecting market chain of the cooperative unions around Addis Ababa Area was studied. So it is suggested that similar studies may be conducted in the other parts of the country on the factors based on 7 ps' .

References

Abay, Akalu. (2007). Vegetable Market Chain Analysis: The Case of Fogera Woreda. MSC thesis (unpublished) presented to school of graduate studies of Haromaya University, Ethiopia

Akalu Teshome and Enyew Adgo (2006). An over view of Research Extension- Farmer linkage in Amhara Region: Challenge and opportunity Bahir Dar, Ethiopia. 54p.

Akroush, N. (2003). An integrated approach to marketing strategy formulation and implementation, University of Huddersfield.

Aloyce G., Gabagambi D., Hella J. and Mikocheni (2014) .Agricultural Research Institute, P. O. BOX 6226, Dar Salaam, Tanzania., Journal of Development and Agricultural Economics

Adugna, G. (2009). Analysis of Fruit and Vegetable Market Chains: The Case of Alamata, Southern Zone of Tigray. M.Sc. Thesis (unpublished) Haramaya University.

Anteneh, Girma. (2008). Dairy Services Delivery in Debre Zeit Milk shed of Ada'a District, Central Ethiopia. M.Sc. Thesis (Unpublished) Presented to School of Graduate Studies of Haramaya University, Ethiopia, 9p

Barrett, Christopher. (2007). Smallholder Market Participation: Concepts and Evidence from Eastern and Southern Africa. *Paper prepared for FAO workshop on Staple Food Trade and Market Policy Options for Promoting Development in Eastern and Southern Africa, Rome*

Berto, Sofia. (2007). "Vertical Relationships between Manufacturers and Retailers: "Inference with Limited Data", *Review of Economic Studies* 74: 625-652.

Byerlee, D. and C. Eicher. (1997). "Introduction: Africa's Food crises." In Beyrlee, D. and C. Eicher (eds). *African Emerging Maize Revolution.* Lynne Rienner Publishers, Inc., Boulder, Colorado.

Central Statistics Authority (CSA). 2005. Statistical Abstract. CSA, Addis Ababa

CIAT, (2004). Increasing the Competitiveness of Market Chains of Smallholder's Producers. Manual, 3: Territorial Approach to Rural Agro Enterprise Development Project.

Cohen, J. (1988) Statistical power analysis for the behavioral sciences (2nd Ed.). Hillsdale, NJ: Lawrence Erlbaum Associates

Creswell,(2003).method of research to gather information

Damalas, C., and Koutroubas, S. (2017). Farmers' Training on Pesticide Use Is Associated with Elevated Safety Behavior. *Toxics*, *5*(3), 19. https://doi.org/10.3390/toxics5030019

 Daniels, H., and Fors, S. (2015). Supply & Value Chain Analysis of Onions in Ethiopia.

Dawit Alemu, (2005). The status and challenges of agricultural marketing in Ethiopia, EARO Paper presented at a   panel discussion organized by the Ethiopian Association of Agricultural Professionals (EAAP), Addis Ababa, Ethiopia

Demeke, M., V. Kelly, T.S. Jayne, A. Said, J.C. Le Vallee (1998) "Agricultural Market Performance and Determinants of Fertilizer Use in Ethiopia." Grain Market Research Project, Working Paper 10. Ministry of Economic Development and Cooperation, Addis Ababa.

Demeke, M., A. Said and T.S. Jayne.(1997).Grain Market Research Project Working Paper, Ministry of Economic Development and Cooperation, Addis Ababa.

Dereje Derso, Edo Elemo, et al., (2016),   Determinants of the utilization of agricultural inputs and transfer of agricultural technologies, Journal of Agricultural Research and Development Vol. 6(2). pp. 030-033,

Dethier, J., and Effenberger, A. (2012). Agriculture and development : A brief review of the literature. *Economic Systems*. https://doi.org/10.1016/j.ecosys.2011.09.003

De Toni, A. and Tonchia, S. (2001). Performance measurement systems models, characteristics and measures. *International Journal of Operations & Production Management,* 21(1/2):46.

