ASSESSMENT OF SUPPLY CHAIN PERFORMANCE IN FRUIT AND VEGETABLE MARKETS: THE CASE OF ET-FRUIT.

By

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DECLARATION

I, declare that this MBA Thesis entitled “Assessment of supply chain performance in fruit and vegetable markets in the case of Et-fruit” .This thesis is my original work, prepared under the guidance of my advisor, Mohammed Mohamednur (Asst.Prof..). All the sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

Manaye Wube Tsega

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ENDORSMENT

I certify that this MBA thesis entitled “Assessment of supply chain performance in fruit and vegetable markets in the case of Et-fruit” of Mr. Manaye Wube Tsega, who carried out the research under my supervision. This thesis has been submitted to St.Marry’s University, school of graduate studies for examination with my approval as a university advisor.

Mohammed Mohammednur (Asst prof.)

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ABSTRACTS

Every business should have well integrated supply chain so as to have a sustainable business performance. Supply chain performance of any business engaged in supplying perishable product need to be evaluated periodically. This research is intended to assess the supply chain performance of Fruit and Vegetable market considering Et-Fruit as a reference point. The researcher used five determinants of fruits and vegetables supply chain performance measurement frameworks based on the nature of products. Thus, performance indicators are product availability, on time delivery, cost reduction, quality of products and customer satisfaction through supply chain. To conduct this study, a descriptive research design with a mixed approach is employed. The data were collected from primary and secondary sources by reviewing relevant documents and distributing questionnaires to three groups of respondents - suppliers, employees and customers. Out of the total 470 respondent, 462 respondents have filled and responded the questionnaires successfully. To analyze the data collected, descriptive analysis is used considering the five dimensions to evaluate supply chain performance in Et-fruit. This study summarizes the findings from the three groups of respondents, - suppliers, employees and customers. As the suppliers 'performance indicates, product availability – among other dimensions -was recorded with the highest mean value next by the cost reduction and on time delivery dimension. The supply chain performance from the employees of Et-fruit perspective indicate that the mean score of the dimensions used - product availability, on time delivery, cost reduction, and product quality have lower mean score that indicate lower supply chain performance. From the customers' perspective, the supply chain performance dimensions have a moderate performance. Based on the research findings, the researcher has forwarded some recommendations. From the five dimension of supply chain performance, product availability has an enormous influence on supply chain performance in fruits and vegetable from suppliers up to end-consumers. In the absence of product availability a poor performance of supply chain occur through the chain.

Key words: Supply chain, Performance, Et-Fruit

LIST OF ACRONYMS

CSA	Central Statistics Agency
FDRE	Federal Democratic Republic of Ethiopia
ETBC	Ethiopian Trade Business Corporation
F & V	Fruits and Vegetables
FAOSTAT	Food and Agricultural Organizational Statistics
SC	Supply Chain
SCM	Supply Chain Management
SD	Standard Deviation
SCP	Supply Chain Performance
SPSS	Statistical Package for Social Science
UAAIE	Upper Awash Agro Industrial Enterprise

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CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

Ethiopia harbors an extraordinarily rich agro-biodiversity resulting from its geography, climatic differences, ethnic diversity and strong food culture. Unique is the great variation in climates, due to the great variation in altitude ranging from sea level up to 4500 meters. Altitudes between 500 meters (normally warm) and 2600 meters (cool nights and mild day temperatures), and all altitudes in between, are common. Due to Ethiopia's good agro-climatic circumstances it is able to produce fruits and vegetables throughout the year. Both the low- and highland areas offer good opportunities (Rolien Wiersinga and André de Jager, 2009).

Horticultural crops are important for health and economy but the production and marketing system is still weak and challengeable in Ethiopia. Fruits and vegetables are produced seasonally, but the market requires products throughout the year (Solomon et al., 2010).

Supply chain is the network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hand of the ultimate customer (Christopher, 1998).

Supply chain performance shows and provides for way of systems to fulfill the end-customer necessities, product capacity & availability, on-time delivery, and all the necessary inventory and capacity in the supply chain to deliver that performance in a quick to respond manner. Supply chain performances evaluate and measure in various stages of the firm includes basic materials, components, subassemblies, finished products, distribution through various channels to the end customers(Whitten et al, 2012).

As businesses evolve into the 21st century, the management focus driving most organizations is supply chain superiority (Brewer & Speh, 2000 p. 75). Supply chain management is becoming a necessity in the competitive marketplace hence the need to have performance measurement tools that can lead to successful supply chains.

According to Braithwaite and Parsons (2001) 1) no single measure defines supply chain performance - there are many dimensions to measure, 2) measures can be in conflict - accentuating rather than breaking functional silo issues, 3) there is a need to obtain equilibrium throughout the supply chain and to be prepared for change, 4) measuring the overall performance is a first key step towards making improvements, 5) this requires a considerable investment of time and commitment, 6) measurement and its interpretation is a valuable but complex skill. From this point of view the researcher list out some of supply chain performance measurement indicators in the next paragraph that are studied in different aspects.

Over the years, the definitions have changed and broadened the scope ofsupply chain management (SCM), but, these definitions are still limited to manufactured products and services with little attention being paid to agriculture. Fruits and vegetables constitute a major part of the world economy and is the raw material for many industries. Among the agricultural produce, perishable food produce like F&V have got the least attention. The supply chain management of fruits and vegetables constitutes the processes from production to delivery of the agro-fresh produce, i.e. from the farmer to the customer. SCM of F&V is complex as compared to other SCMs due to the perishable nature of the produce, high fluctuations in demand and prices, increasing consumer concerns for food safety & quality (Vorst & Beulens, 2002), and dependence on climate conditions (Salin, 1998).

Supply chain performance studies have been conducted in various sectors in Kenya nut company (Ashioya, 2013), measurement of water desalination supply chain using balanced scorecard (Hasan *et al.,* 2016), Small and Medium- Sized Garment Enterprises (Kim *et al.,* 2018)**,** Pharmaceutical Industry (Alemu, 2017), etc. Therefore there is a lack of studies on Supply chain performance in Fruits and Vegetables using five measuring dimensions such as product availability, Cost reduction, on time delivery, product quality and customer satisfaction generally in horticultural sectors and particularly in Et-fruit. Here this study fills the gap between the knowledge of supply chain performance measurement of fruits and vegetables in Et-fruit and horticultural sector.

1.2. Background of the Organization

From the beginning The Ethiopian Fruit and Vegetable Marketing Share Company (Et-fruit) was established in 1980 under the former Ministry of State Farms Development, the Horticulture Development Corporation with the aim to serving as a marketing organ for all state owned horticulture farms. With the decentralization and liberalization of the country's economic policy, Et-fruit was reorganized in 1993 by the council of Ministers Regulation No. 131/1993 in accordance with the provision of the public enterprise proclamation no. 25/1992.The scope of its services have since then been extended to include private horticultural producers striving to enter the export market. Et-fruit is a pioneer major leading domestic distributor and exporter of fresh fruits, vegetables, and processed horticultural products. The types of fruits delivered to domestic markets are oranges, mandarin, grapefruit, lemon, lime, mango, avocado, banana, processed horticulture products such as tomato juice, orange marmalade, orange squash, guava nectar and strawberry jam are equally supplied to the local market like fresh vegetables such as onion, tomato, potato, etc (profile of Et-fruit).

Ethiopian Trading Business Corporation (ETBC) is the federal government public enterprise established by the council of ministers regulation no 369/2015 on 22nd December 2015. The corporation is governed by the public enterprise proclamation no. 25/1992 and is supervised by the FDRE ministry of trade. The corporation is established through the amalgamation of the Ethiopian grain enterprise, the Ethiopian fruits and vegetables marketing Share Company (Et-fruit), the Ethiopian trading enterprise (Alle bajjmela) and the procurement service enterprise.

Et-fruit has developed its distribution centers and branches in fifteen major towns of the country. In the city of Addis Ababa Et-fruit have four main branches, fifty four retail shops strategically placed to render efficient service. The major supplier of fresh fruits and processed products are the Upper Awash Agro Industry Enterprise (UAAIE), Metehara Sugar Factory, Getu Horizon plantation, Kassam Sugar Factory followed by small holder private horticulture farmers, Asossa mango producers cooperative, Gomo Gofa fruits and vegetables grower’s cooperatives and private commercial horticulture producers (profile of Et-fruit). Based on the above four business units the researcher studied the assessment of supply chain performance of fruits and vegetables in the case of Et-fruit.

1.3. Statement of the Problem

Ethiopia has a variety of fruits and vegetables crops that can be grown in different agro ecological zone produced through commercial state farms, different unions, as well as small fruits and vegetables grower farmers both as a source of income as well as food. It is an economically important commodity. Ethiopian Trade Business Corporation in Fruit and Vegetable Trade Business Unit (Et-fruit) is one of the major wholesalers and retailers of marketing fruits and vegetables in the country. Fruits and vegetables are a horticultural product. The product is by nature an easily perishable.

Various studies have suggested and used a set of new measures to respond to the current requirements for Supply Chain Performance (SCP) measurement: Stevens (1990) presents SCP measurement in terms of service level, cost, throughput efficiency, inventory level, and supplier performance; According to Pittiglio et al. (1994) SCP measures fall into one of four categories: customer satisfaction/quality, cost, time, and assets. Spekman et al. (1998) used customer satisfaction and cost reduction as the SCP measure. Beamon (1999) identified other qualitative SCP measures such as flexibility, information and material flow integration, customer satisfaction, supplier performance, and effective risk management.

Ramdas and Spekman (2000) used six Dimensions that reflect different approaches to measuring supply chain performance. These included inventory, time, order fulfillment, quality, customer focus, and customer satisfaction. Kaplan and Norton (1992) introduced the concept of a balanced scorecard (BSC) to measure business performance from four perspectives: financial, customers, internal business processes, and innovation and learning. Bezabin and Hadera (2007) state that production of fruits and vegetable is seasonal and price is inversely related to supply. During the peak supply period, the prices decline. The situation is worsened by the perishable of the products and poor storage facilities.

Dametew AWW, Ebinger and Beshah (2018) conducted study on a title of the role of Supply Chain Performance Measurement on Manufacturing Firms in Ethiopia. The study identifies and discusses the main motives and impact of supply chain performance measurement practice on the performance of basic metal manufacturing industries in Ethiopia and provided solutions to areas

that needed improvement. Markets play a major economical role and a sustainable development of a given country. But in the absence of well established markets most of agricultural products suffered a big problem especially fresh fruits and vegetables due to the nature of the product are easily perishable.

As per the aforementioned studies, the researcher has noticed various kinds of gaps from both foreign and domestic researcher. To mention some of them, firstly the researcher noticed contextual (geographical) gap and time gap from foreign studies. Secondly the researcher have noticed great conceptual gap, time gap and even limitation of prior studies on the sector of horticulture especially supply chain performance in Ethiopia. So this study focused on supply chain performance on product availability, Cost reduction, time delivery, product quality and customer satisfaction in fruits and vegetables in the case of Et-fruit supply chain performance. Thus, this study narrows the gap and contributes to better understanding on supply chain performance for fruits and vegetables in horticultural sectors and Et-fruit.

1.4. Research Question

- What is the level of supply chain performances of Et-fruit in terms of product availability?
- What is the level of supply chain performances of Et-fruit in terms of Cost reduction?
- What is the level of supply chain performances of Et-fruit in terms of on time delivery?
- What is the level of supply chain performances of Et-fruit in terms of in product quality? and,
- What is the level of supply chain performances of Et-fruit in terms of customer satisfaction?

1.5. Objectives of the Study

1.5.1 General Objectives of this Study

The general objective of the study was to assess supply chain performance of fruit and vegetable in Et-fruit.

1.5.2. Specific Objectives of this Study

- To assess the supply chain performance of Et-fruit from product availability.
- To analyze the supply chain performance of Et-fruit from Cost reduction perspective.
- To determine the supply chain performance of Et-fruit from on time delivery.
- To investigate the supply chain performance of Et-fruit from product quality perspective.
- To determine the supply chain performance of Et-fruit from customer satisfaction.

1.6. Significance of the Study

As compared to the dominant share of the agricultural sector in the Ethiopian economy, horticulture sub-sector is highly contributing to the economy of the country. Supply chain performance of fruits and vegetables as product availability, Cost reduction, on time delivery, product quality and customer satisfaction in fruits and vegetables to improve supply chain performance through increase overall supply chain of fruits and vegetables products to ensure smooth marketing effort and ensure quality standards up to end consumers. The study would support the organizational employee of Et-fruit, Scholars, academicians and horticulture sector especially on fruits and vegetables processor how to better improve their supply chain performance.

1.7. Scope and Limitation of the Study

1.7.1. Scope of the Study

Ethiopian fruit and vegetable trade business unit (Et-fruit) have four wholesalers' branches and fifty four retailers shop in Addis Ababa and also fifteen branches are found in major towns of the country. It obtains the product directly from state farms, large private farms, Unions& small scale producers. Due to the wide varieties of horticulture products and many intermediaries, The focus of this study was delimited to assess the supply chain performance of fruits and vegetables measured in terms product availability, Cost reduction, on time delivery, product quality and customer satisfaction in Et-fruit. The study was restricted in Addis Ababa, Ethiopia, this location represents mostly the city is the main place for marketing fresh horticultural products especially

fruits and vegetables are available. Et-fruit it is one of the public sectors which are dominant in fresh fruit and vegetable marketing and it is still an important performer.

1.7. 2. Limitations of the Study

The occurrence of pandemic Corona virus (Covid-19), time and financial resource is a limitation for study supply chain performance measurement for all horticultural products in different horticultural sector of Ethiopia.

1.8. Definition of key terms

Et-fruit: Fruits and vegetables Trade Business Unit

Supply chain: the series of companies eventually making products and services available to consumers including all of the functions enabling the production, delivery and recycling of materials, components, end products and services is called a supply chain*(Joel D. Wisner et al ,2012)*.

Performance: Performance measurements must be utilized along supply chains to help firms keep track of their supply chain management efforts *(Joel D. Wisner et al, 2012)*.

1.9. Organization of the Study

This study has been categorized into five chapters. The first chapter determined on introductory parts of the paper that mainly identified background of the study, the statement of the problems, and objective of the study, significance of the study; scope, limitation, key terms and organization of the study. The second chapter provided related literature review with specific emphasis to theoretical, methodological and empirical aspects concerning about supply chain. The third chapter deals with research methodology, research design& approach, data source &collection, sampling technique & sampling size, measurement of validity & reliability, and methods of data analysis are incorporated. The fourth chapter presents the analysis of the descriptive and interpretation of the results. The last chapter is about the summary of finding, conclusion and recommendation.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. The Supply Chain Concept

Supply chain is the network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hand of the ultimate customer (Christopher, 1998).

