FACTORS AFFECTING SMALL SCALE COFFEE PRODUCER HOUSEHOLDS WELL-BEING IN ETHIOPIA: THE CASE OF OROMIA REGIONAL STATE, JIMMA ZONE, MANNA WOREDA

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DECLARATION

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THE CASE OF OROMIA REGIONAL STATE, JIMMA ZONE,MANNA WOREDA

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Examiner (Internal)   **Signature**

DECLARATION

I, the undersigned, declare that this thesis is my original work and has never been presented for a degree in any other university and that all sources of materials used for this thesis have been duly acknowledged. The advisors and examiners' comments have been duly taken in to account.

Student name : Nejat Kemal Ahimed   Date   signature

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As thesis research advisor we here by certify that we have read and evaluated the thesis proposal prepared under our direction and recommend that it can be submitted as fulfilling the thesis proposal requirement.

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Place and Date of Submission: _____

ABBREVIATIONS

ADLI   Agricultural Development Led Industrialization

CMC   Coffee Marketing Cooperatives

DA   Development Agent

EPRDF   Ethiopian People's Revolutionary Democratic Front

FAO   Food and Agriculture Organization of the United Nations

GDP   Growth Domestic Product

ICO   International Coffee Organization

ICS   Internal Control Systems

IFAD   International Fund for Agricultural Development

MWoARD....Manna Woreda Agriculture and Rural Development Office

MDGs   Millennium Development Goals

MFIs   Micro Finance Institutions

NBE   National Bank of Ethiopia

NGOs   Non-Governmental Organizations

No.   Number

OPHI   Oxford Poverty & Human Development Initiative

OR   Odd Ratio

SWB   Subjective Well-being

UN   United Nation

US   United State

USAID   United States Agency for International Development

UNDP ....United Nations Development Program

Table of Contents

LIST OF TABLES

LIST OF FIGURES

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Abstract

Ethiopian economy is mostly dominated by agricultural sector like the economies of most developing countries. Coffee, tea, spices contribute around 33.6 % of total export earnings of US$2.9 billion, of which coffee alone contributed $866 million (30.2%) in 2017. Income from exported coffee in 2017was increased by 20% when compared with that of 2016. Although, coffee takes the lion's share in Ethiopia's GDP particularly with an upward movement from year to year during the last five years, there is no measurable impact on small scale coffee producer households' well-being. The aim of the study was to examine the factors affecting the wellbeing of small-scale coffee producers and evaluate their effect among coffee producers in Manna District of Jimma Zone, Ethiopia. The study was conducted using cross-sectional data collected in 2017/18 from a sample of 203 households selected through a multi-stage sampling approach. Data analysis was conducted using logistic regression model. The results indicate that from explanatory variables used to analyse factors affecting smallholder coffee producer households well-being; which examined by using well-being indicators variables living standards, health and education. The result indicates that educational level of house wife and household head, total land size, land for crop production, producing coffee as a primary product, fair-trade membership status, access to financial institution, access to health station, access to primary school, coffee selling place and access to agricultural extension workers have a significant impact on cumulative household well-being status. However, the impact level and magnitude is different. According to the logistic regression result, producing coffee as primary product accounts the lion share. Households those who produce coffee as a primary product have better well-being more likely by 0.68(68%) when compared to those who do not produce coffee as primary product. Households those who have better access to financial institution have chance to achieve better well-being more likely by 0.15(15%) when compared to those who do not have access to financial institutions. And the probability of households those are fair-trade certified members to achieve better well-being increases by 14% when compared to non-members. Moreover, when there is change in coffee selling place from cooperative to informal local traders and individual exporters, the probability of households to achieve better well-being reduces by 16% and 15%, respectively. Receiving fair price, access to right market, infrastructure (access to road) and access to health station have a positive impact on well-being of households. In contrast to this, access to school, cooperative membership status and having extension worker (DA) have a negative relationship with well-being of households in the study area. Coffee productivity and land for coffee production are insignificant in affecting wellbeing of the small scale coffee producer households. The results suggest that there is a need to gear policies towards enhancing coffee production to be a primary product, supporting them to have financial institutions, rightaccess to market, fair price for their coffee and also to increase efficiency of farmers so as to enhance living standard, better education and health which take them too better well-being.

Key words: *Small-scale Coffee producer, well-being, Consumption, Net-Income, Manna, Ethiopia*

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Ethiopia is the origin of coffee Arabica, and it grows a wide variety of coffee, highly differentiated, most of which are shade-grown by small farmers without chemical inputs (Dempsey, 2006). Ethiopia is one of the largest producers of coffee and ranks fifth in the world and first in Africa by annual coffee production. For the past three to four decades, coffee has been and remains the leading cash crop and major export commodity of the country. It accounts on average for about 10% of total agricultural production, 5% of gross domestic product, and constitutes about 41% of total export earnings of the country (Worako, 2008).

The number of coffee growers has been estimated in about one million smallholder farmers. Most of them hold less than half a hectare of land, and grow 95 percent of the coffee output (Oxfam, 2008). According to Kidane (1999), the average yield per hectare is between 340 and 490 kg. Less than 40% of total national production of coffee is directed to official export markets (Worako, 2008). As Worako, (2008) indicated, annual domestic coffee consumption per household in the country is 24.5 kg and the per capita consumption is 4.5 kg. About 15% of coffee produced in the South-Western and Western Zones is smuggled via Sudan.

Ethiopian coffee is sold both at local level and at the international market, the latter mainly through the newly established commodity exchange market and directly to international buyers through specialty market channels by coffee cooperative unions. Normally, all Ethiopian coffee should pass through Commodity Exchange Market. Since 2001, however, cooperatives have been granted permission to by-pass coffee auction opening the way for direct export sales (Dempsey, 2006).

Many scholars suggest that, wellbeing is an umbrella concept, embracing at least 'objective wellbeing' and 'subjective wellbeing', although this very distinction is contentious and potentially problematic. Gasper (2007) defines the former as 'externally approved, and thereby normatively endorsed, non-feeling features of a person's life, matters such as mobility or

morbidity'; and SWB as 'feelings of the person whose wellbeing is being estimated'. He goes on to make finer distinctions between seven categories and eleven subcategories of wellbeing, including 'wellbeing as activity' (Bruton, 1997).

It is, however, a useful umbrella term, beneath which a variety of related ideas and concepts can shelter. Inasmuch as it evokes competing visions about what it might mean to live well, wellbeing must be considered in relation to wider conceptions of development as 'good change' (Chambers, 1997). But understandings of and prescriptions for development depend on and change with dominant conceptions of wellbeing. The dominant conception in the modern, post-war development era has been an economic one wellbeing comprises the material resources people control and can utilise and dispose of, measured by income and at aggregate levels by national income per head. But, over the last two decades this has been challenged at the level of conceptual argument and, equally important, measures and indicators. Final this paper is structured around three particular challenges and seeks to relate them to each other and build from them to add some literature on the existing ones.

1.2. Statement of the Problem

Coffee is the second most traded commodity in the world after oil, produced in more than 70 developing countries and consumed mainly in developed countries. It is also important for rural livelihoods, since more than 70% of the production worldwide is on farms less than 10ha in size (Consumer International, 2005).

The coffee plant is indigenous to Africa, and it was in Ethiopia that the habit of drinking coffee first developed. In Africa coffee is one of the most important commodities, generating substantial income to rural communities, contributing to the fight against extreme poverty. It accounts for the primary source of income for more than 10 million households in 25 African Coffee-growing countries. Some of these countries depend on coffee as a primary source of income for their rural population and an important source of export revenues. It is a vital contributor to foreign exchange earnings in addition to accounting for a significant proportion of tax income and Gross Domestic Product for a number of countries in Africa.

Ethiopia is also unique in Africa in so far as it has a strong domestic coffee consumption culture, which frequently accounts for over half of production. In Ethiopia, the livelihoods of approximately one quarter of the population depend on the coffee sub-sector (Petit, 2007).

The economies of developing countries continued to be dominated by the agricultural sector. Ethiopia's most valuable exported products are coffee followed by miscellaneous oil seeds and oleaginous fruits. Coffee, tea, spices contribute around US$963 million (33.6 %) of total export earnings of US$2.9 billion, of which coffee alone contributed $866 million (30.2%) in 2017. In come from exported coffee was increased by 20% when compared with last fiscal year, 2016.

However, small scale households coffee growers in Ethiopia face high transaction cost, lack of market information, poor infrastructure, and weak capital markets. In addition to the stated problems of small scale coffee producers, the living conditions of Ethiopian coffee producers household welfare is still not showing a change like that of currency revenue for Ethiopian government. Most of the studies conducted on coffee sectors are examines factors affecting small-scale coffee producer households by using monetary indicators. Using monetary indicators to evaluate the determinant factors affecting small-scale coffee producer households' well-being is not wrong but using non-monetary indicators are more appropriate for the case rural households in developing countries. In addition to the stated problem, I am from coffee producer family. I have seen no real change in the livelihood of my families as well as the other coffee producers surrounding us, due to the increment of income from coffee at national level as stated by world trade organization in (2017).

Therefore, the questions in my mind since that time added up on the opportunity given to me to conduct a study motivated me to examine factors affecting small scale coffees producer households' well-being by using both monetary and non-monetary indicators to came up the methodological gap stated in the study area which encompasses also my own birth place. At the end this study came up with findings that can add up on the existing literatures and forwardedrecommendations based on the study findings.

1.3. Objective of the Study

1.3.1. General Objectives

To examine the factors affecting small scale coffee producers' wellbeing in southwest Ethiopia: In the case of Mana woreda, Jimma zone of Oromia regional state

1.3.2. Specific Objectives

- To examinefactors affecting small-scale coffee producer households wellbeing; by using of health, education and living standards as a proxy
- To assess factors affecting small-scale coffee producer households consumption.
- To assess factors affecting small-scale coffee producer households income

1.4. Significance of the Study

As many scholars stated, identifying the factors affecting sustainable development of the society, especially at micro levels are very important for poverty alleviation and to bring sustainable development in rural and urban areas. This issue is directly important to macro level factor identifying for a sustainable development and growth. When the factors are identified at household level, it will be used to plan and implement at regional, as well as at national level to eradicate poverty by minimizing/eliminating those identified factors. Strong and sustainable development and growth can improve the living conditions and employment opportunities of both rural and urban populations directly, when there is strong policy that improve and change the life of farmers at household level.

So the researcher believes conducting study in this sectors and identifying the problems and then forwarding recommendations depending on the results of the findings is not questionable regarding to its importance for policy makers. Generally, this study will serve as source or input for policy makers to reduce the gaps (Income in equality, infrastructure, eradicating poverty, transforming of agriculture sector (specially for coffee sector, etc), suggests solutions for major challenges encountered under the provision of Ethiopian agriculture led industry policy and serves as a feedback to draw suitable strategies (policy) for better implementation of any inter-

related development program. Moreover, this study will be used as guideline for future researchers who wish to investigate further study.

1.5. Scope of the Study

The factors affecting small household coffee producers' wellbeing can be seen from different dimensions. Wellbeing can be measured by using different proxy at international level (whether for developed or developing) countries case. However, this study only assess the major determinant factors affecting small household coffee producers' economic wellbeing and its impact on their productivity and consumption and on their households who are at schools and on works in jimma zone, manna woreda. This study is delimited only in manna woreda since there is data, financial as well as time constraint to conduct the study in a vast and broad manner of jimma zone.

On the contrary, a multidimensional and theoretically founded well-being measurement and assessment could provide to the policy maker a more comprehensive and coherent informational basis for the analysis of rural development and poverty and for policy design.

Secondly, this approach calls for a main shift of traditional rural policies that are still mostly focused on rural income growth– toward a multidimensional (Hence multi-sectoral) perspective. Although in many countries, like in the European Union, and agencies this need has been already formally recognized, actually most rural policies largely coincide with agricultural policies, whose focus is agricultural and income–that is still considered as the main source of rural wellbeing.

1.6 Organization of the study

The study will be presented in five chapters. The first chapter begins with introduction which encompasses background of the study, statement of the problem, objective, significance, and scope of the study. Chapter two provides review of related literatures while the third chapter deals with the methodology of the study. The forth chapter presents the major findings from the study. The last chapter concludes and puts forward policy implications.

CHAPTER TWO

LITERATURE REVIEW

2.1. History of Coffee

The original birthplace of coffee is known to be in Oromia Region, in the previous Kaffa province; currently Jimma Zone of CocceGuddaa locality. The discovery dates back to around 1000 AD according to legends (Oxfam International, 2002). Coffee has become the country's commodity for over 500 years (EEPA, 2002). Coffee in dollar terms is the second most traded product in the world after petroleum. Coffee produces income for millions of small farmers and their families, who are often totally dependent on the crop for their livelihood (Oxfam International, 2002).

As a nucleus of the Ethiopian economy, it accounts for approximately 60% of the country's export merchandise. It is estimated that there are 1.2 million coffee farmers and approximately 15 million households depend on coffee either directly or indirectly (Oxfam International, 2002).It is estimated that about 25% of the country's population is engaged in coffee industry, 95% of whom are small scale farmers working on more than 380, 000 hectares of land. Nearly half of the country's annual production is domestically consumed.

We are the first people; Ethiopians are the first person who gives art of making coffee as a food to the other world. So, that in every household in our country, coffee's taken every morning, in the afternoon, also, in the evening, three times a day. If a guest comes to your house, the first thing you offer them is coffee.

You don't drink coffee alone in, in the rural areas in Ethiopia. Neighbours have to call each other and to enjoy coffee from a single pot. So this makes people to chat or to, of political issues, social issues in the village and it are a place where you settle disputes and share information. Even when you give, for example, like marriage ceremonies, if someone wants to marry your daughter, they will come with a coffee cherry and bring it in a kind of jar to your home, and if

your families accept the jar, it means they have agreed to give the girl to that family. It means bunnanyati. Bunnanyati means 'she has eaten coffee.' So, coffee has a big place in our country (TadesseMeskela, Oromia Coffee Farmers' Cooperative: 22nd Aguast, 2016).

In most of the areas, coffee is inter-cropped with staple food crops used as subsistence or as cash crops separately. Currently, the area covered by coffee plant is estimated to be 600,000 ha (Alamayehu et al, 2010). The annual yield is estimated at 350,000- 400,000 ton which makes Ethiopia the third largest producer in Africa. Even though, there is good environmental condition and potential genetic diversity, average yield at national level is 472kg/ha (Wokafaces and Kassu.2000).

The Oromia Regional Government possesses the largest part of coffee plantation of the country, amounting to about 328, 870 hectares. In addition to this, potential coffee cultivable land is estimated to be about 187, 230 hectares. The Regional Government's official report records that annual average production of Oromia is about 120000-150000 tones. Of the fourteen zonal administrations, coffee grows in thirteen zones and eighty-eight districts of the region (OBAD, 2001). There are variations in genotypes, eco-physiology and the biosphere of coffee under different production systems. Plantation coffee can be regarded as an intensively technician system. The small scale farmers are the major producers, whereby about 140 local coffee land races known to grow as garden with owing on average 0.5 ha of coffee farming systems (Gebrehawaria, 2012).

Oxfam America launched its coffee campaign on the steps of the US Capitol in September 2002. At that time, the international price of coffee had dropped to a 30-year low, placing already vulnerable small-scale coffee farmers and farm workers at the brink of a humanitarian crisis. As Oxfam's *Mugged* report detailed, in countries like Mexico, farmers left their coffee farms for big cities or the United States in search of employment that would provide a decent livelihood. Throughout Central America, hundreds of thousands of jobs on coffee farms were lost. In countries like Ethiopia and Uganda, farming families were unable to pay for education and health care as a result of the crisis.

In Washington, DC, Oxfam, along with Congressional and private sector allies, worked to bring attention to the devastating effects of the coffee crisis. A bi-partisan coalition of legislators showed leadership by incorporating measures to address the coffee crisis into foreign operations appropriations bills in 2003 and 2004, including calls for the US Administration to assemble an interagency strategy to address the coffee crisis. Many of these legislators also joined Oxfam in its call for the US Administration to rejoin the ICO, the international forum where coffee producing and consuming countries meet to address issues of international coffee trade, including sustainability and quality of life in coffee producing countries.

After two years of campaigning for change, Oxfam America welcomed the State Department's September 2004 announcement that the US would rejoin the International Coffee Organization (ICO). US membership in the ICO became official in February 2005. Meanwhile, the US federal government has shown encouraging signs of its commitment to addressing the coffee crisis. And the US Trade Representative's office has formed the interagency task force to address the crisis. In recent months, however, the context of the coffee crisis has changed.

The international coffee market has begun to recover, as reflected in higher international prices for coffee. But a few extra cents alone does not signal the end of the coffee crisis. Small-scale coffee farmers and farm workers are still extremely vulnerable to the coffee market's price swings and the disproportionate market power of local buyers, international traders, and multinational coffee companies. As the US builds upon its commitment, it is crucial that the Administration and Congress advocate for programs that benefit small-scale farmers and farm workers. The US must work together with international policy makers, the coffee industry, and non-governmental organizations, to implement market-based strategies that stabilize prices, provide access to farm credit, provide technical assistance, finance, and market information, create meaningful diversification options, and promote farmer and farm worker representation in international debate. Oxfam America urges the US government to focus its attention to the coffee sector on three areas: price stability, development assistance for small-scale, family farmers, and farmer and farm worker representation in international debate.

2.2. Small-Scale Farmer Priorities

2.2.1. Price and Price Stability

Despite the recent increase in the international price of coffee, an adequate, sustainable, and stable price of coffee is a priority concern for small-scale farmers. Their core demand is to receive a price for their coffee that covers production costs and some level of investment and savings. Beyond that, they stress the need to be compensated for the added cost of compliance with sustainability certification programs like organic, Rainforest Alliance, shade-grown, UtzKapeh and others. Small-scale farmer organizations are striving to locate financing to increase their processing and exporting capacity so that they can increase their share of the price international traders and buyers pay.

According to Anteneh (2011), there is concern that the premiums now paid in the specialty markets may erode over time as supply outpaces demand. Quality improvement projects abound, and should continue, and the US specialty industry views the demand to be rising steadily indefinitely. Several industry traders raise the specter of large specialty roasters siphoning off the best quality coffee around the world as smaller specialty buyers fight to compete. Long-term premium decline will most likely occur in the certified niche markets (such as organic) where premiums shift with supply, and as more farmers become certified, traders can play them off each other to drive prices down.

2.2.2. Access to Finance

"The principal challenge of the coffee producers of La Central is access to financing. This includes short term credit for farm maintenance, fertilization, and harvest; medium and long term financing for investment in productive and commercial infrastructure, diversification projects, and land purchases." –DagobertoSuazo, La Central, Honduras

Much attention has been paid to credit and financing for microenterprises in the developing world. However, coffee farmer marketing cooperatives are typically too large to qualify for micro-credit and are overlooked by commercial lenders. Marketing cooperatives and associations

play an integral role in providing small-scale coffee farmers with direct access to international markets. But a lack of access to capital has limited the potential of the cooperative business model and thus its ability to function as a means to increase direct market access and the higher incomes associated with it. The recent rise in the international price of coffee has increased marketing cooperatives' need for working capital to finance purchases from their members. Independent of price fluctuation, marketing cooperatives need financing to invest in capital improvements essential for quality production and to make pre-harvest farm credit available to farmers for investment that increases yields and improves quality.

2.2.3. Working Capital/Pre-Harvest Credit

Small-scale farmer organizations are in constant need of low interest working capital to finance the purchase, processing, and sale of coffee. This financing allows the cooperative to maintain a positive cash flow, maintain high quality, and meet contract terms. Several people interviewed mentioned the value of flexible funds, like those provided by Ecologic Finance, as well as the need for similar funds that exist on a longer term basis.

2.2.4. Infrastructure

Financing for on-farm infrastructure is used for construction of small mills and drying patios and can come from informal lenders, development project budgets or cooperative credit funds. Financing for centralized infrastructure is used for cooperative level mills, transport vehicles, quality equipment, or drying patios.

2.2.5. Financing for Diversification Transition

Farmers who are encouraged to diversify cannot do so successfully without transitional financing for investment in the new activity or crop, income substitution for basic needs, debt payments prior to generation of new income sources, and support for required training. There is a general shortage of this type of funding.

2.2.6. Debt Refinancing

Many farmers struggling to maintain financial stability through the coffee crisis have increased their debt load. In El Salvador, this translated to widespread farm seizures when farmers were forced to default.

"This is an extremely severe problem to have this debt, because it isn't only a problem of credit. Because of the crisis, profitability isn't possible so there aren't resources to continue investing in their farms. Practically, the farmers are just waiting for this period to pass. There's nothing they can do, except hope their land isn't taken."