Dionne, K. Y., and Horowitz, J. (2016). The Political Effects of Agricultural Subsidies in Africa: Evidence from Malawi. *World Development*, *87*, 215–226. https://doi.org/10.1016/j.worlddev.2016.06.011

Djurfeldt, G., H. Holmen, and M. Jirstrom. (2006). "What Can sub-Saharan Africa Learn from Asian Experience in Addressing its Food Crises?" Swedish International Development Agency (SIDA), Division for Rural Development.

Field. A.,(2009). Discovering statistics using spss

FAO, (2005a). Addressing Marketing and Processing Constraints that Inhibit Agric-food exports: A guide for Policy Analysts and Planners. Agricultural Service Bulletin 160. Rome. Italy.

Freeman and Salim. (2002). *Commercialization of smallholder irrigation:* Accra, Ghana, pp 185− 192

Frank, Verboven., and Bettendorf, L. (2000). "Incomplete Transmission of Coffee Bean Prices: Evidence from the Netherlands", *European Review of Agricultural Economics* 27: 1-16.

Gebremedhin, B., Hoekstra and Tegegne. (2006). Extension Service from Input Supplier to Knowledge Broker and Facilitator, IPMS of Ethiopian Farmers Project Working Paper 1. ILRI, Nairobi, Kenya.

Gebremeskel Decaling, T.S. Jayne, and J.D. Shaffer (1998). Market structure, conduct and performance: constraints on performance of Ethiopian grain markets, working paper 8 grain market research project ministry of economic development and cooperation, Addis Ababa, Ethiopia.

Gill, J. And Johnson, P., 2002. Research Methods: for managers. 3rd ed., Thousand Oaks.

Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C., (2006). Multivariate Data Analysis, (fifth edition), New Jersey: Prentice Hall, Inc.

Hammami, R., Frein, Y. and Hadj-Alouane, A. B. (2008). Supply chain design in the delocalization context: Relevant features and new modeling tendencies. *International Journal of Production Economics,* 113 (2), 641-656.

Hagmann, J., M., Connolly, P., Ficarelli, J., Ramaru, 2002. The Service Delivery Framework: understanding the development of service systems as a systemic change and negotiation processwithin and across three levels of demand and supply.

Hellerstein, R. (2008). "Who Bears the Cost of a Change in the Exchange Rate? Pass-through Accounting for the Case of Beer", *Journal of International Economics* 76: 14-32.

Hovahannisyan, V. and B.W. Gould (2012). "A Structural Model of the Analysis of Retail Market Power: The Case of Fluid Milk", *American Journal of Agricultural Economics*

Howard, J.A., A. Said, D. Molla, P. Diskin and S. Bogale. (1995). "Towards Increased Domestic Cereals Production in Ethiopia: Grain Market Research Project. Ministry of Economic Development and Cooperation, Addis Ababa.

International fund for agricultural development (2003), Promoting Market Access for the Rural Poor in Order to Achieve the Millennium Development Goals.

Johanes, A. , Harald, G., Workneh, N.2015. Fertilizer supply chain in Ethiopia: structure, performance and policy. Agricultural and Food Policy Group, Universität Hohenheim, Germany

Jonas, N., Franklin M., Isaac, E. and Justina N. (2008).Tropical Soil Biology and Fertility institute of the International Centre for Tropical Agriculture (TSBF-CIAT), c/o World Agroforestry Centre (ICRAF), Nairobi, Kenya.