Poirier (1999) argued that the primary objective of supply chain improvements was to serve ultimate customers more effectively and therefore an analysis of the supply chain should focus on the "finish line" (demand), not the "starting point" (supply). To enhance the customer values and meet customer requirement, careful planning of demand-creation and -fulfillment activities is critical to the success of the whole organization

According to James R. Good Chair (2015) supply chain is referred to as an *integrated system* that synchronizes a series of interrelated business processes in order to: (1) create demand for products; (2) acquire raw materials and parts; (3) transform these raw materials and parts into finished products; (4) add value to these products; (5) distribute and promote these products to either retailers or customers; (6) facilitate information exchange among various business entities (e.g., suppliers, manufacturers, distributors, third-party logistics providers, and retailers). Its main objective is to enhance the operational efficiency, profitability, and competitive position of a firm and its supply chain partners.

Supply chains (SCs) consist of several stages, namely supplier, manufacturer, distributor, and consumer which influence each other performance. A very significant issue in SC environment for practitioners is that they know where a product is now, how it got here and where will it be in the future (Jüttner, U. 2005).

2.2. Supply Chain Management

Supply chain management (SCM) is coordination of materials, information and intermediate financial flow participating companies. Supply chain management is also defined as all kinds of activities basic commodities until the final product sale to consumer. Supply chain management is alternative strategies that provide solutions within facing environmental uncertainty for achieve competitive advantage through reduction of operating costs and service improvements consumer and consumer satisfaction. Management supply chain is the process of value creation added goods and services that focus on efficiency and the effectiveness of inventory, cash flow, and flow information (Anatan dan Ellitan, 2008).

Supply chain management is the integration of the activities that procure materials and services, transform them into intermediate goods and final products, and deliver them through a distribution system. Supply Chain Management plays an important role in marketing of goods and services. Every business plans to cut costs, which do not add to maintain and improve the quality of goods and services delivered. In this direction, supply chain has played major role across the world in varied sectors. SCM not only helps to cut costs, but also adds to maintain and improve the quality of goods and services delivered. In this direction, Supply chain has played a major role across the world in varied sectors (Daliya et al. 2011).

2.3. Supply Chains in Agriculture

According to Bailey (2001) the main difference between the supply chain for food, agricultural products and supply chain for other industries is that agricultural supply chains are both demand and supply driven. While demand and supply forecasts are equally important in the agricultural supply chain, the ability of supply chain members to control supply is limited. As a result of factors specific to agricultural supply chains it is impossible for these supply chains to be purely customer driven. Seasonal patterns of production and other factors such as weather and diseases are beyond the ability of either a company or chain members to control. Customers are usually at far end of the chain and they have very specialized needs to which agricultural production does not and cannot react quickly. Agricultural supply chains can be considered as production adjusted customer driven systems.

According to Sivaramane Dr. N and Reddy Dr. GP (2014) Supply chain management studies deals with the flow of products and information among supply chain enablers, their method of operation, strengths and weaknesses and distribution of those products to end consumers. Generally, the supply chains are relatively more efficient in the input side owing to the presence of professionally managed companies and institutions producing and marketing the inputs such as seeds, fertilizers, plant protection chemicals, etc. However, in the output side, the supply chain management has the task of linking small and spatially distributed production units with the widely distributed consumers offering the value while facing huge risks in terms of high perishable, high transfer costs, dominant of traditional tastes and preferences, ineffective storage, lack of awareness of grades and standards, etc

The concept of the food supply chain management is defined by (Downey, 1996) as "…the process of bringing orders to the system of producing, processing, and distributing food and agricultural products to consumers. From the consumer perspective supply chain management focuses on improving effectiveness and efficiency of the system to deliver a wide range of safe and desirable agricultural products in a cost effective manner. From the supplier's point of view, supply chain management involves the creation of organizational structures and linkages that will ensure a strong position in the market and enhance their profitability."

2.3.1. Supply Chain Performance of Fruits and Vegetables

A supply chain performance measure is a means of providing feedback to the management throughout the supply chain that enables them to make informed decisions and take necessary corrective actions in a timely manner. It is also one of the ways to communicate with stakeholders of the organization and its supply chain partners regarding the efficiency and effectiveness of supply chain activities (Hokey M, 2015 p.434).

According to Vorst & Beulens (2002) fruits and vegetables constitutes a major part of the world economy and is the raw material for many industries. Among the agricultural produce, perishable food produce like F&V have got the least attention. The SCM of F&V constitutes the processes from production to delivery of the agro-fresh produce, i.e. from the farmer to the customer. SCM

of F&V is complex as compared to other SCMs due to the perishable nature of the produce, high fluctuations in demand and prices, increasing consumer concerns for food safety &quality (Hokey Min James and R. Good Chair, 2015).

According to Pandey (1988) marketing of fruits and vegetables were suffering from multi-angled problems. He identified the basic problems like market density, processing facilities, transport bottleneck, storage facilities, cold storage, market information, post harvest care and domestic care. He suggested to develop administrative set up, legislative support, technical support, planning of markets and also to improve the market infrastructure, communication and information system which need attention.

2.3.1.1. Supply Chain for Orange in Ethiopia

Orange is one of the most important fruits in the tropical and sub-tropical regions of the world. The fruits are eaten fresh and used for making canned orange juice. Large quantities of sweet orange are used to produce single strength juice, frozen concentrate, rind oil, pectin used in the production of jams and jelly pulp residue which is fed to livestock. The orange juice is also extracted and used for flavors for food items (Apata, 2002).

Upper awash Agro Industrial Enterprise (UAAIE) is the biggest producer of orange, mandarins and other tropical fruits like mango and papaya in Ethiopia. The Company is also the main producer and supplier of tomato paste, tomato juice, orange marmalade and guava nectar in the country (profile of UAAIE).

2.3.1.2. Supply Chain for Banana in Ethiopia

Banana (Musa spp.) is a crop of major economic importance in the world. It is the fourth most important crop of the food market next to rice, wheat, and maize (Food and Agriculture Organization Statistical Division FAO STAT (2O12). This makes banana the prime leading fruit crop in terms of volume and value in the global market (Woldu et al., 2015a).

In 2017, banana was the world's most productive fruit crop with an annual production of 113,918,763 metric tons FAOSTAT (2019). In terms of production and export potential, India is the largest producer of banana while Ecuador is a leading exporter followed by the Philippines.

According to Girma et al, (2020 p. 3) Due to Ethiopia's suitable agro-climatic conditions, it has a big potential for banana and other fruits production (Wiersinga et al., 2008). Cavendish banana is the major fruit crop that is most widely grown and consumed in the country. Especially in the south and southwestern parts of the country, it is of great socioeconomic importance contributing much to the overall well-being of the rural communities including food security, income generation, and job creation (Woldu et al.2015a). Banana contributes around 48% for producers' own consumption, 49% for income generation, less than 1% for animal feed and less than 3% for other purposes in Ethiopia.

2.3.1.3. Supply Chain for onion in Ethiopia

According to Lemma and Shimeles (2003), Ethiopian onion is produced in many parts of the country by small farmers, private growers; state enterprise mainly in Awash Valley and Lake Region, where the bulk of dry bulbs and seed are produced. Onion is one of the most important commercial vegetables. Onion is a cool season crop. However it can be grown under a wide range of climatic conditions. It grows well under mild climatic without extreme heat or cold or excessive rain fall (Sharma, 2006).

An optimal supply chain is a system where the economies, physical flow and information all are integrated to the chain to optimize the process and induce a higher productivity throughout the chain. This would imply a close collaboration between the farmers, wholesalers, transporters and retailers when applied to the onion chain (Hanna Daniels & Stefan Fors, 2015).

2.3.1.4. Supply Chain for Avocado in Ethiopia

According to CSA (2017) avocado (Persea americana Miller.) are among the dominant fruit crops next to banana in terms of area coverage, total production and export value in Ethiopia. The South Western part of Ethiopia is the key production belt for them. The production of

avocados are contributing to 10% of the national fruit production, covering about 15% of the harvested area of fruit crops in the country. South Nation and Nationalities (SNNPR), Oromia, and Amhara regional states are the major growing areas of edible fruits. These regions have the largest potential for production increases using rain-fed as well as irrigated commercial farming systems.

2.4. Supply Chain Performance Measurement

Performance measurement should take a holistic system perspective beyond the organizational boundaries. The performance of supply chain needs to be assessed across the organizations so as to optimize global optimization along the supply chain (Flex and Qi 2003).

A good performance measurement system should include measures that assess what is important to customers. These measures will vary by company and through time as strategic changes occur to the firm, its products and its supply chains (Joel D. Wisner et al, 2012. p. 490).Performance measurement has become a critical management task in all types of organizations, including private corporations, public sector agencies and even non - profit organizations(Suresh S. Kalagnanam, 2004 p.407).

2.4.1. Product Availability

According to (Joel D. Wisner et al, 2012) reduction of inventory levels causes problems to surface in the organization and among its trading partners. Once these problems are detected, they can be solved, improving product value and allowing the system to run more effectively with lower inventory investment. Once the product reaches its destination, it is continuously available. Users can determine the exact location of available products, anywhere in a supply chain, at any time.

Off season fruits and vegetable production and marketing observed that the major problems faced by the farmers and suppliers in production and marketing of fruits and vegetables were lack of availability of products and raw materials (Thakur, 1994).

2.4.2. Cost Reduction

Cost reduction both externally and internally in the supply chain is vital for improving productivity. Hill (2000), states that many organizations do not concentrate their efforts in the area of greatest cost. Instead, they concentrate on reducing the cost of direct labor. Gadde and Hakansson (2001) provided examples of what is usually known as indirect purchasing costs. These costs can be defined as: purchasing costs, goods handling costs, storage costs, financial costs, supplier handling costs, administration costs and development costs. Cost is strongly connected to the performance measure price.

According to Hill (2000) states that price is an increasingly important order-winning criterion, especially in the growth, maturity and saturation phases of the product life cycle. The task of manufacturing is to achieve the low costs necessary for price sensitivity in the market-place. This measure is strongly connected to suppliers i.e. purchased items, as well as the manufacturing organization's own workforce.

2.4.3. On time Delivery

There are several performance sub-measures connected to delivery e.g. on time delivery, delivery reliability, faster delivery times, delivery service, delivery frequencies, delivery synchronization, delivery speed etc. Delivery, reliability concerns supplying the ordered products on the agreed date. On-time delivery is therefore a major concern of the manufacturing as well as the distribution function. Hill (2000) argues that in many businesses this criterion constitutes a qualifier.

According to Hill (2000) a company wins orders through its ability to deliver more quickly than competitors or to meet the required delivery date when few or none of the competition can do so. He states that there are two perspectives on the issue of delivery speed. One is when the process lead time, although shorter than the delivery time required by customers, is difficult to meet as a result of the current forward order load, i.e. the order backlog on the manufacturing capacity, which means that the process lead time to complete the order is greater than the delivery time required. The second perspective is when the process lead time is greater than the customer

delivery requirement. Delivery has several sub metrics, and organizations decide which sub measures are most appropriate to measure, e.g. delivery from suppliers, delivery within their own organization or delivery to customers.

2.4.4. Product Quality

According to Aramyan (2007) two performance indicators of the goal quality were considered to be of medium importance. One is taste and the other is health. Taste is determined by the sweetness, mealiness and aroma of the products. As traditional food products have their own special taste character, maintaining the original taste of the product is more important than improving its tastiness or better meeting the requirements of the consumers with regards to taste.

2.4.5. Customer Satisfaction

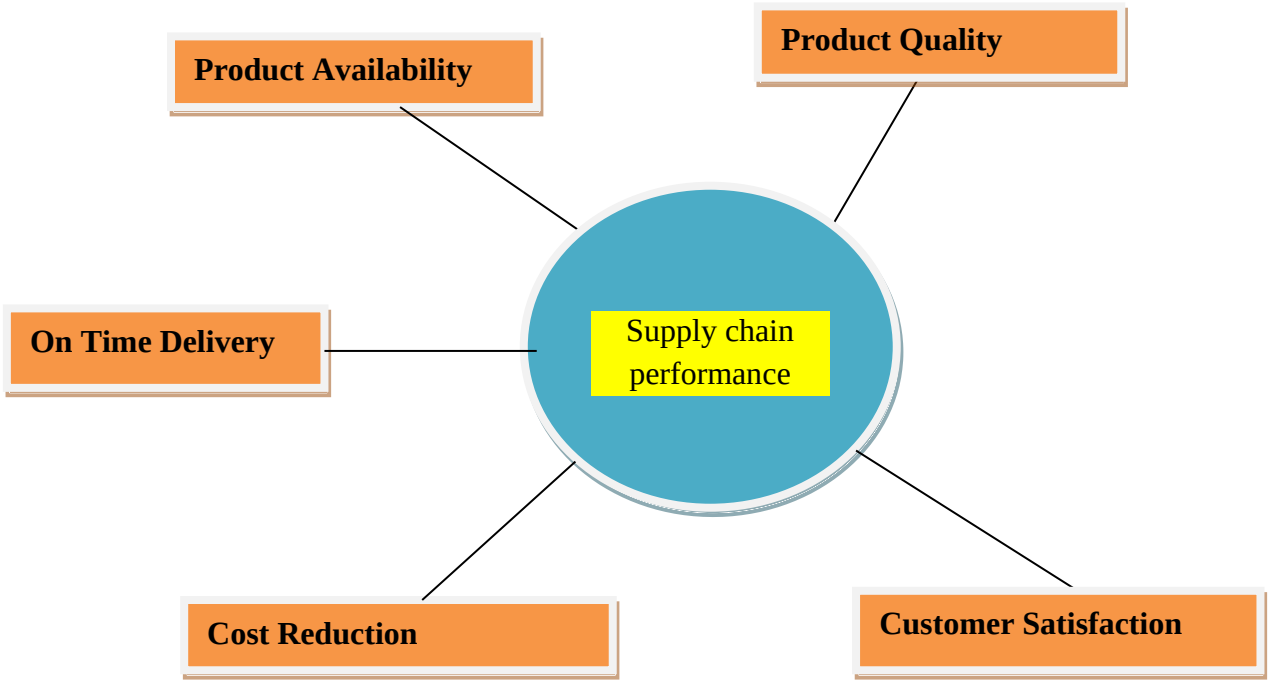
Customer satisfaction is the state of mind that customers have about a company when their expectations have been met or exceeded over the lifetime of the product or service. Service companies have since recently focused on customers in order to improve competitiveness. Customer satisfaction is one of the important outcomes of marketing activity (Rigopoulou et al. 2008).

