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Makda Mulugeta April 7, 2021

Implications of gender for perceptions of wellbeing and agency in low-income communities: the case of South Wollo, Ethiopia.

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Abstract

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By Makda Mulugeta

The South Wollo region of Ethiopia is well known for its struggles with famine and food security, but less is understood about how these impact wellbeing and other social outcomes. Many studies have attested to the complex relationship between objective and subjective wellbeing, which is largely influenced by a sense of agency. In populations like those who reside in South Wollo, there are many cultural influences barring women from attaining the same objective wellbeing that males have, which can harm both food insecurity and subjective wellbeing. There is little research on how female and male household heads differ in terms of subjective and objective indicators of wellbeing and the role that agency plays. Socioeconomic and demographic data from a 2017-2018 study in the area was analyzed to assess whether agency, life satisfaction, and certain indicators of food insecurity vary based on the gender of the household head. I used an approach that entails economic and sociocultural factors impacting objective wellbeing, which alters perceptions of one's control over their life that in turn affect life satisfaction. Hypothesizing that households with female heads or from a poorer neighborhood, Tebasit, would have the worst wellbeing and agency levels, I found that the lowest scorers of wellbeing and agency were Tebasit female-headed households. Poor neighborhood negatively affected subjective wellbeing. The relationship between agency and wellbeing followed a complicated pattern, as noted from the literature. This research offers a unique perspective on how subjective and objective wellbeing are related, what factors influence this relationship and offers the importance of gender in how people pursue 'the good life.'

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Thank you to my family, who encouraged and supported me. I will carry your words and compassion throughout my academic, personal and working life. And I will remember to break the wall, always.

This year cannot be remembered without acknowledging the pain and turmoil disturbing these past 12 months. I pray for a healthy and peaceful future.

Thank you.

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Introduction

Ethiopia is amongst the poorest countries in the world (Agidew and Singh 2018). In its South Wollo region, almost half of all households are considered to be poor or extremely poor (Sharp and Devereux 2004). Mostly comprised of farmers who rely on rain-fed agriculture, South Wollo's dependence on a short, unreliable rainy season render it the 'buckle of the famine belt' (Little et al. 2006). In this region impacted by chronic poverty and historic drought-induced famines, research indicates that female-headed households are poorer and more food insecure than male-headed households (Sharp and Devereux 2004; Little 2006; Devereux and Sharp 2006; Cafer et al. 2015; Agidew and Singh 2018; Beshir 2018). Thus, female- headed households have lower objective wellbeing, as indicated by material wealth. Wellbeing is "the state of being happy, healthy, or prosperous" ("Well-Being | Definition of Well-Being by Merriam-Webster" n.d.)

Within this concept are the approaches of objective and subjective wellbeing. Objective is determined by material and social factors such as land, social networks and income, and subjective is perceived by individuals regarding general happiness and life satisfaction. Both components make up wellbeing, but their relationship to each other often is not fully understood. Agency, the ability to act on one's resources to create desirable life outcomes, is a determining aspect of what life one leads. The literature suggests agency implicates the correlation between subjective and objective wellbeing but does not specify how this varies with gendered households (Victor et al. 2013).

The robust literature has room for some questions that this study aims to answer, such as how the trends between wellbeing and agency vary between gendered households. Previous research on similar subjects provide a basis to compare results. Studies have corroborated gender

of the head of household correlates with increased poverty, but what about decreased life satisfaction (Sharp and Devereux 2004; Little et al. 2006; Cafer et al. 2015; Beshir 2018)? And if subjective wellbeing is found to be lower in a wealthier neighborhood, then how does the head of household's agency level compare, and how can that be figured in to causing the low life satisfaction? If gender of the household head does not correlate strongly enough to be considered an indicator of poverty, could it correlate strongly with agency or wellbeing?

To address the knowledge gap, I propose an approach based on insights from the literature. Objective wellbeing, obtained and cultivated through economic and sociocultural factors, informs the perceptions one has on their ability to control their life. With increasing objective wellbeing, agency will improve as well, allowing the head of household to work and obtain desirable outcomes. This will result in higher subjective wellbeing. The research questions I aim to answer with this study and approach are as follows:

Research Questions

- Does gender of the head of household affect subjective and objective wellbeing?
- How does this vary across two kebeles (administrative unites), Tebasit and Gerado?
- Does agency, indicated by sense of control over one's own life, have a positive association with indicators of wellbeing?
- How does this relationship change between the gender groups?

Based on my approach, I propose the following hypotheses:

Hypotheses

Gender

- Female household heads are more likely to have faced inequality from all extrinsic fronts; as a result, they are likely to have lower levels of objective wellbeing, agency and subjective wellbeing in comparison to male household heads.
- Male household heads are more likely to have benefited from extrinsic factors; as a result, they are likely to have higher levels of objective wellbeing, agency and subjective wellbeing in comparison to female household heads.

Kebele

- In Tebasit, both households are likely to have decreased wellbeing and agency due to decreased economic opportunity. Male household heads are still likely to have higher levels of wellbeing and agency than female household heads.
- In Gerado, both groups of households are likely to have increased wellbeing and agency due to increased economic opportunity. Male household heads are still likely to have higher levels of wellbeing and agency than female household heads.

Agency

- If objective wellbeing increases, then perceptions of agency will increase as well. Agency, as indicated by sense of control over one's own life, is likely to have a positive association with indicators of objective wellbeing.
- If agency increases, then life satisfaction will increase as well. Agency perception is likely to be positively associated with indicators of subjective wellbeing.
- Perceptions of agency are likely to be higher in wealthier populations: male household heads over female household heads and households in Gerado over those in Tebasit.

South Wollo is a rich region of diversity, development and historic struggle. With considerable literature on the encompassing subject and paucity of it on the dynamics of

gendered subjective wellbeing and agency, I hope to create a meaningful study that looks deeper into how the people of South Wollo pursue ‘the good life.’

Chapter 1: Background and Literature Review

Ethiopia, the second most populous country in Africa, is located in the Horn of Africa region. Near the coastline of the Red Sea, Ethiopia is landlocked by Eritrea, Djibouti and Somalia. To the west and south, Sudan, South Sudan and Kenya border the nation. Ethiopia boasts a geographic mélange; one can find frosty highlands, sweltering desert depressions and the source of the Blue Nile. With over eighty ethnic groups, Ethiopia is diverse and rich in culture. The country is segmented into ten ethno-linguistic regions. Within each region are zones, which are further delineated into districts and lastly *kebeles*, the smallest administrative unit consisting of one or more communities. Oromiya and Amhara are the largest regions in both size and population. Thus, Oromo and Amhara are also the largest ethnic populations in Ethiopia. Christianity is the most practiced religion in the country, followed by Islam. This study focuses on the South Wollo zone of the Amhara region.

South Wollo is located in the northern area of Ethiopia, with mountainous and dry terrain covering most of the region. Its arid climate is matched with a dense, heavy and difficult to maintain soil type, vertisol, that can only be effectively cultivated by plows. With a population of around three million people, South Wollo is amongst the more densely populated regions of Ethiopia (Schmidt 2020). It is diverse in both religions and ethnicity, mainly consisting of Amhara and Oromo groups. South Wollo has many developed *woredas* (districts), like Dessie Zuria, that boast higher population densities than the less developed areas (Rosell 2007). Neighborhoods closer to market towns have better economic opportunities and are more developed than neighborhoods that are farther away. Such is the case for the kebeles in this study. Tebasit and Gerado are both kebeles in the Dessie Zuria district. Within this district is the capital of South Wollo, Dessie (Mekonnen et al. 2018). About 400 kilometers north of the capital

of Ethiopia, Addis Ababa, Dessie is an urbanized town and key center of development and markets (Mekonnen 2018). Gerado is characterized by its closeness to Dessie. Due to its proximity to the metropolitan center, Gerado has more infrastructural development, various income sources, and better opportunities to sell agricultural products at markets than Tebasit (Rosell et al. 2017). Tebasit is located too far from Dessie to reap any benefits. But South Wollo is not widely known for its development, rather for its chronic food insecurity. The region was immortalized by the terrible famines of 1973-1974 and 1983-84; the latter event led to immense international attention (Little 2008). The chronic poverty and food insecurity South Wollo faces has largely impacted its farmer population.

Economy, Poverty and Food Insecurity

Lack of productive resources define destitution in poor communities. As most households in South Wollo are smallholder farmers, land, oxen and labor are integral assets. The region is known for its chronic poverty and food insecurity, caused by environmental issues, policies, and food inaccessibility. In addition to poor rainfall, unsustainable agricultural practices lead to soil degradation; natural occurrences such as drought and pest infestations ruin crops; policies such as redistribution laws and government deployment of aid render land a public good and food aid a poorly distributed commodity; and crop failures severely limit farmers' access to food. Agricultural input and extension programs are beneficial but are underdeveloped and inaccessible to many.

South Wollo Smallholder Farms

The majority of Ethiopians are farmers (Beshir 2018). In South Wollo, these farmers are mainly smallholders producing rainfed agriculture. Smallholding refers to the ownership and operation of a small area of land for agricultural production. Due to social and cultural norms

identifying men as financially responsible for the family, most of these smallholder farms are led by males. Farmers in South Wollo own 20% less land than farmers in other rural areas of Ethiopia (Little 2008). This generally results in lower incomes as South Wollo farmers rely predominantly on rainfed agriculture, and the land they own is too small to adequately provide for them (ibid.). Farming plots are typically fragmented further for the children inheriting the land and are confined to the kebele (Rosell et al. 2017). Increasing population exacerbates the issue of land fragmentation as expansion of cultivated land can erode forested and marginalized areas (Rosell 2017; Cafer et al. 2015).

The vertisol soil typical of South Wollo is so compact and tough that farmers cannot cultivate their fields with hand tools. A lack of machinery leaves farmers to use large animals like oxen and horses to plow their fields (Little 2014). As two oxen are necessary to plow a field, farmers that have less must engage in social borrowing systems to cultivate their crops (Little et al. 2006). If smallholder farms have one ox, they can engage in sharing deals called *mekenajo* (Little 2008). These are usually done with relatives and neighbors to borrow one ox, and farmers that engage in this practice are said to be better-off as they do not need to beg for oxen (ibid.). Farmers that do not have any oxen are forced to sharecrop their land to others for plowing (Little 2014). The terms of sharecropping vary, but households can lose over half of their own crops by lending their land to others to tend for (ibid.). Sharecropping renders smallholder households incapable of feeding their families; some have been forced to accrue debt by purchasing food with credit (Little et al. 2004).

Harvest yield is extremely important in smallholder farms; it indicates the amount of agricultural production a household has to eat and to sell for income (Agidew and Singh 2018). South Wollo farmers mainly grow cereals, most of which are teff and sorghum (Agidew 2018).

Both grains grow well in vertisols and on irrigated land, as they require regular water supply (Hailu et al. 2015; Cafer et al. 2015). Although these cereals have long harvest times and are sensitive to unfavorable weather conditions, teff and sorghum production per hectare in Ethiopian farming households increased by 60% from 2005 to 2015 (Rosell et al. 2017). Farmers also grow legumes, such as chickpeas, beans and vetch, which can increase vertisol fertility by fixing nitrogen into the soil (Hailu 2015).

To further improve income, smallholders often add cash crops to their farms. Cash crops are agricultural products that have high marketability and annual harvest rates; these are typically fruits, vegetables, coffee and a stimulant called *khat* (Cafer et al. 2015; Rosell et al. 2017). Adding cash crops to production improves soil quality and security, deterring household vulnerability (Cafer 2015; Rosell 2017). Farmers in South Wollo have developed other techniques to maximize their crop yields. One method is increasing the diversity of agriculture grown. Planting nitrogen-fixing crops like beans can enhance soil; swapping out plants annually can discourage pest infestations; and having a variety of plants, such as lentils, niger seed, and barley, can alleviate periodic drought (ibid.; Hailu et al. 2015). Another method is through inputs such as irrigation, rain preservation, fertilizer, and information from agricultural extension programs (Cafer et al. 2015). In these ways, farmers in South Wollo have developed many methods to improve their craft in the face of adversity. However, a multitude of factors contribute to the chronic poverty and food insecurity the region endures.

Food Insecurity

Ethiopia has a highly variable climate and fluctuating levels of rainfall that impact the viability of rainfed agriculture (Rosell 2007). In the highlands, there are two rainy seasons: the short, unreliable *belg* from February to May, and the long, dependable *kiremt* from June to

October (ibid.). South Wollo is unique in that resident farmers mainly rely on the shorter, more variable rain season to produce food. As *belg* is a key period for crop cultivation in South Wollo, its inconsistency is a serious detriment. Crop growth, especially cereals like teff, can be destroyed from just one week of no rain (ibid.). In a longitudinal study, South Wollo endured months of no rain during multiple *belg* seasons (ibid.). As rainfed agriculture is dominant in the region, South Wollo regularly suffers from low food production, and consequently, high food insecurity.