The Foro de Café has successfully negotiated with the Salvadoran government to reduce the total amount owed and allow a grace period on repayment. This has stemmed the tide of land seizures somewhat. However, debt refinancing and forgiveness remain priorities for small scale farmers. Often small-holders owe less in terms of total debt, but they have far more to lose than medium and large farmers.

Costa Rica, El Salvador, and Honduras instituted emergency funds for farmers when the price dropped. The repayment of these funds depends on the recovery of coffee prices. If the price does not recover over a sustained period of time, farmers will fall further into debt and may lose their land as a result. Several countries are also restructuring the debt of farmers, although these usually reach only the medium and large-scale farmers who receive formal credit.

2.2.7. Credit for Risk Management

Long-term lines of credit have also been mentioned as required for cooperatives to use risk management tools such as price insurance and hedging. The International Task Force on Risk Management, housed at the World Bank, is actively campaigning with local and national banks to ensure the availability of this type of credit. But it is not widely available now.

2.3. Marketing and Market Access

2.3.1. Overcoming Market Concentration

One of the central challenges of small-scale farmer organizations is competition with exporters who have financing, infrastructure, risk management tools, extensive market knowledge, and existing contracts. This combination of capital, infrastructure, and experience allows exporters to reduce their cost of goods and achieve economies of scale. Add to this dishonest, unaccountable traders and the result is a highly competitive and unfavorable environment for small-holder organizations, especially emerging ones.

Achieving economies of scale can be virtually impossible for small-scale farmer organizations when they are competing with large exporters and when we are thinking of brokers (formal and informal) in the developing with consolidated processing and established relationships with international buyers.

2.3.2. Improving Direct Market Linkages

Farmer organizations want to export their products directly and are increasingly making direct links with buyers in consuming countries. A certain level of organizational development is required to meet the legal, quality, and volume requirements of exporting.

The difficulty in obtaining travel visas to the US is also a barrier to independent direct marketing. The visa process is eased by invitation by a buyer or non-governmental organization, but is an obstacle for independent sales trips. USAID sponsors travel visas for organizations they fund. However, the process is non-standardized and happens on a case-by-case basis at each consulate. There is also a concern that direct coffee buying by transnational companies is increasing in producing countries. Rather than bringing increased benefits to producers, roasting companies are using this as a way to sidestep intermediaries and cut their own costs by paying the same prices as the local buyers. This is not 'market access' that is beneficial to small-holders.

2.3.3. Strategic Market Information

Farmers require consistent and reliable information on the coffee market and worldwide production trends to plan accordingly. Currently no dependable system exists, and much of the information comes from national coffee institutes and ad hoc information gleaned from market contacts. Trade fairs and conferences are opportunities for information gathering. However, they can present a skewed version of the market depending on how representative the trade fair is of actual commerce.

Much of the best information is held by large traders and thus inaccessible to farmer cooperatives. Trans-Fair USA and other NGOs offer farmers promotional sales packages that include airfare, hotel, trade fair expenses and promotional assistance, however, funds are limited relative to the need in producing countries.

Few producer organizations are solvent enough to have adequate sales and marketing budgets. Sales contacts can be made at trade fairs but consistent customers come more frequently from direct sales tours. Trans-Fair and others do not have the resources to support these types of trips for many farmer organizations. Information on the market potential, advantages and disadvantages of the various certification programs is needed by small-holder organizations with limited investment resources.

2.3.4. Excessive Transaction Costs

Along with low prices, small-scale farmers noted high transaction costs for themselves and their organizations as a barrier in El Salvador and elsewhere in Central America. These costs include taxes and technical assistance fees to various national agencies. The Salvadoran Foro del Café has successfully campaigned with the government to reduce these fees by approximately 60%. Transaction costs also refer to the costs of entry to specialty markets (certification, administrative, and quality control costs) and export-related fees.

2.3.5. Quality Improvement

Farmers recognize the advantages and opportunities available with a higher quality coffee. Many farmer organizations have made considerable strides towards achieving this. Farmers from small-holder marketing cooperatives in Nicaragua and Bolivia recently won the Cup of Excellence competition, Oxfam is a partner in a comprehensive quality improvement project with CEPCO in Mexico, and there is excellent quality coming out of the PEARL project in Rwanda, just to name a few of many examples.

This work needs to continue to expand the opportunities of the growing demand in the specialty market to more small-holders. Specialty traders note the growing demand for high quality coffee given both the increasing consumer demand and expansion of specialty giant Starbucks. *Production assistance* Small-scale farmers, especially those in very remote areas, need assistance with proper harvesting and farm management to maximize their quality and minimize defects. These are the first stages where qualities can be maintained, improved, or damaged.

2.3.6. Post-Harvest Processing

"A priority for us is to improve the quality of our coffee because the market for high quality coffee is growing. Without the infrastructure to process coffee it is difficult for a cooperative to achieve this goal."
-Lucas Silvestre, AsociaciónGuaya'b, Guatemala

Farmer organizations need centralized infrastructure to process the coffee that comes from their many small-scale members. Centralized processing allows these organizations to maintain the standard and consistent quality necessary for sales to the specialty market. There are other farmers who live too far from a centralized buying/processing station and thus need affordable, efficient on-farm processing methods along with training on quality control.

"There is a great need to standardize processing criteria on the level of the farm. If a farmer organization has thousands of farmers processing their coffee in different ways that is no way to get good, consistent quality. Centralization of processing is not really an option because of the

poor roads and difficulties in transporting coffee to a central location. Rain can come in the middle of the harvest and stay for a month, which can ruin the coffee. It needs to be processed on farm.

The Guatemalan business development association CRECER is considering a micro-mill project to confront this challenge of farm level processing. It presents considerable organizational and training challenges but also considerable potential in knowledge dissemination and long term farm level sustainability. Mentioned frequently are criticisms of the position that farmers growing coffee below 900 meters are considered noncompetitive. There is a case to be made that Central American farmers at these altitudes are producing coffee of better quality than the Robustas of Brazil and Vietnam and should not be abandoned by technical assistance programs. More serious are concerns of African producers who may not be able to grow Arabica coffee, but face stiffer challenges to diversification than Latin American producers.

2.3.7. Cupping Labs and Training

The training in cupping and quality control is a continued need at smallholder organizations. Many large farms and plantations will have on staff a professional cupper, often trained to international standards, but only the most organized of cooperatives have this capacity. Many farmers have never tasted their coffee and do not understand the ways to control taste and reduce off-flavor. Finding a way of disseminating basic cupping technology is a need for those organizations which are looking to the specialty market. The NGO has been very successful with the installation of 'mini-labs' in farmer cooperatives in Nicaragua.

2.4. Organizational Strengthening

2.4.1. Formation of farmer organizations and alliances

Many small-scale producers are still unorganized or associated only with small cooperatives that have relatively little economic or political power. These organizations need more long-term financial and institutional resources for basic organizational formation and strengthening. The farmers who belong to these organizations face the most intractable obstacles of remote areas.

They lack transport and communication infrastructure, education, and experience in business practices. Some may have rich community traditions of cooperation that can be strong foundations of collective action. Coffee marketing may not be the best long-term livelihood option for them. However, organizational strengthening and alliance building is needed.

After local area organizations are established, there is a need for regional alliances among farmer organizations. Alliances can be effective for commercial consolidation, as small organizations find it difficult to fill minimum volume requirements in a consistent manner. They can also function for advocacy work with government officials or negotiations with development agencies. Alliance building is not only dependent on the resources to fund meetings and exchanges, but also on the farmers' belief in the benefits of association. The desire for organizations to go it alone, or intra organizational animosity, can be substantial barriers in and of themselves.

2.5. Factors affecting market outlet choice

Limited empirical studies exist regarding factors affecting farmers channel choice decision. Williamson, 2002 have identified factors related to price, production scale and size, farm household characteristic, behavioral aspects such as (trust, risk, and experience), and market context (distance and purchase condition) affect producer market outlet choice. Furthermore, Zuniga-Arias (2007) found out that factors such as price attributes, production system, farm household characteristic, and market context could affect market outlet decision of farmers in mango supply chain in Costarica. Hobbs (1997) found out that age, education, farm profit and transaction cost are some factors that influence farmers channel choice decision in livestock marketing. The same study also indicated that the mode of payment, long standing relationship with the buyer, and the price received as the most important reasons for selling to a particular buyer in the livestock sector. A study conducted by Sourgiannis (2008) found out that farm and farm characteristics, volume of milk production, farm income, debt, sales price, speed of payment and loyalty have a significant effect on market channel choice of sheep and goat farmers in the region of east Macedonia in Greece.

Misra (1993) found out that factors related to price and non-price factors affecting selection decision of milk producer farmers. According to Royer (1995) risks that agricultural producers face are linked with decisions about the prices, quantity, quality, and the timing of delivery. It also aims to explore the association between the factors that influence the farmers to adopt a particular marketing strategy and their selection of a particular distribution channel. According to Gong (2007) there are significant relationships between economic and social variables and marketing channel selection for cattle distribution in China. They argued that transaction cost has a significant impact on marketing channel selection.

Generally, however, limited studies exist about factors affecting market outlet choice of farmers in general. Even existing studies were done mainly on livestock sector in developed countries with few exceptions. To the best of my knowledge there is no study on coffee farmers (member and non-member) market channel selection decision. Factors affecting the market outlet choice of coffee growers have never been explored in the Ethiopian context. It is therefore necessary to undertake empirical study to fill existing information gap by identifying factors affecting market outlet choice of coffee farmers in the study area. We will follow the following conceptual framework depicted in figure 1 below to conduct the analysis and operationalize the variables.

2.5.1. Financial and Organizational Management Training

Farmer organizations need financial and organizational management capacity to operate as successful businesses in the competitive and marginally profitable world of green coffee exporting. Farmer organizations, especially emerging ones, need methods to reduce high operational costs, maximize efficiency, and achieve economies of scale in post-harvest processing. They need to develop dependable internal control systems (ICS) for information management. ICS are required for certification in quality or sustainability programs such as Fair Trade or organic.

Organizations in poor rural areas are hard pressed to find and retain skilled management and technical staff. They often need but do not have at least one person who can read English if a fax or email is received from a buyer in English.

"The principle challenge to improving the situations in these cooperatives is to find skilled human resources. Many cooperatives have been recipients of assistance from aid agencies and the government over a long period of time, but they haven't been able to capitalize on this. There is a high turnover rate of personnel in these cooperatives because first, it is difficult to find qualified people and second, the ability of small cooperatives to pay attractive salaries is also a problem. When a skilled person finds a better employment opportunity, they leave. We also have the problem that many technicians leave for the US looking for better work." Antonio Cordón, CRECER, Guatemala

The managerial component is often overlooked in development projects and it is central to the success of small-holder organizations. Cooperatives and federations with developed management capacity are resources for new organizations. Although there can be exporting competition between these organizations, cooperation would benefit them more than isolation. Management team exchanges have been suggested as a possible resource for effective skill and information transfer. Reports from an exchange between Rwandan and Nicaraguan farmers facilitated by the Thanksgiving Coffee Company and USAID were reported as positive.

2.5.2. Risk Management Mechanisms

Traders regularly use tools to manage the inherent risk in commodity trading. These tools have generally not been used by small-holder organizations due to lack of access, information and training. Farmer organizations that are aware of these tools are interested in using them and having access to appropriate training and credit.7 The World Bank is supporting pilot projects to train small-holder organizations to use tools such as hedging and price and weather insurance. There has been considerable learning in this area over the last few years and several organizations are successfully using the risk management tools. The emphasis now is on dissemination of information both to small-holders and national banks to educate both sectors. Many small-holder organizations have heard about risk management. However, many express lack of understanding of how the tools can be used, which provides an obstacle to gaining access to them.

2.5.3. Livelihood Diversification

Diversification is often cited as the answer to low commodity prices. However, finding alternatives to cash crops like coffee that can deliver equal benefits is exceedingly difficult. Farmer leaders mention diversification as a priority, but emphasize the difficulty in finding legal, profitable alternatives to coffee.

"Our members have had some success in diversification programs, but on a very small scale. Examples are honey, pigs, cattle, vegetables, basic grains, roasted and ground coffee, and plantain. To expand and promote rural diversification, the following services and/or programs are needed:
- ✓ *Assistance in feasibility studies*
- ✓ *Long-term lines of credit*
- ✓ *Market studies and access to national and international markets*
- ✓ *Brand design and development*
- ✓ *Design and development of marketing strategies*
- ✓ *Technical assistance (quality control, knowledge of the final consumer, etc)*
- ✓ *Exchange of experience and information"*

2.6. Measuring Well-being

Many studies on economic wellbeing were able to offer a plethora of answers to national governments on the health status of the people, or the wellbeing and/or ill-being of their citizens. No policy formulation on improving the quality of life of the citizens of a particular space should proceed without firstly unearthing the 'real' determinants of wellbeing. From Crisp's perspective (2005), wellbeing is related to health and the strength of those associations, and secondly planning requires information that is made available by research. Is traditional economists' operationalization of wellbeing still applicable in contemporary societies, knowing it to be purely objective?

If happiness is a state of wellbeing, then if we w ere to impute depression, anxiety, stress, and illness and/or physical incapacitation, spirituality and environment within the objective measurement of wellbeing, a more holistic valuation would be reached. W ith the inclusion of subjectivity conditions in the measurement of wellbeing, we come closer to an understanding of people's state of wellness, health and quality of life, as better nutrition, efficient disposal of sewage and garbage, and a healthy lifestyle also contribute to health status (i.e. wellbeing). It should be noted that the biomedical model that is objective, conceptualizes health as the absence of diseases. This leads to the question, are any of the following diseases – (i) depression, (ii) stress, (iii) fatigue, and (iv) obsession? Hence, an issue arises; does the lack of objectivity mean it should be accepted with scepticism?

In order to put forward an understanding of what constitutes wellbeing or ill-being, a system must be instituted that will allow us to coalesce a measure that will unearth peoples' sense of the overall quality of life from either economic-welfarism (Becker *et al*., 2004) or psychological theories (Diener*et al*., 1997; Kashdan, 2004; Diener, 2000). This must be done with the general construct of a complex man. Economists like Smith and Kington, and Stutzer and Frey as well as Engel believe that the state of man's wellbeing is not only influenced by his/her biologic state, but that it is always dependent on his/her environmental, economic and sociological conditions. Some studies and academics have sought to analyze this phenomenon in a subjective manner by way of general personal happiness, self-rated wellbeing, positive moods and emotions, agony, hopelessness, depression, and other psychosocial indicators (Arthaud- Day *et al*., 2005; Diener*et al*., 1999; Skevington *et al*., 1997; Diener, 1984).

An economist (Easterlin, 2001a, b) studying happiness and income, of all social scientists, found an association between the two phenomena, (Stutzer and Frey, 2003). He began with a statement that "the relationship between happiness and income is puzzling" (Easterlin, 2001a), and found that people with higher incomes were happier than those with lower incomes – he referred to it as a correlation between subjective wellbeing and income (Stutzer, and Frey, 2003). He did not cease at this juncture, but sought to justify this reality, when he said that "those with higher

incomes will be better able to fulfil their aspirations, and with other things being equal, on an average, feel better off" (Easterlin, 2001a). Wellbeing, therefore, can be explained outside of the welfare theory and/or purely on objectification objective utility (Kimball and Willis, 2005; Stutzer, and Frey, 2003).

Whereas Easterlin found a bivariate relationship between subjective wellbeing and income, Stutzer and Frey revealed that the association is a non-linear one. They concretized the position by offering an explanation that "In the data set for Germany, for example, the simple correlation is 0.11 based on 12, 979 observations" (Stutzer and Frey, 2003). Nevertheless, from Stutzer and Frey's findings, a position association does exist between subjective wellbeing and income despite differences over linearity or non-linearity.

Studies have shown that subjective wellbeing can be measured on a community level (Bobbit et al., 2005; Lau, 2005) or on a household level (Lau, 2005; D iener, 1984), whereas other experts have sought to use empiricism (biomedical indicators - absence of disease symptoms, life expectancy; and an economic component – Gross Domestic Product per capita; welfarism - utility function). Powell (1997) in a paper entitled 'Measures of quality of life and subjective wellbeing' argued that psychological wellbeing is a component of quality of life.

He believed that this measurement, in particular for older people, must include Life Satisfaction Index, as this approach constitutes a number of items based on "cognitively based attitudes toward life in general and more emotion-based judgment"(Powell, 1997). Pow ell addressed this in two dimensions. Where those means are relatively constant over time, and while seeking to unearth changes in the short-run, 'for example an intervention', procedures that mirror changed states may be preferable. This can be assessed by way of a twenty-item Positive and Negative Affect Schedule or a ten-item Philadelphia Geriatric Centre Positive Affect and Negative Affect Scale (Pow ell, 1997).

Even though in Europe these were found not to be causal, income provides some predictability of subjective wellbeing, and more so in poor countries than in wealthy nations. (Lima and Nova, 2006)

It should be understood that GDP per capita speaks to the market economic resources, which are produced domestically within a particular geographic space. So increased production in goods and/or services may generate excess, which can then be exported, and vital products (such as vaccination, sanitary products, vitamins, iron and other commodities) can be purchased, which are able to improve the standard of living and quality of the life of the same people compared to the previous period.

One scholar (Caldwell, 1999) has shown that life expectancies are usually higher in countries with high GDP per capita, which means that income is able to purchase better quality products, which indirectly affects the length of years lived by people. This reality could explain why in economic recession, war and violence, when economic growth is lower (or even non-existent) there is a lower life expectancy. Some of the reasons for these justifications are government's failure to provide for an extensive population in the form of nutritional care, public health and health-care services. Good health is, therefore, linked to economic growth, which further justifies why economists use GDP per capita as an objective valuation of standard of living; and why income should definitely be a component in the analysis of health status.

Ringen (1995) in a paper entitled 'Wellbeing, measurement, and preferences' argued that non-welfarist approaches to measuring wellbeing are possible despite its subjectivity. The direct approach for wellbeing computation through the utility function according to Ringen is not a better quantification as against the indirect method (i.e. using social indicators). The stance taken was purely from the vantage point that utility is a function 'not of goods and preferences' but of products and 'taste'. The constitution of wellbeing is based on choices. Choices are a function of individual assets and options. With this premise, Ringen put forward arguments showing that people's choices are sometimes 'irrational', which is the make for the departure from empiricism.

Wellbeing can be computed from either the direct (i.e. consumption expenditure) or the indirect (i.e. disposable income) approach (Ringen, 1995). The former is calculated using consumption expenditure, whereas the latter uses disposable income. Rigen noted that in order to use income as a proxy for wellbeing, we must assume that (1) income is the only resource, and (2) all persons operate in identical market places. On the other hand, the direct approach has two key assumptions. These are (1) what we can buy is what we can consume and (2) what we can consume is an expression of wellbeing. From Rigen's monograph, the assumptions are limitations.

In presenting potent arguments in favour of non-empiricism in the computation of wellbeing, Ringen highlighted a number of drawbacks to welfarism.

According to Ringen:

> *''Utility is not a particularly good criterion for wellbeing since it is a function not only of circumstances and preferences, but also of expectation. In the measurement of wellbeing, respect for personal preferences is best sought in non-welfarist approaches that have the quality of preference neutrality; ...As soon as preferences are brought into the concept of wellbeing, it cannot but be subjective'' (Ringen, 1995).*

The difficulties of using empiricism to quantify wellbeing have not only been put forward by Ringen, as 'Donnell and Tait (2003) were equally forthright in arguing that there were challenges in measuring quality of life quantitatively. O'Donnell and Tait believed that health is a primary indicator of wellbeing. Hence, self-rated health status is a highly reliable proxy of health, which "successfully crosses cultural lines" (O'Donnell and Tait, 2003). They argued that self-reported health status could be used, as they found that all the respondents of chronic diseases indicated that their health was very poor.

Despite the fact that quality of life extends beyond the number of years of schooling and material wellbeing, generally wellbeing is substantially construed as an economic phenomenon.

Embedded within this construct of a measure is the emphasis on economic resources, and we have already established that man's wellbeing is multifaceted. Hence, any definition of the quality of life of people cannot simply analyse spending or the creation of goods and/or services that are economically exchangeable, the number of years of schooling and life expectancy, but it must include the psychosocial conditions of the people within their natural environment.

GDP is the coalesced sum of all the economic resources of people within certain topography, so this does not capture the psychosocial state of man in attaining the valued GDP. By this approach, we may arrive at a value that is higher than in previous periods, making it seem as though people are doing very well. However, with an increase in GDP, this single component is insufficient to determine wellbeing, as the increase in GDP may be from (1) more working hours, (2) higher rates of pollution and environmental conditions, (3) psychological fatigue, (4) social exclusion, (5) human 'burn out', (6) reduction in freedom, (7) unhappiness, (8) chronic and acute diseases and so forth. Summers and Heston (1995) note that "However, GDPPOP is an inadequate measure of countries' immediate material wellbeing, even apart from the general practical and conceptual problems of measuring countries' national outputs." Generally, from that perspective, the measurement of quality of life is therefore highly economic and excludes the psychosocial factors, and whether quality of life extends beyond monetary objectification.