According to Oliver (1997**),** customer satisfaction is consumer's fulfillment response. It is a judgment that a product or service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfillment, including levels of under- or over -fulfillment.

The customer relationships include the complete range of practices that are employed for the purpose of managing customer complaints, building long-term relationships with customers & improving customer satisfaction (Tan et al. 1998; Claycomb et al. 1999).Based on the element of supply chain practice, the customer relationships might be a fundamental element of supply chain practice. The reason is that this supply chain practice might be good idea to analyze for improving the supply chain performance.

2.5. Conceptual Framework of the Study

The conceptual framework indicates the supply chain performance of fruits and vegetables measuring dimensions (product availability, cost reduction, on time delivery, product quality and customer satisfaction).The framework helped to identify which dimension was involved, in what aspect of the in fruits and vegetables supply chain performance. This conceptual framework shows the five dimensions that make up supply chain performance in fruits and vegetables link the literature review with the methodology. As indicated in the following figure, the research framework has been organized to have such components as the supply chain performance in fruits and vegetables market (see the following figure).



Fig, 2.1, Conceptual frame work of the study

Source: Pittiglio et al. (1994) and spekman et al (1998)

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1. Description of the Study Area

The study was conducted in Addis Ababa capital city of Ethiopia. It is found at 9° 1' N latitude & 38° 44' E longitude demarcation. Ethiopia is located in the Eastern Africa bordered on the west by the Sudan, the south west by the South Sudan, east by Somalia and Djibouti, the south by Kenya, and the northeast by Eritrea. It lies on the central plateau at an altitude of 2,400 meters above sea level (CSA, 2007).

3.2. Research Design and Approach

3.2.1. Research Design

A research design was simply the frame work of the study. From different types of research designs descriptive design was employed for this study to the realization of intended objectives. The reason behind using descriptive research design is because the researcher was interested in describing the existing situation under study. (Creswell, 1994) stated that the descriptive method of research is a technique of gathering information about the present existing condition. This research design is a fact finding study with adequate and accurate interpretation of findings in fruit and vegetable supply chain performance in Et-fruit.

3.2.2. Research Approach

There are three common approaches to business and social research namely, quantitative, qualitative and mixed methods approach. Quantitative research is a means for testing objective theories by examining the relationship among variables. On the other hand, qualitative research approach is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem with intent of developing a theory or pattern inductively Finally, mixed methods approach is an approach in which the researchers emphasize the research problem and use all approaches available to understand the problem (Creswell 2014).Hence,

based on considering the research problem and objective, in this study, mixed method was adopted.

3.3. Data Sources and Data Collection Method

This study was conduct on both primary and secondary data sources' five point Likert scale questionnaire was developed to collect data.

3.3.1. Primary Data Sources

The primary data sources were collected in three ways1stEt-fruit supplier, 2nd Et-fruit employees and 3rdcustomers who buy Et-fruit products. Primary data was collected through structured questionnaires. The questionnaires are closed and open -ended so as to allow the respondents to express their views without limiting. 13 questionnaires were given to Et-fruit suppliers, 20 questionnaires for Staff members and 17 questionnaires for Customers as a total of 50 questionnaires were prepared (Appendix).

3.3.2. Secondary Data Source

Furthermore, primary data were collected because of secondary data will not be adequate to answer the research problem. So in support of the primary sources, secondary statistical data were collected from journals, books and the organization published and unpublished documents such as annual report of ETBC and Et-fruit.

3.3.3. Data Collection

The most suitable method to collect primary data is to distribute questionnaire. A five point Likert scale questionnaire was developed to provide the respondents ease of answering the questions as per their level of agreement (McLeod, 2008). The Likert scale follows the format of: 1) Strongly Disagree; 2) Disagree; 3) Neither Agree nor Disagree; 4) Agree; 5) Strongly Agree. The development of the questionnaire was based on the following supply chain performance dimensions; product availability, cost reduction, on time delivery, product quality and customer

satisfaction. The questionnaires were targeting suppliers, employees and Et-fruit customers. In addition, secondary data were collected from relevant documents in supply chain.

3.4. Sampling Technique and Sample Size

According to (Creswell, 2009) drawing inference about a population without studying the entire population under study is also advantageous in time consuming and cost saving. Thus, the researcher selects Et-fruit in Addis Ababa by using purposive sampling method. From the variety of probabilistic sampling techniques, the researcher was used stratified random sampling methods for large target population of the study. A multi stage sampling procedure was used to select samples such as Et-fruit supplier, employee and customer respondents. The study areas cover 14 respondents of Et-fruit supplier, 72 Et-fruit employees and 384 customers in Et-fruit as a total of 470 sample sizes are required for supply chain performance of fruits and vegetables in Et-fruit. Based on the opportunity of demanding major fruits and vegetables market are obtaining in Addis Ababa, the respondents were selected purposively for the study (based on time, budget, Corona- Virus (Covid- 19), and related constraints).

3.4.1. Supplier Sampling

The sources of supply for Et-fruit from the domestic channels are: Upper Awash Agro Industrial Enterprise (UAAIE), Methara suger factory, Kasum sugar factory, Gomo Gofa fruits and vegetables grower's cooperatives, Getu farm enterprise, and Small private horticulture growers and suppliers are major suppliers of fruits and vegetables to Et-fruit. The convenient samples for this study were UAAIE production manager and small private horticultural suppliers such a total of 14 respondents were taking in the sample size. Purposive sampling was used to select specific people who adequate knowledge about supply chain.

3.4.2. Et-fruit Employees Sampling

As human resource annual reports of Et-fruit (2021) 365 permanent employees are found in the organization. Out of 365 permanent employees, 261 are found in Addis Ababa and the rest 104 employees are found in different areas of the country out of Addis Ababa where Et-fruit branches are available. Based on this, Et-fruit employees who are found in Addis Ababa are selected as a population frame for the study. The researcher employed simple random sampling method to select the sample. To determine the sample size of the target population, the researcher has used statistical instrument formula. The statistical formula developed by Yamane (1967). Sample formula given as:

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

Where:

n = Desired sample size

N =Total population size

e = Accepted error limit (0.1) on the basis of 90 percent degrees of confidences.

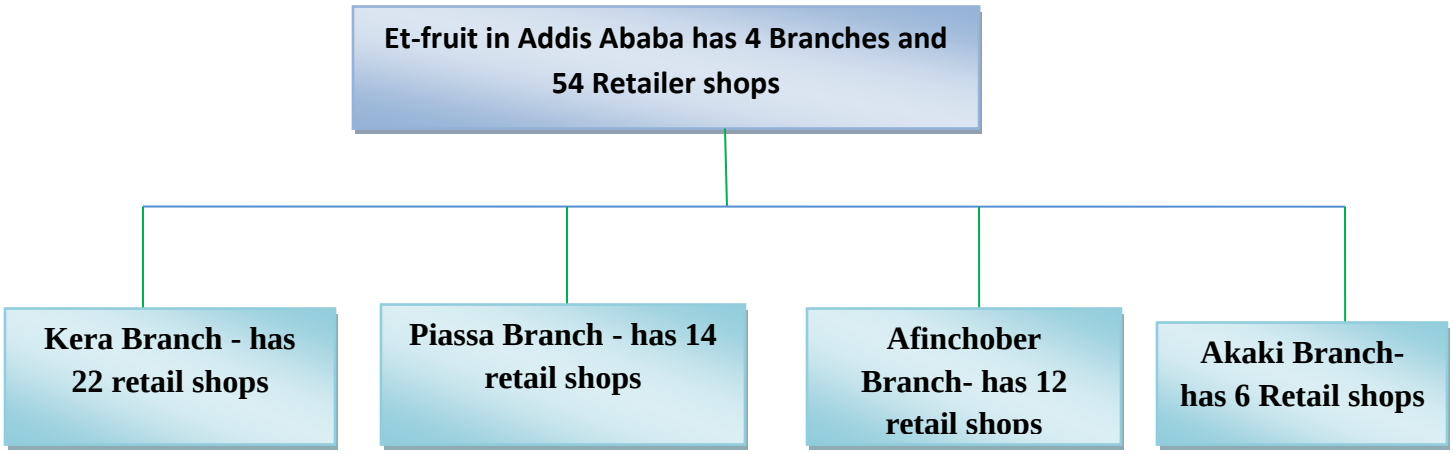
$$n = \frac{\mathrm{N}}{1 + N(e)\text{^}2}$$

$$n = \frac{261}{1+261(0.1)\text{^}2} \quad =72$$

The study is assumed that the margin of error is 10% and confidence level or error free of 90%. According to above formula and target population of 261 organizational employees who are found in Addis Ababa were participating for primary data collection purpose. So that desired sample size is 72

3.4.3. Et-fruit Customers Sampling

The customer or consumers' survey would program to understand the demand for the value of fruits and vegetables product. According to Et-fruit 2021 annual report, it has 4 branches and 54 retail shops are founded in Addis Ababa**.**



Fig,3. 1, Et-Fruit Branches and Retailer Shops in Addis Ababa

In Kera branchthere are 22 retail shops chosen for this study namely , Gebi suke, Mekanisa Abo, Mekanisa Condominium, Bisrata Gabriel, Labu Michael, Jamo Number one, Jamo Number two, Ayer Tana, Betal, Alem Bank, Kara kore, Alem gana, Sabeta, Gofa camp, Gofa Maberalhaile, Lafto, Hana Maryiam, Gotera, Aday Ababa, Karekos , Ganet Hotel and Gebi Corporation.

In Piassa Branch there are 14 retail shops chosen for this study namely, Gebi suke, Tele, Georges, Takel Haymanot, Mexico, Balcha, Markato, Kolfa, Asko, Berchko, Wengate, Meskal, Olompya and Pola.

In Afincho-ber branch there are 12 retail shops chosen for this study namely, Sidest Kilo, Minilek, Meganagna, Garje, Amicha, CMC, Civil service, Imperial, Gurde shola, Par lama, Wondeyerade and Hayat.

In Akaki branch there are 6retail shops chosen for this study namely, Gebi suke, Galan, Comate, Bola Bulbulla, Akaki number one and Kality Tana Tabya.

According to Bill Godden (2004) to calculate the sample size for more than 50,000 or infinite populations using the following formula:

$$ss = \frac{(Z-score)\text{^}2)\ (StdDev)(1-StdDev)}{(marginoferror)\text{^}2}$$

Where:

SS = Sample Size

Z-values for confidence levels are: 1.645 = 90% confidence level 1.96 = 95% confidence level and, 2.576 = 99% confidence level. A 95% Confidence level, 0.5 Standard Deviation, and a Margin of error (confidence interval) of +/- 5%.

$ss = \frac{(1.96)\text{^}2(0.5)(1-0.5)}{(0.05)\text{^}2}$ = $ss = \frac{(3.8416)(0.25)}{0.0025}$ = 384.16

So that, **384** customers respondents are needed as a sample size

50% of the total population (Retail Shops) were taken as a sample due to time, financial resource and pandemic Corona- Virus (Covid- 19) so that , 27 retail shops are selected randomly from the total of 4 branches found under the study area using probability proportional to sample size (PPS) sampling techniques.

Hence; the total sample sizes of customers were 384, since the numbers of respondent in each sample retail shops wouldn't the same, this need to proportionate for each and calculate using the following formula.

$$n = \frac{(\mathrm{k})(\mathrm{N1})}{N}$$

Where;

n is a total number of sample size customer in each branch,

k is a total number of sample retail shops in each branch

N is total number of retail shops

N1 is total number of sample size customers

Table 3.1, Total Sample Size Retail Shops and Customers for Each Branch

Branches	Sample Retail shops	Sample size customer
Kera	11	156
Piassa	7	100
Afincho-ber	6	85
Akaki	3	43
Total	27	384

From the above sample size retail shops were chosen 11 for kera, 7 for piassa, 6 for afincho-ber and 3 for akaki as a total of 384 customers. 156, 100, 85 and 43 sample size customers are selected respectively and filled the questioners by using accidental sampling technique.

Table 3.2, Total Sample Size Customers for Each Retail Shops in Each Branch

Branches	**Sample Retail shops**	**Sample size customers**
Kera	Gebi suke	15
	Mekanisa Abo	14
	Mekanisa Condominium	14
	Bisrata Gabriel	14
	Jamo Number one	15
	Labu Michael	14
	Jamo Number two	14
	Betel	14
	Aday Ababa	14
	Karekos	14
	Gebi Corporation	14
Sub total	**11**	**156**
Piassa	Tele	15
	Georges	14
	Takel Haymanot	14
	Mexico	15
	Balcha	14
	Bola	14
	Kolfa	14

Sub total	**7**	**100**
Afinchober	Sidest Kilo	15
	Menelik	14
	Meganagna	14
	Garje	14
	Amecha	14
	CMC	14
Sub total	**6**	**85**
Akaki	Galan	15
	Akaki number one	14
	Kallity Tana tabya	14
Sub total	**3**	**43**
Total	**27**	**384**

Table 3.3, Summary of Samples Respondents' Rate

Sample study	Questionnaire distributed	Questionnaire returned	Respondents rate
Et-fruit suppliers	14	14	100 %
Employees	72	68	94.4 %
Et-fruit Customers	384	380	98.9 %
Total	470	462	98.3 %

As presented in table 3.3 .a total sample size of 462 respondents are selected for this study, out of which 8 respondents were refused to respond to the questionnaire 4 respondents for employees and 4 respondents were in customers' response. So that 462 respondents were properly answered and returned the questionnaire to the researcher.

3.5. Measurement of Validity and Reliability

3.5.1 Measures of Validity

According to Zikmund (2013) attitudes and opinions are measured in many types of scales of which Likert scale is one of the methods used to measure such attitudes, using a 5 - point Likert scale that varying from 1(strongly disagree) to 5 (stronglyagree). The validity and reliability of the concept covered in this study were measured in terms of Cronbach‟s Alpha. The validity measurement guarantees how well the items used covered each other. This means that it explains

how well the items assess or measures the concept. To develop the Cronbach‟s Alpha, correlations between the items has been calculated. A good correlation between items leads to a higher value of Cronbach‟s Alpha. Hence, the higher Cronbach‟s Alpha value indicates a higher validity.

3.5.2 Analysis of Reliability

Reliability Analysis (Cronbach‟s alpha) was conducted to test the reliability of collected data. The scale reliability coefficient or Cronbach‟s alpha are 0.78 for suppliers in three measuring dimensions on product availability, cost reduction and on time delivery. 0.83 Cronbach's Alpha Test recorded in employees sample frame in four measuring dimensions on product availability, cost reduction, on time delivery and product quality. 0.83 Cronbach's Alpha Test recorded in customers sample in five measuring dimensions on product availability, cost reduction, on time delivery, product quality and customers' satisfaction, which is considered acceptable as an indication of item scale reliability. According to Anderson, Cornbrach‟s alpha reliability coefficient normally ranges between 0 and 1. However, there is actually no lower limit to the coefficient. The closer Cronbach‟s alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale.