Apart from rainfall, overcultivation of land and resulting soil infertility also contribute to heightened food insecurity. Numerous agricultural practices in Ethiopia result in adverse effects for the soil. Intense cultivation and low fertilizer usage strip the soil of its nutrients without replenishing it (Hailu et al. 2015). Natural circumstances like erosion pair with cultural practices, such as continuous cropping, burning of vegetation and removal of protective straw, to inadvertently increase soil degradation and infertility (Hailu 2015). Vertisols dominating the highlands have numerous limiting nutrients, a poor condition for plant production that is exacerbated by high cultivation rates in the area (ibid.). Soil degradation, loss and infertility, although large sources of decreased agricultural production, are just a part of environmental deterioration that complicates food security in South Wollo.

In 2020 Ethiopia faced one of the worst desert locust infestations in over two decades, a harsh reminder that pest invasions threatening agriculture in the country are not rare (Lebrum 2020). Locusts, swarming insects that devour crops and reap devastating havoc, are among the most formidable pest and insect problems plaguing agriculture and have even contributed to historical famines in Ethiopia (Graham and Mehrab 2012). Loss of crops also negatively impacts cattle, and damage to both assets cause immense impairment to livelihoods (Graham 2012).

Almost every major famine in Ethiopia was due to rainfall failures and drought, the most severe of which were recorded in the northern states of Tigray and Wollo (ibid.). Droughts ensuing rainfall shortages were exacerbated by weak infrastructure, poor disaster response, and decreasing agricultural growth, which tumultuously culminated in the calamitous 1972-74 famine that made Wollo a key case for humanitarian studies. In the present, reformation such as implementation of safety net programs, increased communication regarding need, and less civil conflict has allowed for lower death rates involved with natural disasters (ibid.).

In addition to environmental factors, small land plots and dense population aggravates the food insecurity situation in South Wollo. Ethiopia has seen considerable population growth in the past decades, including in rural areas. In addition to variable climate and unstable food production, the highlands suffer from dense populations, rendering it one of the worst affected regions by famines (Little et al. 2006). Land redistribution policies enacted in the 1990s to ensure all residents received land led to South Wollo having smaller-than-average farm plots (Little 2008). Although this policy provides even the poorest of households with land, there are rules and sanctions in place that force farmers to stay where they are. A farm will be reallocated if it is vacant for more than a couple of seasons, no individual in South Wollo is allowed to own over 2.5 hectares of land, and land transactions are illegal (Little et al. 2006). These stipulations create dependencies on assets, such as livestock and adult labor, and remittance income to decrease reliance on the fluctuating rainfed agriculture (Little 2006). Those who cannot afford to leave home and find a dependable job, or cannot afford assets like cattle, are forced to rely on an undependable form of income. A form of income that involves relying on an inconsistent environment prone to droughts and infestations, unsustainable agricultural practices, and overcrowded landholdings.

Entitlement Theory

South Wollo is known as the 'buckle of the famine belt' of Ethiopia for its historical and continued struggle with high poverty rates and food insecurity (Little et al. 2006). Catastrophic and highly publicized famines, such as the 1983-84 crisis, severely debilitated South Wollo more than any other region in Ethiopia and still impacts civilians decades later (Little et al. 2006). These tragic famines served as the basis for numerous humanitarian studies, including the entitlement approach.

Amartya Sen's Nobel Peace Prize-winning work on welfare economics includes his essay, Poverty and Famines, where he introduces an entitlement approach to poverty (1982). His entitlement theory draws upon data from the 1973-1974 drought and famine in South Wollo (Sen 1982). Entitlement refers to the commodities one can be in charge of based on the opportunities they have (Sen 1982). What Sen calls 'exchange entitlement' is all of the commodities one can own by trading what they already have (ibid.). The ability one has to acquire food, an exchange entitlement, can directly worsen as a result of increased food prices, poor economic prospects and employment variability (ibid.). Decline of this entitlement results in starvation (ibid.). In creating this framework of looking at poverty and famines, Sen argues that the cause of starvation is not a shortage of food, but rather the inability to access it (ibid.).

Although Sen creates an analytical framework to further understand poverty and starvation, he does not take into account social and political aspects of the shock. Devereux criticizes this approach for that very reason, as the limitations of the study end up simplifying famines to the economics of them (2001). In developing countries, where even political exploitation can invoke famines, it is integral that all perspectives are taken into account when analyzing the root of a disaster. In South Wollo, where institutions are underdeveloped and

cultural constructs influence behavior, it would be helpful to examine how social and cultural factors affect destitution.

In scrutinizing food availability and crop production reports in Ethiopia during and before the 1970s famine, Sen demonstrates that there was not a significant decrease in food supplies preceding the shock (1982). He went on to assess the cause of the starvation as an entitlement failure (Sen 1982). The farmers could not access food for their households because they lacked the means, mainly cash, to access it, leading to starvation. As agriculture was the main income source, the problem of failed crops also severely decreased farmers' ability to access food. As Sen has identified, starvation is not necessarily the result of decreased food supply but a lack of economic and social entitlement. Thus, food insecurity can be seen as an inability to access food as a result of decreased capability and opportunity. Food insecurity is defined in this study as the state of not having dependable sources of and accessibility to nutritious food, whether it is produce grown at one's farm or bought at the market.

"Dependency Syndrome"

The poverty that agriculturists face in South Wollo is heavily tied to politics. Prior to the 1970s famine, peasants were indebted to the imperial government and sharecropped their land (Little et al. 2006). The government system that was established with the coup of 1974 was a military regime called the *Derg,* which forbade all private markets and labor unions. Critics argue that historically, farmers have been forcibly kept to their land and at the mercy of the government (Graham and Mehrab 2012; Little 2006). Even after the Derg regime's fall in 1991, many agriculturists were reportedly scared to leave their farms for other work in fear that their land would be reallocated (Little 2006). It should be noted that the literature examined here does

not reflect present-day South Wollo, and immense development and growth in the area could have altered these attitudes.

Due to unsustainable practices, a variable, drought-prone environment and overcrowded landholdings, agricultural work in the highlands is a rough and often compromised means of life. This correlates with South Wollo having been a large recipient of outside food aid during the 1970s and 1980s famine, and suffering from intense chronic poverty (Little 2006). As Ethiopia is persistently amongst the largest receivers of food assistance in the world, there are beliefs that the rural population has become increasingly dependent on aid. In looking at South Wollo, a major recipient of said food aid, this claim can be easily contradicted. “Dependency syndrome,” cited as a problem and often misused by the Ethiopian government, is when recipients cannot improve their own wellbeing without receiving outside aid (Little 2014). In order to curb this, policies such as food- or cash-for-work, where farmers earned aid through public labor and penalties for not volunteering, were enacted to encourage mobilization of the poor population towards development and good work ethic (Little 2014).

As much as these policies are promoted and even forced upon the people, they often do not have the intended effects. Irregular employment leaves many farmers without sufficient levels of food payment, and unclear goals result in people volunteering and contributing money for developments they do not know anything about (ibid.). The majority of food aid comes from government-affiliated programs and local administration, which often redirect the efforts of assistance from the neediest to the most politically or personally connected. Officials in South Wollo distributed food aid to households regardless of need, with discrimination and on a late schedule (ibid.). The Productive Safety Net Program, despite intentions of ‘graduating’ needy households after two years of assistance, saw mishandling of aid as administrators instead

targeted the middle class due to its higher chances of being successfully weaned off aid (ibid.). Arbitrary measures of neediness create a basis for officials to deny aid to certain houses but allow it for others of similar economic status (ibid.). Quotas on resettlement endeavors lead local administrators to coerce farmers to leave the area and move into lowlands, which many farmers are against due to the prevalence of malaria (ibid.).

Counter to government belief, many studies have shown that the behavior of recipients of food aid do not differ much from that of nonrecipients. Little shows that recipients have higher percentages of diverse means of livelihood than nonrecipients and are more inclined to give resources to others, contradicting the claim that food aid reduces productivity, social and work ethic, and fosters dependency (2014). Another study found that during the 2000 drought, food aid was only the second most important means of food acquisition, and in the consequent drought in 2002, it was the third (Little 2008). Jayne et al.'s study also corroborated the fact that government food aid distributions are not concentrated in the neediest regions (2002). Despite the government's claims that farmers in South Wollo are becoming dependent on aid, the reality shows that farmers are wary enough of the unreliable food distributions to not depend on them. And although it does help farmers to receive food aid, especially during droughts, they do not receive enough of it to sustain them. This highlights the need for proper development of infrastructure at both the local and federal level, taking into account the people's lifestyle and needs rather than forcing an ideal on them.

Government policies over land and economics have been argued to have decreased poverty in Ethiopia, but this is also contradicted by studies in South Wollo. Devereux and Sharp demonstrated poverty spikes in rural areas and declines in richer households, exposing poorer ones to vulnerability (2006). Their study brings into question the ability of national surveys to

accurately summarize poverty without non-income and qualitative indicators (Devereux and Sharp 2006). It also corroborates high variability in regional poverty; as seen in other studies, districts and even neighborhoods differ greatly in response to shocks (Little et al. 2006). Amongst the literature, South Wollo is considered to still be suffering from chronic poverty and even increasing destitution.

Since the catastrophic 1980s famine, there has been immense progress that has decreased famine- and drought-related deaths in recent shocks (Graham and Mehrab 2012). This includes government acknowledgement of the problems and early warning signs, more developed infrastructure to allocate resources, and acceptance of outside aid. In addition, agricultural developments have improved in recent decades. An example of agricultural input is the harvesting of rainwater in man-made ponds (Rosell et al. 2017). During *kiremt* farmers place a plastic tarp over a shallow hole on the ground to collect rainwater that will be used in the following year's *belg* season (Rosell 2017). Some even utilize algae to prevent the water from evaporating over time (ibid.). Agricultural sectors in the neighborhood provide the plastic tarps (ibid.). The ponds are mainly used for the cultivation of cash crops, such as khat, fruits, and vegetables, which is known to lessen vulnerability of the household (Cafer et al. 2015). Irrigation developed as a tool for smallholder farms to diversify crops and sustain production in periods of low rainfall. Studies have shown that the usage of irrigation canals increases crop production and yield, income, and cropping patterns (Beshir 2018). It also allows for safe investment in sustainable perennial crops (Rosell et al. 2017). Despite the known benefits of irrigation, it is not widely used. Even areas that have irrigation systems still face challenges to alleviating poverty such as conflict, poor outreach and support for the community, and underdeveloped systems of operation (Beshir 2018).

Culture and Society

The culture and society in South Wollo and in this sample are mainly influenced by Amhara Muslims. Traditions laud both females and males as equal. But familial preferential treatment of sons and customary marriage traditions advantaging husbands suggest women are treated unfavorably. Wollo Muslims, although peaceful in coexistence with Christians, are pressured to conform to stricter practices of Islam. This has implications on women's legal and social rights. In agriculture, women have less access to resources but more responsibilities at home. Female-headed households are often poor; closing the gender gap has great implications for the household and economy.

Amhara

The people of South Wollo are mainly of the Amhara ethnicity (Cafer et al. 2015). Amhara trace their lineages bilaterally, equally respecting and regarding both maternal and patriarchal lines (Crummey 1983). Likewise, culture dictates that both sons and daughters have equal rights to inheritance and will gain property through the mother and father (Crummey 1983). Marriage customs secularize the unity and render it a contract upheld to unofficial law rather than a sanctity governed by religion (ibid.). Amhara do not use transgenerational family names and units of multi-generational kin; this suggests that the main family unit is the household, or *betaseb* (ibid.). Although exogamy is central to marriages, there is still a desire to maintain property within families (ibid.). Despite the seeming gender equality in descent and succession, there are still cultural expectations that disadvantage women by establishing standards of what females can or cannot do. For example, although women are allowed to own land and do agricultural work such as taking care of oxen and weeding, they are discouraged from actually plowing the land with oxen, as it is deemed a man's job (Little 2014).

Religious Institutions

One of the first countries in the Horn of Africa to accept Islam is Ethiopia (Baye 2018). Islam did not expand well into the northern highlands, as Christianity was already engrained in the culture, so it found dominance within the southern, eastern, and central regions (Baye 2018). Over a decade of conflict and war in the 16th century forced Islam into Christian areas like Wollo with mass conversions (ibid.). These conflicts continued in the ensuing centuries and led to segregation based on religion (ibid.). Successive emperors in the 19th century targeted Muslims, and later specifically Wollo, for religious reforms; Muslims were told to either convert or leave the empire (ibid.). Converts were enticed with the guarantee of owning inheritable land (ibid.). In the late 20th century, segregation, systematic oppression and barriers against Muslims owning land declined (ibid.). Wollo is now known for its large proportion of Muslims, many of whom are of Amhara ethnicity, a predominantly Christian group.

