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COLLEGE OF AGRICULTURE AND NATURAL RESOURCE
POST GRADUATE PROGRAM
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DETERMINANTS OF WOMEN'S PARTICIPATION IN NON-FARM INCOME GENRATING ACTIVITIES IN THE CASE OF MISRAK SILTI WOREDA CENTERAL ETHIOPIA REGION

BY
ASIYA AHMED

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MAJOR ADVISOR: DEBELA GELETA (PHD)

CO-ADVISOR: TADELE E (MSc)

WERABE, ETHIOPIA

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DECLARATION

I, the under signed student of Werabe University, Post Graduate Program in Agricultural Economics, declared that this Master Thesis writing is my original work and it has not been presented in any MSc/PhD thesis or any other purpose at any University.

ASIYA AHMED _____ _____

Student Name Signature Date

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WERABE UNIVERSITY

Post Graduate Program in Agricultural Economics

As Thesis researcher advisor, we hereby certify that we have read and evaluated this Master Thesis proposal developed under our direction, by asiya Ahmed kedir on the title of "Determinants of Women's Participation in Non-Farm Income Generating Activities In The Case Of Misrak Silti Woreda Central Ethiopia Region" and revised it accordingly.

Major Advisor	Signature	Date
Co- Advisor	Signature	Date
Department Chairperson	Signature	Date

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ABBREVIATIONS AND ACRONYMS

CSA… .....Central Statistical Agency

FAO .....FoodAgriculturalOrganization

FDRE… .....FederalDemocraticRepublicofEthiopia

FHH .....Female-HeadedHousehold

ILO.....InternationalLaborOrganization

NFA… .....Non-farmActivities

NFE…..... Non-farmEnterprises

NGO….....Non-GovernmentalOrganization

RFA… .....RuralNon-farmActivities

SPSS .....StatisticalPackagefor SocialScience

SSA…..... Sub-SaharanAfrica

UN .....UnitedNations

UNDP… .....UnitedNationsDevelopmentProgram

USAID… ..... UnitedStateAgencyforInternationalDevelopment

WB..... WorldBank

ABSTRACT

This study was conducted to examine to examine the determinants of women's participation in non-farm income generating activities, in the case of Misrak Silti Woreda, Central Ethiopia Region. To address the objectives of the study, the study was utilized both quantitative and qualitative data. Target population of the study was a woman's who are able to participate in non-farm activity. In order to select samples from the target population, simple random sampling technique was utilized. To achieve the goal of the study, primary data were used. Both descriptive statistics and econometric technique were employed. Data were gathered for this study using a structured questionnaire. The descriptive result showed that , Out of 392 women's respondents 178 (45.41%) women's were not participated in non- farm income generating activity 214(44.13%) women's were participated in non- farm income generating activity in study area. Furthermore, the logistic regression result showed that,family size, educational status ,accessibility of water ,accessibility of credit, distance from work area and membership to social group are significantly affect women's participation in non-farm income generating activities because their respective p value is less than five percent (that is ($p>|z|<0.05$).In order to encourage women's to engage in non-farm farm income generating activity, administrative officials and experts ought to raise awareness and offer sufficient training to women regarding non-farm income generating activities.

***Keywords**: Non-Farm Income Generating Activities, Participation, Misrak Silti Woreda, Central Ethiopia Region, Women.*