Kassu Kubayo.(2009). Analysis of Agricultural input supply system: The case of Dale woreda, south National Nationalities and peoples Region. Msc thesis(unpublished) Haramaya University, Ethiopia

Kothari, C.R.,2004. Research Methodology: Methods and Techniques.2nd ed. New Delhi: New Age international Ltd

Mark, Lunndy, M.V. Gottret, W. Cifuentes, C. F. Ostertag, R. Best, D. Peters and S. Ferris, (2004). Increasing the Competitiveness of Market Chains for Small-holder Producers. International Centre for Tropical Agriculture. Colombia.117p.

Mark Lundy, M. V. (2007). Participatory Market Chain Analysis

MoARD (Ministry of Agriculture and Rural Development). 2005. "Agricultural Input and Product Marketing Strategy and Implementation Mechanisms". MoARD, Agricultural Marketing State Ministry, Addis Ababa.

Minot, N. and Sawyer, B. (2013) Input use in Ethiopia: Results of the 2012 ATA Baseline Survey. International Food Policy Research Institute. Washington, DC

Million, Tadese and Belay, Kassa(2004), determinants of fertilizer use in Gununo Area Ethiopia.

Muzammil H. et al (2010) Sampling Methods in Social Research, West Bangal

Nkonya, E., T. Schroeder and D. Norman, (1997). Factors affecting adoption of improved maize seed and fertilizer in Northern Tanzania, 48(1): 1-12.

Pallant, J. (2005). SPSS Survival Manual. A step- by- step guide to data analysis using SPSS for windows (Version 10), USA.

Panda, S. C. (2007), Famer Management and Agricultural Management: Kalyani Publishers, New Delhi-110 002..

Robnson Colin (2002).'Real world Research, 2nd ed. USA: Black well Publishing.

Roy, B.C., T.S. Bhogal and L. R. Singn, 1999. Tenancy and adoption of new farm technology: Astudy in West Bengal, India. *Bangladesh Journal Economics*. xxii 1(1999):39-49.

Singh, A. K. (2012). Deficiencies in Agricultural Marketing and Input Delivery System : A View from the Field, *25*, 421–426

Stoorvogel, J. and E.M.A. Smaling, 1990. *Assessment of Soil Nutrient Depletion in sub-Saharan Africa: 1983-2000.* Report No. 28, Wageningen, The Netherlands.

Singh , Sukhpal. (2016). Innovative Agricultural Input Marketing Models in India: Performance and Potential, Centre for Management in Agriculture Indian Institute of Management Ahmedabad

Saunders, M., Lewis, P. and Thornhill, 2009. Research methods for business students, 5th ed.Harlow: Pearson Education.

Tanguy, Bernard., David J. Spielman, Alemayehu Seyoum Taffesse, Eleni Zaude (2010). Cooperatives for Staple Crop Marketing: Evidence from Ethiopia. International Food Policy Research Institute. Washington.

Techane, Adugna and Mulat, Demeke. (1999). "Institutional reforms and sustainable input supply and distribution in ethiopia". Institutions For Rural Development Proceedings of

the 4 Annual Conference of the Agricultural Economics Society of Ethiopia (AESE) Addis Ababa, Ethiopia, pp 125 - 157

Techane, Adugna. (2002). Determinants of Fertilizer Adoption in Erhiopia. The Case of Major Cereal Producing Areas. M.Sc. Thesis (Unpublished) Presented to School of Graduate Studies of Haramaya University, Ethiopia.

Tesfaye, Zegeye and Shiferaw, Tesfaye. (2001). Determinants of adoption of improved maize technologies and inorganic fertilizer in Southern Ethiopia. Ethiopia Agricultural Research Organization

Tiruneh, Abebe. (2011). Analysis of the Success Factors of Micro and Small Business Enterprises in Addis Ababa.

USAID /Ethiopia, (2005). Evaluation of Agricultural Cooperatives in Ethiopia (ACE) Programme Activities. Prepared by and submitted by Mitchell Group. Washington,

Wolday Amha, (1999). "Improved seed marketing and adoption in Ethiopia". Ethiopian journal of Agricultural Economics, AESE, Addis Ababa, Ethiopia vol. 3 No 1 – pp 41-88.