Wollo is characterized by the peaceful coexistence of its Muslim and Christian populations. Many Muslims in Wollo follow a mixture of Islamic beliefs and traditional customs, an amalgamation that renders their practice of Islam as unorthodox in the eyes of non-Ethiopian and literate Muslims (Abbink 1998). Religious identity is somewhat flexible in Wollo: people can convert between Christianity and Islam (Abbink 1998). These conversions are influenced by life changes and encouraged by the social benefits of assimilation. People can convert when marrying or divorcing, or when moving into a new environment, and the benefits of identity affiliations can improve even business relations (ibid.). The acceptance of conversions in Wollo indicates that there are not only close relations between the religious communities, but that practicing Muslims differ from orthodox Islam, as conversions are accepted. Research suggests

that the destitution both Wollo Christians and Muslims face contributes to their amicable comportment (Abbink 2007).

In the past three decades, there has been an increase in reformist Islam: a denouncement of pre-Islamic traditions and push for more orthodox practice of the religion (Abbink 2007). In South Wollo, Muslims identifying with the movement are separating themselves from Christians—mixed-faith programs are seeing Muslim withdrawal, marriages between the religious groups are declining, and youths are unfriending their Christian peers (ibid.). These stricter changes are mostly noted in towns as the rural population seems to be apprehensive (ibid.). The reformist norms and expectations of women are also contested by many in Wollo. They believe that women should not have structural equality to men, in legal, political, or business aspects (ibid.). Many Muslims in Wollo also dislike the practice of women covering up with veils (ibid.). This research on Muslim custom and identity in Wollo is from the 2000s, and new studies would provide insight as to how the population currently interacts with their sociocultural groups, as well as how female rights and autonomy are regarded.

Kinship Structures and Inheritance Systems

The constitution of Ethiopia establishes equal rights amongst the two genders for land ownership and land inheritance in divorce (Howard and Smith 2006). Even so, there are traditions and norms that disadvantage women in land ownership. Cultural barriers against females doing essential farm work render women unable to take care of land, and in some cases, this leads to their land being registered under their husband or a male relative (Howard 2006). Typically, land is acquired through marriage customs, and when a husband dies, it is not uncommon to see land taken away from the widow (ibid.). Conversely, when the wife dies, land

is usually not taken away from the newly widowed husband (ibid.) This is probably due to the assumption that men, unlike women, are able to tend to their land.

This assumption is what also leads to women giving up their shares of land in divorce (ibid.). Even when women are able to keep their share of the land, it is frowned upon to remarry, as their old land will now be under the new husband (ibid). It is advantageous for men to marry and have children with women, even illegitimately, as that can allow him to gain rights over the female's land (ibid.). It has been found that women who own property, even while divorced, have better chances of being married or remarried than resource-poor women (ibid.). This perpetuates poverty cycles, as women who do not own anything are limited to marrying men who are also poor, thus sustaining them in destitution (ibid.). All of these customs and inequalities reward men for divorcing and remarrying women, while disadvantaging females for not being able to cultivate land or acquire property (ibid.).

Amhara use cognatic succession to allow for both males and females to inherit land. But bias can still complicate this. When daughters inherit land, it will be given away to an outside family when she marries. But sons keep the land forever. This leads some families who aim to keep the landholdings within their kin to have bias in choosing who can inherit land (ibid.). The small landholdings in rural areas are always at risk of fragmentation; to avoid this, some families split up their land for their sons only (ibid.).

Women in Agriculture

Women are an integral part of the population when it comes to food production, food security and nutrition in developing nations (Quisumbing et al. 1996). In Sub-Saharan Africa, women contribute to 70-80% of household food production (Quisumbing 1996). In the agricultural work force, they constitute 50% of the population (FAO 2011). Despite their large

presence in agriculture, women in third-world countries constantly face social, economic and cultural barriers to productivity. Some women are barred from using and inheriting land due to religious, traditional and otherwise male-authoritative customs (Quisumbing 1996.). They have less access to not only land, but also information and helpful products such as fertilizer (ibid.). Women are also more likely to be uneducated and financially illiterate, preventing them from reaching out to credit officers and acquiring resources (ibid.). Resettlement or irrigation efforts can only prescribe formal titles to men, which discourages women from investing effort and materials into the land (ibid.). Agricultural extension programs, made to educate communities, disproportionately exclude women (ibid.).

Studies show that closing the gap of gender bias in agriculture would not only improve productivity, but it would also promote food security and growth of the economy (FAO 2011). Despite the gender bias in agriculture, women continue to be an integral force in food production due to their status as the caretaker. When women are obstructed from working at higher-income and improved-productivity levels as a result of gender bias, the entire household is impacted. In addition to gender bias, the jobs women have at home prevent them from attaining equal resources and opportunities as males.

A meta-analysis of over 2,000 households demonstrated that female-headed households in Ethiopia have a higher prevalence of food insecurity than the national estimate (Negesse et al. 2020). The systematic review also found a significant association between food insecurity and gender of the household head (Negesse et al. 2020). Numerous South Wollo studies show female-headed households have lower rates of wealth, food security, laborers, land, livestock and food stocks as compared to male-headed households (Sharp and Devereux 2004; Devereux and Sharp 2006; Little 2006; Cafer et al. 2015; Beshir 2018). Despite the correlation, these studies

did not come to the conclusion that gender is a determinant of food insecurity. Broader reports on women in agriculture in developing countries also corroborate the correlation between female household heads and poverty, and claim gender equality can ameliorate insecurity (Quisumbing 1996; FAO 2011).

The need for gender equality is evident. Numerous cultural constructs prohibit women from plowing their own land, deter them from learning and practicing agricultural techniques and prevent them from being autonomous (Cafer 2015). Solutions to South Wollo's chronic poverty need to include women. Extension workers are usually male; it is more culturally acceptable for them to work closely with male household heads than female household heads (Beshir 2018). In a study of irrigation usage in South Wollo, it was found that the gender of the household head might have an effect on whether a household uses irrigation techniques (Beshir 2018). Female-headed households may feel discouraged from working with male extension workers and from seeking help altogether; without access to improved farming techniques and tools, women are put at a disadvantage (ibid.) Policies are needed to make extension programs and agricultural inputs accessible to women.

Objective Wellbeing, Agency and Subjective Wellbeing

Wellbeing encompasses both material and subjective characteristics that make one's life content and healthy. It can be thought of as objective markers such as income, standards of living and assets. These standards vary greatly amongst developed and underdeveloped countries and are held to different norms accordingly. Wellbeing can also be thought of in subjective markers, such as perceived life satisfaction and meaning. This opens up a relatively less varying component of wellbeing: the pursuit of 'the good life.' Life satisfaction relates to factors such as goals, opportunity structures, morals, and ethics across differing societies (Fischer 2014). Even

though cultures vary in their core values, all people tend to hold these values in attempts to live a life they believe is meaningful. In this study, material possessions indicative of wealth are used to assess objective wellbeing. Self-reported life satisfaction is used as an indicator of subjective wellbeing. Although both components contribute to overall wellbeing, the relationship between the two is not exactly linear. Studies have been conducted in an effort to piece together the relationship between objective and subjective wellbeing.

According to welfare economics, the more valuable material possessions one has, the more ability they have to achieve what they desire (ibid.). Many studies have shown that wealth has a general positive impact on life satisfaction, while some attest that they do correlate to a point, after which rising income does not follow increasing happiness (ibid.). It is understood that objective wellbeing and indicators of wealth have a complex relationship with subjective wellbeing that varies greatly across cultures (Fischer 2014). What seems to be corroborated is that increases in agency can allow people to act more on opportunities available to them and create desirable outputs, as the sense of agency drives the choices people make in creating lives out of what is available to them (Victor et al. 2013). Agency refers to the capacity one has to live the life they deem valuable (Victor 2013). For this study, the perceived sense of control one has over their life is used as an indicator of agency.

Agency levels have been suggested to facilitate the correlation between subjective and objective wellbeing, as the more agency one has, the better they are in acting on their resources and producing a desirable life (Victor et al. 2013.). The analysis of female-headed households in Mozambique depicted a positive association between subjective wellbeing and material possession that decreases with declining agency (ibid.). Belief in agency was shown to have limiting capabilities on people's subjective wellbeing under low levels of objective wellbeing,

which attests to the complex relationship between subjective and objective wellbeing (ibid.). Another interesting result of the study was that it showed many household heads had strong beliefs in agency; they believed they could control their lives, but were restrained from doing so due to cultural and social norms (ibid.). As male-headed households were not a part of that study sample, this research will provide an interesting look into how the gendered households differ in terms of agency and its relationship to subjective and objective wellbeing.

Literature suggests that agency can be influenced by external factors, attesting to its susceptibility to change (ibid.). For example, it has been found that women who attended social support groups could have an increase in agency levels (ibid.). High levels of agency can be beneficial, as it allows one to achieve a satisfactory life. However, it can also be detrimental. In cases where agency is higher than what wealth permits one to achieve, it is reported that people feel dissatisfied with their lives (ibid.). Conversely, low agency can make people believe they cannot change their lives, preventing people from acting on their resources to produce content lives. Cultural values, perceptions of 'the good life,' sense of agency, hopes for the future and material possessions all influence life satisfaction. From not being allowed to plow the field to owning less land, women in South Wollo are faced with more obstacles to obtaining better objective wellbeing (Little 2014). These factors impairing their autonomy can negatively impact their perception of control over their lives; this decreases agency and can possibly reduce life satisfaction. Literature leaves room as to how the concepts of objective wellbeing, agency and subjective wellbeing interact with each other and differ between the gendered households.

In Africa

Sub-Saharan African countries ranked the lowest in the world for subjective perceptions of happiness on the 2014-2016 Gallup World Happiness Poll, with an average of 4.29 on a scale

from 0-10 (Helliwell et al. 2017). The extremely low wellbeing is connected to the unsatisfaction with current developments, especially in the context of democracy, and people's desire to have change in their lives (Helliwell 2017). Ethiopia averaged at 4.46 for happiness, and although this is higher than the mean for Sub-Saharan Africa, it is still a very low level of wellbeing (ibid.). For context, Ethiopia ranked 119th out of 155 countries in perceptions of wellbeing (ibid.). Compared to the world's average of 5.3, Ethiopia has low life satisfaction levels (ibid.).

Ethiopia's low levels of subjective wellbeing could be complicated by beliefs like agency. In the Children's Worlds survey, Ethiopian children almost consistently scored lower than other surveyed countries in categories of material and subjective wellbeing (ibid.). Although these low levels of happiness might be partially explained by conflicts going on at the time, including the Oromo protests, objective wellbeing has been a persistent issue in rural Ethiopian populations. It is evident that female-headed households in Ethiopia have lower levels of objective wellbeing than male-headed households. The literature on female-headed household's poverty and insecurity indicate that sociocultural factors, such as social norms and cultural beliefs, inhibit women's abilities to acquire wealth and material possessions. This leaves room to assess how subjective wellbeing and agency vary between male and female-headed households.

Using theories and arguments supported by literature, I have formed an approach to support the analysis of this study. The concept of entitlement failure demonstrates that food insecurity is not just an environmental problem, but rather a holistic issue. This can allow for the study to have broader implications for development in the region. Literature on South Wollo's culture and history has formed the foundation of sociocultural aspects influencing wellbeing. Literature on life satisfaction and its association with material wealth provides the proper context for understanding and examining its variations between gendered households. Examining how

agency intersects with objective and subjective wellbeing provides perspective into the complex relationship between the two factors of wellbeing. From this, I propose that objective wellbeing, obtained and cultivated through economic and sociocultural factors, informs the perceptions one has on their ability to control their life. With increasing objective wellbeing, agency will improve as well, allowing the head of household to work and obtain desirable outcomes. This will result in higher subjective wellbeing. Conversely, when one's objective wellbeing is decreased by economic and sociocultural factors, they will have a decreased perception of control on their life and will not be as equipped to achieve life satisfaction. This idea of wellbeing and agency allows for adaptability and the incorporation of economic and sociocultural factors as active influences.

Chapter 2: Research and Methods

Dr. Peter Little and colleagues conducted a study on *Cross-cultural Insights into Wellbeing among Vulnerable Populations in Eastern Africa* from 2016 to 2018. In this study, field work in the form of ethnographies, interviews and surveys were conducted in two sites: South Wollo, Ethiopia and Il Chamus, Kenya. This thesis utilizes Dr. Little's team's household interview data collected in South Wollo from 2017-2018, and the corresponding Ethiopian years of 2009 and 2010, as the data was collected over the New Year holiday.

There were 88 households selected to represent the diverse demographic seen in South Wollo. The sample includes Amhara households, predominantly those of Islamic faith. It is also split between two neighborhoods, Tebasit and Gerado, which differ because Gerado is closer to a major market and urban center, Dessie town. Questionnaires were concocted to understand demographic information, such as gender of the head of household, number of family members, and income, and to give insight into subjective beliefs, such as what future aspirations interviewees had. The questionnaires were separated into two rounds over five months, the first being in May 2017 and the second in September 2017 (*Genbo/Säne* 2009- *Meskerem* 2010 in the Ethiopian Calendar). Questions have been assessed from both rounds to understand subjective wellbeing, objective wellbeing and sense of agency of the sample.