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

According to World Bank (2019), the engagement of women in the workforce not only boosts productivity but also fosters a more diversified economy and greater parity in earnings (Bayu, 2021). By leveraging education and human capital for higher yields advocating for efficiency and fairness to advance socio-economic progress (Gebreyes, 2019), empowering themselves for stronger influence at home, thereby enhancing family welfare (Alemu“et al”., 2021), women's economic empowerment contributes to broader family and community prosperity. They are essential to spurring economic expansion, securing food sources, augmenting familial assets, diminishing poverty (World Bank, 2021), and alleviating rural poverty through engagement in non-agricultural activities (Mulugeta, 2021). However, women are disproportionally absent from the non-farm labor sector (Bekana, 2019). When they do find opportunities, they often face suboptimal conditions, such as low-quality jobs, underemployment, insufficient remuneration for extended hours of work, plus a considerable amount of unpaid domestic labor (Bekana, 2019). Legally, many women are prohibited from choosing jobs on an equal footing with men (Ojulu, 2015). Structural constraints include diminished participation in decision-making across political, social and economic spheres due to societal customs, religious edicts and governmental policies which undermine their roles (Kring,, 2017). Furthermore, the workload of women vastly exceeds that of men; women dedicate approximately 2.5 times more hours to unpaid care and domestic tasks than their male counterparts do in sub-Saharan African nations—their participation in non-agrarian work is markedly lower than that of men (ILO, 2018). This imbalance in participation can lead to a scarcity of alternate income sources for women bring about rising joblessness or degeneration into poorer quality work resulting in financial distress at both household levels and across nations (Gebreyes., 2019b). Additionally, the negative impacts of female unemployment resonate through family stability and poverty levels contributing to societal issues such as violence, prostitution, familial disruption and substance abuse stemming

from despair (Challa et al., 2020). The bleak prospects of meaningful employment combined with looming economic stress pose significant threats to the future prosperity of families (Tadesse et al., 2020). The focus of this study is to investigate the determinants of women's participation in non-farm income generating activities, the case of Misrak Silti Woreda, Central Ethiopia Region.

1.2. Statement of the Problem

The active engagement of women in activities outside of agriculture is vital for the financial wellbeing of their families. However, economic liberty eludes many Ethiopian women, with those in rural regions facing particular challenges (Alemu et al., 2021). Often, women are compelled to contradict the choices made by their male partners upon whom they are financially dependent (Asfaw, 2022). Therefore, addressing the hurdles that hinder women's progress and tapping into their economic potential is essential (Challa et.al, 2020).

Exploring and discerning the elements that influence women's choices to engage in non-agricultural work is fundamental for enhancing their income sources, bettering their standard of living, boosting the economy broadly, and informing policy-making. Various researches have probed into the factors affecting labor participation decisions among Ethiopian women (; Gebreyes, 2019a5), among others.

Varghese (2021) conducted a case study on the evolution and hurdles of non-farm activities in Gujarat. Findings suggest that non-agricultural sectors are immensely contributing to the development of rural areas in Gujarat and other Indian rural locations. Despite this, challenges such as high material costs, rural migration, infrastructural issues, and market limitations persist. Yet, this study did not pay distinct attention to women's involvement or to the unique obstacles they face. In another study by Hossain et al., (2018), which examined rural married women's participation in the farm and non-farm sectors in Bangladesh found that factors such as the age of respondents and their husband's income negatively influenced these women's economic engagement. Conversely, not having inon-farm activitynts or school-aged children and higher wages for women positively affected economic engagement. This study however lacked coverage on female-led households by focusing solely on married women as its subjects.

This exclusion left a gap in understanding these women's status and their opportunities within non-farm activities. Furthermore, it did not account for differences in factors between farming and non-farming pursuits but rather treated them uniformly. There was also no detailed look at various forms of non-farming activities — whether by sector, function or location — only viewing them through the lens of married women's economic contributions. Additionally, the research methodology was limited to quantitative analysis without integrating qualitative insights..CRecognizing existing research gaps, the current analysis incorporated both women from households led by men and women to assess their role in non-agricultural jobs, their level of involvement in these activities, the difficulties and prospects they encounter, and their regional distribution using a comprehensive research strategy. The 2016 study by Osarfo et al., titled "The Impact of non-farm activities on rural farm household income and food security in the Upper East and Upper West Regions of Ghana," illustrates that engagement in non-agricultural employment significantly enhances both household earnings and food security. Nonetheless, this research neglected the factors influencing women's participation in such non-farm work.