World Bank, (2004). Enhancing Agricultural Innovation: How to Go Beyond the Strengthening of Research Systems, Washington

Wolde, Amaha. (2004). "The Development of Microfinance Industry in Ethiopia:." Paper presented at the Improving Productivity and Market Success (IPMS) of Ethiopian farmers project planning workshop. ILRI, Addis Ababa.

Yamane, Taro. (1967). Statistics: An Introductory Analysis, 2nd Edition. New York: Harper and Row.

Yonas, Abera. (2016). *Market Challenges and Opportunities of Micro and Small Scale Enterprises in Dire Dawa , Ethiopia*

Zikmund, W.J, (2000).Business research methods. 6th ed. Orlando, Florida the Dryden Press

APPENDIXES

APPENDIX I

QUESTIONIER

ST. MARY'S UNIVERSTIY SCHOOL OF GRADUATE STUDIES

MBA IN GENERAL MANAGEMENT

This questionnaire developed to analyze factors affecting agricultural input marketing chain around Addis Ababa Area farmer's agricultural cooperative union

Dear Respondents!

I would like to express my (his) deep gratitude for your cooperation to express your real feeling in this Questionnaire.

My name is Abayneh Tesfaye, studding Masters of Business administration conducting a research entitled analyze of factors affecting Agricultural input market chain Performance as a partial fulfillment for my MA Degree. Since I (the researcher) follow(s) a scientific research methodology and methods, I (the researcher) hereby declare(s) and promise(s) that your responses will be kept confidential and its consumption is/will be/ limited to this research thesis only.

Hereby, I would like to express my gratitude for your dedicated cooperation as this questionnaire is conducted for the purpose of fundamental scientific research. Had it not been your genuine cooperation of filling this questionnaire, it would have not been possible to conduct this thesis.

Thank you in advance!!

Part I- General Background of Respondents

1) Sex -   1) Male   2)   Female

2) Age -   1)18-20 years   2) 20-30   3) 31-40   4) 41-5   5) 51 and above

3) Marital status:-   1= Married   2=Single   3)Others

4) Family size   1) Below 3   3) 3-4   4) 5-6   5) 7 and above

5) Educational background

1) None educated   2) Primary Education   3) Secondary education 4)Certificate or Diploma 5) Degree and above

6) Occupational level- 1)manager 2) finance/sales 3) procurement 4)store manager 5) member farmer

7)- What is the size of your production farming land that requires inputs?

1) Below 0.5 ha   **2)** 0.5-1.5 ha   3) 1.5-2 ha   **4)** above 2ha   **5)** Land less

Part II- Questioner related to factors affecting market chain

1) Agricultural input legal factor on market chain Performance

(1= Strongly disagree, 2= disagree, 3= Neutral, 4 =Agree, 5= Strongly Agree)

s/n	Item	1	2	3	4	5
	1- Bureaucracy					
1	unions office bureaucracy is easy for input accessibility					
2	Market chain actors act indifferent on regarding input regulations					
3	Cooperatives union bylaw protect member farmers from input market abuse					
4	Agricultural input market chain challenges are solved immediately by the concerned body along the chain					
	2 Regulations					
5	Government input regulations helps unions marketing system					
6	There is formal Regulatory system in agricultural input distribution along the market chain					
7	Government agricultural input policy facilitates import marketing system of the cooperatives					
8	cooperative unions has agricultural input regulation					

2) Marketing Factors on agricultural input market chain Performance

(1= Strongly disagree, 2= disagree, 3= Neutral, 4 =Agree, 5= Strongly Agree)

s/n	Item	1	2	3	4	5
	1-Product availability					
1	Agricultural input are available on the market at any required time					
2	Agricultural inputs are available on time as per the required quantity					
3	Suppliers provide available input as per demand of cooperatives					
4	Availability of agricultural input increase farmers productivity					
	2-Product Accessibility					

s/n	Item					
5	Cooperative unions access agricultural input easily					
6	Transport Infrastructures are convenient to access inputs from suppliers					
7	Cooperative unions can access inputs from all suppliers					
8	Primary cooperatives members have proximal to agri input access					