Data has been quantitatively analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive analysis will be conducted to gain a sense of the data quality and distribution. Graphical representations were created using Microsoft Excel. Number of oxen are indicators of wealth and will be used to stratify the sample into "very poor," "poor," "middle," and "better-off." Previous studies have shown that as two oxen are necessary to plow the tough vertisol soil of the highlands, the number of oxen, or similar animal like a horse, is a good

indicator of poverty (Little 2014; Little et al. 2006). Having one ox allows a family to participate in social networks to borrow livestock, which leaves them better off than households with no oxen who are forced to borrow or sharecrop out their land (Little 2006).

Other indicators of wealth, such as income, land size, and food storage, were not used in this study. Research has shown that rather than the size of landholdings, it is the ability to cultivate land that best determines whether the home is extremely poor or not (Howard and Smith 2006). This is especially true as government redistribution policies ensured that everyone received land (Little et al. 2006). Other indicators of wealth in the sample were unreliable due to large portions of missing responses. Therefore, the ability to farm, characterized by the number of oxen, is the most suitable determinant of wealth. Many studies utilize this method to analyze wealth and food insecurity in South Wollo and have corroborated that factors such as age of the head of household, family size, and meals consumed are indicators of food insecurity (Little et al. 2004; Sharp and Devereux 2004; Agidew and Singh 2018). Using number of oxen owned to separate classes, statistical comparisons will be conducted to assess if indicators of food security, wellbeing and agency are different amongst the wealth groups and gendered heads of households. Bivariate correlations and non-parametric independence tests were conducted to assess the relationship between variables agency and subjective wellbeing, both measured by Likert scales, and variables such as gender of the head of household and objective wellbeing. This is an appropriate approach, as it utilizes a foundation in literature to form understandings of the quantitative analysis.

Chapter 3: Findings

Study Sample

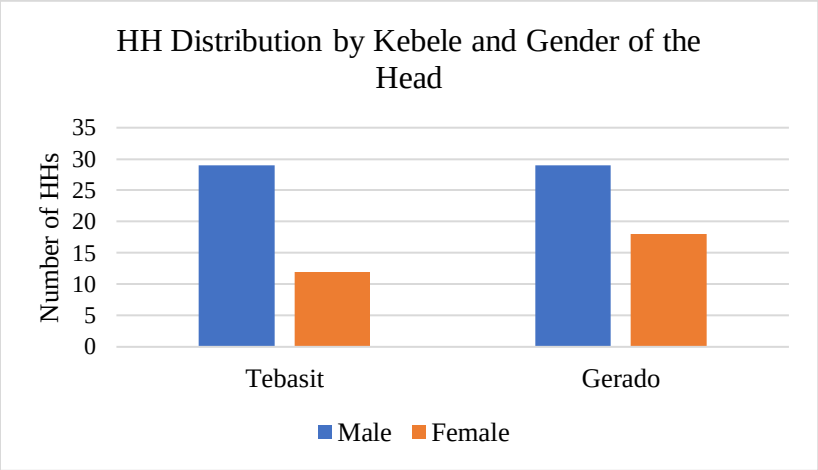

Figure 1. Male HHs are evenly split between the kebeles and larger in number than female HHs.

Percentage of male-headed households are larger than female-headed households in both the overall sample and individual kebeles (Gerado: Male HH 61.7%; Tebasit: Male HH 70.7%). There are more female-headed households in Gerado (18) than in Tebasit (12). Male HHs are evenly split amongst the kebeles, with 29 in each.

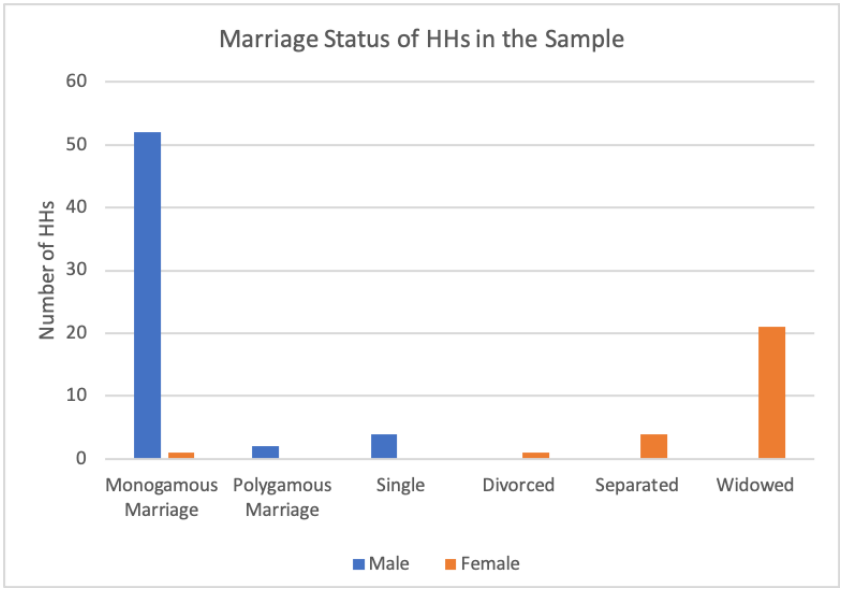

Figure 2. Male HHs are mostly monogamously married, female HHs are mostly widowed.

The distribution of male HHs is evenly split between the kebeles. Most male HHs are monogamously married (89.7%), followed by single (6.9%) or polygamously married (3.5%). Most female HHs are widowed (77.8%), separated (14.8%), divorced (3.7%) or monogamously married (3.7%). All married and separated female HHs are from Gerado. The only divorced HH is from Tebasit. Out of Tebasit female HHs, 90.0% are widowed. Out of Gerado female HHs, 70.6% are widowed.

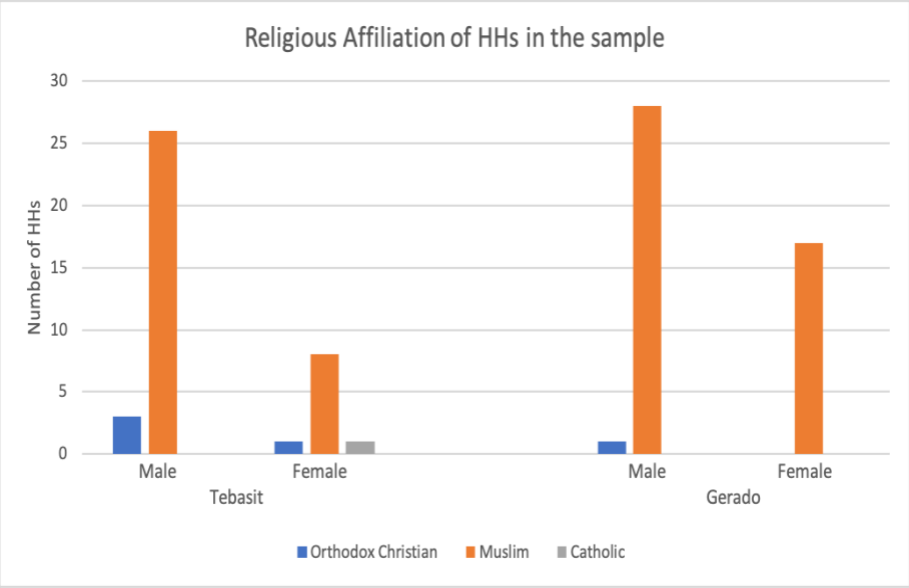

Figure 3. Majority of the HHs across gender and kebele are Muslim.

In the study sample, 92.9% of household heads identify as Muslim, 5.9% Orthodox Christian, and 1.2% Catholic Christian. Tebasit has higher proportions of non-Muslims in both gendered HHs. Gerado HHs are almost entirely Muslim (97.8%) compared to Tebasit HHs (87.2%).

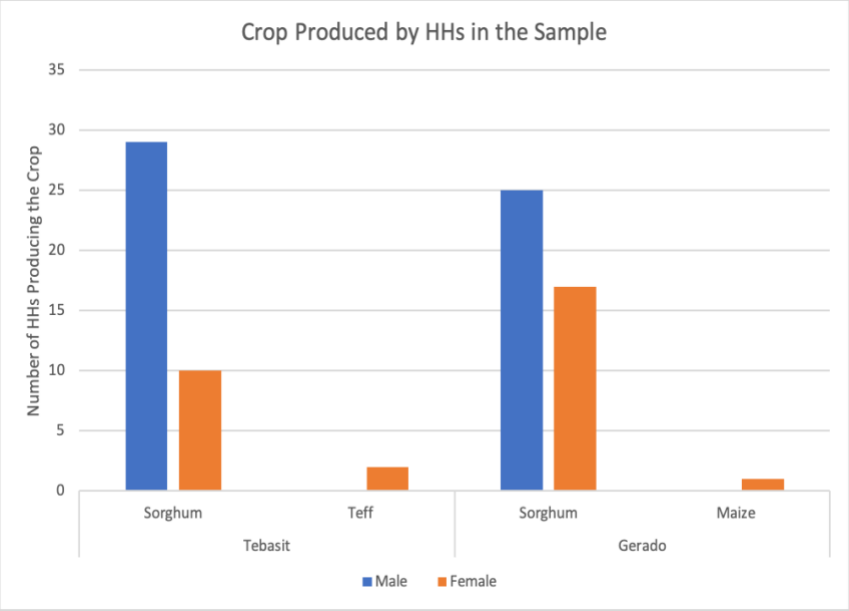

Figure 4. Majority of HHs in the sample produce sorghum, followed by teff and maize.

Across both genders and kebeles, most HHs produce sorghum (96.4%). Only female HHs produce other crops, with 6.7% of them producing teff and 3.3% producing maize. In Tebasit, the alternate crop of choice is teff, and in Gerado it is maize. All of the male HHs and 90% of female HHs produce teff.

Analysis of Food Insecurity Indicators

Table 1. Indicators of food insecurity by gender of the head of household and kebele.

Kebele	**Gender of the head of household**		**Total members of the household**	**Age of the head of household**	**Number of meals consumed in the household per day**
Tebasit	Male	**Mean ± SD**	5.24 ± 2.166	53.41 ± 21.370	3.62 ± 0.903
		Range	11	86	3
		N	29	29	29
	Female	**Mean ± SD**	4.00 ± 2.000	52.33 ± 10.120	3.60 ± 0.843
		Range	7	40	3
		N	12	12	10
	Total	**Mean ± SD**	4.88 ± 2.170	53.10 ± 18.657	3.62 ± 0.877
		Range	11	86	4
		N	41	41	39
Gerado	Male	**Mean ± SD**	5.31 ± 1.966	52.41 ± 18.541	3.62 ± 0.942
		Range	8	80	4
		N	29	29	29
	Female	**Mean ± SD**	4.44 ± 2.093	58.28 ± 14.812	3.82 ± 0.809

	Range	8	44	2
	N	18	18	17
Total	**Mean ± SD**	4.98 ± 2.038	54.66 ± 17.281	3.70 ± 0.891
	Range	8	80	4
	N	47	47	46

Due to the indicators of food insecurity's high standard deviations relative to the means, it is hard to determine how they vary amongst the gendered HHs. In Tebasit, female household heads have a slightly younger average age than males. The largest age discrepancy is between Gerado female and male household heads, with females having an older average age by almost six years. In terms of household size, male HHs, on average, have 24% larger households. Number of meals per day are relatively similar between male and female HHs and across both kebeles. As the averages are above three meals a day across both genders and kebeles, it is assumed that snacks are included within meal count. There are three responses from female-headed households for the number of meals variable, this could be due to interviewee inability to answer or interviewer error.

In accordance with the literature, I will indicate "very poor," "poor," "middle" and "better-off" households using number of oxen owned (0, 1, 2, and 3+ respectively). In dividing the households by wealth levels, I will compare the proposed indicators of food insecurity and test for significant difference. An independent samples t-test suggested the only indicator that was significantly different amongst the gendered households is number of household members ($p=0.03$).

Table 2. Differences in indicators of food insecurity by wealth group and kebele in female-headed households.