Table 3.4, Result of Reliability Analysis for Questionnaire

Sample frame work	Measuring dimension in SCP	Number of Questions	Cronbach's Alpha Test
Suppliers	Product availability	10	0.78
	Cost reduction		
	On time delivery		
Employees	Product availability	20	0.83
	Cost reduction		
	On time delivery		
	Product quality		
Customers	Product availability	15	0.83
	Cost reduction		
	On time delivery		
	Product quality		
	Customer satisfaction		

The acceptable range is between 0.70 and 0.90 or higher depending on the type of research (Statsc, 2015), A low value (e.g. <0.5) could be as a result of factors such as a low number of questions or poor interrelatedness between items, while a high value of alpha (e.g. >0.90), may be as a result of some redundant items in the instrument (Tavakol and Dennick, 2011, p.54). The obtained alpha score indicates that the scale has good internal consistency (reliability). Cronbach alpha is a reliability coefficient that indicates how well the items are positively correlated to one another. So on this study Cronbach alpha indicates the items used in the study are internally consistence and reliable to continue the analysis.

3.6. Method of Data Analysis

Descriptive statistics like percentages, frequencies mean and standard deviation were used to examine and understand the sampled respondents in fruits and vegetables supply chain performance. The data collected were processed using Statistical Package for Social Science (SPSS) version 25 after editing, coding and arranging the raw data collected from survey.

CHAPTER FOUR

4. DATA ANALYSIS AND INTERPRETATION OF THE RESULT

4.1. Demographic Characteristics of Respondents

This section gives an overview of the demographic profiles of the respondents of Et-fruit suppliers, staff employee and Customers gender, age and level of education. This aspect of the data analysis deals with the analysis personal data on the respondents of the questionnaires. The table below shows the details of characteristics of the respondents' frequency and their percentage.

Table 4.1, Demographic Characteristics of Respondents

Item	Description	Frequency	Percentage
Gender	Male	253	54.8
	Female	209	45.2
	Total	**462**	**100**
Age	Below 30 year	140	30.3
	31-40 years	240	51.9
	41-50 years	29	6.3
	Over 50 years	53	11.5
	Total	**462**	**100**
Educational Level	Illiterate	6	1.3
	Grade 1-12	88	19
	Diploma	118	25.5
	Degree	186	40.3
	Master	50	10.8
	Doctor	8	1.7
	Others	6	1.3
	Total	**462**	**100**

As shown in table 4.1, out of 462 respondents, 253 (54.8%) were males and 209 (45.2%) were females. The table also indicates the respondent age, it is obvious that most of them were in the economically active group .The largest group of respondents which contains 240 (51.9%) was

aged between 31 and 40.The next largest group is below 30 year 140 (30.3%) while the rest group is 29 (5.3%) aged between 41 and 50 and Smaller groups are aged above 50 comprises 53 (11.5%)of the respondents.

With regard to educational level; the frequency and percentage 6 (1.3%) are Illiterate, 1st to 12th grade 88 (19%), Diploma 118 (25.5%), Degree 186 (40.3%), Master 8 (1.7%), Doctor 6 (1.3%). This implies that most of the respondents were degree holder.

4.2. Descriptive Statistics for supply chain performance parameter: (Suppliers' Response)

Table 4.2, Frequently Supplying of Fruits and Vegetable to Et-fruits

No	**Description**	Day to Day	Once in a Week	Twice in a week	Other
1	How frequently you supply fruits and vegetable to Et-fruits?	6(42.9)	2(14.3)	5(35.7)	1(7.1)

Accordingly, 78.6 % of the respondents were frequently supplying of fruits and vegetable to Et-fruits in day to day and twice in a week, while the rest 21.4 % were supplying once in a week and occasionally; this implies that frequently supplying of agricultural products especially fruits and vegetables were improve Et-fruits performance and ultimately met the demand of end consumers. Improvements of horticultural sectors were identified as suppliers that are frequently supplying of products and enormous demand of products are required through the supply chain.

Table 4.3, Distribution Network For Delivering Fruits and Vegetables to the Domestic Market

No	**Description**	Distributers	Wholesalers	Retailers
1	Which distribution network is best for delivering fruits and vegetables to the domestic market?	7(50)	1(7.1)	6(42.9)

According to the data collected in table 4.3, about 93 %suppliers answered that the main distribution network for delivering fruits and vegetables are distributors and retailers, whereas; the rest 7.1%are wholesalers. Vegetables and fruits by nature they are easilyperishable, so

suppliers' choice distributors and retailers are more quickly to distribute their products to the end customers. They are a good distribution network for delivering fruits and vegetables in the domestic market.

Table 4.4,Major Customers for Suppliers

No	**Description**	Et-fruit	Et-fruit and Sagle P.L.C	Et-fruit, Sagle and Luna P.L.C	Other
1	Who are the major customers for your products?	7(50)	2(14.3)	3(21.4)	2(14.3)

According to the data collected in table 4.4, about 50 % of suppliers answered that the main customers for purchasing fruits and vegetables are Et-fruit. This is important for suppliers because Et-fruit has a long year of experience for trading in fruit and vegetables to solve supply chain performance problems. So that suppliers are more advantageous for delivering fruits and vegetables to Et-fruit.

Table 4.5, Descriptive Statistics for supply chain performance parameter (Suppliers' Response)

1	**Product Availability**	SD	D	N	A	SA	Mean	Standard Deviation
1.1	Et-fruit has sufficient wholesale branches and retail stores	1(7.1)	2(14.3)	3(21.4)	6(42.9)	2(14.3)	3.79	1.25
1.2	Pre-harvest and post-harvest handling training has been provided by Et-fruit to supply fruits and vegetable products	1(7.1)	4(28.6)	1(7.1)	7(50.0)	1(7.1)	3.21	1.18
1.3	Climate change is a major problem for suppliers to supply fruits and vegetables through the year	-	3(21.4)	2(14.3)	5(35.7)	4(28.6)	3.71	1.14
1.4	The occurrence of pandemic covid-19 has a major impact on supplying of fruits and vegetables	1(7.1)	3(21.4)	-	3(21.4)	7(50.0)	3.86	1.46
Grand Mean = 3.64								
2	**On time delivery**							
2.1	I satisfied with the full service of Et-fruit	3(21.4)	1(7.1)	0	6(42.9)	4(28.6)	3.79	1.12
2.2	Due to a lack of storage house, they haven't been able to access the service to supply products to	3(21.4)	7(50.0)	1(7.1)	3(21.4)	0	2.29	1.06

	Et-fruit							
2.3	Suppliers are satisfied with the service provided when they offer the product to Et-fruit	1(7.1)	2(14.3)	3(21.4)	8(57.1)	0	3.29	0.99
Grand Mean = 3.12								
3	**Cost**							
3.1	Et-fruit will pay the payment on time for the products you are supplying	1(7.1)	3(21.4)	0	4(28.6)	6(42.9)	3.79	1.42
3.2	The interference of brokers in fruits and vegetables marketing is a major problem for suppliers and Et-fruit	4(28.6)	4(28.6)	0	2(14.3)	4(28.6)	2.86	1.70
3.3	Et-fruitwerepay according to the agreement for the product you are offering	1(7.1)	2(14.3)	2(14.3)	6(42.9)	3(21.4)	3.57	1.22
Grand Mean = 3.41								

***(Hint: SD=strongly disagreed, D=disagreed, N= neutral, A = agree, SA = strongly agree. The performance scores of fruits and vegetables supply chain on Likert"s five point rating scale. The mean and grand mean score above 3 indicates the supply chain performance of the dimension is favorable and score below 3 specify the poor performance of the dimension*).**

According to the above data collected from suppliers, 50 % of respondents were agreed that Et-fruit has sufficient wholesale branches and retail stores and the rest 21 % disagreed ; this means that adequate warehouse and retail shops have a good opportunity for suppliers think to bring more horticultural products to Et-fruit.

Accordingly, 57 % of the respondents confirmed that the Et-fruit provides training to suppliers on how to handle fruits before and post harvest while 35.7 % did not. This implies that the Et-fruit, though some respondents were not confirmed, is providing training for the suppliers and this make them better handle their fruits and vegetables through the chain.

As a result of the findings, 64.3 % of respondents agreed that climate change is a major problem for suppliers to supply fruits and vegetables throughout the year; this implies that climate change were a diverse effect on producing and supplying of horticultural products all over the year.

Based on the above data, 71.4 % of respondents agreed that occurrence of pandemic covid-19 has a major impact on supplying of fruits and vegetables; this indicates that covid-19 were great

impacts in fruits and vegetables suppliers. According to the respondents for the period of the occurrence of pandemic covid-19 virus they think fruits and vegetables were easily contaminated with this virus. So that lower demand leads to a reduction in fruits and vegetables supply. Now a day the use of fruits and vegetables are advertised in various social media. So people know that fruits and vegetables are a nutritious food and vital to improve the nutritional quality of our diet.

The table above shows the overall perception of four different product availability questions from suppliers' perspectives. The occurrence of pandemic covid-19 has a major impact on supplying of fruits and vegetables is considered as the most practiced or displayed value with a mean value of 3.86 and standard deviation of (SD=1.46).

Accordingly, 71.5 % of the respondents confirmed in satisfaction with the full service of Et-fruit and the remaining 28.5 % did not. This indicates that suppliers are more satisfied with the service they are interested to bring horticultural products. The higher supply demand relationship the better performance of fruits and vegetables supply chain.

As shown in the above data indicates, 71.4 % of respondents disagreed that due to a lack of storage house, they haven't been able to access the service to supply products to Et-fruit, but; the rest 21.4 % disagreed; this implies that satisfaction of suppliers with Et-fruit service will create a favorable environment for the supply chain delivery; and also adequate warehousing creates a favorable environment for suppliers to deliver their products as soon as possible.

The above results show that, 57 % of respondents confirmed that suppliers are satisfied with the service provided when they offer the product to Et-fruit. While the remaining 21 % did not; this implies that suppliers are more satisfied with the service with they provided the better the products they brings or supplied it.

The table above shows the overall perception of three different on time delivery questions from suppliers' perspectives. Suppliers are satisfied with the full service of Et-fruit is considered as the most practiced or displayed value with a mean value of 3.79 and standard deviation of (SD=1.12).

Based on the above data show, 71.5 % of respondents were accepted that the payments of Et-fruit are on time for suppliers that they bring products whereas the rest 28.5 % did not. This indicates that the payments are in a good condition no delays of time occurrence in Et-fruit. If there are a delay of time for paid the result also poor performance of supply chain.

Accordingly, 57.2 % of the respondents not confirmed that the interference of brokers in fruits and vegetables marketing is a major problem for suppliers and Et-fruit while 42.9 % were accepted; this implies that most suppliers not all want brokers who are involved in fruits and vegetables trade because by nature fruits and vegetables are highly perishable product.

As shown in the above data indicates, 64.3 % of respondents confirmed that Et-fruit will paid suppliers for they offer products according to the agreement while the remaining 21.4 %did not; this indicates that the good agreements for suppliers and Et-fruit show a healthier a interaction for suppliers for supplying of products and vice versa.

The table above shows the overall perception of three different cost questions from suppliers' perspectives. Et-fruit will pay the payment on time for the products you are supplying is considered as the most practiced or displayed value with a mean value of 3.79 and standard deviation of (SD=1.42).

4.3. Descriptive Statistics for supply chain performance parameter :(Employees' Response)

Table 4.6, Analysis of Et-fruit Employees' Response

1	**Product Availability**	SD	D	N	A	SA	Mean	Standard Deviation
1.1	The main fresh fruit and vegetable products are found in Et-Fruit	11(16.2)	22(32.4)	10(14.7)	20(29.4)	5(7.4)	2.79	1.24
1.2	Et-fruit offering the right products to your customers at the right time	12(17.6)	28(41.2)	12(17.6)	15(22.1)	1(1.5)	2.49	1.07
1.3	There is an adequate supply of vegetables and fruits in the distribution and shops of Et-Fruit	14(20.6)	32(47.1)	6(8.8)	11(16.2)	5(7.4)	2.43	1.23
1.4	Loss of fruits and vegetables in the form of disposal has a	10(14.7)	3(4.4)	4(5.9)	25(36.8)	26(38.2)	3.79	1.38

	negative significance impact on the performance of Et-fruit							
1.5	The occurrence of covid-19 negatively affects the fruit and vegetable trade system in Et-fruit.	14(20.6)	21(30.9)	7(10.3)	10(14.7)	16(23.5)	2.90	1.49
Grand Mean = 2.88								
2	**On time delivery**							
2.1	Fresh fruits and vegetables are served efficiently in all Et-Fruit containers	17(25.0)	30(44.1)	9(13.2)	7(10.3)	5(7.4)	2.31	1.17
2.2	Fresh fruits and vegetables are delivered right from the main store to the retail store on time	15(22.1)	29(42.6)	5(7.4)	16(23.5)	3(4.4)	2.46	1.20
2.3	Fresh fruits and vegetables are distributed from the main store to the shops as they go "First In First Out" (FIFO)	10(14.7)	12(17.6)	7(10.3)	32(47.1)	7(10.3)	3.21	1.27
Grand Mean = 2.66								
3	**Cost**							
3.1	During production handling and distribution, Et-Fruit effectively works based on cost reduction	13(19.1)	28(41.2)	8(11.8)	16(23.5)	3(4.4)	2.53	1.17
3.2	Et-Fruit effectively do cost-reducing when loading and unloading fruits and vegetables	12(17.6)	20(29.4)	10(14.7)	23(33.8)	3(4.4)	2.78	1.22
3.3	Efforts were made to reduce unnecessary costs when purchasing Et-fruit products	18(26.5)	16(23.5)	7(10.3)	22(32.4)	5(7.4)	2.71	1.36
3.4	Et-fruit works effectively to reduce administrative costs	12(17.6)	25(36.8)	7(10.3)	17(25.0)	7(10.3)	2.74	1.30
Grand Mean = 2.69								
4	**Quality**							
4.1	fruits and vegetables in Et-fruit fulfill their quality	13(19.1)	22(32.4)	9(13.2)	22(32.4)	2(2.9)	2.68	1.20
4.2	Et-fruit warehouses and retail stores are perfectly clean for storing fresh fruits and vegetables	18(26.5)	28(41.2)	7(10.3)	11(16.2)	4(5.9)	2.34	1.20
4.3	fruits and vegetables from the main store to retail stores are on sale as long as they are of good quality	17(25.0)	28(41.2)	6(8.8)	15(22.1)	2(2.9)	2.37	1.17
4.4	Et-fruit vegetable and fruit storage boxes or creates are kept clean	19(27.9)	29(42.6)	4(5.9)	13(19.1)	3(4.4)	2.29	1.19
4.5	Et-Fruit is used in the refrigerated warehouse to store fresh vegetable and fruit products	30(44.1)	23(33.8)	5(7.4)	7(10.3)	3(4.4)	1.97	1.15
4.6	Et-fruit provides appropriate training for fruits and vegetables production management	16(23.5)	30(44.1)	3(4.4)	12(17.6)	7(10.3)	2.47	1.31

4.7	Et-fruits vehicles are completely clean, pest free and dry before and after loading fruits and vegetables.	31(45.6)	21(30.9)	9(13.2)	5(7.4)	2(2.9)	1.91	1.07
4.8	Et-fruit uses refrigerated vehicles to distribute fresh fruits and vegetables.	30(44.1)	19(27.9)	7(10.3)	7(10.3)	5(7.4)	2.09	1.27
Grand Mean = 2.27								

Accordingly, 48.6 % of the respondents were not confirmed that the main fresh fruit and vegetable products are found in Et-Fruit while the remaining 33.8 % were agreed and 14.7 % respondents were neither of them; this implies that less supply of fruits and vegetables results less demand and also less profit gain.