Shehu and Abubaker's 2015 inquiry into "The determinants of participation of farm households in non-farm enterprise activities in rural Nigeria" uncovered that age, health, and education levels of family leaders play a substantial role in deciding their involvement in non-farm enterprises. This study predominantly pinpointed factors affecting non-farm enterprises specific to farm families while disregarding an array of non-farm work often pursued by women in rural areas. Further, it did not address the specific challenges encountered by women involved in Non-Farm Activities (NON-FARM ACTIVITY), nor the overall extent of women's participation.

Sackey (20200) investigation "The contribution of rural non-farm activities to household income generation: A study on Khulna Region" discovered that such non-agricultural endeavors have notably contributed to job creation and poverty alleviation in rural locales. The study primarily compared the effects of non-farm work with agricultural labor on household income generation. Neglo, Gebrekidan&Lyu (2021) research "The determinant of employment participation in rural non-farm activities" reported that the non-farm sector accounts for a substantial portion—70%

part-time and 9% full-time—of employment, averaging 46% contributions to total household revenue. Factors such as crop earnings, unearned income, access to social networks, esteem associated with farming, traditional caste structures, and miscellaneous adversities were found to influence farmers' decisions regarding engagement in these activities. However, this study did not sufficiently highlight the vital involvement of women in non-farm tasks or the specific challenges and opportunities they face within this sector.

Various studies related to non-agricultural activities have inadequately addressed the scope of women's engagement in such activities, failing to look into the full range of these undertakings, or unravel the diverse factors and challenges influencing their involvement. These investigations primarily concentrated on the contribution of non-agricultural activities to economic development and household earnings, without adequately examining the array of non-agricultural work undertaken by women, especially those tied to longstanding traditional occupations. Nor have they acknowledged the diversity of these activities from one country or region to another. This significant oversight has inspired this research to delve into and acknowledge the traditional non-agricultural work carried out by rural women. Moreover, there has been a lack of initiatives to investigate the determinants of women's participation in non-agricultural work within the study area. The focus has predominantly been on agricultural pursuits, with scant attention paid to non-agricultural fields by both scholars and policymakers in the local region and across Ethiopia as a whole.

By addressing this research gap, scholars and policymakers can gain a better understanding of the complex interactions between environmental factors, climate change, and women's economic empowerment in MisrakSiltiWoreda, Central Ethiopia Region, Ethiopia. This knowledge can inform the design of targeted interventions that support women in diversifying their income sources and building resilience in the face of environmental challenges.

1.3. Objectives of the Study

1.3.1. General objective

The main objective of this study was to examine the determinants of women's participation in non-farm income generating activities, in the case of MisrakSiltiWoreda,Centeral Ethiopia Region.

1.3.2. Specific objective

To examine the determinants of women's participation in non-farm income generating activities in study area

To assess the extent of women's participation in non-farm income generating activities in study area

TO assess the challenges and opportunities of women's to participate in non-farm income generating activities in the study area.

1.4. Research Questions

The following research questions wasanswered after the analysis of the data:

- ✓ What are the factors that determine the participation of women in non-farm income generating activities in the study area
- ✓ To what extent women's participation in non-farm income generating activities in study area
- ✓ What are the challenges and opportunities of women's to participate in non-farm income generating activities in the study area?

1.5. Significance of the Study

This research will proved significant in several ways: Firstly, it is furnish local authorities with critical insights to enhance the quality of life for women engaged in non-agricultural occupations. Secondly, its results would serve as a reference for policymakers and development professionals to better support women in the rural non-farm economy. Thirdly, the study's outcomes would enrich academic discourse on female participation across diverse non-farming

sectors. Moreover, it will shed light on the characteristics and dynamics of non-farm work, thereby advocating for increased female involvement in future research locales.