3) Service Delivery factors on market chain

(1= Strongly disagree, 2= disagree, 3= Neutral, 4 =Agree, 5= Strongly Agree)

s/n	Item	1	2	3	4	5
	1-Service type					
1	Cooperative federation have credit service for unions					
2	Agricultural input Suppliers provide after sales service for the unions					
3	Cooperative unions deliver training to members in agricultural inputs marketing					
4	Cooperative federations are committed to input delivery service up to the unions ware house					
	2 Service quality					
5	Cooperatives treat all their respective member equally					
6	Market chain actors are satisfied by the overall service delivery system of the cooperatives					
7	Cooperatives provide agricultural input marketing service on time					
8	After sales training given by suppliers are relevant for farmers					

4)- Financial factor on agricultural input market chain

 (1= Strongly disagree, 2= disagree, 3= Neutral, 4 =Agree, 5= Strongly Agree)

s/n	Item	1	2	3	4	5
	1 Credit					
1	Cooperatives federation provide input credit to the cooperative unions					

2	Cooperatives unions provide adequate input at credit to the member farmers					
3	Cooperative suppliers have priority to access foreign currency for agricultural input import					
4	Cooperatives have access to financial support from cooperative government body					
	2 **Collateral**					
5	Cooperatives require collateral from the member for input credit facility					
6	Availability of collateral is the major requirement for market chain					
7	Cooperative are responsible to provide collateral to get credit from their supplier					
8	government set type of collateral based on the capacity of the borrowers					

Part III- Questioner related to market chain performance

1) Agricultural input market chain Performance

(1= Strongly disagree, 2= disagree, 3= Neutral, 4 =Agree, 5= Strongly Agree)

s/n	Item	1	2	3	4	5
1	Market chain performance of the cooperatives inhenced by the government policy					
2	Market chain of the cooperatives is easy to access input for the member farmers					
3	Market chain system of the cooperatives is supported by the government offices.					
4	Agricultural input market chain system of the cooperative union is simple for end users					

APPENDIX II

Interview questioners for cooperative Federations management staff

1-How do you evaluate role of legal factor on market chain agricultural input market chain performance?

2-How do you evaluate product availability and accessibility along the agricultural input market chain performance?

3-How is service type and quality along the market chain of agricultural input performance?

4-How you evaluate the status of credit facility and collateral in agricultural input market performance ?

5-From all factors we have raised, what is most influential to agricultural input market chain performance?

APPENDIX III

Secondary Data on Agricultural input distribution of cooperative federation

(pesticides, fertilizer seed)

s/n	study area	item	year			
			2014	**2015**	**2016**	**2017**
1	Cooperative Federation	Pesticide	600,000.00	89,920.00	279,940.20	240,664.00
2	AISCO to unions	Fertilizer	969,306	1,021,384	858,934	1,085,426
	s/Total		**1,569,306.00**	**1,111,304.00**	**1,138,874.20**	**1,326,090.00**
1	Holeta	Pesticide	5752	5821	9770	11040
		Fertilizer	24550	78615	37410	106448
		seed	808	3034	312	4060
	s/total		**31,110**	**87,470**	**47,492**	**121,548**
2	sebeta	Pesticide	13,500	10,500	8,800	6,500
		Fertilizer	129,840	202,130	211,949	206,876
		seed	1,452	3095	4381	1738
	s/total		**144,792**	**215,725**	**225,130**	**215,114**
3	sendafa	Pesticide	4840	8200	5200	5400
		Fertilizer	184200	180400	178500	190800
		seed	848	515	318	511
	s/total		**189,888**	**189,115**	**184,018**	**196,711**
4	Bishoftu	Pesticide	10564	14563	12432	6117
		Fertilizer	202565	223645	190684	228555
		seed	4500	5245	5606	2885
	s/total		**217,629**	**243,453**	**208,722**	**237,557**
	Grand Total		**583,419**	**735,763**	**665,362**	**770,930**