In developing countries, Camfield (2003), in looking at wellbeing from a subjective vantage point, notes that Diener (1984) argues that subjective wellbeing constitutes the existence of positive emotions and the absence of negative ones within a space of general satisfaction with life. According to Camfield (2003), this perspective subsumed 'subjective and objective measures of material wellbeing' along with the absence of illnesses, efficiency, social closeness and security. But it is difficult to come up the stated problem and using it as measurement.

To capture the state of the quality of life of humans, we are continuously and increasingly seeking to ascertain more advanced methods that will allow us to encapsulate a quantification of wellbeing that is multidimensional and multifaceted (Pacione, 2003). Therefore, an operational definition of wellbeing that sees the phenomenon in a single dimension such as physical health,

medical perspective (Farquhar, 1995), material (Lipsey, 1999) and would have excluded indicators such as crime, education, leisure facilities, housing, social exclusion and the environment (Pacione,) as well as subjective indicators, cannot be an acceptable holistic measurement of this construct. This suggests that wellbeing is not simply a single space; and so, the traditional biomedical conceptual definitions of wellbeing exclude many individual satisfactions and in the process reduce the tenets of a superior coverage of quality of life.

One writer noted that the environment positively influenced quality of life (Pacione, 2003) of people; in order to establish the validity and reliability of wellbeing, empirical data must include issues relating to the environment. The quality of the environment is a utilized condition in explaining the elements of people's quality of life. Air and water quality through industrial fumes, toxic waste, gases and other pollutants, affect environmental quality. This is directly related to the maintenance or lack thereof of societal and personal wellbeing (Pacione, 2003).

An economist writing on 'objective wellbeing' summarized the matter simply by stating that "…one can adopt a mixed approach, in which the satisfaction of subjective preferences is taken as valuable too" (Gaspart, 1998; Cummins, 1997a, b), which is the premise to which this paper will adhere in keeping with this multidimensional construct, wellbeing. Wellbeing, therefore, in the context of this paper, will be the overall health status of people, which includes access to and control over material resources, environmental and psychosocial conditions, and per capita consumption.

CHAPTER THREE

MATERIALS AND METHODS

3.1. Study Area Description

This study was conducted in Manna woredas of Jimma zone in Oromia regional state, south western part of Ethiopia as shown in Figure 1. According to Jimma zone finance and economic development office report (2016), Jimma zone divided into 21 woredas and hosting total populations of over 3 million under 512,506 households in general.

Jimma Zone is with an agro-ecological setting of highlands (15%), midlands (67%) and lowlands (18%). The zone is one of the major coffee growing areas of Oromia regional state and also as the study countries, Ethiopia. Also this zone is well known by well-endowed with natural resources; that contribute income from foreign currency. According to the information from zone finance and economic development office report, the contribution of natural resource from this zone is very significant to the national economy of the study country.

3.1.1 Location and Topography of Manna woreda

Manna woreda found in Jimma Zone of Oromia National Regional State. Manna Woreda is one of the eithteen(18) woredas in Jimma Administrative Zone. It is located 22 km to the Northeast of Jimma town, the seat of Jimma Zone Administration. The woreda consists of 24 rural kebeles and 2 developmental municipality towns and Yabu is woreda's administrative center.

The Woreda has three agro- ecological zones, namely Dega (12%), highland(63%) and Woyena-Dega(25%). The total population of the Woreda was estimated to be 149,631. Out of which 76,218 are males and 73,413 are females, with the average household size is 5. According to the woreda's 2010 annual report, both chronic and transistory problem of food insecurity are widespread in the half of total rural kebeles at the households level. Because of this around 13280 rural households are affected by food insecurity problems. (MWoARD, 2010)

However, JimmaZone reliably receives good rains, ranging from 1200-2800 mm per annum; this atmosphere is very comfortable to invest in the area of agro-industry based on natural resource well-endowed by nature, as well as product produced by active and strong community (UNDP, 2000).

Figure 1: Jimma Zone, Oromia Region, Ethiopia
Source: (UNDP, 2000)

3.2. Study Design

A cross-sectional Study design was employed to look for the factors affecting small scale household coffee producer's wellbeing in Southwest Ethiopia. In the case of Oromia regional state, manna worads of Jimma zone administration. According to manna woredas annual report of 2016/17 there are around eleven primary coffee producers kebeles under the stated woredas administration. Among the stated eleven kebeles of coffee producers,six villages (*kebeles*) are selected and paired based on various comparability factors, including similarity on infrastructure availability, distance from woredas main town and etc,..All households, residing in the selected kebeles for more than 6 month consititute the study population. The study was conducted from Jan, 2018 to end of May 2018.

3.3. Study Methodology and Model Specification

3.3.1. Type and Source of Data

Both primary including quantitative and qualitative figures and secondary data were used in this study. The quantitative data was derived from a household survey. They include data like types of production, total production, household possession, usage of agricultural input, the main expenditure items, market chain opportunity, type of labor use, number of household, off farm activities, land holding size, total cultivated land, land for cash crop products, land for coffee production, age of coffee trees, livelihood strategies and other related information. Information related to marketing opportunity for coffee, consumption and expenditure was collected from each household. Supporting data such as MoFD report, statistical reports of the Central Statistical Authority (CSA), the rural development office and agriculture offices of the zone as well as from manna woreda, trade and market development office of Jimma zone and manna woreda and other governmental agencies/offices were also included.

3.4. Data Collection Techniques

Depending on the nature and facts about data's (secondary data) of most developing countries, this study used predominantly a cross-sectional survey type; it mainly relies on quantitative and qualitative primary data that was gathered from the sample through structured questionnaire.

3.4.1. Structured Questionnaire

Structured questionnaire was designed separately to collect data from rural households, urban households and traders. Most of the items of the structured questionnaire were close ended with some partially open-ended items. The questionnaire, which was prepared and proofread, was translated in to the local language (Afan Oromo language). The questionnaires will be piloted in order to determine the clarity and understand ability of the question and to assess whether the questionnaire is able to collect the intended information. The final version was prepared after incorporating the necessary modifications. Well-trained enumerators who will be supervised by the researcher administered the questionnaire.

It is commonly agreed that the collection of quality data to satisfactorily answer research questions and achieve the objectives depends on the experience, socio-cultural background, academic status and motivation of the enumerators. Hence, well-trained and highly motivated enumerators were recruited to carry out the survey. All the enumerators had familiarity with the community and with the subject with basic academic capability to discharge their responsibility effectively. It was certain that the enumerators can effectively understand the socio-cultural context and communicate in Afan-oromo language to avoid cultural and linguistic barriers while interviewing the local community. During this time, detailed information was collected from the respondents. A re-visit was made to a number of households in each site to insure the reliability of data.

3.4.2 Observation

To support the questionnaire survey and interview, personal observations was held at selected study areas.

3.3.3. Interview

Multiple visits were made to a number of households in each selected site to conduct in-depth interviews and checking the validity. The households were mainly selected from the questionnaire survey to cover a range of household types varying by social and economic status. Generally, this study was focused on general background of the respondents in particular and households in general.

The in-depth interviews traced the respondents' life, focusing on their changing livelihood experiences and each separated types of linkage stated under objectives of the study. The in-depth information for each specific objectives was also collected thorough this technique.

Again, a number of interviews were conducted to collect primary data from development agents, traders, and different sector officials.

3.4.4. Secondary Information

Secondary information regarding policies and programs that deals with small scale coffee producer's was collected from different offices at woreda, zone, regional, national and international level. Generally, these secondary data are articles, research papers, policy and strategy documents, annual reports and other official documents.

3.4 Sampling Methods in General

The study was undertaken in Oromia Regional State, Manna woreda of Jimma zone in Ethiopia. Multistage sampling techniques was applied to reach the study population and to answer the study objectives. At first stage from woredas those are known by producing coffee under Jimma zone administration, Manna woreda was selected purposeful. Since, it is easy for researcher to collect data and gather necessary information at a least cost; as well to observe additional information when compared to other woredas. At second stage, from selected woreda, six kebele was selected. The districts which known as kebele in the woreda was categorized purposively depending on coffee production priority and their distance from woredas main town plus. On the third stage, the peasant associations (PAs), the villages were grouped in the same procedure and sampled randomly. Finally, the households were selected using systematic random sampling procedure. The sampling household was prepared by discussing with PA leaders in each kebele as well as at village level.

3.6. Sample Size Determination

To select the appropriate sample size needed from a total of small scale coffee producers household in the study areas; the following sample size determination formula (Noel, et al., 2012) is used:

Based on the 2016/17 census obtained from kebeles administrations, a total of 14,207 households are living in the six selected Kebeles for this study. The sample size needed to obtain an approximate $100(1-\alpha)\%$ confidence interval for the population proportion of factors affecting

small scale household coffee producer wellbeing (P) of length at most 2d, was determined by the following formula (Noel, et al, 2012).

$$n \geq \frac{N}{1 + (N-1)(\frac{2d}{z})^2} \approx \frac{N}{1 + Nd^2} = 203$$

Where, $N = 14,207$ is the total population, n is the required sample size, $d = 0.07$ margin of error, $z = 1.96 \approx 2 \, for \, a = 0.05$ is the confidence level. The margin of error d is taken as percent point error term and is often calculated for d=1%, d=2% and d=5%.

According to the given formula, the required sample size is 203 among total household number of 14,207 in Manna Woreda. For the purpose of selecting representative sample; a multi-stage sampling technique will be applied to generate the required primary data from total numbers of households. Besides, based on the notion of productivity of coffee, the following six kebeles are selected; Qorelalissa, Haro, KellaGudda, SayyeBontu, Bilida and Kenteri.

3.7. Study Methodology

3.7.1. Data Analysis and Estimates of the Model

3.7.1.1. Data Analysis

The primary and secondary data obtained from respondents and documents respectively processed, classified and tabulated. Consequently, a combination of different statistical techniques such as percentages, frequencies, Chi-square, cross-tabulation and logistic regression was used to adequately address the objectives of this research and come up with critical findings, conclusion, and recommendations. To do this we used STATA v.12; for analysis of regression and SPSS v.16; for descriptive part was used.

3.7.2.1. Estimates of the Model

According to Becker *et al*. (2004), in order to put forward an understanding of what constitutes wellbeing or ill-being, a system must be instituted that will allow us to coalesce a measure that will unearth peoples' sense of the overall quality of life from either economic-welfarism or psychological theories. This must be done with the general construct of a complex man.

However using the stated indicators by Becker et al (2004) is very difficult for developing countries in general and it is even more complex when the case under consideration is a rural areas.

Economists like Smith, Kington, Stutzer and Frey as well as Engel believe that the state of man's wellbeing is not only influenced by his/her biologic state, but that it is always dependent on his/her environmental, economically and sociological conditions. Some studies and academics have sought to analyse this phenomenon in a subjective manner by way of general personal happiness, self-rated wellbeing, positive moods and emotions, agony, hopelessness, depression, and other psychosocial indicators (Arthaud- Day *et al*., 2005). So this study tried to modify and used for this study mostly by focusing in on non-monetary measurements.

As concerns data and statistics, a multidimensional perspective is more demanding because of the broader informational base that is required. This is very often considered a shortcoming and is used as an argument for maintaining the traditional income approach, especially for those countries that have poor statistical resources. However, on the one side, several data about non-monetary well-being dimensions are already available for almost all countries, although not regularly. What is often missing is a disaggregation of data between rural and urban areas. For instance, in some countries this is the case for data about health and education. Nevertheless, the effort needed to produce disaggregated data is not enormous, given that censuses and surveys can be easily designed accordingly. Also concerning the MDGs, according to the UN all indicators should be disaggregated by urban/rural as far as possible. Anyway, for many countries, given the availability of appropriate statistics for rural areas, a multidimensional measurement and assessment of rural well-being and poverty is already possible today, and there are already some good examples of in this direction.

On the other side, it is evident that for some other relevant well-being dimensions data are not systematically collected, both for urban and rural areas. An important research project of the Oxford Poverty & Human Development Initiative (2016), has the goal to identify and advocate the collection of data for a small set of indicators on "missing" dimensions of wellbeing –and,

more generally, of human development with a focus on dimensions that often matter to poor people. For the "missing dimensions" of well-being an effort by the international community is needed, in order to mobilize resources and make the appropriate investment in the statistical capacity to collect the relevant data and to produce indicators.

One main critique of using capability approach to measure well-being, which can be addressed to this measure: life satisfaction, as well as happiness, is only a state of the mind and people tend to adapt their preferences (and answers) to the context and conditions in which they live (Sen, 1985). Moreover, the exclusive use of subjective variables makes it difficult to extend results to populations because of problems in the aggregation of individual preferences. Life satisfaction can be *one* of the well-being dimensions (itself being multidimensional because related to work, family, social relations, etc). Because of the main problems of using individual to measure well-being stated by Sen, this study choose household as study population to assess the determinant factors affecting small scale coffee producer household well-being.

Many indicator variables to evaluate well-being at individual, household and country level were stated above. Those indicator variables developed and used by many scholars and originations discussed above have their own limitation to be used as a general indicators. In conclusion, using of common indicators/variables to measure well-being in rural and urban household, developed and developing countries was unfair and made the final result biased. Depending on the complexity and limitation of measuring well-being stated above we tried to solve the limitation and biasedness by modifying the methodology developed by OHDI as follow to measure the minimum household needs as follow to measure, Factors affecting small scale coffee producer farmer's well-being were assessed based on the dependent variables indicated below.

The question of cumulative well-being of household level is expressed in dichotomous form. Thus, "wellbeing status of household" is assigned a value of 1 if it satisfies minimum average requirements, otherwise 0. Actually, as we tried to discuss above, there is no common 'best practice' approach for selecting variables which are indicators of household well-being; however formative research can contribute to the identification of assets that are strong predictors of

socio-economic position (Howe et al., 2008). Broadly speaking, wellbeing status involves many dimensions. The use of a single proxy is not likely to lead to reliable results, so the idea is to include a number of proxies or variables, covering each of the dimensions required to evaluate well-being. And the following variables are to build welfare index containing equal value:
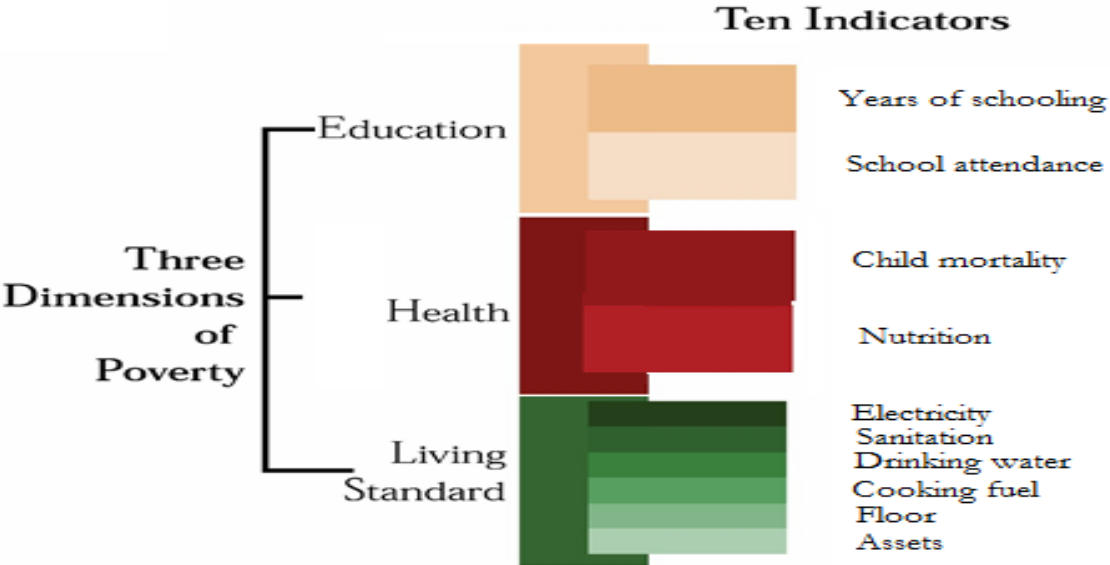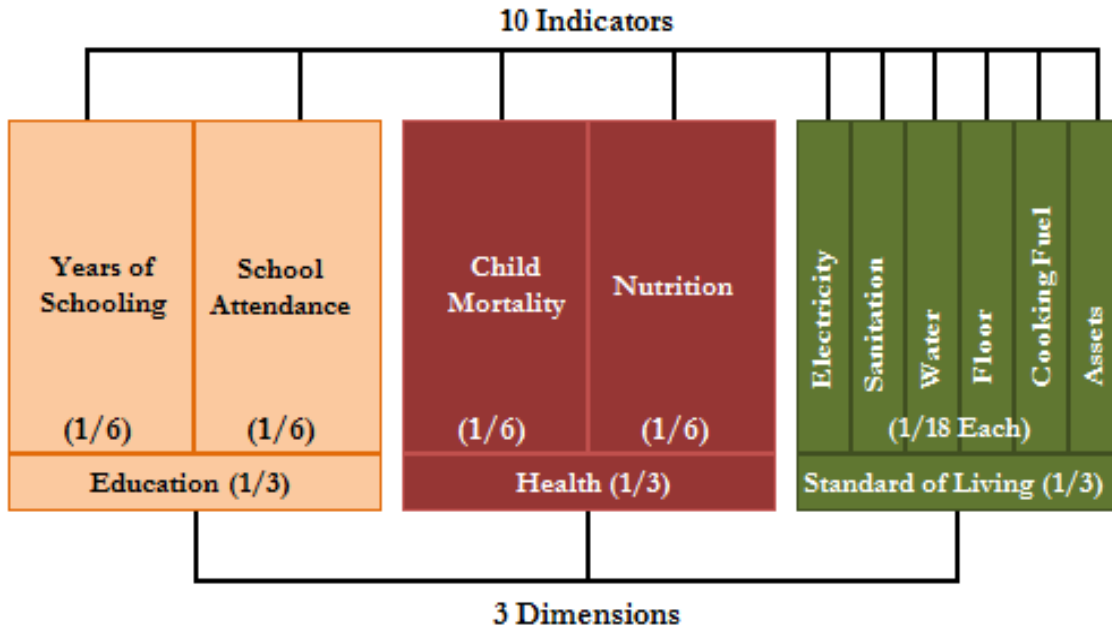
Source, OPHI, 2016

Depending on the indicators stated above at household, the functional relationship between the probability of household wellbeing status and explanatory variables is specified as:

Let Y_{ij} be the i[th] well-being status of household (a binary outcome, 1= alone, 0=otherwise) living in the j[th]kebele$_s$.

$$Y_{ij} \sim Bernoulli(P_j)$$

$$log \frac{P_j}{1-P_j} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \ldots + \beta_k X_k \text{ .... (Equation 2)}$$

Where , P_j is population proportion of well-being status of households in the j[th]kebele, $X_1, X_2, \ldots, X_k$ household and individual level characteristics of the study subjects and $\beta_0, \beta_1, \ldots \beta_k$ are their associated regression coefficients or study parameter.