At the heart of this research is the ambition to deliver analytical perspectives essential for pinpointing non-agricultural endeavors pursued by women that can inform offices such as Technic, Vocational and Enterprises Development, Agriculture and Rural Development, Trade, Industry and Market Development, and Women and Children affairs within the study region. Furthermore, it would supply successive researchers with data pertinent to conducting extensive studies on non-agricultural income sources in rural territories and beyond.

1.6. Scope of the Study

This study is geographically centered aroundMisrakSiltiWoreda situated within Central Ethiopia Region; however, it excludes the woreda's urban kebeles. The scope of this study was conceptually narrowed down to examine women's engagement in non-farming income activities exclusively within MisrakSiltiWoreda. While numerous factors affect women's participation in non-farm work, this investigation focuses on four key elements: demographic, institutional, geographical location, and socio-economic. Additionally, it would probe into the nature of non-farm work engaged by women including the challenges they face and opportunities available to them as well as assess the level and breadth of their participation in these activities. Concerning demographics, the research encompasses both male-led and female-led households within MisrakSiltiWoreda to better understand their circumstances and ensure relevant findings are inclusive for all women in the area.

1.7. Limitations of the Study

Future research must address the limitations of this study. First , the women in the study's sample were limited to rural areas; however, this does not imply that the issue of women's non-farm labour is exclusive to these regions. However, this study did not compare the participation of men and women in non-farm income generating activities. Instead, the study focused solely on women's participation since it was challenging to handle a big sample when men's cases were included. It should be noted that, because to time and resource constraints, this study focused on four rural Kebeles rather than addressing the participation of women in non-farm income

generating activities in study area. However, the further study would be recommended bby using a large sample size.

1.8. Organization of The study

The paper was organized under five chapters. The first chapter includes an introductory part, dealing with background of the study, statement of the problem, objective of the study, significance of the study, scope of the study, limitation of the study and organization of the study The second chapter includes review related literature. The third chapter includes research methodology, research design, data source, data collection, population of the study, method of data analysis, and the fourth chapter includes result and discussions and the fifths chapters conclusion and recommendations includes.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1. Theoretical Literature Review

2.1.1. Definition of concepts

Activities: encompassing the actions taken—are pivotal. Amongst these, rural livelihood activities include agriculture and extend to non-agricultural pursuits such as wage labor, commerce, and hawking, along with artisanal crafts like weaving, carving, pottery, baking, and basketry. These endeavors capture the various means through which individuals in a household employ their time outside of leisure to sustain their existence. Not only do these undertakings make use of assets but they may also contribute to the augmentation of a household's asset base as noted by Bayu (2021).

The term 'non-farm activity' applies to all economic enterprises carried out within or beyond the home confines by entrepreneurs or salaried workers that are exclusive of primary agricultural product creation (which includes crop and livestock production as well as forestry and fisheries). This also encompasses wage-based work as well as entrepreneurial efforts either conducted solo or with hired help situated in rural territories, as defined by Batool et al. (2017).

'Non-farm self-employment' is classified as entrepreneurial undertakings such as pottery, trade, weaving/spinning, basketry, selling firewood & charcoal, traditional healing, leather crafting, and other arts or handiworks completed independently without wages. It signifies the commercialization of one's labor services rather than employment under an entity offering fixed wages or salaries. Predominantly it represents revenue sourced from privately operated businesses (Neglo et al., 2021).

Conversely, 'Non-farm self-employment' is recognized as time-bound paid positions whether full-time or part-time across public or private sectors enacted by salaried workers. The scope encapsulated within this research signifies the employer-employee dynamic where an individual offers labor in return for remuneration or stipends through endeavors managed by the owner

themselves. An inherent part of wage employment is the contract enabling employers to issue mandates to their employees (Asfaw, 2022).

Lastly, **'Participation'** is indicative of the extent to which women engage in non-agricultural work; it embodies their active contribution to said activities whether as a principal occupation or supplementary assignments. The concept underscores the commitment of women's time towards non-farm labor reckoning their role whether in the main job or secondary tasks while implicating their share derived from such engagement—commonly within frameworks designed externally through input and benefit-sharing (Challa et al., 2020).