APPENDIX IV

Mean result of variables

	N	Minimum	Maximum	Mean	Std. Deviation
legal bureaucracy- office bureaucracy on input access to farmers	193	1.00	3.00	1.9275	.54479
legal bureaucracy communication among unions on input regulations	193	1.00	3.00	1.8912	.55300
legal bureaucracy members input market abuse protection	193	1.00	3.00	1.9793	.54923
legal bureaucracy solution for challenges of market chain	193	1.00	3.00	2.0622	.55553
legal regulation- input regulations on marketing system	193	1.00	5.00	2.0363	.75948
legal regulation-Formal regulatory system on input distribution	193	1.00	5.00	2.0363	.75948
legal regulation-Government input policy on import marketing system	193	1.00	5.00	2.1036	.75666
legal regulation- interpretation of input regulation along the market chain	193	1.00	4.00	2.2280	.66132
marketing -availability of input at any required time	193	1.00	3.00	1.6580	.51756
transport infrastructure	193	2.00	3.00	2.2850	.45258
marketing availability- suppliers provide input as per demand of cooperatives	193	2.00	3.00	2.2850	.45258
marketing availability of input increase productivity	193	2.00	4.00	3.1036	.85369

marketing accessibility-easily access of inputs by cooperatives	193	1.00	3.00	1.6425	.49123
marketing accessibility-convenient of transport infrastructures to access input	193	2.00	4.00	2.9793	.84137
marketing accessibility-cooperatives access of input from all supplier	193	1.00	5.00	1.6528	.53881
marketing accessibility-proximity of primary cooperatives to input access	193	1.00	5.00	2.1036	1.00501
service type-cooperatives federation credit service for unions	193	1.00	5.00	2.3731	1.02860
service type-suppliers after sales service for unions	193	2.00	5.00	2.7461	.77244
service type-training about input market by unions	193	2.00	5.00	3.0518	1.09326
service type-commitment of federation for input delivery service	193	2.00	5.00	3.4715	.95223
service equal treatment of members by cooperatives	193	1.00	4.00	2.2124	.85480
service quality satisfaction of market chain actors on service system	193	2.00	4.00	2.7668	.79224
service quality timing of agricultural input marketing service	193	1.00	5.00	2.1606	.82292
service quality relevancy of after sales service for farmers	193	1.00	5.00	2.6839	1.12667
finical credit cooperative federation input credit provision for unions	193	2.00	5.00	4.1192	.73690
finical credit -unions adequate input credit provision for members	193	3.00	5.00	4.1244	.71084

	N	Minimum	Maximum	Mean	Std. Deviation
finical credit- priority of foreign currency for cooperative suppliers	193	1.00	4.00	2.2280	.66132
finical credit- government support of finance for cooperatives	193	2.00	5.00	3.3264	.59702
financial collateral- requirement of cooperative for collateral from members	193	1.00	4.00	2.2280	.66132
financial collateral- availability of collateral as a major requirement	193	1.00	4.00	2.2280	.66132
financial collateral- responsibility of cooperatives for collateral to get credit	193	2.00	5.00	3.7824	.59011
financial collateral-type collateral set by government for borrowers	193	1.00	4.00	2.2280	.66132
market chain-control of marketing chain by government regulation	193	1.00	4.00	2.4922	1.02123
market chain bureaucracy of cooperatives to access input	193	1.00	4.00	2.5544	.95655
market chain system for accessing financial service	193	1.00	4.00	2.5233	.98991
market chain- input delivery system as part of market chain	193	1.00	4.00	2.6062	.89580
Valid N (list wise)	193				