This study had general information on household well-being status indicators variables in three types: Education, Health and living standards

This leads us to response variable. Namely,

1. *Education*

$$Y_{1i} = \begin{cases} 1 & If\,there\,is\,participation\,properly\,in\,one\,of\,education\,indicator\,listed\,above \\ 0 & If\,there\,is\,no\,participation\,properly\,in\,education\,indicator\,listed\,above \end{cases}$$

2. *Health*

$$Y_{2i} = \begin{cases} 1 & If\,there\,is\,no\,child\,mortality\,in\,the\,last\,5\,year \\ 0 & If\,there\,is\,child\,mortality\,in\,the\,last\,5\,year \end{cases}$$

3. *Living standard*

$$Y_{3i} = \begin{cases} 1 & If\,household\,have\,access\,to\,three\,and\,above\,out\,of\,living\,stands\,indicated\,above \\ 0 & If\,household\,have\,access\,to\,less\,than\,three\,out\,of\,living\,stands\,indicated\,above \end{cases}$$

4. *General household well-being status, if they household have access to at least in 1 of the 3 indicators listed above (proxy of the study)*

$$Y_{4i} = \begin{cases} 1 & Y_{1i} + Y_{2i} + Y_{3i} \geq 1 \\ 0 & Y_{1i} + Y_{2i} + Y_{3i} < 1 \end{cases}$$

In addition, this study construct econometrics model to assess factors affecting small scale coffee producer's household consumption and income. Indicators and estimated model is discussed in chapter four, under 4.4.2 and 4.2.3

Table 3.Study variables and expected sign

Variable	Meaning	Expected sign
MAE	Marital status	Positive /Negative (+/-)
EDU	Educational status of household head	Positive (+)
WAGE	Wife age	Positive /Negative (+/-)
WEDU	Wife education	Positive (+)
AGE	Age of household head	Positive /Negative (+/-)
HHH	Sex of household head	Positive (+/-)
FMS	Family size	Positive/negative (+/-)
EXWA	Extension worker access	Positive (+)
HEXWA	Health extension worker access	Positive (+)
PCP	Primary coffee producer	Positive (+)
DIT	Distance from the town	Positive (+)
TULS	Total unit of livestock	Positive (+)
AINFR	Access to infrastructure	Positive /Negative (+/-)
TLS	Total land size	Positive (+)
TLFCOP	Total Land for coffee production	Positive (+)
TLFCP	Total Land for crop production	Positive /negative (+/-)
PCPBC	Producing Cash crop product beside coffee	Positive (+)
RCPR	Receiving fair price for coffee	Positive (+)
CSP	Coffee selling place	Positive /Negative (+/-)
FTM	Fair-trade membership status	Positive (+)
COM	Cooperative membership status	Positive (+)
AFINST	Access to financial institution	Positive (+)
TRN	Training access	Positive (+)
AINFO	Information access	Positive (+)
MACS	Market access	Positive (+)
ASCH	Access to school	Positive (+)
AHC	Access to health center	Positive (+)
GSU	Government support	Positive (+/-)
PDC	Productivity of coffee	Positive /Negative (+/-)
TUFP	Inputs (technology) used for production	

Source: author, 2018

3.8. Validity and Reliability of Data

Reliability and validity are the two most important and fundamental techniques of any measurement procedure. Reliability and validity of the instruments and methodology deal with the quality of data and appropriateness of the methods used. Mwanje (2001) indicates that reliability refers to the degree of consistency of results derived from repeated observations of the same phenomenon under the same circumstances. It is the extent to which any instrument produces the same result on repeated trials. Validity, on the other hand, stands for the degree to which the research measures what is purported to measure.

3.9. Ethical Considerations

While conducting a research, it is important to consider the underlying ethical issues. Before starting to conduct the study, permission was assured from the selected study areas administration. By elaborating the purpose of the study, consent guaranteed from each respondent. Ethical considerations were seriously taken into account so that the concern, integrity, consents and other human elements of the participants, discussants, and interviewees are protected. Essentially, data collectors are told to respondents the purpose of the study prior to responding to the questions. They was assured that any information concerning them will never be passed to other unauthorized persons or institutes without their consent and cannot be used for other purpose outside this academic research. The selected study participants were requested kindly whether they agree to participate in the study or not. This stated mega research project ethical consideration must be within line with research profession ethics.

CHAPTER FOUR

RESULT AND DISCUSSION

4.1. General Background

This chapter depicts data analysis and discussion to the end, the chapter is organized into two main sections. The first Section deals with background characteristics of respondents and with socioeconomic characteristics of respondents. Such as, respondent's educational level, family size, sex, household headship status, total farm land and total coffee land, while the second part of this study deals with result and discussion of the study details.

A total of 203 respondents were selected randomly from six selected kebeles from Manna woreda, Jimma zone of Oromia regional state.

Out of 203 respondents, 25(12.3%), 43(21.2%) 40(19.7%), 26 (12.8%), 38(18.7%) and 31(15.3%) were from Kore Lalissa, Haro, Bilida, KellaGudda, Kenteri and SayyeBontukebeles, respectively. The proportion response rates for each kebeles were taken depending on their respective total populations (table 4.1 below)

Table 4.1.Respondent rates

Characteristic	Response rate	
	Frequency	Percent
Kore Lalissa	25	12.3
Haro	43	21.2
Bilida	40	19.7
Kellagudda	26	12.8
Kenteri	38	18.7
SayeBontu	31	15.3
Total	203	100.0

Source: Study survey, 2018

4.1.1 Background Characteristics of Respondents

This section provides a summary of the socioeconomic characteristics of households and respondents including age, residence, educational status, household facilities, and household characteristics. Information collected on the characteristics of the households and respondents was important to, understand and interpret the finding of the survey and also, provide indicators of the representativeness of the study survey. The information is also useful in understanding and identifying the possible factors that affect income as well as well-being of small household coffee producer farmers in the study area.

According to the result indicated in table 4.1.1 below shows, among 203 of households, 140(69.2%) were male headed and 63(31.0%) are female headed.

Table 4.1.1 Household headship Status

Characteristics	Response rate	
	Frequency	+Percent
Female	63	31.0
Male	140	69.0
Total	203	100.0

Source: Study Survey, 2018

According to table 4.1.2 below, Out of 203 respondents 134(66%) households have family size less than five (<5), while 69(34%) of them have greater than or equals to five.

Table 4.1.2.Total Number of household (Total Family size)

Characteristics			Response rate	
			Frequency	Percent
Family size		<5	134	66
		>or=5	69	34
Total			203	100.0

Source: Survey Study, 2018

As expected, from total respondent 137(67.5%) no education (can't read and write), 33(16.3%) read and write only, 16(7.9%) primary education and 17(8.7%) secondary educational level, respectively (See Table 4.1.3 below).

Table 4.1.3.Educational Level of Respondents

Characteristics		Response rate	
		Frequency	Percent
Household head educational level	No education	137	67.5
	Read and write	33	16.3
	Primary	16	7.9
	Secondary	17	8.4
Total		203	100.0

Source: Study Survey, 2018

According to table 4.1.4 below, of total respondents, 162(79.8%) were Muslim, 18 (8.9%) were Orthodox and 23(11.3%) of them were Protestant religion followers.

Table 4.1.4.Religion of Respondents

Characteristics		Response rate	
		Frequency	Percent
Respondents religion status	Muslim	162	79.8
	Orthodox	18	8.9
	protestant	23	11.3
Total		203	100.0

Source: Study Survey, 2018

Of total respondents, 155(76.4%) were Married, 23 (11.3%) were widowed and 25(12.3%) of them were divorced.

Table 4.1.5.Marital status rates of respondents

Characteristics		Response rates	
		Frequency	Percent
Marital status of respondents	Married	155	76.4
	Widowed	23	11.3
	Divorced	25	12.3
	Total	203	100.0

Source: Study Survey, 2018

According to the result of table 4.1.6 below shows, 37(18.2%), 79 (38.9%), and 87 (42.9%) of respondents were between age of 25-31, 32-38 and 39-45 years of age, respectively.

Table 4.1.6.Age of the respondent

Characteristics		Response rates	
		Frequency	Percent
Age of respondents	25-31	37	18.2
	32-38	79	38.9
	39-45	87	42.9
	Total	203	100.0

Source: Study Survey, 2018

In conclusion, according to the study result, more of the households were headed by male. This indicates that households in the study area were predominantly male headed, which is the same as the study country and also a common feature of most developing countries in general, and that of Sub-Saharan countries in particular. Almost around one in eight households were not educated (can't read and write). Surprisingly, there is no single respondent, who went further than high school educational level and unfortunately respondents aged greater than 40 years were not included in this study. Also the result of this study shows that family sizes of respondents were under the category of less than 5 (five).

4.1.2 Households Asset Ownership

This section provides economic index profile of respondent households; such general information is essential to the interpretation of finding and for understanding the results presented later in the discussion part. Basic characteristics collected include House ownership status, household possession/effects and livestock ownership status was examined and detail information was collected.

Table 4.1.7 survey result shows that, 192(94.6%) of respondents reported that, they are living in their own house and 11(5.4%) of them live in rented house. This study result indicated that, most of households are living in their own house; which is common in most of rural areas.

Table 4.1.7.Respondents/household House Ownership status

Characteristics		Response rates	
		Frequency	Percent
House ownership status of the household	Own house	192	94.6
	Rent house	11	5.4
	Total	203	100.0

Source: Survey Study, 2018

Results of table 4.1.8 shows that, of total respondents (Regarding to household effect), the majority 133(65.5%) of households have radio and 70(34.5%) do not have it.

Table 4.1.8.Households Access to Possess of Radio

Characteristics		Response rate	
		Frequency	Percent
Does this household have Radio?	**No**	70	34.5
	Yes	133	65.5
	Total	203	100.0

Source: Study Survey, 2018

According the result of table 4.1.8 below, the majority 168(56.5%) of households do not use gas stove to cook meals and only 35(17.2%) of them were reported that, they use gas stove as means of cooking meals for their household.

Table 4.1.9.Respondents household possess of gas stove

Characteristics		Response rates	
		Frequency	Percent
Does this household used	*No*	168	82.8
kerosene gas for cooking	*Yes*	35	17.2
Total		203	100.0

Source: Study Survey, 2018

Results of this study survey indicated under table 4.1.10 below, only 26 (12.8%) of respondents reported that, they have TV at home. However, the majority 177 (87.2%) of respondents doesn't have TV at their house. Note that, for this study the researchers didn't identify type and size of television.

Table 4.1.10.Respondents/household ownership status of TV

Characteristics		Response rates	
		Frequency	Percent
Does this household have TV	*No*	177	87.2
	Yes	26	12.8
	Total	203	100.0

Source: Study Survey, 2018

According to Table 4.1.11 below result shows, only 83 (40.8%) of respondents reported that, they have more than one kinds of livestock. However, the majority 120(59.2%) of respondents doesn't have more than one kinds of livestock or they don't have livestock at all.

Table 4.1.11.Household Ownership Status of Livestock's

Characteristics		Response rates	
		Frequency	Percent
Does this household have more	*No*	120	59.2
than two kinds of livestock	*Yes*	83	40.8
	Total	203	100.0

Source: Study Survey, 2018

4.2. Relationship between Socio-Economic Information and Net-Income of Households

4.2.1. Relationship between Additional Work and Saving Habit of Households

For every household/person income is a fundamental thing; the case is very serious when it is for household. In other word Income is the basic need at individual as well at country level. According table 4.2.1 result of the study, of total respondent 139(65.8%) of respondents reported that, they didn't save from their income. While 61(34.2%) of them said that, they save some part of their income.

According to the result of table 4.2.1 below, the majority 1632(59.6%) of them work additional work and only 82(41.4%) of them were reported that they don't participate in additional work.

Among the respondents those participate in additional work reports, only 28 (13.8) of them save from their income. Also from respondents those didn't participate in additional work only 36(17.7%) of them save from their income.

This study output indicates saving level of respondents is still very low. However, depending on the results of this study survey, there is a positive relationship between participating in additional work and saving habit of respondents. This relationship also takes households income to increase. According to keneyisian theory (1936), saving is the difference between income and expenditure. Saving is positive when income is greater than expenditure. This results

saving=investment, so when there is investment household productivity increase, and this increasing of productivity may be increase households' income in general.

Table 4.2.1. Relationship Between Additional Work and Saving habit

Characteristics	Response		Last year have you managed saving a part of your earning?		
			No	Yes	Total
Aside from your own work, have you done any work in the last seven days?	No	Count	85	36	121
		% within Aside from your own work, have you done any work in the last seven days?	70.2%	29.8%	100.0%
		% within Last year had you managed saving a part of your earning?	61.2%	56.2%	59.6%
		% of Total	41.9%	17.7%	59.6%
	Yes	Count	54	28	82
		% within Aside from your own work, have you done any work in the last seven days?	65.9%	34.1%	100.0%
		% within Last year had you managed saving a part of your earning?	38.8%	43.8%	40.4%
		% of Total	26.6%	13.8%	40.4%
	Total	Count	139	64	203
		% within Aside from your own work, have you done any work in the last seven days?	68.5%	31.5%	100.0%
		% within Last year had you managed saving a part of your earning?	100.0%	100.0%	100.0%
		% of Total	68.5%	31.5%	100.0%

Source: Study survey, 2018

4.2.2. Relationship between Access to Credit and Saving Habit of Households

According to the result of table 4.2.2 below, the majority 121(65.5%) of them have access to credit and only 72(35.5%) of them were reported that they don't have access to credit.

From the respondents those who have access to credit, only 22(30.6%) of them save from their income. Also from respondents those didn't have access to credit only 42 (32.1%) of them save from their income. Still the output of this study indicates that saving level of respondents is very low. However, depending on the results of this study survey, there is a negative relationship between access to credit and saving habit of respondents.

The result is agreement with the study conducted by one of the prerequisites to economic wellness is the access to credit. Since it bestowed one with opportunity to attain working capital that is capable of generating income or rather increase it. However, Odudo (2011) identified access to credit as a major socio-economic challenge to rural socio-economic development. According to Odudo (2011), this was because most of the rural residents do not have adequate security to meet the credit, as a result which help them to satisfy their household well-being.

Table: 4.2.2. Relationship between access to credit and saving

Characteristics	Response		Last year have you managed saving a part of your earning?		
			No	Yes	Total
Do you get any credit from your cooperative/MFI or any others for the last 5 years?	No	Count	89	42	131
		% within Do you get any credit from your cooperative/MFI or any others for the last 5 years?	67.9%	32.1%	100.0%
		% within Last year has you managed saving a part of your earning?	64.0%	65.6%	64.5%
		% of Total	43.8%	20.7%	64.5%
	Yes	Count	50	22	72
		% within Do you get any credit from your cooperative/MFI or any others for the last 5 years?	69.4%	30.6%	100.0%
		% within Last year has you managed saving a part of your earning?	36.0%	34.4%	35.5%
		% of Total	24.6%	10.8%	35.5%
	Total	Count	139	64	203
		% within Do you get any credit from your cooperative/MFI or any others for the last 5 years?	68.5%	31.5%	100.0%
		% within Last year has you managed saving a part of your earning?	100.0%	100.0%	100.0%
		% of Total	68.5%	31.5%	100.0%

Source: Study survey, 2018

4.2.3. Relationship between Certified Fair-Trade and Saving Habit of Households

According to the result of table 4.2.3 below, the majority 127(62.6%) of them reported that they are not member of certified fair-trade cooperative and only 76(37.4%) of them were reported that they are member of certified fair-trade cooperative member.

Out of the respondents those are member of fair-trade cooperative, 34 (53.1%) of them save from their income. Also from respondents those were not members of fair-trade cooperative only

30(23.6%) of them save from their income. As usual still this study survey result indicates saving level of respondents is very low. Here also there is a positive relationship between member of fair-trade certified cooperative and saving habit of respondents.

Table 4.2.3. Relationship between Fair-trade membership and Saving

Characteristics	Response		Last year have you managed saving a part of your earning?		
			No	Yes	Total
If you are a member of cooperative, is it Fair-trade certified cooperative?	No	Count	97	30	127
		% within If you are a member of certified cooperative; do you have any information at the time of process for Fair-trade certification?	76.4%	23.6%	100.0%
		% within Last year has you managed saving a part of your earning?	69.8%	46.9%	62.6%
		% of Total	47.8%	14.8%	62.6%
	Yes	Count	42	34	76
		% within If you are a member of certified cooperative; do you have any information at the time of process for Fair-trade certification?	55.3%	44.7%	100.0%
		% within Last year have you managed saving a part of your earning?	30.2%	53.1%	37.4%
		% of Total	20.7%	16.7%	37.4%
	Total	Count	139	64	203
		% within If you are a member of certified cooperative; do you have any information at the time of process for Fair-trade certification?	68.5%	31.5%	100.0%
		% within Last year have you managed saving a part of your earning?	100.0%	100.0%	100.0%
		% of Total	68.5%	31.5%	100.0%

Source: Study survey, 2018

4.2.4. Relationship between Cooperative Membership status and Saving Habit

According the result of table 4.2.4 below, the majority 107(52.7%) of them are cooperative member and only 96 (47.3%) of them were reported that they are member of cooperative.

Among the respondents those who have access to credit, only 31(32.3%) of them save from their income, and among the respondents those who were member of cooperative only 33 (30.8%) save from their income. The output indicates that saving habit of the respondents is very poor. However, depending on the results of this study survey, there is a positive relationship between cooperative membership and saving habit of respondents.

Table 4.2.4. Relationship between cooperative membership status and Saving

Characteristics		Response	Have you saved part of your earning last year?		
			No	Yes	Total
Are you coffee cooperative member?	No	Count	74	33	107
		% Within Are you coffee cooperative member?	69.2%	30.8%	100.0%
		% Within Have you saved part of your earning last year	53.2%	51.6%	52.7%
		% of Total	36.5%	16.3%	52.7%
	Yes	Count	65	31	96
		% within Are you coffee cooperative member?	67.7%	32.3%	100.0%
		% Within Have you saved part of your earning last year	46.8%	48.4%	47.3%
		% of Total	32.0%	15.3%	47.3%
	Total	Count	139	64	203
		% within Are you coffee cooperative member?	68.5%	31.5%	100.0%
		% % Within Have you saved part of your earning last year?	100.0%	100.0%	100.0%
		% of Total	68.5%	31.5%	100.0%

Source: Study survey, 2018

4.3. Relationship between Socio-Economic Information and Households consumption

Household consumption is one of the appropriate variables among the indicators to evaluate households' well-being. For this study, the researcher used household consumption depending on the socio-economic characteristics of the most developing countries in particular. To come up, this study used general household consumption level as proxy to evaluate well-being, because it is believed to be the most appropriate indicator variable.

4.3.1. Relationship between having saving account and Household consumption

According to table 4.3.1 result of the study, of total respondent 139(65.8%) respondents reported that, they didn't save from their income. While 61(34.2%) of them said that, they save part of their income.

According to the result of table 4.3.1 below, the majority 132(59.6%) of them work additional work and only 82(41.4%) of them were reported that they don't participate in additional work. According to respondents those participate in additional work reports, only 28 (13.8) of them save from their income. Also from respondents those didn't participate in additional work only 36(17.7%) of them save from their income. This study output indicates saving level of respondents is still very low. However, depending on the results of this study survey, there is a positive relationship between participating in additional work and saving habit.

Table 4.3.1. Relationship between saving account and Household consumption level

Characteristics	Response			General level of Household consumption?		
				No	Yes	Total
Does any member of this household have saving account at any financial institution ?	No	Count		79	49	128
		% within Does any member of this household have saving account?		61.7%	38.3%	100.0%
		% within General level of Household consumption?		54.1%	86.0%	63.1%
		% of Total		38.9%	24.1%	63.1%
	Yes	Count		67	8	75
		% within Does any member of this household have saving account?		89.3%	10.7%	100.0%
		% within General level of Household consumption?		45.9%	14.0%	36.9%
		% of Total		33.0%	3.9%	36.9%
	Total	Count		146	57	203
		% within Does any member of this household have saving account?		71.9%	28.1%	100.0%
		% within General level of Household consumption?		100.0%	100.0%	100.0%
		% of Total		71.9%	28.1%	100.0%

Source: Study survey, 2018

4.3.2. Relationship between Support from Government and Level of Consumption

According to table 4.3.2 result of the study, of total respondent 136(67.0%) respondents reported that, they didn't get support from government. While 67(31.1%) of them are said that, they get support from government.

According to the result of table 4.3.2 below, from the total number respondents which reported "didn't get support from government", 100(73.5%) of them were no satisfied in their general level of Household consumption and 36(26.5%) of them were reported that they are satisfied in their general level of Household consumption.

According to the result of table 4.3.2 below, from the total number respondents which reported "have support from government", 46(68.7%) of them were not satisfied in their general level of Household consumption while 21(31.3%) of them reported that they are satisfied in their general level of Household consumption.

Table 4.3.2. Relationship between support from government and level of consumption

Characteristics	Response			General level of Household consumption?		
				No	Yes	Total
Is there real/functional support from government for coffee production?	No	Count		100	36	136
		% within Is there real/functional support from government for coffee production?		73.5%	26.5%	100.0%
		% within General level of Household consumption?		68.5%	63.2%	67.0%
		% of Total		49.3%	17.7%	67.0%
	Yes	Count		46	21	67
		% within Is there real/functional support from government for coffee production?		68.7%	31.3%	100.0%
		% within General level of Household consumption?		31.5%	36.8%	33.0%
		% of Total		22.7%	10.3%	33.0%
	Total	Count		146	57	203
		% within Is there real/functional support from government for coffee production?		71.9%	28.1%	100.0%
		% within General level of Household consumption?		100.0%	100.0%	100.0%
		% of Total		71.9%	28.1%	100.0%

Source: Study survey, 2018

4.3.3. Relationship between Training Access and Level of Household Consumption

According table 4.3.3 result of the study, of total respondent 118(58.1%) respondents reported that, they didn't get any training access. While 85(41.9%) of them are said that, they get training access.