Gender Roles represent a collection of expected actions, societal norms, and beliefs that are shaped by cultural and social factors, designated to be adopted by specific genders. These roles are not inherent but rather taught within a society or group, setting the stage for a gender-based division of work – assigning specific tasks and responsibilities as typically male or female. These expectations govern the way men and women are presumed to behave and interact with one another. Over time, gender roles evolve owing to changes within the society and shifts in perceptions regarding what is considered appropriate behavior for each gender. The dynamics of gender roles can influence the balance of power between sexes at all societal levels, potentially leading to unequal chances and differing results for certain demographic groups (Amare et al., 2017).

2.1.2. Types of Non-farm Activities

Davis (Endalew, 2020) clearly points out that rural employment extends beyond agriculture to include processes such as agro-based manufacturing and various income-generating activities like starting small enterprises. Individuals might adapt to environmental changes by shifting focus from agricultural production to markets, or they might need to adopt certain jobs or sell off possessions as a direct reaction to overcome hardships threatening their livelihoods. It is established that rural employment is diverse and encompasses self-employment opportunities along with micro, small, or medium-sized businesses (MSMEs) in commerce.

To reinforce this notion, Kamunyu and Theuri (2017) observed that non-farm jobs also correspond to secondary and tertiary sectors including commerce, manufacturing, services as

well as formal jobs in public service including educators, healthcare professionals, development workers, etc., alongside private sector jobs ranging from business-owned positions to daily wage earners.Furthermore, non-farm work can typically be classified into two extensive categories based on productivity: those with high labor productivity leading to substantial incomes and those with low productivity providing only supplemental income sources (Salma, et al., 2020). The latter is often associated with the economically disadvantaged; however these earnings play a critical role in social welfare when agricultural work isn't viable for certain rural communities. Earning possibilities outside of farming can make significant contributions even if they aren't highly profitable; this is particularly true for families without agricultural land.The diverse nature of non-agricultural occupations is heavily influenced by varying factors including the availability of natural resources, workforce, geographical location, historical context, and institutional influences. The main challenge in measuring these activities arises from their seasonal patterns, part-time involvement, and their typically small scale, compounded by the absence of formal record-keeping by the producers. As a result, employment is often used as an indirect indicator of the level of non-agricultural engagement (Qing, 2020).

Thus, this research defines non-farm activities as those that do not involve direct agricultural production, encompassing both salaried work and self-employment. Likewise, Mideksa's (2015) research categorizes sources of non-farm income to include self-employment, official employment/pensions, remittances from urban to rural areas within the country and from international sources, plus earnings from leasing out land or livestock. Within these categories lie numerous specific avenues for earning income; for instance, self-employment can refer to running a store or engaging in small-scale trade of items such as grains, livestock, coffee, spices, salt), selling firewood or charcoal, engaging in rural artisanal crafts like bamboo craftwork, joinery workmanship, blacksmithing or weaving), trading fruits and providing services like shoe repair services , grooming services , grain milling service s , tailoring workmanship , or traditional medical practices .

In Huis's (2017) examination it was noted that crafting handicrafts and operating modest food establishments represent low-income non-farm ventures typically pursued alongside agriculture for subsistence purposes. Handicrafts have remained prevalent in Ethiopian culture with

practices such as weaving, leather working, and metallurgy among them. Varghese's (2021) study also found that these handicrafts are an important supplementary endeavor for farmers with relevant artisan skills. In parallel findings by Huis (2017), activities like woodworking , forging , basket weaving , rope production , and sewing stand out due to their prominence and in providing work for family members within rural households. Alternatively, Shamy's (2015) investigation revealed commercial endeavors at marketplaces were found across nearly half of the households involved in non-farm pursuits in the two surveyed Tanzanian villages. Similarly, Endalew's (2020) study suggested that trading is a principal non-agricultural occupation which acts as a key means of sustainability for families.