As shown the above results, 58.8 % respondents were disagreed that Et-fruit delivering the right products to your customers at the right time where as the rest 23.6 % respondents were accepted; this implies that delivering of fruits and vegetables from the main store to retail shops there were a delay of time customers not wait much more time for purchasing the products they decided other alternatives.

Based on the above results, 67.7 % of respondents disagreed that adequate supply of fruits and vegetables in Et-fruit distribution and shops while, the rest 23.6 % confirmed. This implies that insufficient availability of fruits and vegetables in the main store and retail shops gives less performance in supply chain.

According to the above data, 75 % of the respondents confirmed that loss of fruits and vegetables in the form of disposal has a negative significance impact on the performance of Et-fruit whereas; the remaining 19.1 % did not; this implies that fruits and vegetables by nature they are easily perishable so the amount of wastage is more in poor pre and post harvest fruits and vegetables throughout the chain. Fruits & vegetables are highly perishable; they start to lose their quality right after harvest and continued throughout the process until it is consumed. For this purpose elaborated and extensive marketing channels, facilities and equipments are vital. This behavior of fruits & vegetables exposed the commodity not to be held for long periods and fresh produce from one area is often sent to distant markets without a firm buyer or price. Poor handling practice such as lack of grading, sorting, cold chain leads to less performance in supply chain.

Accordingly, 51.5 % of the respondents disagreed that occurrence of covid-19 negatively affects the fruit and vegetable trade system in Et-fruit while, the rest 38.2 % agreed; this shows that most respondents disagreed in pandemic covid–19 virus are not affected the performance of Et-fruit trade system. Fruits and vegetables are a healthy diet food so demands of purchaser are increased.

The above table shows that overall perception of five different product availability questions from employees' perspectives. Loss of fruits and vegetables in the form of disposal has a negative significance impact on the performance of Et-fruit is considered as the most practiced or displayed value with a mean value of 3.79 and standard deviation of (SD=1.38). This implies that loss of fruits and vegetables in the form of disposal hinders the performance of the organization and also poor supply chain. Loss of fruits and vegetables occurs at all points in the supply chain from in the production site to the food being placed on a plate for consumption. Post harvest activities include harvesting, handling, storage, processing, packaging, transportation and marketing. Loss of fruits and vegetables are a major problem in post-harvest chain. They can be caused by a wide Varity of factors ranging from growing condition to handling at retail levels.

According to the above data, 65.1 % of the respondents were disagreed in fresh fruits and vegetables were served effectively in all Et-fruit containers, whereas, the rest 17.7 % agreed; this implies that fruits and vegetables are not sold on time; they are more prone to spoilage, which can lead to negative supply chain performance.

Accordingly, 64.7 % the respondents were disagreed that Fresh fruits and vegetables are delivered right from the main store to the retail store on time, whereas; the rest 27.9 % agreed; this implies that fruits and vegetables are not sold on time; they are more prone to spoilage, which can lead to negative supply chain performance.

As shown the above results, 57.8 % respondents confirmed in fresh fruits and vegetables are distributed from the main store to the shops as they go "First In First Out" (FIFO) method (whereas, the remaining 32.3 % disagreed; this implies that the oldest inventory items are sold first . Majority of respondents agreed with Fresh fruits and vegetables are distributed from the main store to the shops as they go "First In First Out" (FIFO) method.

According to the above data shows that overall perception of three different on time delivery questions from employees' perspectives. Fresh fruits and vegetables are distributed from the main store to the shops as they go "First In First Out" (FIFO) method is considered as the most practiced or displayed value with a mean value of 3.21and standard deviation of (SD=1.27).

Accordingly, 60.3 % of the respondents disagreed Et-Fruit effectively works based on cost reduction during production handling and distribution, while; the rest 27.9 % agreed; this shows that most respondents disagreed in cost reduction during fruits and vegetables handling and distribution. The more unnecessary costs incurred the less of the company profit. Inadequate uses of packaging material for fresh fruits and vegetables results that poor quality of products.

As shown the above results, 47 % of the respondents were not confirmed that-Fruit effectively do cost-reducing when loading and unloading fruits and vegetables, whereas; the rest 38.2 % accepted; this indicates that extra costs minimized during loading and unloading. Logistics and transportation are key supporting activities in fruits and vegetables supply chain. These functions ensure that a perishable product reaches its destination in good condition.

Based on the above data, 54.4 % of respondents disagreed that Et-fruit works effectively to reduce administrative costs, whereas; the remaining 30.3 % agreed; this implies that majority of respondents disagree that Et-fruit effectively to reduce administrative costs. More costs the company incur the less the performance.

Accordingly, 50 % of the respondents were disagreed Efforts were made to reduce unnecessary costs when purchasing Et-fruit products, while; the rest 39.8 % agreed; this shows that most respondents disagreed in purchasing of fruits and vegetables. The higher purchasing price of product implies the higher the selling price. Fresh fruits and vegetables effectively not sell at the time of freshness results the perishables occurs.

According to the above table shows the overall perception of four different cost questions from employees' perspectives. Et-Fruit effectively do cost-reducing when loading and unloading fruits and vegetables is considered as the most practiced or displayed value with a mean value of 2.78 and standard deviation of (SD=1.22).

Accordingly, 51.5 % of the respondents were responded that fruits and vegetables in Et-fruit do not fulfill their quality whereas, the remaining 35.8 % agreed; this implies that good quality of fruits and vegetables results more customers want it and increase supply chain.

Based on the results, 67.7%respondents disagreed that Et-fruit warehouses and retail stores are really clean for storing fresh vegetables and fruits, while; the rest 22.1 % agreed; this implies that clean warehouse and retail shops are useful for keeping quality of fresh fruits and vegetables. Cool storage warehouse and retail shops are used through the supply chain to keep the products fresher.

The above results, 66.2 % of the respondents answered that from the main store up to retail shops fresh fruits and vegetables are not keeping their quality, while; the rest 25 % agreed; this indicates that most of the respondents said that fresh fruits and vegetables in Et-fruit are not in a good quality so, good practices starting from production, delivering, storage, handling, distribution up to end consumers are enhanced to maintain the quality of fresh fruits and vegetables through the chain are very important for a successful supply chain performance.

Accordingly, 70.5 % of the respondents not confirmed that Et-fruit vegetable and fruit storage boxes or creates are kept clean, but; the rest 23.5 % agreed; this implies that Poor quality of row material like storage boxes are increase disposal or perishable of fruits and vegetables. To keeping the quality of fresh fruits and vegetables, the storage materials like create, boxes should be clean and attractive.

As shown the above results, 77.9 % of the respondents were not confirmed that Et-Fruit is used refrigerated warehouse to store fresh vegetable and fruit products, whereas; the rest 14.7% agreed; this means that inadequate storage facilities for fruits and vegetables – especially lack of cold storage facilities increase the perishable, not extend the shelf life of fruits and vegetables they are easy- spoiling. This is an enormous challenge for supply chain performance.

Based on the above results, 67.6 % of the respondents said that Et-fruit were not giving appropriate training for fruits and vegetables handling, while on the other hand 27.9 % agreed; this implies that need training assessment is important for identify person who have a skill gap in handling of fresh fruits and vegetables through the supply chain.

Accordingly, 76.5 % of the respondents not confirmed that Et-fruits vehicles are completely clean, pest free and dry before and after loading fruits and vegetables, whereas the remaining 10.3 % agreed; this implies that in the absence of pest free, unclean and infected vehicles are leads a lower quality of fruits and vegetables.

As shown the above results, 72 % of the respondents disagreed that Et-fruit uses refrigerated vehicles to distribute fresh fruits and vegetables, while the rest 17.7 % agreed; this means that most respondents said Et-fruits not use refrigerated vehicles to distribute fresh fruits and vegetables. The more the respiration rate the higher the loss of fruits and vegetables. This is enormous challenge for supply chain performance. Refrigerated vehicle are used to maintain the loss of fruits and vegetables through the supply chain process.

The above table shows that overall perception of eight different quality questions from employees' perspectives. Fruits and vegetables in Et-fruit fulfill their quality is considered as the most practiced or displayed value with a mean value of 2.68 and standard deviation of (SD=1.20).Maximum amount of food losses in fruits and vegetables in supply chain occur due to improper handling, lack of cold chain and supply chain integration problem.

4.4. Descriptive Statistics for supply Chain Performance Parameter :(Et-fruit Customers' Response)

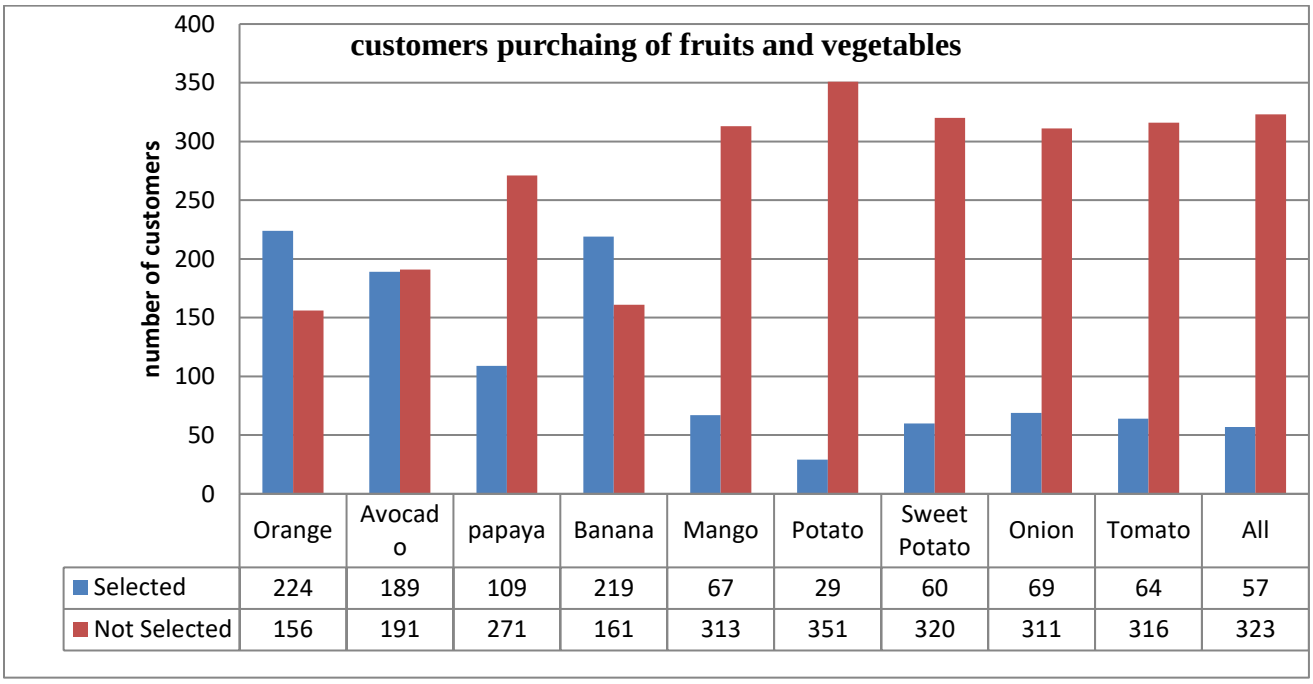
Table 4.7, Customers Purchasing of Fruits and Vegetable Products from Et-Fruits

No	Description	Day to Day	Once in a Week	Twice in a Week	Once in 15 Days	Once in a Month	Other
1	How frequently you purchase fruits and vegetable products from Et-fruits?	26(6.8)	163(42.9)	112(29.5)	46(12.1)	22(5.8)	11(2.9)

According to the above data collected from table 4.7, from Et-fruit customers, the respondents were asked how often you buy fruits and vegetables from Et-fruit. (42.9% once in a week, 29.5% twice a week, 12.1% once every 15 days, 6.8% day to day , 5.8% once in a month and 2.9% others). This means that most of respondents 72.4 % of Et-fruit customers were purchased

fruits and vegetables once in a week and twice in a week. fruits and vegetables by nature are easily perishable products, so the organization give attention for improving the selling performance for give emphasis on product quality, reasonable price realize that customers wants to purchase fruits and vegetables within day to day and increase the supply chain performance .

Fig 4.1, Customers Frequently Purchased Fruit and Vegetable from Et-Fruit



	Orange	Avocado	papaya	Banana	Mango	Potato	Sweet Potato	Onion	Tomato	All
Selected	224	189	109	219	67	29	60	69	64	57
Not Selected	156	191	271	161	313	351	320	311	316	323

Based on the above data collected from Et-fruit customers' fig 4.1, the respondents were asked that which fruits and vegetables are frequently purchased from Et-fruit (Oranges, bananas, avocados, papayas, mangoes, onion, tomatoes, sweet potatoes, potatoes and all respectively); this implies that customers purchased more fruits rather than vegetables .Therefore, Customers most frequently purchased oranges, bananas and avocados are often in high demand, so Et-fruit give high value for these products supply chain.