Kebele	Wealth		Total members of HH	Age of the head of HH	Meals per day
Tebasit	**Very poor**	**Mean ± SD**	2.60 ± 1.140	49.40 ± 11.866	3.50 ± 1.00
		N	5	5	4
	Poor	**Mean ± SD**	5.00 ± 1.000	51.33 ± 9.866	3.33 ± 0.577

		N	3	3	3
	Middle	**Mean ± SD**	5.00 ± 2.582	56.75 ± 9.032	4.00 ± 1.000
		N	4	4	3
	Total	**Mean ± SD**	4.00 ± 2.000	52.33 ± 10.120	3.60 ± 0.843
		N	12	12	10
Gerado	**Very poor**	**Mean ± SD**	3.67 ± 1.826	59.42 ± 13.621	3.64 ± 0.809
		N	12	12	11
	Poor	**Mean ± SD**	5.50 ± 1.291	58.25 ± 22.336	4.00 ± 0.816
		N	4	4	4
	Middle	**Mean ± SD**	7.00 ± 2.828	51.50 ± 9.192	4.50 ± 0.707
		N	2	2	2
	Total	**Mean ± SD**	4.44 ± 2.093	58.28 ± 14.812	3.82 ± 0.809
		N	18	18	17
P-value, including both kebeles			0.013*	0.966	0.373

It appears that the number of household members and average number of meals per day increase with wealthier class, but high standard deviations indicate large variability. Age of the head of household slightly decreases with increasing wealth group, also with sizeable variability. Using the factor of wealth (as denoted by number of oxen) an ANOVA test was conducted, showing there were only significant differences in the total number of household members amongst the different wealth groups (p=0.013). An analysis using Tukey's method shows that at the 95% confidence level, there are differences between "very poor" and "middle" households in terms of household number, but not amongst the other groups.

Table 3. Differences in indicators of food insecurity by wealth group and kebele in male-headed households.

Kebele	Wealth		Total members of HH	Age of the head of HH	Meals per day
Tebasit	**Very poor**	**Mean ± SD**	5.00 ± 3.16	51.76 ± 23.662	3.52 ± 1.078
		N	11	21	21
	Poor	**Mean ± SD**	5.50 ± 1.45	54.19 ± 18.487	3.65 ± 0.892
		N	14	26	26
	Middle	**Mean ± SD**	5.00 ± 0.82	52.50 ± 16.959	3.70 ± 0.675
		N	4	10	10
	Total	**Mean ± SD**	5.24 ± 2.17	52.91 ± 19.836	3.62 ± 0.914

		N	29	58	58
Gerado	**Very poor**	**Mean ± SD**	4.57 ± 2.541	51.76 ± 23.662	3.52 ± 1.078
		N	21	21	21
	Poor	**Mean ± SD**	5.65 ± 1.719	54.19 ± 18.487	3.65 ± 0.892
		N	26	26	26
	Middle	**Mean ± SD**	5.60 ± 1.430	52.50 ± 16.959	3.70 ± 0.675
		N	10	10	10
	Better-off	**Mean ± SD**	7.00	48.00	4.00
		N	1	1	1
	Total	**Mean ± SD**	5.28 ± 2.050	52.91 ± 19.836	3.62 ± 0.914
		N	58	58	58
P-value, including both kebeles			0.231	0.972	0.920

Like the female HH data, it appears that both number of household members and meals per day increase with wealthier groups. Age of the head of household increases, then decreases at the "middle" class. The only account of a "better-off" household is a male-headed household.

An ANOVA test was conducted with wealth group as the factor and showed that the differences within the groups were greater than differences between them in terms of food insecurity indicators ($p>0.05$). Unlike female HHs, none of the indicators were statistically significant.

Indicators of Wellbeing and Agency

Objective Wellbeing

Table 4. Number of oxen owned by gender of the head of household and kebele.

				Gender		
Kebele				**Male**	**Female**	**Total**
Tebasit	**Number of Oxen Currently Owned**	**None**	Count	11	5	16
			% of subset	37.9%	41.7%	39.0%
		1	Count	14	3	17
			% of subset	48.3%	25.0%	41.5%
		2	Count	4	4	8
			% of subset	13.8%	33.3%	19.5%
	Total		Count	29	12	41
			% of subset	100.0%	100.0%	100.0%
Gerado	**Number of Oxen**	**None**	Count	10	12	22
			% of subset	34.5%	66.7%	46.8%

Currently Owned	**1**	Count	12	4	16
		% subset	41.4%	22.2%	34.0%
	2	Count	6	2	8
		% of subset	20.7%	11.1%	17.0%
	3	Count	1	0	1
		% of subset	3.4%	0.0%	2.1%
Total		Count	29	18	47
		% of subset	100.0%	100.0%	100.0%

This table depicts the crosstabulation of number of essential livestock, mainly oxen, per HH. Over half of female HHs do not have any oxen (56.7%). Majority of male HHs have at least 1 essential livestock (63.7%). Across both kebeles, female HHs have less livestock than male HHs. From Tebasit to Gerado, the proportion of male households without oxen decreases by 3.4% and the proportion of female households without oxen increases by 25.0% (male HHs 37.9%, 34.5%; female HHs 41.7%, 66.75%). Although the Gerado subset has a larger size, it can be noted that male HHs in Gerado have more oxen. In comparison to Tebasit, the proportion of Gerado male HHs with zero to one ox is lower by 10.3% and the proportion of male HHs with two to three oxen is higher by 10.3%. In contrast, Gerado female HHs largely aggregate at having no oxen. The increase of female HHs with zero oxen from Gerado to Tebasit is the largest difference in proportion of similar wealth groups in the sample. Compared to Tebasit, the proportion of Gerado female HHs with one ox is lower by 2.8% and the proportion of female households with two oxen is lower by 22.2%.

Agency

Table 5. Self-reported agency by gender of household head and kebele.

			Gender					
Kebele			**Male**		**Female**		**Total**	
			Count	**%**	**Count**	**%**	**Count**	**%**
Tebasit	**I am free to decide for myself how to**	**2**	1	3.4	0	0.0	1	2.4
		3	0	0.0	2	16.7	2	4.9
		4	1	3.4	2	16.7	3	7.3
		5	6	20.7	2	16.7	8	19.5
		6	3	10.3	0	0.0	3	7.3

	live my life	**7**	3	10.3	1	8.3	4	9.8
		8	4	13.8	0	0.0	4	9.8
		9	2	6.9	1	8.3	3	7.3
		10	9	31.0	4	33.3	13	31.7
	Total		29	100.0	12	100.0	41	100.0
Gerado	**I am free to decide for myself how to live my life**	**2**	0	0.0	1	5.6	1	2.1
		3	1	3.4	1	5.6	2	4.3
		5	1	3.4	3	16.7	4	8.5
		6	3	10.3	0	0.0	3	6.4
		7	5	17.2	1	5.6	6	12.8
		8	7	24.1	2	11.1	9	19.1
		9	2	6.9	2	11.1	4	8.5
		10	10	34.5	8	44.4	18	38.3
	Total		29	100.0	18	100.0	47	100.0

This ordinal variable contains ranked answers starting from 0, meaning the interviewee "completely disagrees" with the prompt, up to 10, meaning the interviewee "completely agrees" with the prompt. Out of 88 households, no respondents reported complete (0-1) disagreement with the statement. Most respondents reported rankings higher than 6 for perceived agency (69.3%). The lowest frequency response correlates to the lowest self-reported agency (2.3% selected 2), and the highest frequency response correlates to the highest self-reported agency (35.2% selected 10).

In Tebasit and Gerado, female HH proportions of low agency (below 6 on the scale) are over 20% larger than that of male HHs. Compared to Gerado, both HHs in Tebasit show greater proportions of lower agency, an increase of 20.7% in male and 22.2% in females. Although female HH subsets are smaller than male HH subsets, it can be inferred from this table that in both kebeles female HHs have lower levels of agency than male HHs. While 50.1% of female HHs in Tebasit reported low agency levels, almost half of that proportion, 27.9%, of female HHs in Gerado reported low agency levels.

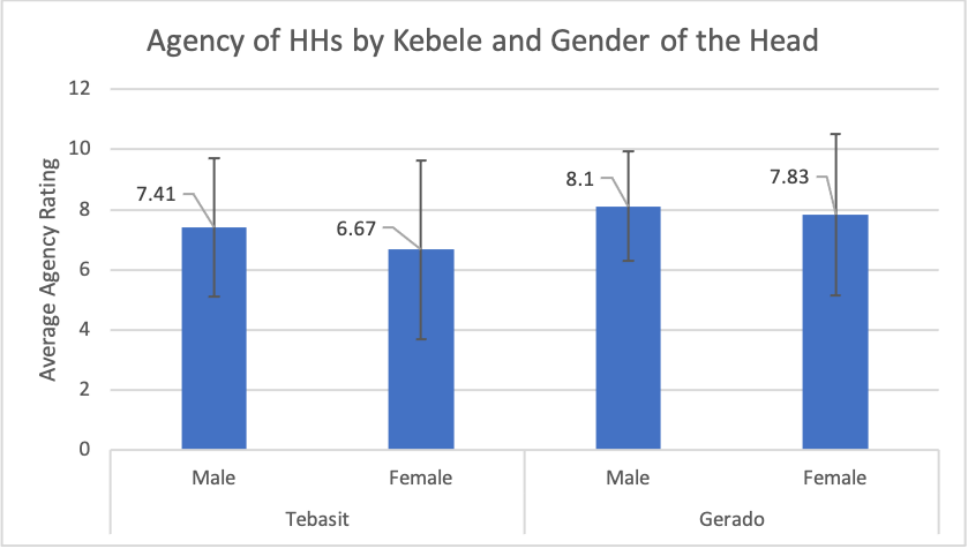

Figure 5. High variation in the averages render the differences between the subsets insignificant.

Across both kebeles, male HHs have higher averages of agency. Across both genders, the Tebasit subset has lower averages of agency than the Gerado subset. Not much significance in the differences.

Subjective Wellbeing

Table 6. Life satisfaction by gender of HH and kebele.

		Perceived Life Satisfaction				
		Somewhat dissatisfied	**Neither satisfied nor dissatisfied**	**Somewhat satisfied**	**Completely satisfied**	**Total**
Kebele	**Gender**	**Percentage within Gender**				
Tebasit	**Male**	10.3	3.4	62.1	24.1	100.0
	Female	40.0	10.0	50.0	0.0	100.0
	Total	17.9	5.1	59.0	17.9	100.0
Gerado	**Male**	3.4	-	62.1	34.5	100.0
	Female	0.0	-	58.8	41.2	100.0
	Total	2.2	-	60.9	37.0	100.0
Total	**Male**	6.9	1.7	62.1	29.3	100.0
	Female	14.8	3.7	55.6	25.9	100.0
	Total	9.4	2.4	60.0	28.2	100.0

Life satisfaction is an indicator of subjective wellbeing. The ordinal variable is set on a ranking scale starting from 1 indicating the respondent was “not satisfied at all” up to 5

indicating they were “completely satisfied” with their life. No respondents reported having complete dissatisfaction with their lives. There are three missing values, which could be due to an interviewee not wanting to answer the question or interviewer error. Out of 85 respondents, only 8 reported being dissatisfied with their lives. Majority indicated they were somewhat or totally satisfied with their lives (88.2%).

Male HHs have higher proportions of reporting satisfactory life perceptions in both kebeles across both responses “somewhat satisfied” and “completely satisfied.” An exception is noted in Gerado for the response “completely satisfied,” where female HHs have a higher proportion of responses. In Tebasit, female HHs have larger proportions than male HHs for indifferent and unsatisfactory responses. No household head in the Gerado subset reported indifference to the prompt of life satisfaction, and only one, which was male, reported dissatisfaction. It should be noted that in the total distribution of responses, male HHs consistently have higher proportions of satisfactory life responses and lower proportions of unsatisfactory life responses than female HHs. Tebasit and Gerado differed notably in distribution of perceived life satisfaction.

For both genders, the Tebasit subset has a more spread-out distribution of life satisfaction responses than Gerado. Gerado HHs aggregate towards the two satisfactory responses, indicating almost all of HHs in that kebele have high subjective wellbeing (male: 96.6%; female:100%). In Tebasit, male HHs aggregate towards satisfactory responses (86.2%), but female HHs are evenly split amongst satisfactory and dissatisfactory responses. The high proportion of female HHs having dissatisfaction with life (40%) is notable, especially when contrasted with the male HHs’ low proportion of 10.3%. There were not any female HHs in Tebasit that reported complete

satisfaction with their lives. In comparison to male HHs, Tebasit female HHs also had a 6.6% higher proportion of indifferent responses about their life.

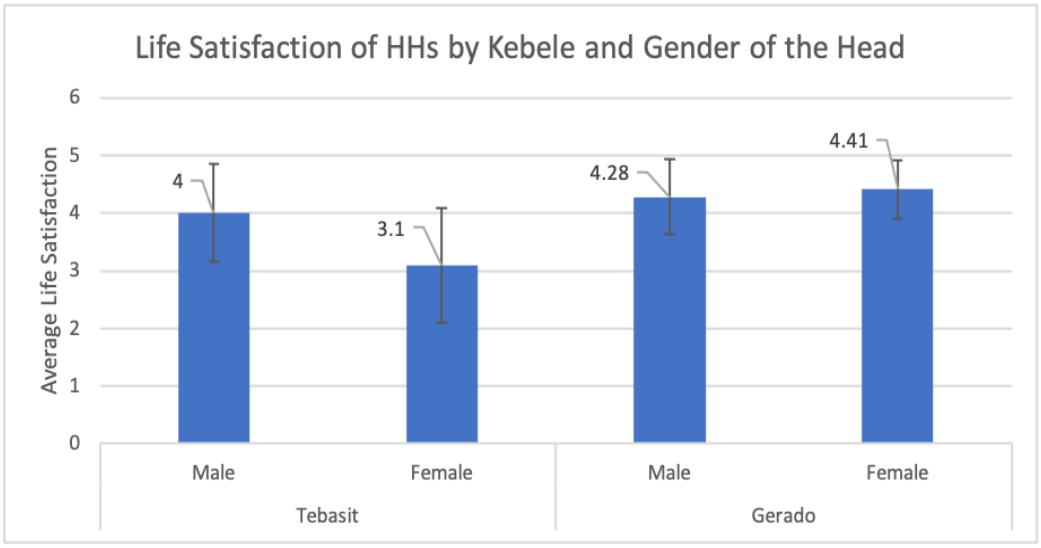

Figure 6. Average subjective wellbeing, as indicated by perceived life satisfaction, differ significantly between the subsets.