According the result of table 4.3.3 below, from the total number respondents which reported "didn't get any training access", 83(70.3%) of them were not satisfied in their general level of Household consumption and 35(29.7%) of them were reported that they were satisfied in their general level of Household consumption.

Table 4.3.3. Relationship between training access and level of Household consumption

Characteristics	Response		General level of Household consumption?		
			No	Yes	Total
Do you get any training from anybody regarding coffee production/price?	No	Count	83	35	118
		% within Do you get any training from anybody regarding coffee production/price?	70.3%	29.7%	100.0%
		% within General level of Household consumption?	56.8%	61.4%	58.1%
		% of Total	40.9%	17.2%	58.1%
	Yes	Count	63	22	85
		% within Do you get any training from anybody regarding coffee production/price?	74.1%	25.9%	100.0%
		% within General level of Household consumption?	43.2%	38.6%	41.9%
		% of Total	31.0%	10.8%	41.9%
	Total	Count	146	57	203
		% within Do you get any training from anybody regarding coffee production/price?	71.9%	28.1%	100.0%
		% within General level of Household consumption?	100.0%	100.0%	100.0%
		% of Total	71.9%	28.1%	100.0%

Source: Study survey, 2018

According the result of table 4.3.3 above, from the total number respondents which reported "get training access", 63(74.1%) of them were not satisfied in their general level of Household

consumption and 22(25.9%) of them were reported that they were satisfied in their general level of Household consumption.

According the result of table 4.3.3 above, from the total number respondents which reported "didn't get any training access", 83(70.3%) of them were no satisfied in their general level of Household consumption and from the total number respondents which reported "get training access", 63(74.1%) of them were not satisfied in their general level of Household consumption.

According the result of table 4.3.3 above, from the total number respondents which reported "didn't get any training access", 35(29.7%) of them were reported that they are satisfied in their general level of Household consumption and from the total number respondents which reported "get training access", 22(25.9%) of them were reported that they are satisfied in their general level of Household consumption. However, depending on the results of this study survey, there is a negative relationship between training access and level of Household consumption of respondents.

4.3.4. Relationship between Coffee Selling Place and Level of Household Consumption

According to table 4.3.4 result of the study, of total respondent 84(41.4%) of respondents reported that, they sell their coffee to retailers,49(24.1%) respondents reported that, they sell their coffee to local traders, 44(21.7%) respondents reported that, they sell their coffee to coffee to exporters, and 26(12.8%) respondents reported that, they sell their coffee to cooperatives.

According to the result of table 4.3.4 below, among the total number of the respondents those reported that they sell their coffee toretailer, 58 (69.0%) of them were not satisfied in their general level of Household consumption and 26(31.0%) of them were reported that they are satisfied in their general level of Household consumption.

According to the result of table 4.3.4 below, from the total number respondents which reported that they sell their coffee to local traders, 38 (77.6%) of them were not satisfied in their general

level of Household consumption and 11(24.4%) of them were reported that they were satisfied in their general level of Household consumption.

According to the result of table 4.3.4 below, from the total number respondents which reported delivering /selling their coffee toexporters", 31(70.5%) of them were not satisfied in their general level of Household consumption and 13(29.5%) of them were reported that they are satisfied in their general level of Household consumption.

According the result of table 4.3.4 below, from the total number respondents which reported delivering /selling their coffee to cooperatives", 19(73.1%) of them were not satisfied in their general level of Household consumption and 7(26.9%) of them were reported that they are satisfied in their general level of Household consumption.

Table 4.3.4. Relationship between coffee selling place and level of Household consumption

Characteristics	Response		General level of Household consumption?		
			No	Yes	Total
Farmers delivering /selling their coffee to?	Cooperative	Count	19	7	26
		% within Farmers delivering /selling their coffee to?	73.1%	26.9%	100.0%
		% within General level of Household consumption?	13.0%	12.3%	12.8%
		% of Total	9.4%	3.4%	12.8%
	Local traders	Count	38	11	49
		% within Farmers delivering /selling their coffee to?	77.6%	22.4%	100.0%
		% within General level of Household consumption?	26.0%	19.3%	24.1%
		% of Total	18.7%	5.4%	24.1%
	Exporters	Count	31	13	44
		% within Farmers delivering /selling their coffee to?	70.5%	29.5%	100.0%
		% within General level of Household consumption?	21.2%	22.8%	21.7%
		% of Total	15.3%	6.4%	21.7%
	To retailers	Count	58	26	84
		% within Farmers delivering /selling their coffee to?	69.0%	31.0%	100.0%
		% within General level of Household consumption?	39.7%	45.6%	41.4%
		% of Total	28.6%	12.8%	41.4%
	Total	Count	146	57	203
		% within Farmers delivering /selling their coffee to?	71.9%	28.1%	100.0%
		% within General level of Household consumption?	100.0%	100.0%	100.0%
		% of Total	71.9%	28.1%	100.0%

Source: Study survey, 2018

4.3.5. Relationship between access to extension worker and Household consumption

According to table 4.3.5 result, of total respondent 144(70.9%) of respondents reported that, they don not haveaccess to DA. While 59(29.1%) of them said that, they haveaccess to DA.

According the result of table 4.3.5 below, from the total number respondents those who reported "didn't have access to DA", 104(72.2%) of them were not satisfied in their general level of Household consumption and 40(27.8%) of them reported that they are satisfied in their general level of Household consumption. Of the total number respondents which reported "have access to DA", 42(71.2%) of them were not satisfied in their general level of Household consumption and 17(28.8%) of them reported that they are satisfied in level of Household consumption.

Table 4.3.5. Relationship between access to extension worker and Household consumption

Characteristics	Response		General level of Household consumption?		
			No	Yes	Total
Does this household have access to extension worker/DA?	No	Count	104	40	144
		% within Last year do you get any access to DA/is it visit you more than two times?	72.2%	27.8%	100.0%
		% within General level of Household consumption?	71.2%	70.2%	70.9%
		% of Total	51.2%	19.7%	70.9%
	Yes	Count	42	17	59
		% within Last year do you get any access to DA/is it visit you more than two times?	71.2%	28.8%	100.0%
		% within General level of Household consumption?	28.8%	29.8%	29.1%
		% of Total	20.7%	8.4%	29.1%
	Total	Count	146	57	203
		% within Last year do you get any access to DA/is it visit you more than two times?	71.9%	28.1%	100.0%
		% within General level of Household consumption?	100.0%	100.0%	100.0%
		% of Total	71.9%	28.1%	100.0%

Source: Study survey, 2018

4.3.6. Relationship between Productivity of Coffee and Household Consumption

According to table 4.3.6 result of the study, of total respondents 140(69%) of them reported that, HH productivity of coffee was not increased. While 63(31%) of them said that, HH productivity of coffee was increased.

According the result of table 4.3.6 below, from the total number respondents those who reported HH productivity of coffee was "not increased", 99(70.7%) of them were not satisfied in their general level of Household consumption and 41(29.3%) of them reported that they are satisfied in their general level of Household consumption. According the result of table 4.3.5 below, from the total number respondents those who reported HH productivity of coffee was "increased", 47(74.6%) of them were no satisfied in their general level of Household consumption and 16(25.4%) of them reported that they were satisfied in their general level of Household consumption.

The result indicates coffee productivity does not have much more impact on household consumption. According to this study coffee productivity and household consumption does not have positive relation. This is may be from many challenges faced by the respondents are: poor infrastructure, especially the road network, which was ranked highest when compared to the others. Due to the basic infrastructural challenges of the area, conveying agricultural and other economic produce to and from the market is a huge challenge. This usually leads to a low income for the residents since most agricultural products next coffee in the area are fresh (vegetables and fruits) and will have to be sold at a very low price or face the risk of running a loss as observed during data collection and as most of respondents reported.

Table 4.3.6. Relationship between productivity of coffee and Household consumption

Characteristics	Response		General level of Household consumption?		
			No	Yes	Total
Do you think this HH productivity of coffee is/was increased?	No	Count	99	41	140
		% within Do you think this HH productivity of coffee is/was increased?	70.7%	29.3%	100.0%
		% within General level of Household consumption?	67.8%	71.9%	69.0%
		% of Total	48.8%	20.2%	69.0%
	Yes	Count	47	16	63
		% within Do you think this HH productivity of coffee is/was increased?	74.6%	25.4%	100.0%
		% within General level of Household consumption?	32.2%	28.1%	31.0%
		% of Total	23.2%	7.9%	31.0%
	Total	Count	146	57	203
		% within Do you think this HH productivity of coffee is/was increased?	71.9%	28.1%	100.0%
		% within General level of Household consumption?	100.0%	100.0%	100.0%
		% of Total	71.9%	28.1%	100.0%

Source: Study survey, 2018

4.3.7. Relationship between access to information and level Household consumption

According to table 4.3.7 result of the study, of total respondent 129(63.5%) of respondents reported that, they canget information easily. While 74(36.5%) of them are said that, they have no easy access to information.

According the result of table 4.3.7 below, from the total number respondents those who reported "not get information easily", 89(69%) of them were not satisfied in their general level of Household consumption and 40(31%) of them were reported that they are satisfied in their general level of Household consumption.

According the result of table 4.3.7 below, from the total number respondents which reported were "get information easily", 57(77%) of them were not satisfied in their general level of Household consumption and 17(23%) of them were reported that they are satisfied in their general level of Household consumption. This result shows that,getting information determines their livelihood. Indeed, as their accesses to information increase their awareness regarding to price and market demand also increase.

Table 4.3.7. Relationship between get information easily and Household consumption

Characteristics	Response		General level of Household consumption?		
			No	Yes	Total
Do you have any information easily?	No	Count	89	40	129
		% within Do you got any information easily?	69.0%	31.0%	100.0%
		% within General level of Household consumption?	61.0%	70.2%	63.5%
		% of Total	43.8%	19.7%	63.5%
	Yes	Count	57	17	74
		% within Do you got any information easily?	77.0%	23.0%	100.0%
		% within General level of Household consumption?	39.0%	29.8%	36.5%
		% of Total	28.1%	8.4%	36.5%
	Total	Count	146	57	203
		% within Do you got any information easily?	71.9%	28.1%	100.0%
		% within General level of Household consumption?	100.0%	100.0%	100.0%
		% of Total	71.9%	28.1%	100.0%

Source: Study Survey, 2018

4.4. Econometric Analysis: Results and Discussions

4.4.1. Determinant Factors Affecting Small Scale Coffee Producer Household Well-Being

In the previous section we have seen that small scale coffee producer farmers' well-being and income were affected or determined by various variables. However, since we had not adjusted our analysis to each independent variable the observed difference households general consumption level and net income level may be explained by many factors at different level and magnitudes.

As stated previously under the methodology of the study, this study used three indicators to evaluate cumulative household well-being; namely education, health and living standard. This leads to four response variable. Those are,

1. *Education*

$$Y_{1i} = \begin{cases} 1 & If there is participation properly in one of education indicator listed above \\ 0 & If there is no participation properly in education indicator listed above \end{cases}$$

2. *Health*

$$Y_{2i} = \begin{cases} 1 & If there is no child mortality in the last\ 5\ year \\ 0 & If there is child mortality in the last\ 5\ year \end{cases}$$

3. *Living standard*

$$Y_{3i} = \begin{cases} 1 & If household have access to three and above out of living stands indicated above \\ 0 & If household have access to less than three out of living stands indicated above \end{cases}$$

4. *General household well-being status, if they household have access to at least in 1 of the 3 indicators listed above (proxy of the study)*

$$Y_{4i} = \begin{cases} 1 & Y_{1i} + Y_{2i} + Y_{3i} \geq 1 \\ 0 & Y_{1i} + Y_{2i} + Y_{3i} < 1 \end{cases}$$

For the last response we fit a binary logistic regression and the result of this analysis is presented in table 4.4.1 below. However, we fit the model in Stata.12 and checked the goodness of fit of the model. The regression result in table 4.4.1 shows that, the probability of the cumulative household well-being status. However, the extent to which these variables relate with the dependent variable is different. The extent of the relationship is explained as follows.

Explanatory variables used in the logistic regression are Marital status, Age of the wife, Family size, Wife's education, HH head education, Household headship status, Age of HH head , Total land size, Land for crop, primary coffee producer, Land for coffee, production beside coffee,

credit opportunity , Coffee selling place, Cooperative membership, Using technology (fertilizer, seeds, etc), Fair-trade membership, training opportunity, family help for overall production, health extensions access, market access, financial institution access, access to Infrastructure (access to road),Government support, aschool access , access to health station, Right market (fair price for their coffee), increase in productivity, permanent visits by extensions workers (DA), access to information , Total livestock ownership status

From all variables used in logistic Permanent visits by extensions workers (DA), Right market (fair price for their coffee), access to school, access to health station, access to financial institutions, Cooperative membership, Fair-trade membership, family help, health extensions access, Coffee selling place, Land for coffee, total Land size, Land for crop production, wife educational level, wife age and household head educational level are statistically significant at 1%, 5% and 10% significance level . See the following table 4.4.1 and appendix II for detail information

Table 4.4.1: Regression result for cumulative household well-being (n=203)

Dependent variable (cumulative result)	dy/dx	Standard error	Z	p> |z|
Marital status(Reference=Single)				
Married	0.82	0.2917	0.63	0.532
Divorced	0.06	0.2976	0.19	0.850
Widowed	0.11	0.2982	0.37	0.710
Age of the wife (reference=25-31)				
32-38	-0.13	0.0518	-2.59	0.010**
39-45	-0.19	0.1023	-1.87	0.052***
Wife's education (reference = No education)	-	-	-	-
Read and write	0.15	0.0673	2.19	0.029**
Primary school completed	0.24	0.1284	1.84	0.066***
Secondary school completed	0.04	0.1720	-0.28	0.763
HH head education (reference=No education)	-	-	-	-
Read and write	0.09	0.0858	0.76	0.445
Primary school completed	0.16	0.1050	1.80	0.071***
Secondary school completed	0.04	0.0877	0.35	0.729
Dummy HH headship	0.07	0.0717	0.90	0.662
Age of HH head (reference=25-31)				
32-38	-0.19	0.1412	-1.33	0.183
39-45	0.15	0.1079	1.16	0.247
Family size (reference=<5)				
Greater than or equals to five	0.08	0.0528	1.47	0.142
Total land size(reference <1ha)				
1.1-2ha	0.36	0.1318	2.77	0.006*
2.1ha-3ha	0.11	0.1181	0.98	0.332
3.1ha-4ha	-0.08	0.1490	-0.49	0.629
>4ha	0.14	0.3122	0.46	0.848
Land for crop (reference=<1ha)				
1ha-2ha	0.20	0.1076	0.18	0.854
2.1ha-3ha	0.39	0.1488	2.60	0.009*

	dy/dx	Std. Err.	z	P>|z|
Dummy for primary coffee producer	0.68	0.0541	12.57	0.000*
Land for coffee (reference <1ha)				
1.1-2ha	-0.80	0.0766	0.96	0.335
2.1ha-3ha	-0.60	0.0811	0.68	0,494
3.1ha-4ha	-0.15	0.0476	-2.89	0.004*
Dummy beside coffee production	0.08	0.0501	1.53	0.127
Dummy credit opportunity	0.03	0.0682	0.20	0.844
Coffee selling place(reference=Coop)				
Local traders (brokers)	-0.16	0.0749	-2.11	0.035**
Individual exporters	-0.15	0.0694	-2.22	0.026**
EXC	-0.02	0.0671	-0.40	0.688
Dummy Cooperative membership	-0.12	0.0403	-3.06	0.002*
Dummy Using technology	-0.08	0.0548	-1.43	0.152
Dummy Fair-trade membership	0.14	0.0395	3.49	0.000*
Dummy training	-0.02	0.0774	-0.21	0.832
Dummy family help	-0.17	0.0510	-3.23	0.001*
Dummy health extensions access	-0.24	0.0831	-2.84	0.002*
Dummy market access	0.10	0.0621	0.13	0.022**
Dummy financial institution access	0.15	0.0489	3.13	0.002*
Infrastructure (access to road)	0.13	0.0716	0.41	0.082**
Dummy Government support	-0.01	0.0499	-0.19	0.545
Dummy school access	-0.36	0.0708	5.06	0.000
Dummy health center access	0.26	0.0680	3.71	0.000
Dummy Right market (fair price for their coffee)	-0.12	0.0623	-1.78	0.075***
Dummy Productivity increase	-0.05	0.0549	-0.87	0.382
Dummy visits by extensions workers (DA)	-0.17	0.0610	-2.76	0.006*
Dummy information access	0.02	0.0493	-0.35	0.726
Dummy Total livestock	-0.02	0.0483	-1.58	0.113

Source: Authors' estimations (2018)

*significant at 1%, **significant at 5% and *** significant at 10%

Note: dy/dx for factor levels is the discrete change from the base level.

According to table 4.4.1, by making other variables constant, when there is changing in wife's educational level from illiterate to read and write category, the probability of households achieving better well-being reduces by 0.15(15%). In another word, by making other variables constant, when wife educational level changes from illiterate to read and write status, it is less likely to have better well-being. Also, by making other variables constant, when there is changing in wife's educational level from illiterate to primary educational level category, the probability of households to achieve better well-being increases by 0.24(24%). In another word, by making other variables constant, when wife educational level changes from illiterate to complete primary educational level status, it is more likely by 0.24 to have better well-being.

By making other variables constant, when there is change in wife's age from 25-31 to 32-38 age categories, the probability of households to achieve better well-being reduces by 0.13(13%). In another word, by making other variables constant, when wife's age changes from 25-31 to 32-38 level, it is less likely to have better (good) well-being. Also, By making other variables constant, when there is change in wife's age from 25-31 to 39-44 age categories, the probability of households to achieve better well-being reduces by 0.19(19%). In another word, by making other variables constant, when wife's age changes from 25-31 to 39-44 level, it is less likely by 0.19 to have good well-being for households. The result is in contrast to the study conducted by Michael Amurtiya et al, (2016), who found that age (the study didn't identify whether the age of hh head or other) have a positive effects on household well-being in general.

By making other variables constant, when there is change in household head educational level from illiterate to complete primary educational categories, the probability of household's to achieve better well-being increases by 0.16(16%). In another word, by making other variables constant, when household head educational level changes from illiterate to complete primary educational categories, it is more likely by 0.16 to have better (good) well-being. This result is in agreement with the study conducted by Michael Amurtiya et al, (2016), who found that education in general have a positive effects on household well-being

By making other variables constant, when there is change in household total land size from less than one (1) hectares to between 1 hectare – 2hectares categories, the probability of households to achieve better well-being increases by 0.26(26%). In another word, by making other variables constant, when household total land size changes from less than one (1) hectares (first category) to between 1 hectare – 2hectare (second category) categories, it is more likely by 0.26 to have better well-being level.

By making other variables constant, when there is change in household total land for crop production from less than one (1) hectares to between 2.1 hectare – 3 hectares category, the probability of households to achieve better well-being increases by 0.68(68%). In another word, by making other variables constant, when household total land for crop production changes from less than one (1) hectares (first category) to between 2.1 hectare – 3 hectare (third category) categories, it is more likely by 0.68 to have better household well-being.

By making other variables constant, primary coffee producer households have better well-being more likely by 0.68 when compared to households those do not produce coffee as a primary product. In another word, by making other variables constant, the probability of primary coffee producer households to achieve better well-being increases by 0.68(68%) when compared to others.

By making other variables constant, coffee cooperative member's households have better well-being less likely by 0.12 when compared to non-members. Or, by making other variables constant, the probability of cooperative member's households to achieve better well-being reduces by 0.12(12%) when compared to non-members. However, by making other variables constant, households those are fair-trade certified member have better well-being more likely by 0.14 when compared to non-members. Or, by making other variables constant, the probability of households those are fair-trade certified member to achieve better well-being increase by 0.14(14%) when compared to non-members.

By making other variables constant, households those have access to infrastructure (road access)

within 1km in their area have better well-being more likely by 0.13 when compared to households those have no access to road. In another word, by making other variables constant, the probability of households those have access to road (infrastructure) within their area to achieve better well-being increases by 0.13(13%) when compared to those who have no access to road. Infrastructural factors are important and the results agree with previous research such as Osman (2003) who says that main and feeder roads that improve access to necessary input fertilizer, seed, pesticide chemicals and other agricultural implements are very indispensable. Also, the result is in agreement with the study conducted by JehovanessAikaeli (2014), who stated, Among the many challenges faced by the respondents are: poor infrastructure, especially the road network, which was ranked highest (100%). Due to the basic infrastructural challenges of the area, conveying agricultural and other economic produce to and from the market is a huge challenge.