Table 4.8, Descriptive Statistics for supply chain performance parameters (Customers' Response)

1	**Product Availability**	SD	D	N	A	SA	Mean	Standard Deviation
1.1	Et-fruit sales branches or shops are easily available for customers	63(16.6)	119(31.3)	47(12.4)	20(29.4)	5(7.4)	2.79	1.24
1.2	Et-fruit has the potential to efficiently supply fruits and vegetables	45(11.8)	157(41.3)	82(21.6)	69(18.2)	27(7.1)	2.67	1.11
1.3	Et-fruit promotes its products through various advertisements	90(23.7)	146(38.4)	57(15.0)	59(15.5)	28(7.4)	2.44	1.21
Grand Mean = 2.63								
2	**On time delivery**							
2.1	I am satisfied with the service of time (no delay) in Et-fruit	30(7.9)	76(20.0)	44(11.6)	147(38.7)	83(21.8)	3.47	1.25
Grand Mean = 3.47								
3	**Cost**							
3.1	The price of Et-fruit is reasonable and fair	48(12.6)	80(21.1)	42(11.1)	146(38.4)	64(16.8)	3.26	1.30
3.2	The price of Et-fruit is volatile	40(10.5)	44(11.6)	42(11.1)	172(45.3)	82(21.6)	3.56	1.24
3.3	I prefer the quality of the product rather than the discount price	35(9.2)	45(11.8)	34(8.9)	139(36.6)	127(33.4)	3.73	1.28
Grand Mean = 3.52								
4	**Quality**							
4.1	Freshness and taste are my basic criteria for buying vegetables and fruits from Et-fruit	37(9.7)	58(15.3)	56(14.7)	169(44.5)	60(15.8)	3.41	1.20
4.2	Et-fruit's products are of high quality and standard	46(12.1)	103(27.1)	73(19.2)	114(30.0)	44(11.6)	3.02	1.23
4.3	Fruits and vegetables storage material or crates in Et-fruit are clean	64(16.8)	129(33.9)	60(15.8)	86(22.6)	41(10.8)	2.77	1.27
4.4	Et-fruit branches and retail shops are clean	59(15.5)	146(38.4)	63(16.6)	74(19.5)	38(10.0)	2.70	1.23
4.5	I prefer fresh products rather than packed fruits and vegetables	39(10.3)	57(15)	35(9.2)	142(37.4)	107(28.2)	3.58	1.31
Grand Mean = 3.87								
5	**Customer Satisfaction**							
5.1	I am satisfied with the service of Et-fruit employee	32(8.4)	46(12.1)	50(13.2)	169(44.5)	83(21.8)	3.59	1.19
5.2	I satisfied with the accuracy of product standards or scale of measurement in Et-fruit	35(9.2)	44(11.6)	76(20.0)	143(37.6)	82(21.6)	3.51	1.21
5.3	Due to the COVID-19 pandemic, your consumption of fruits and vegetables from Et-fruit has decreased.	82(21.6)	133(35.0)	47(12.4)	72(18.9)	46(12.1)	2.65	1.33
Grand Mean = 3.25								

Accordingly, 47.5 % of the respondents ‘data collected from Et-fruit customers not confirmed that Et-Fruit's sales branches or shops are easily accessible to customers, while on the other hand 36.8 % agreed; this means that the higher accessibility of branches and shops in Et-fruit are leads to higher selling and supply chain performance.

As shown the above results, 53.1 % of the respondents disagreed that Et-fruit has the potential to efficiently supply fruits and vegetables while, the rest 25.3 % agreed; this implies most respondents are disagreed so insufficient supply of fruits and vegetable in the market leads less demand of customers for Et-fruit and decrease the performance of supply chain.

Based on the above findings, 62.1 % of the respondents not confirmed that Et-fruit promotes its products through various advertisements, however the remaining 22.9 % agreed; this implies the main drawback in consumption of fruits and vegetables is that there is no adequate promotion done to educate consumers about the use of those fruits and vegetables are a source of vitamins. Their use for treating disease is not fully understood by many and thus eating fruits and vegetables is undermined in general. It is essential to overcome in order to successfully implement a supply chain performance.

The above table shows that overall perception of three different product availability questions from Et-fruit customers’ perspectives. Et-fruit sales branches or shops are easily available for customers was considered as the most practiced or displayed value with a mean value of 2.79 and standard deviation of (SD=1.24).

The results of the above data, 60.5 % of the respondents confirmed that customers are satisfied with the service of delivery (no delay) in Et-fruit, but 27.9 % did not; this implies that fruits and vegetables are naturally they are easily perishable products and their service delivery is not delayed by Et-fruit, which is better for the company's supply chin performance.

The above findings indicates that, 55.2 % of the respondents approved that the price of Et-fruit is fair and reasonable, whereas 33.7 % disagreed); this implies the price of products is fair and reasonable is useful for stay costumers’ in a long time and also successfully achieve for the performance of fruits and vegetables supply chain.

Accordingly, 66.9 % of the respondents confirmed that the price of Et-fruit is volatile, but 22.1 % did not; this implies majority of respondents agree on the price of Et-fruit is volatile

Based on the above data, 70 % of the respondents' confirmed that customers would prefer quality of the product rather than discount price, while the remaining 21 % disagreed; this implies that customers want quality products rather than discount prices, so it helps to have a good supply chain performance for fruits and vegetables.

The above table shows that overall perception of three different cost questions from Et-fruit customers' perspectives. Customers prefer the quality of the product rather than the discount price is considered as the most practiced or displayed value with a mean value of 3.73 and standard deviation of (SD=1.28).

Accordingly, 60.3 % of the respondents confirmed that freshness and taste are basic criteria for customers buying vegetables and fruits from Et-fruit, but 25 % did not; this implies most Et-fruit customers want fresh fruits and vegetables.

From the above findings, 41.6 % of the respondents accepted that Et-fruit's products are of high quality and standard, while 39.2 % disagreed; this implies that the higher the quality of the products the more demand they want it.

Based on the results, 50.7 % of the respondents not confirmed that fruit and vegetable storage boxes in Et-fruit were clean, whereas 33.4 % agree; this implies Poor quality of the row materials results an impact on supply chain performance and end products.

According to the findings, 53.9 % of the respondents not confirmed that Et-fruit branches and retail shops are clean, but 29.5 % agreed; this implies that majority of the respondents disagreed in fruits and vegetables storage creates are clean. Storage creates are not clean, so contaminated diseases are highly spoilage fresh fruits and vegetables.

As shown the above results, 65.6 % of the respondents decided that customers prefer fresh products rather than packed fruits and vegetables, whereas 25.3 % disagreed; this implies that fresh fruits and vegetables are an important part of a healthy diet. They contain essential vitamins, minerals, fibers and other nutrients that are essential for good health.

The above table shows that overall perception of five different quality questions from Et-fruit customers' perspectives. Customers prefer fresh products rather than packed fruits and vegetables was considered as the most practiced or displayed value with a mean value of 3.58 and standard deviation of (SD=1.31).

Accordingly, 66.3 % of the respondents confirmed that customers are satisfied with the service of Et-fruit employee, but 20.5 % did not; this implies that most of customers' respondents are agreed in the service of Et-fruit.

As shown the above results, 59.2 % of the respondents decided that customers are satisfied with the accuracy of the Et-fruit product standard or retail scale of measurement, while 20.8 % did not); this implies that most of Et-fruit customers respondents satisfied to the degree to which accuracy of product standard measurement.

According to the above data, 56.6 % of the respondents disagreed that due to the covid-19 pandemic, customers' consumption of fruits and vegetables from Et-fruit has decreased, but 31 % agreed; this implies that most Et-fruit customers responded that occurrence of pandemic covid-19 has no impact on consumption of fruits and vegetables in Et-fruit.

The above table shows that overall perception of five different customers' satisfaction related questions from Et-fruit customers' perspectives. Customers are satisfied with the service of Et-fruit employee is considered as the most practiced or displayed value with a mean value of 3.59 and standard deviation of (SD=1.19).

4.5. Discussion of Findings

Table 4.9, summarize for supply chain performance parameters (suppliers, employees and Customers' Response)

Measuring dimensions in SCP	Suppliers		Employees		Customers	
	Grand Mean	SD	Grand mean	SD	Grand Mean	SD
Product availability	3.64	1.26	2.88	1.28	2.63	1.18
On time delivery	3.12	1.06	2.66	1.21	3.47	1.25
Cost reduction	3.41	1.45	2.69	1.26	3.52	1.27
Product quality			2.27	1.20	3.87	1.25
Customer satisfaction					3.25	1.24

The analysis discussion in previous chapter suppliers' response towards the three dimensions of supply chain performance. Among these dimensions suppliers have better performance in product availability with a grand mean score of 3.64, while the other performance indictors used for the suppliers is cost reduction in their operation. As far as these dimensions is considered suppliers have above average performance with a grand mean of 3.41 with regard to the 3rd dimensions of supply chain performance on time delivery suppliers performing in good level with a grand mean score of 3.12.

According to (Sudhakar, 2010) findings supply chain performance of fresh fruits and vegetables indicators that have contributed low mean score to the supply chain performance are transportation cost (2.897), Volume flexibility (2.969), Delivery flexibility (2.979), Shipping errors (2.749), traceability (2.612), storage and transport condition (2.918) and Promotion of fresh produce (2.309) and these indicators are needed to be take-up for the improvement. The rest of the variables efficiency (3.328), Flexibility (3.034), Responsiveness (3.10), Product Quality (3.564) have moderate effect on the supply chain performance.

The data gathered from employees indicates that the supply chain performance considering the four dimensions is found to be below average with grand mean score of product availability 2.88, on time delivery 2.66, cost reduction 2.69 and product quality 2.27.Deficiency of product availability results poor performances in supply chain.

Based on the analysis data collected from customer response towards the five dimension of supply chain performance. Among the five dimensions product availability is found to be below grand mean score of 2.63, whereas the other four dimensions is recorded good grand mean score in supply chain performance of on time delivery 3.47, Cost reduction 3.52, product quality 3.87 and customer satisfaction 3.25.Customers want quality product, reasonable and fair cost were useful for purchasing of fruits and vegetables in Et-fruit and this results strength the performance of supply chain.

CHAPTER FIVE:

5. SUMMARY OF FINDING, CONCLUSION AND RECOMMENDATION

5.1. Summary of Finding

- This research was intended to assess the supply chain performance of fruits and vegetables considering Et-fruit as a case study. To do this data were collected from three major group of respondents include suppliers, employees and Et-fruit customers that constitute the supply chain performance for the industry. From the data analysis conducted the previous chapter the following findings were summarized.

- The results of background information of respondents indicated that Out of the total 470 respondent, 462 respondents have filled and responded the questionnaires successfully. 253(54.8%) are male and 209(45.2%) are female. The largest group of respondents which contains 240 (51.9%) was aged between 31 and 40 while, Smallest groups of respondents were aged between 41- 50 comprises 29(6.3%) and above 50 years 53 (11.5%) of the respondents. This indicates that most of the respondents were young people. With regard to educational level; the majority respondents were degree holder 186(40.3%).

- To analyze the data collected descriptive analysis is used considering the five dimensions used to assess supply chain performance namely, product availability, on time delivery, cost reduction, product quality and customer satisfaction to evaluate supply chain performance in Et-fruit. As the suppliers' performance indicates, product availability – among other dimensions -was recorded with the highest mean value next by the cost reduction and on time delivery dimension. The supply chain performance from the employees of Et-fruit perspective indicate that the mean score of the dimensions used - product availability, on time delivery, cost reduction, and product quality have lower mean score that indicate lower supply chain performance. From the customers' perspective, the supply chain performance dimensions have a moderate performance.

5.2. Conclusion

The researcher concluded that product availability is critical issues in supply chain performance from suppliers up to end consumes. In general; the availability of product was below average in employees and customers response. Enough fruits and vegetables in Et-fruit branches and retail shops were minimal.

Based on the research result on time delivery of fruits and vegetables were a negative significant effect on supply chain. Suppliers and customers were satisfied with the full service of Et-fruit, while; employees shown as delay of time were occurred in delivering fresh fruits and vegetables in Et-fruit. These shown as a lack of supply chain integration were observed from suppliers up to end consumers' through the chain.

To concluded that cost were a negative link in fruits and vegetables supply chain performance from suppliers up to customers, due to that; suppliers were received the payment during the time of delivering products and customers were preferred quality of products rather than discounted price. Whereas, in employees responded loading and unloading extra costs were incurred in Et-fruit were hinder the performance of the company.

The researcher concluded that fruits and vegetables are lack quality in Et-fruit based on several ways; thus are lack of cod chain system, unrefrigerated vehicles, unclean ware houses, retail shops and packaging materials .While, customers prefer fresh and clean fruits and vegetables. So Lack of integration was shown in supply chain performance through the chain.

The researcher suggested that customers were satisfied with the service of Et-fruit employee. The more customers were satisfied the higher the supply chain performance was achieved. This show that a positive significant effect in customers with supply chain. Customer-oriented metrics are connected across different stakeholders will encourage the performance of fruits and vegetables supply chain in Et-fruit.

5.3. Recommendation

Based on the above findings and conclusion, the following recommendations are given so as to be considered in the future intervention strategies which are aimed at the supply chain performance of fruit &vegetable marketing in Et- fruit:

- Regarding on product availability dimension of fruits and vegetables supply chain performance measurement:

Product availability in supply chain plays an important role in the fruits and vegetables marketing. Proper and sufficient products help suppliers and agri-businessman to run their business successfully and help to deliver the goods in the right time with right condition. In Et-fruit, employees and customers responded insufficient products are there in the supply chain which leads to a low performance of the company. Without proper knowledge and awareness level of the farmers and suppliers the supply chain of fruits and vegetables cannot be efficient, because farmers and suppliers are the main source of the fresh fruit and vegetable products. So that, to increase availability of fruit and vegetable products recommended that Et-fruit receive the right quantity and quality of fresh fruits and vegetables products and give awareness on producer and suppliers.

- Regarding on cost reduction dimension of fruits and vegetables supply chain performance measurement :

The practice of reasonable price would maintain customers. Most of the respondents in Et-fruit customers' prefer quality fresh fruits and vegetables rather than a discounted price.High cost of fresh fruits and vegetables makes difficult for the consumers stay in the long run. So it recommended that Et-fruit practiced proper handlings of intimate customers are essential in a competitive marketing.

- Regarding on time delivery dimension of fruits and vegetables supply chain performance measurement :

Fresh fruits and vegetables are not well delivered on time in retail shops of Et-fruit due to different factors such as; transportation problem, lack of integrity in the supply chain. Transportation plays a very important role in the supply chain. Without proper transportation the goods can't be delivered to the customer in a right time and in a right quality. It plays even a more important role in Perishable food like fruits and vegetables because of short shelf life, high perishable, required controlled temperature. Transportation related challenges are very high in Ethiopia, and also in Et-fruit Company because, lack of temperature controlled vehicle for the movement of fruits and vegetables at a good condition.