The subjective wellbeing of the sample is 4.07; only Tebasit female-headed households scored below this, and they did so by almost an entire point, the largest deviation from the sample mean of any subset. In Tebasit, female-headed households have notably lower subjective wellbeing averages than male-headed households. Across kebeles, Gerado households have higher averages than Tebasit. Within Gerado, female-headed households have higher subjective wellbeing averages than males, thought the high variation in the data renders the significance low. The largest difference in the subset is between female-headed households; HHs in Gerado averaged 1.31 points higher (42.3% increase) in average subjective wellbeing rankings than HHs in Tebasit.

Associations Between Wellbeing and Agency

Kendall's Tau-b (τ_b) test of association is a nonparametric computation of the relationship between two ordinal variables. It identifies how strong the correlation is and whether the association is positive or negative. This coefficient will be used to assess if agency is correlated with number of oxen and life satisfaction within the overall sample and subsets. The association will also be tested for statistical significance at the 0.05 significance level.

Association Between Objective Wellbeing and Agency

The null hypothesis is that objective wellbeing, as indicated by number of oxen owned, and agency do not associate. The alternative hypothesis is that the variables do correlate.

Table 7. Association between objective wellbeing and agency by subset.

Subset	**τ_b**	**p-value**
Entire sample	0.006	0.949
Male HHs	-0.060	0.592
Female HHs	0.119	0.453
Tebasit HHs	-0.080	0.543
Gerado HHs	0.060	0.628
Tebasit Male HHs	-0.085	0.597
Tebasit Female HHs	-0.097	0.705
Gerado Male HHs	-0.113	0.480
Gerado Female HHs	0.337	0.111

At the 0.05 significance level, there is not enough evidence to suggest that objective wellbeing correlates with agency in the sample.

Association Between Agency and Subjective Wellbeing

The null hypothesis is that agency and subjective wellbeing, as indicated by life satisfaction, do not associate. The alternative hypothesis is that the variables do correlate.

Table 8. Association between agency and subjective wellbeing by subset.

Subset	**τ_b**	**p-value**
Entire sample	0.052	0.573
Male HHs	-0.044	0.699
Female HHs	0.190	0.249
Tebasit HHs	0.170	0.208
Gerado HHs	-0.141	0.283
Tebasit Male HHs	0.172	0.284
Tebasit Female HHs	-0.059	0.838
Gerado Male HHs	-0.361	0.031*
Gerado Female HHs	0.194	0.388

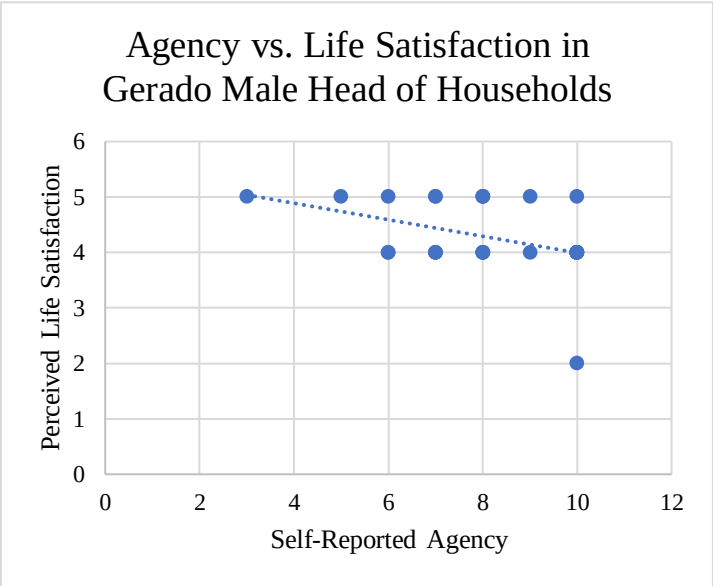

Figure 7. In Gerado male HHs, there is a negative association between agency and subjective wellbeing, as indicated by life satisfaction, at the 0.05 significance level (p=0.031).

Through the coefficient of correlation, τ_b, there appears to be a statistically significant correlation between agency and subjective wellbeing in Gerado male HHs (p=0.031). The other subsets tested did not have statistical significance; for those subsets, there is not enough evidence in the sample to suggest that agency and subjective wellbeing have a significant correlation. In Gerado male HHs however, there is enough evidence to suggest that agency and subjective

wellbeing have a strong negative association (τ_b= -0.361). This indicates that as male HHs in Gerado have higher agency, they experience lower subjective wellbeing as indicated by life satisfaction. The null hypothesis, stating agency and subjective wellbeing are not associated, is rejected for this subset.

Table 9. Life satisfaction rating averages by wealth group.

	Perceived Life Satisfaction	
	Mean ± SD	**N**
Very poor	3.97 ± 0.941	36
Poor	4.12 ± 0.820	33
Middle	4.20 ± 0.561	15
Better-off	4.00	1
Total	4.07 ± 0.828	85

Depicts an increasing trend of higher life satisfaction with increasing wealth group.

Effects of Household Head's Gender and Kebele on Wellbeing and Agency

The Mann-Whitney U is a nonparametric test used to determine statistically significant differences amongst ordinal variables of independent groups. For this study, it will be used to test for significant differences between female, male HHs and Tebasit, Gerado HHs in subjective wellbeing, agency and objective wellbeing. Assumptions for the test were met before assessment. The dependent variables life satisfaction and agency are ordinal, and livestock owned is discrete. Independent variables, gender and kebele, are categorical with two options each. The two values within both groups are independent of each other and do not repeat HHs. The last assumption is checked by normality; histograms were used to observe that both life satisfaction and agency had different shapes and distribution patterns. As the variable distributions do not exhibit normality, mean ranks will be used to analyze the results of the tests.

Subjective Wellbeing and Agency by Gender of the Household Head

These Mann-Whitney U Tests of Independence assesses if there are significant differences in agency and subjective wellbeing amongst the gendered HHs. The null hypotheses for the first and second test respectively are that mean life satisfaction/agency of male and female HHs are equal. The alternative hypotheses are that the mean life satisfaction/agency of male and female HHs are not equal. Both tests are conducted at a significance level of 0.05, and results are presented in a singular table.

Table 10. Differences in Life Satisfaction and Agency by gender of the household head.

	Gender	N	Mean Rank	p-value
Life Satisfaction	Male	58	44.36	0.433
	Female	27	40.07	
	Total	85		
Agency	Male	58	45.11	0.751
	Female	30	43.32	
	Total	88		

Neither Mann-Whitney Mean ranks indicate there is a small difference in agency between the gendered HHs. Male HHs have higher self-reported agency A larger difference is seen in the life satisfaction of male versus female HHs. In both cases, male HHs have higher agency and subjective wellbeing than female HHs. Failed to reject the null hypothesis for both tests at the 0.05 level of significance (p=0.433, 0.751). This does not mean that female and male HHs have equal levels of agency and life satisfaction; it means that we do not have enough evidence to statistically claim otherwise.

Subjective Wellbeing and Agency by Kebele

The Mann-Whitney U Test of Independence assesses if there are significant differences in agency and subjective wellbeing amongst the kebeles. The null hypotheses for the first and second test respectively are that mean life satisfaction/agency of Tebasit and Gerado HHs are

equal. The alternative hypotheses are that the mean life satisfaction/agency of Tebasit and Gerado HHs are not equal. Both tests are conducted at a significance level of 0.05.

Table 11. Differences in Life Satisfaction and Agency by kebele of the household.

	Kebele	N	Mean Rank	p-value
Life Satisfaction	Tebasit	39	35.72	0.004*
	Gerado	46	49.17	
	Total	85		
Agency	Tebasit	41	40.22	0.133
	Gerado	47	48.23	
	Total	88		

There is a significant difference in life satisfaction between Tebasit and Gerado at the 0.05 significance level (p=0.004). Tebasit HHs have significantly less subjective wellbeing than Gerado HHs. Tebasit HHs also have lower agency levels than Gerado HHs. Failed to reject the null hypothesis for test of agency at the 0.05 level of significance (p=0.133).

Objective Wellbeing by Gender of the Household Head and Kebele

These tests of independence will assess if there are significant differences in essential livestock owned amongst the gendered HHs and kebeles. The null hypotheses for the first and second test respectively are that mean essential livestock owned of male and female/Tebasit and Gerado HHs are equal. The alternative hypotheses are that the mean essential livestock owned of male and female/Tebasit and Gerado HHs are not equal. Both tests are conducted at a significance level of 0.05, and results are presented in a singular table below.

Table 12. Differences in objective wellbeing by gender of the household head and kebele.

	Gender	N	Mean Rank	p-value
Essential Livestock (Oxen) Owned	Male	58	46.94	0.187
	Female	30	39.78	
	Total	88		
	Kebele	**N**	**Mean Rank**	**p-value**
	Tebasit	41	45.93	0.611
	Gerado	47	43.26	
	Total	88		

Objective wellbeing is indicated by essential livestock (oxen) owned. Neither Mann-Whitney U Test of Independence produced significant results; failed to reject the null hypothesis for both tests at the 0.05 level of significance (p=0.187, 0.611). The difference in mean essential livestock owned amongst the genders is stronger than amongst the kebeles. Female HHs have substantially less oxen than male HHs. The difference in kebeles is small.

Data Quality

Data where most of the responses are missing were not used, including food security indicators such as monthly expenses and net income. Data that did have a few missing responses could have had it randomly, whether from interviewee, interviewer or input error. Survey response regarding subjective wellbeing and number of meals consumed per day were missing three responses. The dataset used seems to be representative of the diverse South Wollo population. There were not any questionable, outlying data and the baseline correlations found seem to align with that of literature.

Chapter 4: Discussion

The objectives of this quantitative research were to identify trends in perceptions of wellbeing and agency amongst the gendered households and their kebeles. In South Wollo, households are typically led by males (Cafer et al. 2015). The proportion of male to female-headed households, 65.9% to 34.1%, respectively, indicate that there is a large population of women left in charge of their homes (Fig. 1). This is due to almost all of the female head of households being widowed, separated from their husbands, or divorced (Fig. 2). Literature suggests men benefit from marriage as they obtain land rights from the woman and indirectly through children, and poor women struggle to marry as they do not have any resources to offer (Howard and Smith 2006).

Poor female heads of household are discouraged from marriage, and male heads of household are encouraged to marry. This is seen in the study sample, as the overwhelming majority of female-headed households do not have marriage partners (96.3%) compared to the miniscule amount of male-headed households that do not have a marriage partner (6.8%) (Fig. 2). Moreover, no male-headed households in the sample are divorced, separated or widowed, as they would be encouraged to remarry if they were to be (Howard 2006). The only instances of polygamous marriage in the sample are also male-headed households, attesting to cultural traditions of Muslim practice.

Figure 3 shows that majority of all household heads identify as Muslim, but there are higher proportions of Christians in Tebasit than in Gerado (12.8% and 2.2%, respectively). This coincides with the literature suggesting that Islamist reforms are impacting towns more than rural areas (Abbink 2007). Perhaps Gerado households are strictly adhering to orthodox Islam, which frowns upon religious conversions and encourages separation from Christian households

(Abbink 2007). Majority of households across gender and kebele produce sorghum, which corroborates the literatures findings (Agidew and Singh 2018). Sorghum is a native staple and is sensitive to rainfall, which could increase vulnerability, unless other means are used to increase income and harvest such as crop rotation and cash crops (Cafer et al. 2015).

Food Insecurity

Studies have shown a negative association exists between the age of the head of household and food security (Agidew and Singh 2018). Elderly farmers have an elevated risk of being food insecure (Little et al. 2004; Agidew 2018). The discrepancy between average ages of the gendered households, especially in Gerado, can impact economic opportunity due to older farmers being dependent and unable to provide labor (Table 1). This can lead to decreased objective wellbeing, which is predicted to negatively impact agency and life satisfaction. The higher average ages of female household heads could be explained by their high proportion of widows, who chose to not remarry or are unable to due to their older age and lack of resources.