Also, This study result was almost in agreement with the study conducted byPetit (2007), who found that, in Ethiopia, the livelihoods of approximately one quarter of the population depend on the coffee sub-sector However, small-scale households coffee growers in Ethiopia face high transaction cost, lack of market information, poor infrastructure, and weak capital markets. From the variables stated by Petit (2007), almost all of them are the main determinant of household well-being according the study results.

By making other variables constant, households those have access to right market have better well-being more likely by 0.10 when compared to households those who do not have access to right market. In another word, by making other variables constant, the probability of households those have market access to achieve better well-being increases by 0.10(10%) when compared to those who have no access to market.

By making other variables constant, households those have access to financial institution within 5km in their area have better well-being more likely by 0.15 when compared to households those are do not have access to it. In another word, by making other variables constant, the probability

of households those have access to financial institution within their area to achieve better well-being increases by 0.15(15%) when compared to others. The result is in consistent with the study conducted by Mavole, J et al (2016), who found the access to financial institution have a positive effects on household well-being.

By making other variables constant, households those have access to health station within 5km in their area have better well-being more likely by 0.26 when compared to households those who do not have access to it. In another word, by making other variables constant, the probability of households those have access to health station within their area to achieve better well-being increases by 0.26(26%) when compared to those who don't have it.

By making other variables constant, households those have access to school within 5km in their area have better well-being less likely by 0.36 when compared to households those are do not have access to it. In another word, by making other variables constant, the probability of households those have access to school within their area to achieve better well-being reduces by 0.36(36%) when compared to household those who do not have access to it.

By making other variables constant, when there is changing in coffee selling place from cooperative to informal local traders (brokers) categories, the probability of households to achieve better well-being reduces by 0.16(16%). In another word, by making other variables constant, when coffee selling places changes from cooperative to informal local traders (brokers) categories, it is less likely by 0.16 to have better (good) well-being. Also, by making other variables constant, when there is changing in coffee selling place from cooperative to formal traders (exporters) categories, the probability of households to achieve better well-being reduces by 0.15(15%). In another word, by making other variables constant, when coffee selling place changes from cooperative to formal traders (exporters) categories, it is less likely by 0.15 to have better (good) well-being.

By making other variables constant, households those who sell their coffee products at right market (fair price) have better well-being less likely by 0.12 when compared to households those

who sell at right market. In another word, by making other variables constant, the probability of households those who sell their coffee products at right market to achieve better households well-being reduces by 0.12(12%) when compared to households those who do not sell at right market (fair price). Note that, this study used the concept of fair price (right market) is according to farmer's perception only.

Finally, By making other variables constant, households those are visited by DA at least ones per week permanently have better well-being likely by 0.17 when compared to households those are don't visited permanently. In another word, by making other variables constant, the probability of households those are visited by DA at least ones per week permanently to achieve better well-being reduces by 0.17(17%) when compared to households those who were not visited by development agent (DA) permanently.

4.4.2. Determinant Factors Affecting Small Scale Coffee Producer Household consumption

In the previous section we have seen that small scale coffee producer farmers' well-being and income were affected or determined by various variables. However, since we had not adjusted our analysis to each independent variable the observed difference households general consumption level and net income level may be determined by many factors at different level and magnitudes. For this, we consider Marital status, Family size (Household number),Educational level, producing other cash crop beside coffee, General credit opportunity from any financial institution (including cooperative), Financial institution information in the area, Technology used to produce coffee, Total farm land of household, Cooperative membership status, Fair-trade certification membership status, Total livestock ownership status, Household possession effect status and Infrastructure level status are included in the regression analysis to evaluate general level of household well-being (general household consumption level).

This study had information on household consumption level in six types: respondent's access to eating egg, Milk, chicken, other meat, Fish and Fresh fruit at household level.

This leads us to response variable. Namely,

1. *Egg consumption*
$$Y_{1i} = \begin{cases} 1 & If\ household\ consume\ at\ least\ one\ time\ per\ week\ egg \\ 0 & If\ household\ not\ consume\ at\ least\ one\ time\ per\ week\ egg \end{cases}$$

2. *Milk consumption*
$$Y_{2i} = \begin{cases} 1 & If\ household\ have\ access\ to\ milk\ at\ least\ ones\ per\ week \\ 0 & If\ household\ have\ not\ access\ to\ milk\ at\ least\ ones\ per\ week \end{cases}$$

3. *Food frequency*
$$Y_{3i} = \begin{cases} 1 & If\ household\ have\ access\ to\ eat\ food\ at\ least\ twice\ per\ day \\ 0 & If\ household\ have\ not\ access\ to\ eat\ food\ less\ than\ two\ times\ per\ day \end{cases}$$

4. *Other meat consumption*
$$Y_{4i} = \begin{cases} 1 & If\ household\ have\ access\ to\ eating\ other\ meat\ at\ least\ ones\ per\ 15\ day \\ 0 & If\ household\ have\ not\ access\ to\ eating\ other\ meat\ at\ least\ ones\ per\ 15\ day \end{cases}$$

5. *Clean Water*
$$Y_{5i} = \begin{cases} 1 & If\ household\ have\ access\ to\ clean\ water \\ 0 & If\ household\ have\ n't\ access\ to\ clean\ water \end{cases}$$

6. *Fresh fruit consumption*
$$Y_{6i} = \begin{cases} 1 & If\ household\ have\ access\ to\ eating\ fresh\ fruit\ at\ least\ ones\ per\ week \\ 0 & If\ household\ have\ n't\ access\ to\ eating\ fresh\ fruit\ at\ least\ ones\ per\ week \end{cases}$$

7. *General access to household consumption level, if they household have access to at least in 3 of the 6 indicators type listed above (proxy of the study)*
$$Y_{7i} = \begin{cases} 1 & Y_{1i} + Y_{2i} + Y_{3i} + Y_{4i} + Y_{5i} + Y_{6i} \geq 3 \\ 0 & Y_{1i} + Y_{2i} + Y_{3i} + Y_{4i} + Y_{5i} + Y_{6i} < 3 \end{cases}$$

For the last response we fit a binary logistic regression and the result of this analysis is presented in table 4.4.2 below.

According to 4.4.2.Logistic regression result, total land size, Total farm land of household, cooperative membership status, Livestock ownership, Access to Financial institution nearby, coffee production productivity, right market and total land for crop productions are statistically significant at 1%, 5% and 10% of significance level. We fit the model in Stata 12 and checked the goodness of fit of the model before using it for analysis as usual. For more details see table for 4.4.2 below and Appendix II.

According to table 4.4.2, by making other variables constant, when there is changing in household total land size from less than one (1) hectares to between 1 hectare – 2hectares categories, the probability of satisfying households consumption reduces by 0.32(32%). In another word, by making other variables constant, when household total land size changes from less than one (1) hectares (first category) to between 1 hectare – 2 hectare (second category) categories, it is less likely by 0.32 to have better consumption level. This study result indicates, as total land size increase household consumption level decrease. Or Total land size and household consumption level have negative relationship. This finding is not in consistency with the finding of Sati et al. (2015), who found that, keeping the effect of all other variables constant, a hectare increase in farm size increases livelihood in the area by 3.3%.

By making other variables constant, when there is changing in household total land for crop production from less than one (1) hectares to between 2.1 hectare – 3 hectares categories, the probability of satisfying household's consumption increase by 0.42(42%). In another word, by making other variables constant, when household total land for crop production changes from less than one (1) hectares (first category) to between 2.1 hectare – 3 hectare (third category) categories, it is more likely by 0.42 to have better household consumption status.

By making other variables constant, when there is changing in coffee selling place from cooperative to informal local traders (brokers) categories, the probability of households achieving better consumption status reduces by 0.03(3%). In another word, by making other variables constant, when coffee selling places changes from cooperative to informal local traders (brokers) categories, it is less likely by 0.03 to have better (good) consumption status.

By making other variables constant, coffee cooperative member's households have better consumption level less likely by 0.01 when compared to non-members. Or, by making other variables constant, the probability of cooperative member's households to achieving better consumption level reduces by 0.01(1%) when compared to non-members.

By making other variables constant, households those have got training at least twice per year have better consumption status less likely by 0.08 when compared to non-members. Or, by making other variables constant, the probability of households those have got training at least twice per year to achieving better consumption level reduces by 0.08(8%) when compared to households those have not got training. According to the result, training and household consumption have a negative relationship. This is may be, most of training delivered by governmental and non-governmental organization was focus on saving and climate changes, as respondents report indicate.

By making other variables constant, households those have access to financial institution within 5km in their area have better consumption status less likely by 0.21 when compared to households those are do not have access to it. In another word, by making other variables constant, the probability of households those have access to financial institution within their area to achieving better household consumption reduces by 0.21(21%) when compared to not have access it. Depending on the result, households those have access to financial institutions were may be, save part of their income than investing on household consumption. Financial institution access and household consumption level have a negative relationship.

By making other variables constant, households those their productivity from coffee production is increase for the last harvesting years have better consumption status less likely by 0.04 when compared to households their productivity don't increase. In another word, by making other variables constant, the probability of households productivity from coffee production increase for the last harvesting year to achieving better consumption reduces by 0.04(4%) when compared to their productivity from coffee don't increase. This is may be, households those their productivity increase were mostly invest their income to increase coffee production than investing on household consumption.

By making other variables constant, households those sell their coffee products at right market (fair price) have better consumption status less likely by 0.14 when compared to households those are sells at right market. In another word, by making other variables constant, the

probability of households those are sells their coffee products at right market to achieve better households consumption reduces by 0.14(14%) when compared to households those are not sell at right market (fair price). Note that: - this study used the concept of fair price (right market) is according to farmer's perception only. It is possible to say that, households those are selling their coffee to cooperative have better consumption level than households those are selling to the others.

Finally, by making other variables constant, households those have total livestock ownership (more than two kinds) have better consumption status more likely by 0.25 when compared to households those have less than or equals to two kinds of livestock. In another word, by making other variables constant, the probability of households those have more than two kinds of livestock's to achieving better consumption status is increase by 0.25(25%) when compared to households those have less than or equals to two kinds of livestock's ownership status. According to this study results livestock ownership status and household consumption level have a positive relationship.

Table 4.4.2: *Regression result for cumulative Household* **Consumption level** *(n=203)*

Dependent variable (cumulative result)	dy/dx	Standard error	Z	p> |z|
Marital status(Reference=Single)				
Married	0.08	.1203295	0.62	0.534
Divorced	0.09	.1384639	0.71	0.481
Widowed	0.13	.1451199	0.83	0.405
Age of the wife (reference=25-31)				
32-38	-0.04	.0992353	-0.49	0.623
39-45	0.07	1239857	0.57	0.570
Wife's education (reference = No education)	-	-	-	-
Read and write	-0.03	.0893401	-0.28	0.779
Primary school completed	0.14	.1921235	0.76	0.446
Secondary school completed	0.12	.2045591	0.55	0.584
HH head education (reference=No education)	-	-	-	-
Read and write	0.11	.1026713	1.01	0.314
Primary school completed	-0.09	.126781	-0.63	0.526
Secondary school completed	0.17	.1050599	1.60	0.107
Dummy HH headship	0.04	.0911436	0.46	0.646
Age of HH head (reference=25-31)				
32-38	-0.19	.1251678	1.59	0.111
39-45	-0.05	.1161198	-0.43	0.664
Family size (reference=<5)				
Greater than or equals to five	0.04	.0579364	0.56	0.577
Total land size(reference <1ha)				
1-2ha	-0.32	.1626816	-2.02	0.043**
2.1ha-3ha	-0.13	.1786616	-0.77	0.443
3.1ha-4ha	0.09	.1846857	0.54	0.597
>4ha	0.14	.1976114	0.66	0.507
Land for crop (reference=<1ha)				
1ha-2ha	-0.07	.1363428	-0.48	0.634
2.1ha-3ha	0.42	.1144778	-3.72	0.000*

Dummy for primary coffee producer	0.09	.0665188	1.19	0.233
Land for coffee (reference <1ha)				
1.1-2ha	0.03	.084384	0.30	0.766
2.1ha-3ha	-0.07	.1364137	-0.51	0.510
3.1ha-4ha	-0.04	.0673298	-0.60	0.542
Dummy beside coffee production	0.06	.0601853	1.06	0.291
Dummy credit opportunity	-0.03	.0671684	-0.50	0.615
Coffee selling place(reference=Coop)				
Informal Local traders (brokers)	-0.03	.099668	-2.24	0.011**
Formal Individual exporters	0.03	.1031649	0.31	0.757
EXC	-0.03	.0894388	0.34	0.736
Dummy Cooperative membership	-0.01	.0611284	-0.21	0.034**
Dummy Using technology	0.12	0733722	1.61	0.107
Dummy Fair-trade membership	-0.07	.0617021	-1.15	0.249
Dummy training	-0.08	.0735811	-0.24	0.003*
Dummy family help	0.07	.0642661	1.21	0.225
Dummy health extensions access	0.20	1578833	1.31	0.190
Dummy market access	-0.03	.0638195	-0.45	0.190
Dummy financial institution access	-0.21	.0741727	-2.91	0.004*
Infrastructure (access to road)	0.10	.0668273	1.33	0.124
Dummy Government support	-0.03	0613186	-0.52	0.604
Dummy school access	-0.01	.0807585	-0.02	0.992
Dummy health center access	-0.06	.072627	-0.80	0.624
Dummy Right market (fair price for their coffee)	-0.14	.0792646	-1.67	0.095***
Dummy Productivity increase	-0.04	.073309	-0.20	0.024**
Dummy visits by extensions workers (DA)	-0.09	.0873762	0.64	0.264
Dummy information access	0.05	.0578465	1.66	0.096***
Dummy Total livestock	0.25	.0713286	3.49	0.000*

Source: Authors' estimations (2018)

*significant at 1%, **significant at 5% and *** significant at 10%

Note: dy/dx for factor levels is the discrete change from the base level.

4.4.3. Determinant Factors Affecting Small Scale Coffee Producer Household Income

In the previous section we have seen that small scale coffee producer farmers' well-being, consumption were affected or determined by various variables. Also under this section we had adjusted our analysis to each independent variable. The observed may explain by many factors at different level and magnitudes. For this sub section, we consider Family size (Household number), Educational level, Producing other cash crop beside coffee, credit opportunity from any financial institution (including cooperative), Financial institution information in the area, technology used to produce coffee, total farm land of household, Cooperative membership status, Fair-trade certification membership status, total land for agriculture, total land for crop production, total land for coffee production, total livestock ownership status, access to training, government support and Infrastructure (road access) are included in the regression analysis to evaluate cumulative level of household Net-income.

For the case of this study household Net-income is take 1 value if the difference between estimated household income and estimated household expenditure is positive, otherwise, 0. The indicator questioner to evaluate estimated total expenditure and estimated total income is formulated by considering the situation in developing countries in generally and considering rural areas in particularly. The study used both economic and non-economic characteristics of households and individuals simultaneously for and considering their joint effects on household net-income. However, the study does not include the farmer's time and family wages for producing and selling the products.

According to Logistic regression result indicated in 4.4.3 below, total land size (Total farm land of household), total land for crop production, using of technology (fertilizer, seeds and other inputs) for production, Fair-trade certification membership status, Livestock ownership, access to infrastructures (road access) with in 1km, access to health extension, access to DA, access to school within 5km and access to information are statistical significant at 1%, 5% and 10% of

significance level. We fit the model in Stata 12 and checked the goodness of fit of the model before using it for analysis..

Table 4.4.3. Logistic regression result for household Net income (n=203)

Dependent variable (cumulative result)	dy/dx	Standard error	Z	p> |z|
Age of the wife (reference=25-31)				
32-38	0.13	.0887242	1.45	0.145
39-45	0.16	.1052366	1.38	0.269
Wife's education (reference = No education)	-	-	-	-
Read and write	-0.10	.0791918	-1.34	0.180
Primary school completed	0.15	.1377029	-1.06	0.281
Secondary school completed	0.11	2281807	.049	0.666
HH head education (reference=No education)	-	-	-	-
Read and write	0.08	.0850153	0.91	0.364
Primary school completed	0.19	.1639444	1.10	0.372
Secondary school completed	0.24	.1050955	2.24	0.025**
Dummy HH headship	-0.10	0919488	-0.99	0.320
Age of HH head (reference=25-31)				
32-38	-0.06	.1521962	-0.58	0.563
39-45	0.08	.1296161	0.54	0.586
Family size (reference=<5)				
Greater than or equals to five	0.03	.0601357	0.55	0.580
Total land size(reference <1ha)				
1-2ha	0.22	.1115618	2.03	0.042**
2.1ha-3ha	0.34	.069697	4.86	0.000*
3.1ha-4ha	0.27	.0974583	2.86	0.004*
>4ha	0.14	.092893	1.53	0.128
Land for crop (reference=<1ha)				
1ha-2ha	-0.26	.1257292	-2.10	0.036**
2.1ha-3ha	-0.25	.1874712	-1.50	0.133
Dummy for primary coffee producer	0.05	.0629909	0.68	0.292

		dy/dx	Std. Err.	z	P>z
Land for coffee production (reference <1ha)					
	1.1-2ha	0.05	.0832739	0.98	0.327
	2.1ha-3ha	0.10	1094593	0.96	0.336
	3.1ha-4ha	0.01	.0664406	0.13	0.592
Dummy beside coffee production		0.06	.0595261	-1.05	0.293
Dummy credit opportunity		0.01	.0642702	1.54	0.125
Coffee selling place(reference=Coop)					
	Informal Local traders (brokers)	0.05	0964161	0.49	0.011**
	Formal Individual exporters	-0.04	0964326	-0.33	0.757
	ECX	0.01	.0887345	0.03	0.973
Dummy Cooperative membership		0.06	0565685	0.92	0.359
Dummy Using technology		0.13	.0689331	1.82	0.066***
Dummy Fair-trade membership		0.12	.0610758	1.91	0.055***
Dummy training		0.06	.0765236	1.15	0.249
Dummy family help		-0.09	.0625637	-1.11	0.257
Dummy health extensions access		-0.29	.0730498	-4.01	0.000*
Dummy market access		-0.03	0618353	-0.33	0.275
Dummy financial institution access		-0.05	.0781008	0.52	0.802
Infrastructure (access to road)		0.22	.0670789	3.24	0.001*
Dummy Government support		0.09	0603109	1.35	0.175
Dummy school access		0.20	.0865454	2.33	0.020**
Dummy health center access		-0.07	.0746204	-0.94	0.347
Dummy Right market (fair price for their coffee)		-0.03	0797592	-0.15	0.380
Dummy Productivity increase		-0.04	0721684	1.34	0.180
Dummy visits by extensions workers (DA)		0.16	0886786	2.10	0.036
Dummy information access		0.17	0552926	2.98	0.003**
Dummy Total livestock		0.20	0619512	3.20	0.001

Source: Authors' estimations (2018)

*significant at 1%, **significant at 5% and *** significant at 10%*

Note: dy/dx for factor levels is the discrete change from the base level.

According to logistic regression in table 4.4.3 above, the probability of household Net-income level shows direct relationships with some explanatory variables and in direct relationship with the others. However, the extent to which these variables relate with the dependent variable is different. The extent of the relationship is explained as follows. For further information please see appendix II

According to table 4.4.3 above indicates, by making other variables constant, when there is changing in household head educational level from illiterate to complete primary educational categories, the probability of households net-income to be positive (estimated expenditure is less than estimated income) increase by 0.24(24%). In another word, by making other variables constant, when household head educational level changes from illiterate to complete primary educational categories, it is more likely by 0.24 to have positive household net-income. Education of the household head was significant at the 5% level and its coefficient had a positive sign. This indicated that the higher the level of education of the household head, the positive the household net-income.

The implication of this finding is that education leads to capable household management and, crucially, improves economic performance of the household as a whole. This indicates household heads with relatively better education are more likely to have skills and opportunities to successfully diversify into other income-generating activities, in addition to farm activities. Moreover, the productivity of individuals with better education who are engaged in coffee producing activities is also likely to be better when compared to less educated farmers. This result is in agreement with the study conducted by DayalTalukder, (2014), who found that, the correlation between household income from agricultural activities and household head educational level have a positive relationship.

By making other variables constant, when there is changing in household total land size from less than one (1) hectares to between 1 hectare – 2 hectares categories, the probability of households to have a good (positive) net-income increases by 0.22(22%). In another word, by making other variables constant, when household total land size changes from less than one (1)

hectares (first category) to between 1 hectare – 2hectare (second category) categories, it is more likely by 0.22 to have better household net-income level. This finding is in agreement with the findings of Sati et al. (2015) and Amurtiya, M et al, (2016), who founds that total land size affects positively household income.