- Regarding on product quality dimension of fruits and vegetables supply chain performance measurement :

The result of the study indicates that product quality were important factors to improve marketable supply chain of fresh fruits and vegetables, but majority of the employees respondents have not confirmed on the quality of products than , suppliers and customers respond because, suppliers once offer their products to Et-fruit they not know the final process and also customers were purchased fresh fruits and vegetables as they are satisfied otherwise they reject it so that, employees are known more about the quality of the product from suppliers delivering or stoking up to the end process . Fruits and vegetables lack quality in Et-fruit due to different factors such as, lack of cold chain system in warehouse and retail shops, lack of ventilated vehicles and also unclean storage creates. Quality is directly relates to the health of the people. It is very important for supply chain to deliver the fresh goods in a timely manner and in a proper quality to the customers. Proper supply chain helps to maintains the shelf life of produce and prevent from deteriorating the quality. Lacks of cold chain facilities in Et-fruit are difficult for storage fresh fruits and vegetables in a long shelf life. This is worsening for the performance of the company Hence, it is recommended that Et-fruit were use appropriated product storage materials; warehouse, vehicles and retail shops to improved supply chain performance of fresh fruits and vegetables marketing.

- Regarding on customer satisfaction dimension of fruits and vegetables supply chain performance measurement :

In purchasing fresh fruit and vegetable marketing with respective to accurate scale of measurement, good service time, quality of products and reasonable prices were motive customers more satisfied. So that, the study data indicated that in Et-fruit customers were satisfied with the scale of measurement, the service of employee, and also occurrence of Covid-19 were not hinder for purchasing fresh fruit and vegetables from Et-fruit. So, Et-fruit continues customers' satisfaction in the long way.

- Regarding on future research study:

From the investigation of this study, further research should address and develop a framework that evaluates product availability, on time delivery, cost reduction, quality of product and customer satisfaction in supply chain performance of fruits and vegetables. Future research study ,also use this study as reference and investigate different other horticultural sectors and industries in the relationship between vertically as suppliers up to end- consumers in fruits and vegetables supply chain performance measurement tools needs to be further investigations.

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Cover Letter,

I am currently a student of St. Mary's University, and I am doing my MBA thesis on the **Assessment of Supply Chain Performance in Fruits and Vegetables: The Case of Et-fruit**, **Addis Ababa, Ethiopia**. This study is an academic study and the information obtained through this questionnaire is treated confidentially and will not be used for any other purpose other than academic study. The information obtained will help to recommend reasonable solutions for the observed problems. Your clear and truthful response is essential for reliable and accurate information for research.

General Directions

- Please do not write your name on the questionnaire.
- Where the questions require ranking (from strongly disagree to strongly agree). Indicate the degree to which you agree by placing the symbol ((√) in the box provided
- If the questions require different alternatives please select the best answer and give brief explanation.
- If you have any unclear idea or question please contact me by 0918540929. Or manayewub@gmail.com

Manaye Wube Tsega

Thank you in Advance for giving your time and cooperation

Appendix -1

I. **Et-fruit product suppliers Personal profile Questionnaire Interview**

Please Kindly tick once for each question by ticking (√) in the appropriate box.

1. Gender: Male [ ] Female [ ]

2. Age: A. Below 30 years [ ] B.31-40 years [ ] C.41-50 years [ ] D. Over 50 years [ ]

3. Educational Level: A. Illiterate [ ] B. Grade 1-12 [ ] C. Diploma graduate [ ]

D. First degree [ ] E.MA or MSc [ ] F. Doctor G. Any other [ ]

II. Et-fruit product suppliers Questioner

Please tick by ticking (√) in the appropriate box to which you agree with the listed statements below

(1 = strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= strongly Agree)

1	Product availability	1	2	3	4	5
1.1	Et-fruit has sufficient wholesale branches and retail stores					
1.2	Pre-harvest and post-harvest handling training has been provided by Et-fruit to supply fruit and vegetable products					
1.3	Climate change is a major problem for suppliers to supply fruits and vegetables throughout the year					
1.4	The occurrence of pandemic Covid-19 has a major impact on suppliers for supplying of fruits and vegetables in Et-fruit					
2	On time delivery					
2.1	I Satisfied with the full service of Et-fruit					
2.2	Due to a lack of storage house, they haven't been able to access the service to supply products to Et-fruit					
2.3	Suppliers are satisfied with the service provided when you offer the product to Et-fruit					
3	Cost reduction					
3.1	Et-fruit will pay the payment on time for the products you are supplying					
3.2	The interference of brokers in fruit and vegetable marketing is a major problem for suppliers and Et-fruit.					
3.3	Et-fruit were pay according to the agreement for the product you are offering					

III. Et-fruit product suppliers Questionnaire Interview related to the topic

Please select the best answer from the given alternatives and Kindly tick (√) once for each questions in the following set and also discuses a brief explanation in the required question.

11. How frequently you supply fruits and vegetable to Et-fruits?

A. Day to Day [ ] B. once in a week [ ] C. [ ] twice in a week D. once in 15 days [ ] E. once in a month [ ] E. other [ ] ----------

12. Which distribution network is best for delivering fruits and vegetables to the domestic market??

A. Distributors [ ] B. wholesalers [ ] C. retailers [ ] D. Consumers [ ]

13. Who are the major customers for your products?

A. Et-fruit [ ] B. Et-fruit and Sagle P.L.C [ ] C.Et-fruit, Sagle and Luna P.L.C [ ] D. other [ ] -------

Appendix -2

i. **Et-fruit Employees Personal profile Questionnaire Interview**

Please Kindly tick once for each question by ticking (√) in the appropriate box.

1. Gender: Male [ ] Female [ ]

2. Age: A. Below 30 years [ ] B.31-40 years [ ] C.41-50 years [ ] D. Over 50 years [ ]

3. Educational Level: A. Illiterate [ ] B. Grade 1-12 [ ] C. Diploma graduate [ ]

D. First degree [ ] E.MA or MSc [ ] F. Doctor G. Any other [ ]

ii. **Supply Chain Performance of Fruits and Vegetables in the case of Et-fruit**

Please tick by ticking (√) in the appropriate box to which you agree with the listed statements below **(1 = strongly Disagree2= Disagree 3= Neutral 4= Agree 5= strongly Agree)**

1	Product Availabilities	1	2	3	4	5
1.1	The main fresh fruit and vegetable products are found in Et-Fruit					
1.2	Et-fruit offering the right products to your customers at the right time					
1.3	There is an adequate supply of vegetables and fruits in the distribution and shops of Et-Fruit					
1.4	Loss of vegetables and fruits in the form of disposal has a negative significant impact on the performance of Et-fruit					
1.5	The occurrence of COVID-19 negatively affects the fruits and vegetable trade system in Et-fruit					
2	on time delivery					
2.1	Fresh fruits and vegetables are served efficiently in all Et-Fruit containers					
2.2	Fresh fruits and vegetables are delivered right from the main store to the retail store on time					
2.3	Fresh fruits and vegetables are distributed from the main store to the shops as they go "First In First Out" (FIFO)					
3	Cost Reduction					
3.1	During production handling and distribution, Et-Fruit effectively works based on cost reduction					
3.2	Et-Fruit effectively do cost-reducing when loading and unloading fruits and vegetables					
3.3	Efforts will be made to reduce unnecessary costs when purchasing Et -fruit products					
3.4	Et-fruit works effectively to reduce administrative costs					

4	product quality					
4.1	fruits and vegetables in Et-fruit fulfill their quality					
4.2	Et-fruit warehouses and retail stores are perfectly clean for storing fresh fruits and vegetables					
4.3	fruits and vegetables from the main store to retail stores are on sale as long as they are of good quality					
4.4	Et-fruit vegetable and fruit storage boxes or creates are kept clean					
4.5	Et-Fruit is used in the refrigerated warehouse to store fresh vegetable and fruit products					
4.6	Et-fruit provides appropriate training for fruit and vegetable production management					
4.7	Et-Fruit vehicles are completely clean, pest-free and dry before and after loading vegetables and fruits.					
4.8	Et-Fruit uses refrigerated vehicles to distribute fresh fruits and vegetables					

Appendix -3

i. **Et-fruit Customers Personal profile Questionnaire Interview**

Please Kindly tick once for each question by ticking (√) in the appropriate box.

1. Gender: Male [ ] Female [ ]

2. Age: A. Below 30 years [ ] B.31-40 years [ ] C.41-50 years [ ] D. Over 50 years [ ]

3. Educational Level: A. Illiterate [ ] B. Grade 1-12 [ ] C. Diploma graduate [ ]

D. First degree [ ] E.MA or MSc [ ] F. Doctor G. Any other [ ]

ii. **Et-fruit Customers Satisfaction Questioner**

Please tick by ticking (√) in the appropriate box to which you agree with the listed statements below (1 = strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= strongly Agree)

1	Product Availabilities	1	2	3	4	5
1.1	Et-fruit sales branches or shops are easily available for customers					
1.2	Et-fruit has the potential to efficiently supply fruits and vegetables					
1.3	Et-fruit promotes its products through various advertisements					
2	On time delivery					
2.1	I am satisfied with the service of time (no delay) in Et-fruit					
3	Cost reduction					
3.1	The price of Et-fruit is reasonable and fair					
3.2	The price of Et-fruit is volatile					
3.3	I prefer the quality of the product rather than the discount price					
4	Quality					
4.1	Freshness and taste are my basic criteria for buying vegetables and fruits from Et-fruit					
4.2	Et-fruit's products are of high quality and standard					
4.3	Fruits and vegetables storage material or crates in Et-fruit are clean					
4.4	Et-fruit branches and retail shops are clean					
4.5	I prefer fresh products rather than packed fruits and vegetables					
5	Customer satisfaction					
5.1	I am satisfied with the service of Et-fruit employee					
5.2	I Satisfied with the accuracy of product standards or scale of measurement in Et-fruit					
5.3	Due to the COVID-19 pandemic, your consumption of fruits and vegetables from Et-fruit has decreased.					

I. Et-fruit Customers Questionnaire Interview Related To the Topic

Please select the best answer from the given alternatives and Kindly tick (√) once for each questions set and also discuses a brief explanation in the required question.

16. How frequently you purchase fruits and vegetable products from Et-fruits?

A. Day to Day [ ] B. once in a week [ ] C. [ ] twice in a week D. once in 15 days [ ] E. once in a month [ ] E. other [ ] ----------

17. Which type of fruit and vegetable you frequently purchased in Et-fruit for consumption? You can select more than one product.

A. Orange [ ] B. Mandarin [ ] C. Avocado [ ] D. Papaya [ ] E. Banana [ ] F. mango [ ] G. Potato [ ] H. Sweet Potato [ ] I. Onion [ ] J. Tomato [ ] K. All [ ] L. If any other [ ] ----------

Thank you in Advance for your cooperation

ዉድ ደንበኞች፤

እኔ በአሁኑ ሰዓት በቅድስተ ማሪያም ዩኒቨርስቲ የድህረ ምረቃ (Master of Business Administration-GMBA) ተማሪ ስሆን የመመረቂያ ጥናቴን "በኢትፍሩት ጉዳይ ላይ በአትክልቶችና ፍራፍሬዎች ውስጥ የአቅርቦት ሰንሰለት አፈፃፀም ግምገማን" መሰረት በማድረግ ተገቢዉን መረጃ ለመሰብሰብ እና ለሚታዩ ችግሮች አስፈላጊዉን አማራጭ የመፍትሔ ሀሳብ በመዉሰድ ለመጠቆም ታስቦ የተዘጋጀ ነዉ።ይህ ጥናት የአካዳሚክ ጥናት ነው እናም በዚህ መጠይቅ በኩል የተገኘው መረጃ በምስጢር የተያዘ ሲሆን ከአካዳሚክ ጥናት ውጭ ለሌላ አገልግሎት አይውልም።የተገኘው መረጃ ለተስተዋሉ ችግሮች ምክንያታዊ መፍትሄዎችን ለመምከር ይረዳል።ለምርምር አስተማማኝ እና ትክክለኛ መረጃ ለማግኘት የእርስዎ ግልጽ እና እውነተኛ ምላሽ በጣም አስፈላጊ ነው።

አጠቃላይ መረጃ

- ስሞን መፃፍ አያስፈልግም
- የማወዳደሪያደረጃን (በጣም አልስማማም እስከበጣም እስማማለሁ) ለሚጠይቁ ጥያቄዎች በምን ያህል ደረጃ አንደሚስማሙ በተሰጠዉ ሳጥን ዉስጥየ(√) ምልክትን በማስቀመጥ ያመልክቱ
- ጥያቄዎቹ የተለያዩ አማራጮችን የሚሹ ከሆነእባክዎ በጣም ጥሩውን መልስ ይምረጡ እና አጭር ማብራሪያ ይስጡ
- ግልጽ ያልሆነሀሳብ ወይም ጥያቄ ካለዎት እባክዎን በ 0918540929 ወይም manayewub@gmail.com ያነጋግሩኝ

ማናዬ ዉቤ

ስለትብብርዎ ከልብ አመሰግናለሁ

ቅፅ -1 ምርቶችን ለኢትፍሩት በሚያቀርቡ አቅራቢዎች የሚሞላ መጠይቅ

ክፍል 1- ለኢትፍሩት ምርቶችን ለሚያቀርቡ ደንበኞች የተዘጋጀ የግል መረጃ መጠይቅ

ሀ. እባከዎ መልስኦን በ(√) ምልክት ያመልክቱ

1. ፆታ፡ ሀ. ወንድ [ ] ሴት [ ]

2. ዕድሜ፡ሀ.ከ30 ዓመት በታች [ ] ለ. 31-40 ዓመታት [ ] ሐ.41-50 ዓመታት [ ] መ.ከ50 ዓመት በላይ [ ]

3. የትምህርት ደረጃ:ሀ.ያልተማረ [ ]ለ. ከ1-12ኛ ክፍል [ ] ሐ.ዲፕሎማ [ ] መ. ዲግሪ [ ]
ሠ. ማስትሪት [ ] ረ .የዶክትሬት ዲግሪ [ ] ሰ.ሌላ [ ]------

ክፍል 2- ለኢትፍሩት ምርቶችን ለሚያቀርቡ ደንበኞች የተዘጋጀ ከርዕሰ-ጉዳይ ጋር የተያያዝነት ያላቸዉ ጥያቄዎች መጠይቅ

መመሪያ፡- እባክዎትን ከተሰጡት አማራጮች የተስማሙበት ላይ (√) ምልክት ያድርጉ።የሚስማሙበትን የሚለኩበት የሚከተለት ናቸው።

(1. በጣምአልስማማም 2. አልስማማም 3.መወሰን አልችልም 4.እስማማለሁ 5.በጣምእስማማለሁ)