Across both kebeles, male households have larger family sizes (Table 1). This can be an advantage in terms of labor force and could also suggest that male households are wealthier and can support more family members. For smallholder households, it is essential to have members working in agricultural production (Sharp and Devereux 2004). A higher number of household members can improve food security through farm work and remittance income if sons and daughters are working elsewhere. Both improve material, thus objective, wellbeing. Conversely, if the members are dependent and cannot work, they can heighten food insecurity (Agidew 2018). In South Wollo, destitution correlates with smaller household sizes (Sharp 2004). Table 1 can indicate male-headed households have an advantage in obtaining agricultural labor, food security, and higher income levels. This increased economic opportunity could lead to higher

objective and subjective wellbeing. The findings align with the literature in suggesting female-headed households have higher rates of food insecurity (Sharp and Devereux 2004; Devereux and Sharp 2006; Little 2006; Cafer et al. 2015). Similarities in number of meals per day suggest similar food intake levels between the households.

Tables 2 and 3 confirm previous findings about trends in wealth group, gender, and food insecurity indicators. The increase in household size with wealth group can be explained through the benefit of having more people to contribute agricultural labor and diversified income (Little et al. 2004). Since women are not allowed to plow fields, it is essential to have male members of the household to produce crops. With increasing household size, female-headed households are wealthier. The number of meals consumed increasing with wealth group can be explained by the increased food security brought about by higher economic classes. The more oxen a household has, the more food secure they are likely to be (Little 2004). Age of the head of household decreases with increasing wealth group as younger household heads are likely to be self-sustaining and able to work to provide for the home (Agidew and Singh 2018). The data further reflects the literature as it depicts male households with more family members and younger heads than female households, possibly indicating male households are better-off in terms of poverty and food insecurity dynamics (Sharp and Devereux 2004; Little 2006; Cafer et al. 2015). The only "better-off" household in the sample, which is led by a male, aligns with understandings of how these indicators coincide with wellbeing. He is young, has a large household size, high number of meals per day and owns the most oxen in the sample (Table 3).

In the female subset, there were significant differences in average household size between the wealth groups, specifically in "very poor" and "middle" households ($p=0.013$). This analysis proves that wealth groups can be statistically different in determinants of food

insecurity, and thus objective wellbeing. Although differences are observed in both age of head of household and meals per day, they are not statistically significant. The significance of household size aligns with previous findings that more family members increase objective wellbeing through agricultural labor and non-farm income (Sharp and Devereux 2004).

Wellbeing and Agency

Objective Wellbeing

The literature indicates two oxen are needed to cultivate a field (Little 2006). The discrepancies between the gendered households in terms of oxen owned is immense; while 63.7% of male households have at least one ox, 56.7% of female households do not have any oxen (Table 4). As mechanical ploughing is not used in South Wollo, oxen are the only means farmers have to cultivate their crops. Without oxen, households are forced to sharecrop their land to have it ploughed (Little et al. 2004). Having at least one ox allows for farmers to participate in sharing programs; they can borrow an ox from a relative or friend to plough their land. This makes a great distinction in having no oxen and having at least one ox for accessing economic opportunity and obtaining food security.

Arrangements to borrow ox usually require a loss of production, but arrangements of sharecropping are significantly worse as homes often have to give up over half of their harvest (Little 2004; Little 2014). Losing half of the harvest renders households extremely vulnerable and destitute; without accessibility to credit or non-farm income, they are incapable of providing for their family. This suggests that households in developed kebeles like Gerado have better chances of providing for their families than households in Tebasit. Compared to Tebasit, there are more female-headed households and less male-headed households that do not own any oxen in Gerado (Table 4). This suggests that male-headed households are less vulnerable in Gerado

than in Tebasit as they are better equipped to cultivate their land (Howard and Smith 2006). The larger proportion of Gerado female households without any oxen was unexpected but could be attributed to widowing and consequent lack of resources. Although female-headed households are more vulnerable in Gerado, given the kebele's greater accessibility for non-farm income, credit, and other economic opportunities, they are likely to be supplemented by other means.

In both kebeles, female households have less oxen than male households, and are thus less wealthy. This confirms that there are differences in indicators of objective wellbeing between male and female households and between Tebasit and Gerado. The differences in kebeles can be explained by Gerado's proximity to the market town Dessie, which provides the inhabitants with greater access to economic opportunity. These findings offer key insight into objective wellbeing as oxen is an integral factor in determining wealth and food security. Households with more oxen can plough their fields and increase their food security and income. Households that have one ox are perceived as poor homes as they must engage in taxing borrowing systems to utilize their farmland. Households with no oxen at all are extremely poor as they are forced to use exploitive sharecropping arrangements and lose most of their harvest. It is evident from this sample that female-headed households have less resources than male-headed households. Female households are likely to be more food insecure and destitute as a result.

These findings are in accordance with my first hypothesis, that female-headed households are more likely to have faced inequalities from economic and sociocultural factors and as a result, have low objective wellbeing as indicated by material possession. Cultural practices and social norms contribute to the large proportion of female households lacking any oxen; women usually are not involved in ploughing fields, so female households often sharecrop their land or acquire male laborers to cultivate their farms (Little 2008). As a major indicator of wealth, the

number of oxen female versus male-headed households have indicated that there are differences in objective wellbeing between the genders.

Agency

Literature suggests that higher levels of agency allow people to produce desirable outcomes in their lives, which can increase their life satisfaction (Victor et al. 2013). Table 5 indicates that female-headed households consistently have lower proportions of high self-reported agency than male-headed households across both kebeles (Tebasit: male 72.3%, female 49.9%; Gerado: male 93.0%, female 72.2%). Increased agency can bolster subjective wellbeing, so the discrepancy in agency based on gender and kebele can negatively impact wellbeing in female-headed households and Tebasit households. The lower levels of agency in both subsets could indicate these households are less inclined to act on their resources and produce a life they deem as satisfactory. They may not think they can change their circumstances and thus may not seek help from extension programs to improve their farming management, look for work in non-farm income, or try crop diversity and swapping techniques. Decreased agency not only impacts satisfaction with life but can also impair objective wellbeing by hindering one's abilities to make use out of their resources.

The differences in agency between kebele and gender can be attributed to the variation in wealth of male and female-headed households. These findings are in accordance with my prediction that decreased objective wellbeing, indicated by material possession and impacted by economic and sociocultural factors, reduces one's ability to believe they are in control of their lives. Female-headed households are consistently lower in indicators of objective wellbeing, which is expected to negatively influence their self-reported agency levels. Tables 4 and 5 also show that households in Tebasit, the less developed kebele, have both lower objective wellbeing

and agency. A discrepancy is noted in Gerado female-headed households, who have less material wellbeing (Table 4). Table 5 indicates Gerado has larger proportions of female-headed households with high agency levels than Tebasit. This finding supports the posited explanation that the households in Gerado are likely to be supplemented by other economic means accessible in the kebele, thus allowing them to have higher agency while having less oxen. The data is important as it depicts a trend in not only gendered households, but also kebeles, that could correlate agency with indicators of objective wellbeing. The consistency of female-headed households having less agency suggests there could be a difference in agency that is attributable to the head of household's gender. The consistency of the gendered households having lower averages in Tebasit than in Gerado suggests a difference in agency that can be attributable to the kebele.

Standard deviations in agency averages are high, rendering most of the differences in subsets' average self-reported agency insignificant (Fig. 5). The insignificant differences in average agency across the kebeles and gendered households could reflect similarities in wealth not assessed for in this study, such as land size or income. Similar wealth groups would produce similar levels of agency; this could indicate that differences in wealth between the households might be insignificant as well. This could be explained by the cognatic inheritance practice traditional to the Amhara; if both females and males have equal rights to land, then that would decrease wealth gaps between genders, thus impacting agency and life satisfaction (Howard and Smith 2006). The most noticeable difference is between female-headed households; Gerado female household heads have over a point higher in average agency levels than those in Tebasit (Fig. 5). This notable discrepancy suggests that Tebasit, the poorer kebele, has a substantial impact on agency. Gerado female household heads most likely have higher agency, despite a

larger proportion having less oxen than Tebasit, because they have access to various income sources. Their accessibility to non-farm income, markets to sell items, and social networks provide more material wellbeing and social capital, which contribute to objective wellbeing. This increase in objective wellbeing positively impacts their agency, thereby explaining this trend where Gerado female household heads have higher agency than Tebasit female household heads.

Subjective Wellbeing

Table 6 shows that in Tebasit, female-headed households have less satisfaction with their lives than male-headed households do. This decreased life satisfaction supports the proposed hypothesis that as male-headed households have higher objective wellbeing, their agency is increased, and they are able to live satisfactory lives. The most notable finding within the Tebasit subset is that of the female-headed households, 50% reported indifference and dissatisfaction with their lives and none of them reported complete satisfaction (Table 6).This aligns with the literature finding female households vulnerable as the poor kebele's female households have the worst life satisfaction (Little et al. 2014). It also aligns with the literature suggesting that low objective wellbeing correlates with low subjective wellbeing (Victor et al. 2013). Table 9 also corroborates this; with increasing wealth groups, indicated by number of oxen owned, life satisfaction increased as well. This demonstrates that the head of household's subjective wellbeing was positively impacted by increased objective wellbeing. Female-headed households in Tebasit have the significantly lowest average life satisfaction of all subsets, an indication that the intersection of female household head and a poor kebele results in vulnerability and the deteriorated subjective wellbeing (Fig. 6). This has implications for the study as it can suggest poverty and widowing correlate with diminished life satisfaction (Fig. 2)

Across both genders, Gerado households have significantly higher rates of life satisfaction than Tebasit households. This supports the hypothesis that Gerado households have economic and social opportunities that allow them to obtain better objective wellbeing, which results in higher agency and life satisfaction. There is a trend seen in both kebeles; Gerado households have more oxen, higher agency levels, and better life satisfaction responses than Tebasit households. Within the kebeles, female-headed households have less oxen, lower agency levels, and generally poorer life satisfaction responses. It is important to note although Gerado female-headed households had lower self-reported agency than Gerado male-headed households, their perceived life satisfaction does not reflect that difference (Table 5, Table 6). This could be a result of non-farm income opportunities available to households in Gerado; although the head of household may not be working, she could be receiving income through different family members and living comfortably. This proposed explanation takes into account the large proportion of Gerado female-headed households not owning any oxen (Table 4). Compared to Tebasit, a higher proportion of female households in Gerado own zero oxen, and yet, they have lower proportions of poor agency levels and the highest average subjective wellbeing of all subsets (Table 5, Figure 6). This suggests that the benefits of the kebele, namely its proximity to Dessie, allow female-headed households to have other means of income to sustain their families and decreased reliance on oxen.

Associations Between Wellbeing and Agency

Table 7 indicates that the sample does not exhibit significant correlations between objective wellbeing and agency. Although statistically insignificant, the τ_b of the subsets can still be analyzed. The only subsets that had non-negligible coefficients of correlation were female-headed households and Gerado female and male-headed households. The τ_b for female-headed

households was moderately positive, indicating that as objective wellbeing increases, so does agency. The τ_b for Gerado male households is moderately negative, indicating that objective wellbeing had an indirect correlation with agency. The τ_b for Gerado female households was positive and the strongest of the sample. This indicates that female-headed households in Gerado have a strong direct correlation between objective wellbeing and agency. Gerado female heads of household have less oxen and higher agency levels than their counterparts in Tebasit, which I proposed could be due to Gerado's opportunities for differential income and other resources that enhance objective wellbeing. The strong positive association seen in the Gerado female subset between objective wellbeing and agency can be understood as supporting the hypothesis that with increased objective wellbeing, agency increases as well.

Table 8 indicates that there is a statistically significant negative association between agency and subjective wellbeing in Gerado male-headed households ($p=0.031$). In this subset, as agency increases, subjective wellbeing tends to decrease (Fig. 7). This aligns with the literature's suggestion that there are instances when high agency and low objective wellbeing result in poor life satisfaction (Victor et al. 2013). Although high agency levels allow people to produce desirable outcomes in their lives, when one's immense drive to have a better life is not reflected in their situation or is hindered by their poor objective wellbeing, it can create life dissatisfaction (Victor 2013). This could explain why Gerado male-headed households' agency and life satisfaction have a negative correlation. This subset had the highest proportion of high self-reported agency levels at 90%; in other subsets, only 72.2% and 49.9% of their population have high agency levels (Table 3). A large proportion of Gerado male-headed households did not have the essential two oxen (75.9%), meaning majority of its population is somewhat poor. With such high agency levels and low objective wellbeing, as indicated by material wellbeing, it can be

understood that more Gerado male household heads felt dissatisfied with their lives compared to their female counterparts. It can also be noted that subjective wellbeing was the only category where Gerado female-headed households positively outscored male-headed households (Table 6). This can be explained by the high agency male-headed households were feeling; perhaps their disappointment with their actual lives compared to the lives they envisioned resulted in decreased life satisfaction.