By making other variables constant, when there is changing in household total land size from less than one (1) hectares to between 2.1 hectare – 3 hectares categories, the probability of households to have a good (positive) net-income increases by 0.34(34%). In another word, by making other variables constant, when household total land size changes from less than one (1) hectares (first category) to between 1 hectare – 2hectare (third category) categories, it is more likely by 0.34 to have better household net-income level.

By making other variables constant, when there is changing in household total land size from less than one (1) hectares to between 3.1 hectare – 4 hectares categories, the probability of households to have a good (positive) net-income increases by 0.27(27%). In another word, by making other variables constant, when household total land size changes from less than one (1) hectares (first category) to between 1 hectare – 2hectare (fourth category) categories, it is more likely by 0.27 to have positive household net-income level. This result is in agreement with the study conducted by DayalTalukder (2014), who found that land size have a positive effects on rural household income.

By making other variables constant, when there is changing in household total land for crop production from less than one (1) hectares to between 1 hectare – 2 hectares categories, the probability of households achieving positive net-income reduces by 0.26(26%). In another word, by making other variables constant, when household total land for crop production changes from less than one (1) hectares (first category) to between 2.1 hectare – 3 hectare (third category) categories, it is less likely by 0.26 to have positive household net-income.

By making other variables constant, when there is changing in coffee selling place from cooperative to informal local traders (brokers) categories, the probability of households at

positive net-income reduces by 0.05(5%). In another word, by making other variables constant, when coffee selling places changes from cooperative to informal local traders (brokers) categories, it is less likely by 0.05 to have positive (good) net-income.

By making other variables constant, households those are used technology (fertilizer, seeds and etc, ...) have positive net-income more likely by 0.13 when compared to households those are not used it. In another word, by making other variables constant, the probability of households those are used technology to achieving positive net-income increase by 0.13(13%) when compared to those don't used it.

By making other variables constant, households those are fair-trade certified members have better to incur positive net-income is more likely by 0.12 when compared to non-certified members. Or, by making other variables constant, the probability of fair-trade certified member's to achieve positive net-income increase by 0.12(12%) when compared to non-certified members.

By making other variables constant, households those are visited by health extension workers at least once per week permanently have better opportunity to incur positive net-income is less likely by 0.29 when compared to those households don't visited permanently. Or, by making other variables constant, the probability of households those are visited by health extension workers at least once per week permanently to achieve positive net-income reduces by 0.29(29%) when compared to those households don't visited by health extension workers at least once per week permanently. This is may be, clinic fee of households less when compared to households those are constraints of health extension. Results indicated household those are visited by health extension was more health than the other. As a result labour force of the households is more participate on farming and non-farming activities than the other. Finally, their activities increase household's productivity and then increase their income.

By making other variables constant, households those have access to infrastructure (road access for transportation) within 1km in their area have better (positive) net-income more likely by 0.22

when compared to households those are do not have access to it. In another word, by making other variables constant, the probability of households those have access to infrastructure within their area to achieving positive net-income increase by 0.22(22%) when compared to those don't have access to it. The analysis also found that the variable on how frequently roads were passable over the year was significant at the 5% level and had a positive sign. This shows that the less often roads were travelable, the less the net-income of households, mainly because of market inaccessibility.

One of the life-threatening problems faced by rural communities, like those of other developing countries, is the lack of efficient means of transport, including road infrastructure. As a consequence, lots of products in rural areas can remain unsold or are sold at low prices due to lack of market competitors. This problem is very common in Ethiopia and the case is more sensitive issue in the study area. This study result is in agreement with the study conducted by JehovanessAikaeli, (2010), who found that, road infrastructure have a positive effects on rural household income.

By making other variables constant, households those have access to primary school at least within 5km in their area have better net-income more likely by 0.20 when compared to households those are do not have access to it. In another word, by making other variables constant, the probability of households those have access to primary school within their area to achieving positive net-income increase by 0.20(20%) when compared to those don't have it.

By making other variables constant, households those have total livestock ownership (more than two kinds) have better net-income status more likely by 0.20 when compared to households those have less than or equals to two kinds of livestock. In another word, by making other variables constant, the probability of households those have more than two kinds of livestock's to achieving positive net-income status is increase by 0.20(20%) when compared to households those have less than or equals to two kinds of livestock's ownership status. According to this study results livestock ownership status and household consumption level have a positive relationship. Results indicated that ownership of non-farm economic (livestock) activities was

also significant to income generation and thus poverty reduction. The coefficient of rural non-farm activities had a positive sign and was significant at the 1% level. This finding is also, in agreement with the study conducted by JehovanessAikaeli, (2010) on rural household in Tanzania, who found the positive relationship between non-farm economic activities and household income.

By making other variables constant, households those have access to information (access to market price and demand mostly) easily have better (positive) net-income more likely by 0.17 when compared to households those are do not have access to it. In another word, by making other variables constant, the probability of households those have access to information to achieve positive net-income increase by 0.17(17%) when compared those are constraints of information. This result indicates that rural communities having a large number of people with efficient means of communications were better linked to the market and had higher incomes than those who were constrained by information asymmetry. Information barriers impact the investment climate in all LDCs and this finding reveals the significant association of these constraints with net-income deficiency. This finding is consistent with the finding by JehovanessAikaeli, (2010), who found positive association between household income and information access.

Finally, By making other variables constant, households those are visited by development agents at least ones per week permanently have better well-being less likely by 0.16 when compared to households those are don't visited permanently. In another word, by making other variables constant, the probability of households those are visited by DA at least ones per week permanently to achieving positive net-income reduces by 0.16(16%) when compared to households those are don't visited by development agent (DA) permanently.

CHAPTER FIVE

CONCLUSION AND POLICY IMPLICATION

5.1. Conclusion

This study identified that the small-scale coffee producer households' well-being status is determined by education of the household head and the house wife, total land size the households possess, land for crop production, weather coffee is their primary product or not,fair-trade membership status, access to financial institution, access to health station, access to school, The place where they sell their coffee, selling their coffee products at right time and fair price and access to agricultural extension workers have a significant impact on cumulative household well-being status. However, level and magnitude of the impact is different.

According to the study result, Educational level of household head and house wife is statistically significant in affecting cumulative households' well-being. When there is change in the educational level of the household head and the house wife the chance of the households to achieve better well-being will be changed to the same direction. This means in another words better family education leads to better wellbeing. Also, an increasein the age of house wife reduces the chance to achievebetter well-being. The regression output indicates that there is a positive relationship between total land size and land for crop production and cumulative household well-being. Households those who produce coffee as a primary product are more likely to be at higher level of wellbeing by0.68(68%) than households those who donot produce coffee as a primary product. By making other variables constant, coffee cooperative member households have better well-being status by 0.12(12%) when compared to non-members. However, by making other variables constant, households those are fair-trade certified member have better well-being more likely by 0.14 when compared to non-members.

Moreover, by making other variables constant, the probability of households those have access to financial institution to achieve better well-being increase by 0.15 when compared those who

have no financial institution. Leaving other variables constant, when there is change in the place the households sell their coffee is changed from cooperative to informal traders, the probability of that households to achieve better well-being reduces by 0.16(16%).

In conclusion, receiving fair price, access to right market, availability of infrastructures such as road and health station has a positive impact on well-being of households. In contrast to this, access to school, cooperative membership status and having extension worker (DA) have a negative relationship with well-being of households in the study area.

5.2. Policy Implications

As indicated above, this study proved that the currency from exported agricultural products was higher than any sector for many years in general and currency from coffee accounts the lions share in particular.However, the infrastructures(road, health center and school) development in this area was very low when compared to the part of the country. Within parallel, affects market and information access; which directly affect household income in general and price of commodity in particular. Also, access to financial institution, coffee selling place, Fair-trade certification, cooperative membership status, information access, access to DA and health extension have the significant impact on household well-being, consumption and income. Thus the result suggest that, government of Ethiopia should focus on infrastructural investments for the mostly forgettable areas, but the mostly contributor areas for Ethiopia currency revenue and GDP. Since infrastructure is a backbone for every activities and sustainable development of the region. So, this sector needs a gear policy reform for fair distribution of income from growth and development of the country. To do this those marginalized producers are also having the right to ask the appropriate development according to their contribution in the growth and development of their country.In deed the institutional reform and socio-economic characteristics stated above also need policy amendments and subsidy from government of Ethiopia and as well as Oromia regional state. Thus the results suggest that there need to be policies geared towards enhancing production of coffee and increasing efficiency of farmers so as to enhance their productivity and export-competitivenessof this commodity.

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JIMMA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ECONOMICS

MSc. IN ECONOMIC POLICY ANALYSIS

`Questionnaires to be responded by small-scale coffee producer households in manna woreda`

Dear respondent,

I am a graduate student in the department of Economics, Jimma University. Currently, I am undertaking a research entitled *'factors affecting small-scale coffee producer households well-being in southwest ethiopia: the case of oromia regional state, Jimma zone, Manna woreda*. You are one of the respondents selected to participate on this study. Please assist me in giving correct and complete information to present a representative finding on *'factors affecting small-scale coffee producer households well-being in southwest ethiopia:* Your participation is entirely voluntary and the questionnaire is completely anonymous.

Finally, I confirm you that the information that you share me will be kept confidential and only used for the academic purpose. No individual's responses will be identified as such and the identity of persons responding will not be published or released to anyone. All information will be used for academic purposes only.

Thank you in advance for your cooperation and dedicating your time!

Nejat Kemal

Thank you in advance.

Instructions

- ✓ No need of writing your name.

✓ Make a circle for a question with alternatives and fill the blank space after reading the questions carefully.

Part I: - Background characteristics information

1. Kebele_____
2. Sex of respondents   1= Male 2=Female
3. Age of the respondent?_____
4. Ethnicity of the respondent ; 1=Oromo 2=Amhara 3=Yem 4 = Dawuro 5=others
5. Religion : 1=Muslim =2 Orthodox   3=Protestant   4=Wakefata 5= others
6. Marital status: 1=Single 2 =Married   3= Widowed   4= Divorced
7. Educational level :_____
8. Number of household member:_____
9. Are you head of the Household?   1=Yes   0=No
10. If yes, go to Q 10, If, No what is the relationship to the head of the household?_____
11. How old is the head of the household 1=18-24 2=25-31 3=32-38 4=39-44 5=>44
12. Ethnicity of the head 1=Oromo 2=Dawuro 3 =Amhara 4=Yem 5=Wolayita 5=others
13. Religion of the hh head: 1=Muslim =2 Orthodox 3=Protestant 4=Wakefata 5= others
14. Does the head of the household ever attend school? 1=Yes 0=No
15. If your answer for Q 15 is yes, what is the highest grade completed?_____
16. Do you have a children within school age; 1= Yes 0=No
17. If your answer for Q 17 is yes, number of total children?_____
18. If your answer is Yes for Q17, number/s of children under school age?_____
19. If your answer is yes for Q 17, how many of them are go to school? _____
20. Do your children help you in any works at home? 1= Yes 0=No
21. If your answer 21 is yes what age they are/is?_____
22. Generally speaking do you remember that the most difficult time phase you regarding to you or your family during the last five years. 1=Yes 0=No
23. If your answer for Q 23 is yes, what kind of difficult/problem?_____
24. If yes for Q 23, how do you manage the difficulties? _____
25. Does this household own any land that can be used for agriculture? 1=Yes 0=No
26. If your answer for Q 27 is yes, specify total hectares of farm land? _____
27. If your answer for Q 27 is yes, how many hectares of land used to produce permanent crops; like, sorghum, maize, teff and etc…? _____
28. From your total farm land how many hectares is unused/not cultivated? _____
29. Do you produce/farm coffee? 1= Yes   0=No
30. If your answer for Q 30 is yes how many hectares from your total farm land?_____
31. Have you made additional investment on coffee during the last 5 years?1= Yes 0=No
32. If your answer is yes for Q number 31, what is your source of land? _____

33. If your answer is by reducing land of crop production, why? _____

34. Besides producing coffee, do you have other cash crop products? 1= Yes 0=No

35. The land owned by this household and used for farm is?1= certified 0=not-certified

36. Does this household have the following household effects? Circle your answer

HOUSEHOLD ASSETS		Code	Response	When did you buy it?
33.1	The household possess a TV?	1 = Yes	0 = No	1=before 3 years 2=after 3 years
33.2	Radio?	1 = Yes	0 = No	1=before 3 years 2=after 3 years
33.3	Tape recorder/CD player?	1 = Yes	0 = No	1=before 3 years 2=after 3 years
33.2	Gas stove?	1 = Yes	0 = No	1=before 3 years 2=after 3 years
33.2	Kerosene stove?	1 = Yes	0 = No	1=before 3 yrs 2=after 3 yrs
33.2	Electric stove?	1 = Yes	0 = No	1=before 3 years 2=after 3 years
33.2	Bicycle?	1 = Yes	0 = No	1=before 3 yrs 2=after 3 yrs
33.2	Motor cycle?	1 = Yes	0 = No	1=before 3 years 2=after 3yrs
33.2	Car/gari?	1 = Yes	0 = No	1=before 3 years 2=after 3 years
33.2	Plow?	1 = Yes	0 = No	1=before 3 years 2=after 3 years
33.2	Bed net?	1 = Yes	0 = No	1=before 3 years 2=after 3 years
33.2	Table?	1 = Yes	0 = No	1=before 3 years 2=after 3 years
33.2	Spring mattress?	1 = Yes	0 = No	1=before 3 years 2=after 3 years
33.2	Foam/sponge mattress?	1 = Yes	0 = No	1=before 3 years 2=after 3 years
33.2	Cotton mattress?	1 = Yes	0 = No	1=before 3 years 2=after 3 years
33.2	Grass mattress?	1 = Yes	0 = No	1=before 3 years 2=after 3 years
33.2	Chair or stool?	1 = Yes	0 = No	1=before 3 years 2=after 3 years

37. How many times do you/this household usually eat the following food?

Eggs	1=>once a day 2=once a day 3=once every 3 days 4=once a week 5=rarely 6=never
Milk	1=>once a day 2=once a day 3=once every 3 days 4=once a week 5=rarely 6=never
Chicken	1=> once a day 2=once a day 3=once every 3 days 4=once a week 5=rarely 6=never
Other Meat	1=>once a day 2=once a day 3=once every3 days 4=once a week 5=rarely 6=never
Fish	1=>once a day 2=once a day 3=once every 3 days 4=once a week 5=rarely 6=never
Fresh Fruit	1=> once a day 2=once a day 3=once every 3 days 4=once a week 5=rarely 6=never

38. Does this household have the following livestock's? Circle and mark your answer

Livestock's	Acquired		Where the asset is used?	How the expense was covered?
	Circle your response 1 =Yes 0 =No	If yes, how many? number	1=For Household 2=For business	1=From local lender with interest 2=From household income 3=Interest Free from relatives 4=From MFI 5=Other-----------
Ox				
Cow				
Hybrid cow				
Donkey				
Goat				
Sheep				
Hen				
Bee				

39. Is there any improvements or additional made for your house which cost above 3,000 birr for the last two years period?   1= Yes   0=No

40. If your answer, yes for Q 42 list type of improvement (more than 1 answer is possible)_____

41. What is the main source of income for the household? 1=Agriculture   2=non agriculture

42. How do you rate source of household income over the last 3 years? _____

43. How do you rate overall household income over the last 3 years? _____

44. Have you done any aside work in the last seven days?1=Yes 0=No

45. In the last seven days, have you done any of additional any work?   1= Yes   0=No

46. Have you done any work in the last 12 months? 1= Yes   0=No

47. What have you been doing for most of the time over the last 12 months? _____

48. How do you rate source of your personal income over the last 12 months? _____

49. How do you rate overall personal income over the last 12 months? _____

50. Are you member of any financial institution? 1=Yes 0=No

51. If your answer for Q 51 is yes, name of Financial institution_____

52. Is there any bank/credit association/micro finance around your place? 1= Yes 0=No

53. Does any member of this household have saving account?   1= Yes 0=No

54. If your answer for Q 54 yes, from whom? 1=MFIs 2=Bank 3=From both   4=other

55. Do you save monthly?   1= Yes 0=No

56. If yes for Q 56 how much do you save monthly?_____

57. Why you are saving? _____

58. Source of saving money? _____

59. If your answer is No for Q 56, why you are not saving? _____

60. Have you ever taken loan greater than 5000 birr in the last 3 years? 1= Yes 0=No

61. If your answer is yes for Q 61 is yes, from whom?_____

62. If your answer for Q number 61 is yes; what is your purpose for loan? _____

_____

63. Did you face any difficulty in repaying your loan in the last loan round? 1= Yes 0=No
64. If yes for Q. 64, what caused your repayment problems? _____
_____
65. If yes for Q. 64, how did you manage the difficulties? _____
66. How do you rate the impact of farming/producing coffee to increase your source and level of income generating for your household? _____
67. If you are producing coffee, what are the main problems face you? _____
68. If you are not producing coffee, please explain your reason?_____
_____
69. If you have access to producing coffee, to what extent you think it would improve your source and level of income? _____
70. Experience on coffee farming in years? _____
71. Farmers delivering /selling their coffee to? _____
72. Is there any hired labour for coffee production? 1=Yes   0=No
73. If your answer is yes for Q 73 above how you rate the cost? _____
74. Are you coffee cooperative member? 1=Yes 0=No
75. If yes for Q 75 above, for how many years? _____
76. If your answer for Q75 is yes, is it fair trade certified? 1=Yes   0=No
77. If yes for Q 75 above, for how many years?   1=Yes   0=No
78. If you answer is yes for Q 75, do you have any position? _____
79. Is there any member of this household have position in any offices? 1=Yes 0=No
80. If yes for Q 74 above, have you got any credit from your coop?   1=Yes 0=No
81. If yes for Q 75 above, do you receive any payment from your coop? 1=Yes 0=No
82. If yes for question number 74, which Union? _____
83. If your answer is yes for question number 74 what is your reason? _____
_____
84. If your answer is No for question number 74 why? _____
_____
85. Do you think being a certified cooperative member is advantageous? 1=Yes 0=No
86. If your answer is Yes for Q 86, what are the main advantages:
_____
87. Do you know what Fair-trade is?   1=Yes 0=No
88. If your answer yes for Q 88, how do you describe Fair-trade_____
_____
89. If you are a member of certified cooperative; do you have any information at the time of process for Fair-trade certification?   1=Yes 0=No
90. Do you know your cooperative has any other certificate other than Fair-trade? 0) Yes 1) No
91. Is there a price difference between Fair-trade certified and not certified coffees in the market (global market)?   1=Yes 0=No

92. Is there any change in the market demanding for Fair-trade Certified coffee compared with not certified coffees?   1=Yes   0=No

93. If your answer for question 93 yes, how do you describe the change in market demand?
_____

94. To what extent do you believe that Fair-trade certification can be one of an important factor for coffee sector in accessing and entry to different global market and better price?
_____

95. Do you get any credit from your cooperative last 2 years   1=Yes 0=No

96. Do you get second payment from your cooperative?   1=Yes 0=No

97. Does your cooperative treat you equally with other members?   1=Yes 0=No

98. Do you believe your cooperative is economically transparent to its members, such as declaring profit, yearly costs, and sales of coffee?   1=Yes 0=No

99. Where do you sell your coffee? _____

100. Have you ever get training?   1=Yes 0=No

101. If your answer for question number 40 is yes what kind of training? _____

102. Does your children/family help you in your coffee production activities?   1=Yes 0=No

103. If your answer for question number 30 is No, what age are they? _____

104. Do you know your cooperative gets Fair-trade premium each year from sale? 1=Yes 0=No

105. Do you know that there is a price difference between Fair-trade certified and not certified coffees? 1=Yes 0=No

106. What benefits do you get from Fair-trade premium? _____

107. Are you happy with the services you are getting from your cooperative? 1=Yes 0=No

108. Do you believe Fair-trade certificate is important for you and your family or for your community? 1=Yes 0=No

109. Are your farm and/or processing site free from evidence that primary forest or nationally protected areas have been cut at any time in the last 5 years? 1=Yes 0=No

110. If your answer for question number 51 is yes, why?
_____

111. Is there a price difference between Fair-trade certified and not certified coffees in the global market?   0) Yes 1) No

112. Is there any change in the market demanding for fair-trade certified coffee compared with not certified coffees?   0) Yes 1) No

113. To what extent do you believe that Fair-trade certification can be one of an important factor for coffee sector in accessing and entry to different global market and better price?
_____