1	የምርት አቅርቦቶች	1	2	3	4	5
1.1	ኢትፍሩት በቂ የጅምላ ሽያጭ ቅርንጫፎች እና የቸርቻሮ ሱቆች አሉት					
1.2	የአትክልትና ፍራፍሬ ምርቶችን ለማቅረብ የቅድመ እና ድህረ-አዝመራ አያያዝ በኢትፍሩት በኩል ተሰጥቷል ብለዉ ያምናሉ					
1.3	የአየር ንብረት መዛባት ለአቅራቢዎች ዓመቱን በሙሉ ለኢትፍሩት ፍራፍሬዎችን እና አትክልቶችን ለማቅረብ ዋና ችግር ነው					
1.4	ኮሮና_19 Covid-19) ቫይረስ መከሰት በአትክልትና ፍራፍሬ አቅራቢዎች ላይ ከፍተኛ አሉታዊ ተጽዕኖ ያሳድራል					
2	በሰዓት አሰጣጥ ላይ					
2.1	በኢትፍሩት የተሟላ አገልግሎት ረክተዋል፡					
2.2	ምርቶችን ለኢትፍሩት ለማቅረብ በማከማቻ እጥረት ምክንያት አገልግሎቱን ሳያገኙ ቀርተዋል					
2.3	ምርት ለኢትፍሩት ሲያቀርቡ በተደረገዉ አገልግሎቱ ዙሪያ ረክተዋል					
3	የወጪ ቅነሳ					
3.1	ለምታቀርቡተ ምርት ኢትፍሩት ክፍያዉን በአግባቡ ጊዜዉን ጠብቆ ይፈፅማል					
3.2	ለአቅራቢዎች እና ለኢትፍሩት ትልቅ ችግር የሆነው የፍራፍሬ እና የአትክልት ግብይት ውስጥ የደላ ላጣልቃ ገብነት ነው ብለዉ ያምናሉ					
3.3	ለምታቀርቡት ምርት በዉሉ መሰረት ይፈፀማል					

11. ምን ያህል አዘወትረህ(ሺ) ለኢትፍሩት ምርቶችዎን ያስረክባሉ

ሀ. በየቀኑ[ ] ለ. በሳምንት አንድጊዜ[ ]ሐ. በሳምንት ሁለት ጊዜ[ ]መ. በአስራ አምስት ቀን አንድ ጊዜ[ ]

ሠ. በሶስት ሳምንት አንድ ጊዜ[ ]ረ. በወር አንድ ጊዜ[ ]ቀ. ሌላ ካለ (ይግለጹ) [ ] ------

12.በአገር ውስጥ ገበያ ፍራፍሬዎችን እና አትክልቶችን ለማድረስ የትኞቹ የስርጭት አውታር የተሻሉ ናቸዉ

ሀ.አከፋፋዮች [ ] ለ.ጅምላ ሻጮች [ ] ሐ.ቸርቻሪዎች [ ] መ.ሌላ ካለ (ይግለጹ) [ ] ----------

13.ለምርቶችዎ ዋና ደንበኞች እነማን ናቸው ?

ሀ. ኢት-ፍሩት [] ለ. ኢት-ፍሩት እና ሰገል [ ] ሐ.ኢት-ፍሩት, ሰገል እና ሉና [ ] መ.ሌላ ካለ[ ] -----

ቅፅ 2 ፡በኢትፍሩት ሰራተኞች የሚሞላ መጠይቅ

ክፍል 1- ለኢትፍሩት ሠራተኞች የተዘጋጀ የግል መረጃ መጠይቅ

ሀ. እባከዎ መልስኦን በ(√) ምልክት ያመልክቱ

1. .ፆታ

ሀ.ወንድ [ ] ለ. ሴት [ ]

2. እድሜ

ሀ.ከ30 ዓመት በታች [ ] ለ.31-40ዓመት [ ] ሐ.41-50 ዓመት [ ] መ. ከ50 ዓመት በላይ [ ]

3. የትምህርት ደረጃ:ሀ.ያልተማረ [ ]ለ. ከ1-12ኛክፍል [ ] ሐ.ዲፕሎማ [ ] መ. ዲግሪ [ ]

ሠ. ማስትሪት [ ] ረ .የዶክትሬት ዲግሪ [ ] ሰ.ሌላ [ ]------

ክፍል 2፡-- ለኢትፍሩት ሰራተኞች የተዘጋጀ የእርካታ መጠይቅ፡

መመሪያ፡-እባክዎትን ከተሰጡት አማራጮች የተስማሙበት ላይ (√)ምልክት ያድርጉ።የሚስማሙበትን የሚለኩበት የሚከተለት ናቸው።

(1. በጣም አልስማማም 2.አልስማማም 3.መወሰን አልችልም 4.እስማማለሁ 5. በጣም እስማማለሁ)

1	የምርት አቅርቦቶች	1	2	3	4	5
1.1	ዋና ዋና ትኩስ አትክልትና ፍራፍሬ ምርቶች በኢት-ፍሩት ውስጥ ይገኛሉ					
1.2	ኢት-ፍሩት ትክክለኛውን ምርቶች ለደንበኞች በትክክለኛው ጊዜ ያቀርባል					
1.3	በኢትፍሩት ማከፋፈያ እና ሱቆች ውስጥ በቂ የአትክልት እና የፍራፍሬ አቅርቦት አለ					
1.4	አትክልት እና ፍራፍሬዎችን በብልሽት መልክ ማጣት በኢት-ፍሩት አፈፃፀም ላይ ከፍተኛ አሉታዊ ተጽዕኖ ያሳድራል					
1.5	የ COVID-19 መከሰት በኢትፍሩት ውስጥ በአትክልትና ፍራፍሬ ንግድ ስርዓት ላይ አሉታዊ ተጽዕኖ ያሳድራል					
2	በሰዓት አሰጣጥ ላይ					
2.1	ትኩስ አትክልት እና ፍራፍሬዎች በሁሉም የኢት-ፍሩት ከንቴይነሮች ውስጥ ውጤታማ በሆነ ጊዜ ይቀርባሉ					
2.2	ትኩስ አትክልት እና ፍራፍሬዎች በትክክል ከዋናው መደብር ወደ ቸርቻሮ ሱቆች ሰዓቱ ያሰራጫሉ					
2.3	አትክልት እና ፍራፍሬዎች ከዋናው መደብር ወደ ሱቆች እንደአገባበቸዉ ይሰራጫሉ ‹First In First Out› (FIFO)					
3	የወጪ ቅነሳ					
3.1	በምርት አያያዝ እና ስርጭት ወቅት Et-Fruit በወጪ ቅነሳ ላይ በመመርኮዝ ውጤታማ በሆነ መንገድ ይሠራል					
3.2	ኢት-ፍሩት አትክልቶችን እና ፍራፍሬዎችን ሲጭኑ እና ሲያራግፉ ወጪን ለመቀነስ ውጤታማ በሆነ መንገድ ያከናውናሉ					
	ኢት-ፍሩት ምርቶችን በሚገዛበት ጊዜ አላስፈላጊ ወጪን ለመቀነስ ጥረት ይደረጋል					
3.3	ኢት-ፍሩት አስተዳድራዊ ወጪዎችን ለመቀነስ ውጤታማ በሆነ መንገድ ያከናውናሉ					
4	የምርት ጥራት					
4.1	በኢትፍሩት ውስጥ አትክልት እና ፍራፍሬዎች ጥራታቸውን ያሟላሉ					

4.2	የኢትፍሩት መጋዘኖች እና የቸርቻሮ ሱቆች ትኩስ አትክልት እና ፍራፍሬዎችን ለማከማቸት በትክክል ንፁህ ናቸው					
4.3	አትክልት እና ፍራፍሬዎች ከዋናው መደብር እስከ ቸርቻሮ ሱቆች ድረስ ጥራታቸዉን እንደጠበቁ ለሽያጭ ይቀርባሉ					
4.4	የኢት-ፍሩት የአትክልት እና ፍራፍሬ ማስቀመጫ ሳጥኖች ንፅህናቸዉን የጠበቁ ናቸዉ					
4.5	ኢት-ፍሩት ትኩስ የአትክልት እና ፍራፍሬ ምርቶችን ለማከማቸት በማቀዝቀዣ ውመጋዘን ውስጥ ይጠቀማል					
4.6	ኢት-ፍሩት ለአትክልትና ፍራፍሬ ምርት አያያዝ ተገቢውን ሥልጠና ይሰጣል					
4.7	ኢት-ፍሩት መኪኖች አትክልትና ፍራፍሬ ከመጫናቸው በፊት እና ከጫኑ በኋላ ሙሉ በሙሉ ንፁህ፣በፀረ-ተባይ እና በደረቁ ተጠብቀዋል					
4.8	ትኩስ የአትክልትና ፍራፍሬ ምርቶችን ለማሰራጨት ኢት-ፍሩት ባለማቀዝቀዣ ተሽከርካሪዎችን ይጠቀማል					

ቅፅ 3 ፡የኢትፍሩት ምርቶችን በሚገዙ ደንበኞች የሚሞላ መጠይቅ

ክፍል 1- የኢትፍሩት ምርቶችን ለሚገዙ ደንበኞች የተዘጋጀ የግል መረጃ መጠይቅ

ሀ. እባከዎ መልስኦን በ(√) ምልክት ያመልክቱ

1.ፆታ፡ሀ.ወንድ[ ] ለ.ሴት[ ]

2. እድሜ: ሀ.ከ30 ዓመት በታች [ ] ለ.31-40ዓመት [ ] ሐ.41-50 ዓመት [ ]መ. ከ50 ዓመት በላይ [ ]

3. የትምህርት ደረጃ:ሀ.ያልተማረ [ ] ለ.ከ1-12ኛክፍል [ ] ሐ.ዲፕሎማ [ ] መ.ዲግሪ [ ]

ሠ. ማስትሪት [ ] ረ .የዶክትሬት ዲግሪ [ ] ሰ. ሌላ [ ]------

ክፍል 2- የኢትፍሩት ምርቶችን ለሚገዙ ደንበኞች የተዘጋጀ የእርካታ መጠይቅ

መመሪያ፡- እባክዎትን ከተሰጡት አማራጮች የተስማሙበት ላይ (√)ምልክት ያድርጉ።የሚስማሙበትን የሚለኩበት የሚከተለት ናቸው።

(1. በጣም አልስማማም 2.አልስማማም 3.መወሰን አልችልም 4.እስማማለሁ 5. በጣም እስማማለሁ)

1	የምርት አቅርቦቶች	1	2	3	4	5
1.1	የኢትፍሩት የሽያጭ ቅርንጫፎች ወይም ሱቆች ለደንበኞች በቀላሉ ይገኛሉ					
1.2	ኢትፍሩት አትክልትና ፍራፍሬዎችን በበቂ ሁኔታ ያቀርባል					
1.3	ኢትፍሩት ምርቶቹን በተለያዩ ማስታወቂያዎች ያስተዋዉቃል					
2	በሰዓት አሰጣጥ ላይ					
2.1	ከኢትፍሩት ምርት ሲገዙ በተስተናገዱበት ሰዓት (የጊዜ ሁኔታ) ረክተዋል					
3	የወጪ ቅነሳ					
3.1	የኢትፍሩት የምርት መሸጫ ዋጋ ተመጣጣኝ እና ፍትሃዊ ነው					
3.2	የኢትፍሩት የምርት መሸጫ ዋጋ ተለዋዋጭ ነዉ					
3.3	ከዋጋቅናሽ ይልቅየምርትጥራትበምርቶች ላይ መደረጉንበይበልጥእመርጣለሁ					
4	የምርት ጥራት					
4.1	አትክልትና ፍራፍሬዎችን ከኢትፍሩት እንድገዛ የሚገፋፉኝ ትኩስ እና ጣዕም መሆናቸዉ ነዉ					
4.2	የኢትፍሩት ምርቶች ጥራት ያላቸው እና ደረጃቸውን የጠበቁ ናቸው					

4.3	የኢትፍሩት የአትክልት እና ፍራፍሬ ማስቀመጫ (መያዣ) ሳጥኖች ንፅህናቸዉን የጠበቁ ናቸዉ					
4.4	የኢትፍሩት ማከፋፈያ እና ሱቆች ማራኪና ንጽህናቸውን የጠበቁ ናቸው					
4.5	ያልታሸጉ (ትኩስ) የአትክልትና ፍራፍሬ ምርቶችን በይበልጥ ከታሸጉት እመርጣለሁ					
5	የደንበኛ እርካታ					
5.1	በኢትፍሩት ሰራተኞች አገልግሎት አሰጣጥ ዙሪያ ረክተዋል					
5.2	በኢትፍሩት የምርት መመዘኛ ወይም መቸርቸሪያ ሚዛኖች ትክክለኛነት ረክተዋል					
5.3	በወረርሽኙ COVID-19 ቫይረስ ምክንያት አትክልትና ፍራፍሬዎችን ከኢትፍሩት ገዝቶ የመጠቀም ሁኔታዎ ቀንሷል					

<u>ክፍል 3- የኢትፍሩት ምርቶችን ለሚገዙ ደንበኞች የተዘጋጀ ከርዕሰ-ጉዳይ ጋር የተያያዥነት ያላቸዉ ጥያቄዎች</u>

ሐ.እባክዎትን ከተሰጡት አማራጮች የተስማሙበት ላይ (√) ምልክትን በመጠቀም በሳጥን ዉስጥ ያመልክቱ እንዲሁም የፁሁፍ ምላሽ ለሚጠይቁ ጥያቄዎች መልሶትን በፁሁፍ ይግለፁ

16. የአትክልትእናፍራፍሬ ምርቶችን ከኢትፍሩት ምን ያህል ጊዜ ይገዛሉ?

ሀ / ቀን በቀን [] ለ በሳምንት አንድ ጊዜ [] ሐ. በሳምንት ሁለት ጊዜ [] መ. በ15ቀን አንድ ጊዜ []

ሠ. በወር አንድ ጊዜ [] ረ. ሌላ [] ------

17. ከኢትፍሩት ውስጥ ምን ዓይነት አትክልት እና ፍራፍሬዎችን ለምግብነት አዘወትረዉ ይገዛሉዙ (ከአንድ በላይ ምርቶችን መምረጥ ይችላሉ)

ሀ. ብርቱካን [ ] ለ.መንደሪን [ ] ሐ. አቮካዶ [ ] መ. ፓፓየ [ ] ሠ.ሙዝ [ ] ረ. ማንጎ [ ] ሰ .ድንች [ ]

ሸ. ስኪርድንች [ ] ቀ.ሽንክርት [ ] በ. ቲማቲም [ ] ተ. ሁሉንም[ ] ቸ. ሌላካለ [ ]

ስለትብብርዎ ከልብ አመሰግናለሁ