Figure 7 depicts the statistically significant negative correlation between agency and subjective wellbeing. Perhaps the male inhabitants, who are the primary breadwinners in society, felt constrained by their environment. Being in proximity to Dessie's advanced infrastructure, urbanization and economic opportunities could have made them unsatisfied with what they are limited to in Gerado. Inaccessibility to the livelihoods in Dessie could further fuel their disappointment with their lives. This phenomenon is described in the literature as "frustrated freedom," when resource limitations frustrate one's perceptions of their ability to achieve desirable outcomes (Victor et al. 2013). Producing a desirable life not only depends on the capability one has to act, but also the opportunities they have to act on (Victor 2013). Although many Gerado male household heads think they can achieve a better life, they are constrained by their limited opportunity structures, and thus have poor life satisfaction (ibid.).

Although the other subsets in Table 8 tested for correlation were not statistically significant, the τ_b values can still be analyzed. Both the male households' subset and Tebasit female households' subset have negligible associations between agency and subjective wellbeing. Gerado households have a moderately negative association, influenced by its male households. The entire sample had a negligible positive association. Every other subset has moderately positive associations. These subsets could suggest that as agency increases,

subjective wellbeing tends to increase as well. This would support the hypothesis that as agency increases, subjective wellbeing will increase and as agency decreases, subjective wellbeing will decrease. It would also agree with the literature, as Victor et al. found that increased agency enables households to obtain better lives and decreased agency, as a result of impaired objective wellbeing, can limit the life satisfaction achieved (2013). The positive associations in the subsets contrast with the negative correlation in Gerado male household heads. This attests to the explanation that as primary breadwinners and in proximity to better livelihoods in Dessie, Gerado male household head's perceived capacity to lead better lives were constrained by their opportunities and resulted in low life satisfaction. Gerado female household heads had a moderately positive association, suggesting they were not constrained in their life perceptions. This suggests the frustrated freedom felt by Gerado males is specific to their gender. Male household heads in Tebasit also had moderately positive associations. This suggests that proximity to development complicates perceptions of wellbeing and agency. The large p-values for these subsets denotes that there was not enough evidence to reject the null hypothesis that agency and subjective wellbeing are not correlated. Conversely, the significant p-value of the Gerado male households indicate that a correlation between agency and subjective wellbeing exists within the population.

Effects of Household Head's Gender and Kebele on Wellbeing and Agency

Sample differences that are substantially different, such as oxen ownership by the gendered households and agency and subjective wellbeing by kebele, indicate that the null hypothesis is likely to be false (Table 11, Table 12). Although only one subset was found to be statistically significant, other subsets had strong differences as well. The first test showed that agency was relatively similar in both male and female-headed households. Life satisfaction had a

stronger difference in mean ranks. It is interesting to note that female-headed households had less subjective wellbeing and agency than male-headed households, even if not significant. This study found strong correlations between gender and objective wellbeing, agency, food insecurity indicators, and subjective wellbeing. But when it came down to testing the significance of how gender affects agency and wellbeing, the results were insignificant (Table 10, Table 11). This indicates that although gender of the head of household may correlate with low objective wellbeing, agency and subjective wellbeing, it does not appear to bear statistical significance over them. I do not have enough evidence to claim that male and female-headed households are statistically different in terms of wellbeing and agency.

Table 11 shows that there is a significant difference life satisfaction in terms of kebele ($p=0.004$). This supports the hypothesis as the kebele with less economic opportunity, thus impaired objective wellbeing, had significantly lower levels of subjective wellbeing than the better-off kebele. Table 11 has great implications for the study as it reveals kebele does impact life satisfaction and that objective wellbeing, which is the only difference between kebeles, impacts subjective wellbeing as well. Although it is not significant, there is a substantial difference in Tebasit household's agency levels compared to those in Gerado. The fact that Tebasit has substantially lower levels of agency corroborate the hypothesis that low objective wellbeing reduces agency levels, thus impairing subjective wellbeing.

Limitations

Limitations to the study include small sample size and data analysis methods, potential of interviewee bias, and room for more wealth indicators. The sample size of the study, although significant, had smaller subsets in the female population that could have led to misinterpretations of data when comparing to the larger male groups. Equal distribution between the subsets would

allow for more data analysis methods to be used as well. Larger sample size would allow for greater understanding of the population and application of significance tests, as results can sometimes be insignificant due to the sample size. Sample size prevented some analysis methods like the chi-square test from being used. A limitation could be the interviewee's response bias. When interviewees were asked questions, they could have answered misleadingly due to others listening in. Perhaps they did not want to sound bad in front of others, so they reported higher agency levels or higher life satisfaction. Or they could have been answering ideally, where they portrayed a version of themselves they wanted to be but were not at the moment. Possible ways to avoid this would be to ensure that interviews took place in private areas and that the interviewer ensures an honest response will be given from the interviewee. Another limitation of the study is the lack of delineation between wealth groups. There was high variation within the subsets, which can be attributed to possible interviewee bias and the lack of objective wellbeing indicators. Variables such as number of male laborers within the household, number of kin providing remittance income, and involvement in social groups can provide a more in-depth analysis and would allow for lower variation in subset responses by better identifying wealth groups.

Chapter 5: Conclusions and Implications

Wellbeing is a holistic study of both the subjective, including life satisfaction and happiness, and the objective, including social capital and material possessions. In this study, I have attempted to uncover more about how wellbeing and its components relate to agency, and how that relationship correlates to gender in South Wollo. I hypothesized that objective wellbeing obtained through economic and sociocultural factors informs the perceptions one has on their ability to control their life. Accordingly, it was predicted that with decreasing objective wellbeing, indicated by number of essential livestock owned, perceptions of agency would decrease. This would in turn reduce one's ability to create desirable outcomes in their life, and thus, subjective wellbeing would decrease as well. This notion has been supported by not only the literature, but also by the findings of this study.

Location, as indicated by kebele, has a significant effect on self-reported life satisfaction of the head of the household. Agency and subjective wellbeing have a statistically significant negative association within the subset of Gerado male-headed households. And although this subset endured "frustrated freedom," or opportunity constraints negatively affecting their subjective wellbeing, their female counterparts did not. This suggests a difference in perceptions of wellbeing and agency that could be attributable to gender. Most female-headed households consistently rank lower than males for indicators of objective wellbeing, subjective wellbeing, agency, and food security. The intersection of female-headed and Tebasit households resulted in the substantially lowest subjective wellbeing average in the entire subset. Compared to the sample's average of 4.07, the richer kebele's average of 4.35, and the male subset's average of 4.14, Tebasit female household heads' average subjective wellbeing of 3.31 is a stark reminder

that women in agriculture and in South Wollo are suffering from sociocultural and economic inequality.

Agricultural developments like irrigation systems allow farmers in South Wollo to opt for more lucrative products with their limited space, but they are water inefficient (Cafer et al. 2015). Cash crops, such as khat, vegetables and fruit, in addition to other sources of income, have correlated with increased material wellbeing, such as better homes and increased resiliency (Cafer 2015). But these resources are rarely in the hands of women (ibid.). Government endeavors to advance agricultural production, such as extension systems, have not fared well in drought-prone regions like South Wollo and fared worse amongst women, who are often barred from joining support groups and farmer's associations (Graham 2012; Beshir 2018). Research demonstrates a need for more diverse, sustainable and equitable means of livelihood and improvements in the agricultural sector, including maintaining essential assets like livestock and developed irrigation systems (Graham 2012; Little et al. 2004). These demands have not been met by recent development in the area and will not be met by means such as resettlement and the continuation of marginalizing female household heads.

The study of wellbeing and what people regard as 'the good life' provide a lens into how society informs ideals and values. This is valuable to research that fuels policy making, as well as economic decisions, especially in a developing country and region like South Wollo, Ethiopia. As there have been numerous attempts to improve the chronically poor and food insecure region, this research adds to the discourse of how the South Wollo people are coping. This research also allows for a view into the gendered agricultural lifestyles in South Wollo, which is necessary to understand, as marginalization can only exacerbate destitution in these already vulnerable communities. For future research, it would be valuable to further examine how agency interacts

with intersections of identity; perhaps an ethnography can explore individuals' perceptions of control over their lives and how that informs their ability to make a suitable livelihood. It would also be valuable to examine psychological components of wellbeing and agency and how those perspectives alter between genders. Similarly, as this study suggests there are trends in agency and wellbeing that could be attributable to gender and kebele, further studies could go in-depth into these concepts. For brevity's sake I used direct indicators of wellbeing and agency, but there are many holistic measures of these concepts as they are complex. It would be beneficial to conduct a larger study, including aspects such as aspiration, optimism, and hope, to gain a holistic picture.

Implications

In building upon established literature and qualitative data from Dr. Little's study, this research adds to the understandings of the complex relationship between agency, objective wellbeing, and subjective wellbeing, and how this relationship varies with factors such as gender. As there are gaps in the literature revolving around female-headed households and their wellbeing, I hope that with this thesis I can provide a lens into how gender impacts many important facets of life. Especially in the context of underdeveloped regions and countries, this research can offer new understandings of gender's role in wellbeing. I hope this will be useful to the global community in pushing the boundaries of what is commonly thought of as 'the good life,' how gender is involved in the pursuit of it, and why it matters. In the context of the developing South Wollo, I hope this research can inform future research that can influence policies and add to the rich discourse on how the Ethiopian government can better cater to its rural population by understanding what they go through at the individual and household levels.

As an anthropologist, this study has allowed me to venture into a greater understanding of how different societies pursue 'the good life.' Before this thesis, I did not know much about wellbeing let alone agency. Reading the conversations regarding wellbeing and how it changes with context was eye-opening, as I had never considered how loss of control in one's life can impact every aspect of living. As an anthropologist, this study will allow me to maintain the context of life perception as a major determinant of how one exists and acts in the world.

This research not only expanded my abilities to examine societies, but also allowed for reflection on my identity. I am an Ethiopian second-generation immigrant, and much of my family resides in Ethiopia. In thinking about female-headed households and what impact they have in their homes and communities, I came to realize that I have family members who are female heads of their household. Retrospectively, this thesis could be seen as a study into my own family's life back home in Ethiopia. Although I never spoke to them about how they ran the household and what difficulties they faced, this study has given me insight as to what I might have expected their answers to be. Having a connection with the sample cultivates great empathy, a trait I always wish to have no matter what group I study as an anthropologist.

It was heartening to see that the overall subjective wellbeing scores were very high within the sample. Nonetheless, the decreased life satisfaction, agency and objective wellbeing within the female and Tebasit population served as a stark reminder that Ethiopia struggles with poverty and inequality. Coming to America, my parents made it a mission to always help others in any way they could. I can see this quality of community in the people of South Wollo, who go out of their way to help their fellow neighbors. I suppose it could be a trait fostered in Ethiopian culture. Living in America, I wonder how female Ethiopian immigrants who are also the head of their households fare in their agency and wellbeing levels compared to those in Ethiopia.

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Annex

Data is used from the study, *Cross-Cultural Insights into Well-being among Vulnerable Populations in Eastern Africa*. The questions and corresponding variables used in this thesis are from the study's Well-Being and Vulnerability Survey-2017, Household Questionnaires Round 1 and 2 (Little, Negatu and Risjord 2018). The questions, as formatted in the questionnaires, and answer codes are presented below.

Question Number	***Question***	***Codes***
4	Name of the Kebele	1= Ngambo 2=Salabani 3=Loropili 4=Marigat 5=Tebasit 6=Gerado 7=Dessie 99=other
9	Marital status of the HH head	1=married (monogamous) 2= married (polygamous) 3=single 4=divorced 5=abandoned 6=separated 7=widowed 99=other
10	Ethnicity of the household head	1=Amhara 2=Oromo 99=other
11	Religion of the household head	1=Orthodox Christian 2=Muslim 3=Catholic 4=Protestant 5=Traditional religion 99=Other
12	Total household members (including HH head)	-
13	Age (in years)	-
14	Gender	1=male 2=female
44	Crop type produced and/or sold in the past 12 months	1=sorghum 2=teff 3=barley 4=wheat 5=maize 6=millet 7=durrah 8=oats 9=wild oats
91	During **past seven days**, indicate the number of meals that consumed in your household per day.	-
97	Number of livestock owned by the household	-
133.11	How would you describe your general sense of well-being and life satisfaction at the present moment?	1= not at all satisfied 2=somewhat dissatisfied 3=neither satisfied nor dissatisfied 4=somewhat satisfied 5=completely satisfied 88=don't know 00=no opinion

*175**	I am free to decide for myself how to live my life	Please use a scale from 0 to 10 to indicate how you felt. Zero (0) means you "disagree completely" and 10 means "agree completely"

*****Question 175 is from the Round 2 Questionnaire.

Little, Peter D., M. Risjord, and W. Negatu. 2018. *Cross-Cultural Insights into Well-being among Vulnerable Populations in Eastern Africa.* Unpublished study, July 31, 2018, typescript.