114. How many round did you cultivate seeds for environmental protection for the last three years?_____

115. Is there any new school, road and bridge construction for last three years in your area? 1=Yes 0=No

116. If your answer for Q 116 is yes, do you know/explain their source of fund/ income?
_____

117. Usually, whom do you apply to, in case of illness? _____

118. Where was your last child born? _____

119. Who did help you/your wife during last birth? _____

120. Your children's have been vaccinated? 1=Yes   0=No

121. Have you lost children's in tender age in last five years? 1=Yes   0=No

122. When did they die? 0) during the birth 1) in the 1st year 2) 2nd-5th year 3) after the 5th

123. In the last year how many working days have you lost for illness?_____

124. Have you never seriously injured yourself on your work place during the last year? 1=Yes 0=No

125. During the last year have you bought uniforms for your Children's in school? 1=Yes   0=No

126. During the last year have you bought books for your Children's in school? 1=Yes   0=No

127. During the last year have you bought bags for your Children's in school? 1=Yes   0=No

128. Do you have a Bathroom location and sharing: 1=Yes   0=No

129. Please, tell me, for each activity the kind of payment: 0) in cash 1) in kind 2) both 3) others _

130. How many weeks have you worked for each activity last year? _____

131. Are you satisfied by the price of coffee? 1=Yes   0=No

132. Has the price of the coffee decreased in the last 3 years? 1=Yes   0=No

133. Have it never happened to you to not manage to sell the coffee? 1=Yes   0=No

134. Have you ever been asked by your cooperative to participate in meetings to take decisions, to vote your representatives? 1=Yes   0=No

135. When you sell your products to cooperative (buyers) do you sign contracts for selling the crop?

136. Have you never received technical assistance by your cooperative (your buyer)? 1=Yes   0=No

137. Does your family have other incomes than the work income? 1=Yes   0=No

138. If it does or your answer is yes, where do they come from? _____

139.   Please fill the following table appropriately

Item	Estimated cost for production	Estimated income from coffee selling	Remarks
Labor cost			
Inputs cost			
Transportation cost			

140.   If any, please Also please answer the following table properly

Item	Estimated cost for production	Estimated income from other cash crop selling	Remarks
Labor cost			
Inputs cost			
Transportation cost			

141. Are you satisfied with your household's living conditions? 1=Yes   0=No

142. In your opinion, how much should your monthly wage be to live in a satisfactory way? In birr_

143.Last year have you managed saving a part of your earning? 1=Yes   0=No
144.If yes how many? In birr _____
145.Last year have you bought the any tools for your activity? _____
146.If yes, list them_____
147.How do you buy the raw materials necessary for your work? _____
148.From whom do you buy the raw materials and the tools for your work?_____
149.In your family has someone never moved for work reasons? 1=Yes   0=No
150.If your answer for Q 148 is yes, where they had? _____
151.Actually, would you be ready to move outside your community for work reasons? 1=Yes 0=No
152.How do you carry on your job? _____
153.How do you consider working in group? 1=useful   0= not useful
154.Would you be ready to work in group? 1=Yes   0=No
155.If yes for Q 153, Why?_____
156.If no for Q 153, Why? _____
157.In your opinion, on what does the family well-being depend? _____

=THE END=

APPENDEX II STATA OUTPUSTS

```
. margins, dydx(MartialStatus WFAGE WifeEducation Education HHheadship AgeofHH HHmember Totalland Landusedforcro
> p ProduceCoffe LandforCoffee BesideCoffe CreditAccess DeliverCoffee CoopMembership TechnologyUsed FTMembership
>  Training FamilyHelp HEALTHEXTEN MarketAcess FinanceInstition Infrustuctures GovermentSupport SCHOOLNEAR HEALT
> HCENT RightMarket Productivity ExtensionWorkers InformationAccess TotalLivestok)

Average marginal effects                        Number of obs   =        203
Model VCE    : OIM

Expression   : Pr(HHconsump), predict()
dy/dx w.r.t. : 2.MartialStatus 3.MartialStatus 4.MartialStatus 3.WFAGE 4.WFAGE 2.WifeEducation 3.WifeEducation
               4.WifeEducation 2.Education 3.Education 4.Education 1.HHheadship 3.AgeofHH 4.AgeofHH 2.HHmember
               2.Totalland 3.Totalland 4.Totalland 5.Totalland 2.Landusedforcrop 3.Landusedforcrop
               1.ProduceCoffe 2.LandforCoffee 3.LandforCoffee 4.LandforCoffee 1.BesideCoffe 1.CreditAccess
               2.DeliverCoffee 3.DeliverCoffee 4.DeliverCoffee 1.CoopMembership 1.TechnologyUsed
               1.FTMembership 1.Training 1.FamilyHelp 1.HEALTHEXTEN 1.MarketAcess 1.FinanceInstition
               1.Infrustuctures 1.GovermentSupport 1.SCHOOLNEAR 1.HEALTHCENT 1.RightMarket 1.Productivity
               1.ExtensionWorkers 1.InformationAccess 1.TotalLivestok
```

	dy/dx	Delta-method Std. Err.	z	P>|z|	[95% Conf. Interval]	
MartialStatus						
2	.074917	.1203295	0.62	0.534	-.1609245	.3107585
3	.0976686	.1384639	0.71	0.481	-.1737157	.3690529
4	.1208875	.1451199	0.83	0.405	-.1635423	.4053174
WFAGE						
3	-.0487734	.0992353	-0.49	0.623	-.243271	.1457242
4	.0703875	.1239857	0.57	0.570	-.17262	.313395
WifeEducation						
2	-.0250484	.0893401	-0.28	0.779	-.2001517	.150055
3	.146538	.1921235	0.76	0.446	-.2300172	.5230932
4	.1119399	.2045591	0.55	0.584	-.2889885	.5128683
Education						
2	.1033496	.1026713	1.01	0.314	-.0978825	.3045816
3	-.0804484	.126781	-0.63	0.526	-.3289346	.1680379
4	.1685439	.1050599	1.60	0.109	-.0373697	.3744575
1.HHheadship	.041875	.0911436	0.46	0.646	-.1367632	.2205132
AgeofHH						
3	.1992532	.1251678	1.59	0.111	-.0460712	.4445775
4	-.0504261	.1161198	-0.43	0.664	-.2780166	.1771645
2.HHmember	.0323393	.0579364	0.56	0.577	-.0812139	.1458926
Totalland						
2	-.3294158	.1626816	-2.02	0.043	-.648266	-.0105656
3	-.1372149	.1786616	-0.77	0.442	-.4873853	.2129555
4	.0988469	.1846857	0.54	0.592	-.2631304	.4608242
5	.1310014	.1976114	0.66	0.507	-.2563099	.5183126
Landusedforcrop						
2	-.0655678	.1363428	-0.48	0.631	-.3327948	.2016593
3	-.4256039	.1144778	-3.72	0.000	-.6499763	-.2012316
1.ProduceCoffe	.0793726	.0665188	1.19	0.233	-.051002	.2097471
LandforCoffee						
2	.0250998	.084384	0.30	0.766	-.1402898	.1904894
3	-.0695806	.1364137	-0.51	0.610	-.3369465	.1977854
4	-.0403513	.0673298	-0.60	0.549	-.1723153	.0916127
1.BesideCoffe	.0635947	.0601853	1.06	0.291	-.0543664	.1815558
1.CreditAccess	-.0337656	.0671684	-0.50	0.615	-.1654132	.097882
DeliverCoffee						
2	-.0238583	.099668	-0.24	0.811	-.2192039	.1714874
3	.0319153	.1031649	0.31	0.757	-.1702841	.2341147
4	.0301686	.0894388	0.34	0.736	-.1451282	.2054654
1.CoopMembership	-.012824	.0611284	-0.21	0.834	-.1326334	.1069855
1.TechnologyUsed	.1180974	.0733722	1.61	0.107	-.0257095	.2619043
1.FTMembership	-.0711695	.0617021	-1.15	0.249	-.1921034	.0497644
1.Training	-.0179174	.0735811	-0.24	0.808	-.1621338	.126299
1.FamilyHelp	.0779641	.0642661	1.21	0.225	-.047995	.2039233
1.HEALTHEXTEN	.2067477	.1578833	1.31	0.190	-.1026979	.5161932
1.MarketAcess	-.0286798	.0638195	-0.45	0.653	-.1537638	.0964041
1.FinanceInstit~n	-.2158368	.0741727	-2.91	0.004	-.3612126	-.0704611
1.Infrustuctures	.0888436	.0668273	1.33	0.184	-.0421356	.2198228
1.GovermentSupp~t	-.031818	.0613186	-0.52	0.604	-.1520002	.0883641
1.SCHOOLNEAR	-.0017786	.0807585	-0.02	0.982	-.1600623	.1565052
1.HEALTHCENT	-.0584335	.072627	-0.80	0.421	-.2007798	.0839129
1.RightMarket	-.1324567	.0792646	-1.67	0.095	-.2878123	.022899
1.Productivity	-.0145589	.073309	-0.20	0.843	-.158242	.1291242
1.ExtensionWork~s	.0557243	.0873762	0.64	0.524	-.1155299	.2269786
1.InformationAc~s	-.0962091	.0578465	-1.66	0.096	-.2095862	.0171679
1.TotalLivestok	.2486141	.0713286	3.49	0.000	.1088127	.3884155

Note: dy/dx for factor levels is the discrete change from the base level.

```
. margins, dydx(MartialStatus WFAGE WifeEducation Education HHheadship AgeofHH HHmember Totalland Landusedforcro
> p ProduceCoffe LandforCoffee BesideCoffe CreditAccess DeliverCoffee CoopMembership TechnologyUsed FTMembership
>  Training FamilyHelp HEALTHEXTEN MarketAcess FinanceInstition Infrustuctures GovermentSupport SCHOOLNEAR HEALT
> HCENT RightMarket Productivity ExtensionWorkers InformationAccess TotalLivestok)

Average marginal effects                           Number of obs   =        203
Model VCE    : OIM

Expression   : Pr(HHWELBNG), predict()
dy/dx w.r.t. : 2.MartialStatus 3.MartialStatus 4.MartialStatus 3.WFAGE 4.WFAGE 2.WifeEducation 3.WifeEducation
               4.WifeEducation 2.Education 3.Education 4.Education 1.HHheadship 3.AgeofHH 4.AgeofHH 2.HHmember
               2.Totalland 3.Totalland 4.Totalland 5.Totalland 2.Landusedforcrop 3.Landusedforcrop
               1.ProduceCoffe 2.LandforCoffee 3.LandforCoffee 4.LandforCoffee 1.BesideCoffe 1.CreditAccess
               2.DeliverCoffee 3.DeliverCoffee 4.DeliverCoffee 1.CoopMembership 1.TechnologyUsed
               1.FTMembership 1.Training 1.FamilyHelp 1.HEALTHEXTEN 1.MarketAcess 1.FinanceInstition
               1.Infrustuctures 1.GovermentSupport 1.SCHOOLNEAR 1.HEALTHCENT 1.RightMarket 1.Productivity
               1.ExtensionWorkers 1.InformationAccess 1.TotalLivestok
```

	dy/dx	Delta-method Std. Err.	z	P>|z|	[95% Conf. Interval]	
MartialStatus						
2	.1824348	.2916834	0.63	0.532	−.3892541	.7541237
3	.0563456	.2975547	0.19	0.850	−.5268509	.6395421
4	.1107296	.2981908	0.37	0.710	−.4737136	.6951728
WFAGE						
3	−.1341949	.0518053	−2.59	0.010	−.2357315	−.0326584
4	−.190902	.1022895	−1.87	0.062	−.3913858	.0095817
WifeEducation						
2	−.1473175	.067346	−2.19	0.029	−.2793133	−.0153217
3	.2360477	.1283917	1.84	0.066	−.0155955	.4876909
4	−.0473888	.1719291	−0.28	0.783	−.3843636	.289586
Education						
2	.0654724	.0857984	0.76	0.445	−.1026894	.2336341
3	−.1894761	.1050118	−1.80	0.071	−.3952955	.0163433
4	.0304046	.0876877	0.35	0.729	−.1414601	.2022693
1.HHheadship	.0648576	.0717035	0.90	0.366	−.0756788	.2053939
AgeofHH						
3	−.187988	.1412785	−1.33	0.183	−.4648887	.0889127
4	.1249376	.107953	1.16	0.247	−.0866465	.3365217
2.HHmember	.0774855	.0527813	1.47	0.142	−.0259639	.1809349
Totalland						
2	.364509	.1318005	2.77	0.006	.1061848	.6228332
3	.1157074	.1181892	0.98	0.328	−.1159391	.347354
4	−.0723621	.1489944	−0.49	0.627	−.3643867	.2196625
5	.1423265	.3122229	0.46	0.648	−.4696192	.7542721
Landusedforcrop						
2	.0198236	.1076402	0.18	0.854	−.1911474	.2307946
3	.3877105	.1488775	2.60	0.009	.095916	.679505
1.ProduceCoffe	.6811388	.0541775	12.57	0.000	.5749529	.7873247
LandforCoffee						
2	−.0738669	.0766298	−0.96	0.335	−.2240585	.0763247
3	−.0554434	.0811425	−0.68	0.494	−.2144797	.1035929
4	−.1376818	.0476038	−2.89	0.004	−.2309835	−.0443802
1.BesideCoffe	.0765941	.0501905	1.53	0.127	−.0217776	.1749658
1.CreditAccess	.013426	.0682188	0.20	0.844	−.1202803	.1471323
DeliverCoffee						
2	−.1583682	.0749214	−2.11	0.035	−.3052115	−.0115249
3	−.1545052	.0694468	−2.22	0.026	−.2906184	−.0183921
4	−.0269906	.0671601	−0.40	0.688	−.158622	.1046409
1.CoopMembership	−.123476	.0403872	−3.06	0.002	−.2026334	−.0443186
1.TechnologyUsed	−.0784633	.0548157	−1.43	0.152	−.1859001	.0289735
1.FTMembership	.1383293	.0395955	3.49	0.000	.0607236	.215935
1.Training	−.0164427	.0774545	−0.21	0.832	−.1682508	.1353654
1.FamilyHelp	−.164755	.0510286	−3.23	0.001	−.2647693	−.0647408
1.HEALTHEXTEN	−.2359005	.0831224	−2.84	0.005	−.3988174	−.0729835
1.MarketAcess	.0078612	.0621918	0.13	0.899	−.1140324	.1297548
1.FinanceInstit~n	.153167	.0489387	3.13	0.002	.0572489	.2490851
1.Infrustuctures	.0293871	.0716326	0.41	0.682	−.1110102	.1697844
1.GovermentSupp~t	−.0095936	.0499733	−0.19	0.848	−.1075394	.0883522
1.SCHOOLNEAR	.3583633	.0708340	5.06	0.000	.2195188	.4972078
1.HEALTHCENT	.252603	.0680206	3.71	0.000	.1192851	.3859208
1.RightMarket	−.111084	.0623304	−1.78	0.075	−.2332493	.0110813
1.Productivity	−.0480392	.0549758	−0.87	0.382	−.1557897	.0597113
1.ExtensionWork~s	−.1686029	.0610791	−2.76	0.006	−.2883158	−.0488901
1.InformationAc~s	−.0173153	.0493936	−0.35	0.726	−.1141249	.0794943
1.TotalLivestok	−.0765186	.0483185	−1.58	0.113	−.1712211	.0181838

Note: dy/dx for factor levels is the discrete change from the base level.

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. margins, dydx(WFAGE  WifeEducation Education HHheadship AgeofHH HHmember Totalland Landusedforcrop ProduceCoff
> e LandforCoffee BesideCoffe CreditAccess DeliverCoffee CoopMembership TechnologyUsed FTMembership Training Fam
> ilyHelp HEALTHEXTEN MarketAcess FinanceInstition Infrustuctures GovermentSupport SCHOOLNEAR HEALTHCENT RightMa
> rket Productivity ExtensionWorkers InformationAccess TotalLivestok)

Average marginal effects                          Number of obs   =        203
Model VCE    : OIM

Expression   : Pr(NetIncome), predict()
dy/dx w.r.t. : 3.WFAGE 4.WFAGE 2.WifeEducation 3.WifeEducation 4.WifeEducation 2.Education 3.Education
               4.Education 1.HHheadship 3.AgeofHH 4.AgeofHH 2.HHmember 2.Totalland 3.Totalland 4.Totalland
               5.Totalland 2.Landusedforcrop 3.Landusedforcrop 1.ProduceCoffe 2.LandforCoffee 3.LandforCoffee
               4.LandforCoffee 1.BesideCoffe 1.CreditAccess 2.DeliverCoffee 3.DeliverCoffee 4.DeliverCoffee
               1.CoopMembership 1.TechnologyUsed 1.FTMembership 1.Training 1.FamilyHelp 1.HEALTHEXTEN
               1.MarketAcess 1.FinanceInstition 1.Infrustuctures 1.GovermentSupport 1.SCHOOLNEAR 1.HEALTHCENT
               1.RightMarket 1.Productivity 1.ExtensionWorkers 1.InformationAccess 1.TotalLivestok
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	dy/dx	Delta-method Std. Err.	z	P>|z|	[95% Conf. Interval]	
WFAGE						
3	.1284097	.0887242	1.45	0.148	−.0454866	.3023059
4	.1447908	.1052366	1.38	0.169	−.0614691	.3510507
WifeEducation						
2	−.106293	.0791918	−1.34	0.180	−.261506	.04892
3	−.1454929	.1377029	−1.06	0.291	−.4153856	.1243998
4	.1106891	.2281807	0.49	0.628	−.3365369	.5579151
Education						
2	.0771736	.0850153	0.91	0.364	−.0894534	.2438006
3	.1801589	.1639444	1.10	0.272	−.1411661	.5014839
4	.2357333	.1050955	2.24	0.025	.0297499	.4417167
1.HHheadship	−.0914251	.0919488	−0.99	0.320	−.2716415	.0887912
AgeofHH						
3	−.0880907	.1521962	−0.58	0.563	−.3863897	.2102084
4	.0702129	.1296161	0.54	0.588	−.1838299	.3242557
2.HHmember	.0332383	.0601357	0.55	0.580	−.0846254	.151102
Totalland						
2	.2266056	.1115618	2.03	0.042	.0079485	.4452626
3	.3387732	.069697	4.86	0.000	.2021696	.4753768
4	.2789321	.0974583	2.86	0.004	.0879173	.4699469
5	.1422379	.092893	1.53	0.126	−.039829	.3243048
Landusedforcrop						
2	−.2635328	.1257292	−2.10	0.036	−.5099575	−.017108
3	−.2814147	.1874712	−1.50	0.133	−.6488514	.0860221
1.ProduceCoffe	.0426461	.0629909	0.68	0.498	−.0808139	.166106
LandforCoffee						
2	.081693	.0832739	0.98	0.327	−.0815208	.2449068
3	.1053771	.1094593	0.96	0.336	−.1091591	.3199134
4	.0086393	.0664406	0.13	0.897	−.1215819	.1388606
1.BesideCoffe	−.0626056	.0595261	−1.05	0.293	−.1792746	.0540634
1.CreditAccess	.0990447	.0642702	1.54	0.123	−.0269226	.225012
DeliverCoffee						
2	.0476289	.0964161	0.49	0.621	−.1413432	.2366009
3	−.0317439	.0964326	−0.33	0.742	−.2207484	.1572606
4	.0030058	.0887345	0.03	0.973	−.1709106	.1769223
1.CoopMembership	.0518444	.0565685	0.92	0.359	−.0590278	.1627167
1.TechnologyUsed	.1257312	.0689331	1.82	0.068	−.0093751	.2608375
1.FTMembership	.1167346	.0610758	1.91	0.056	−.0029718	.236441
1.Training	.0881592	.0765236	1.15	0.249	−.0618244	.2381428
1.FamilyHelp	−.0694928	.0625637	−1.11	0.267	−.1921154	.0531297
1.HEALTHEXTEN	−.2929671	.0730498	−4.01	0.000	−.436142	−.1497922
1.MarketAcess	−.0201289	.0618353	−0.33	0.745	−.1413239	.101066
1.FinanceInstit~n	.0406962	.0781008	0.52	0.602	−.1123785	.193771
1.Infrustuctures	.2176026	.0670789	3.24	0.001	.0861304	.3490748
1.GovermentSupp~t	.0813168	.0603109	1.35	0.178	−.0368904	.1995241
1.SCHOOLNEAR	.2018056	.0865454	2.33	0.020	.0321796	.3714316
1.HEALTHCENT	−.0701087	.0746204	−0.94	0.347	−.2163619	.0761446
1.RightMarket	−.0120742	.0797592	−0.15	0.880	−.1683993	.1442509
1.Productivity	.0967684	.0721684	1.34	0.180	−.044679	.2382158
1.ExtensionWork~s	.1858817	.0886786	2.10	0.036	.0120749	.3596885
1.InformationAc~s	−.1645971	.0552926	−2.98	0.003	−.2729685	−.0562256
1.TotalLivestok	.198278	.0619512	3.20	0.001	.0768559	.3197002

Note: dy/dx for factor levels is the discrete change from the base level.