Endalew (2020) articulated that non-agricultural self-employment significantly encompasses income derived from entrepreneurial ventures such as textile creation, grain processing, artisan crafts, including pottery, merchant activities in staple foods/general merchandise, revenue from personal services like traditional medicine/religious instruction, animal-powered transportation, sales of timber and livestock waste products, beauty and sewing services. Moreover, it covers the production and vending of indigenous beverages, cargo portage, construction (stonemasonry), roofing installation for buildings, and the peddling of fruits and vegetables. Getu (2015) observed that in the rural economies of developing nations, there exists a categorization that distinguishes between independent work and salaried employment.

2.1.3. Theories of Livelihood

The livelihood framework is composed of several elements: assets for livelihoods, exposure to risks, converting structures and procedures, strategies for subsistence, and the results thereof. This section will describe them as follows:

A livelihood involves the abilities, resources (including reserves, materials, entitlements, and admittance) along with the necessary endeavors for supporting life: a livelihood is deemed sustainable if it can withstand setbacks and recuperate from adverse events while preserving or augmenting its resources and skills and provides lasting opportunities for upcoming generations. It should also contribute positively to other means of living both nearby and worldwide—momentarily and enduringly. According to ILO (2018), "A livelihood encompasses not only

physical goods but also social assets required for survival. Sustainability of a livelihood is achieved when it can effectively respond to disturbances and stressors, bolster its abilities and resources without compromising the ecological foundations."

Acknowledging the aforementioned, the United Nations Development Programme (UNDP) in 2017 defined the livelihoods framework as comprising the abilities, assets (including physical and social resources), and methods employed by individuals and communities to secure their survival. The concept of sustainability suggests that these groups have the capacity to cope with, and recover from, stressful episodes or crises, ensuring that their current and future skills and assets are preserved or even enhanced without depleting their natural resource base. Applying the Sustainable Livelihood Framework (SLF) requires attention to several factors: comprehending vulnerabilities within specific contexts; tactics for safeguarding livelihoods; and evaluating various forms of capital. For instance, human capital is understood as the combination of skills, experience, labor capacity, and health which enable populations to pursue various livelihood strategies and attain their goals. Social capital, on the other hand, represents the social connections upon which populations depend to pursue livelihood objectives—this study specifically highlights local social capital such as networks, associations, community leaders, government officials, and beneficiaries of support programs.

Likewise, "natural capital" denotes the reserves of natural elements like soil, water, airways of genetic material that are harnessed for additional advantages like food sources and erosion control that underpin livelihoods. Additionally, "physical capital" comprises essential infrastructure and production materials necessary for fostering livelihoods. And not to be forgotten is "financial capital," which describes the monetary resources individuals use to fulfill their life sustenance goals as outlined by UNDP in 2017.

The World Bank (2021) delineates the "vulnerability context" as the backdrop against which individuals in poverty exist, encompassing significant trends like technological or demographic shifts. This setting is punctuated by destabilizing events such as natural disasters or fiscal inflation, and the cyclical nature of seasonality, which influences pricing, job availability, and production variances throughout the year. These elements invariably impact people's assets and,

in turn, the endurance of their means of support. The notion underpinning the sustainable livelihoods framework is that assets are critical for achieving a favorable livelihood result. Individuals leverage various types of assets in their pursuit of preferred ways to make a living.

Building on this premise, the same authors highlight that "transforming structure and process" entails the legislative bodies, institutions, and policies that shape how impoverished individuals sustain themselves, operating at multiple layers from local communities to global spheres. Such frameworks play a pivotal role in people's ability to access diverse assets. The significance of these frameworks is paramount and cannot be stressed enough—examples include global accords, property rights, legislation securing individual rights, or systemic elements like ministries, financial entities providing loans to agriculturalists, or community support collectives.

A fundamental aspect within the livelihood framework is "livelihood strategies," referring to people's systematic actions aligned with their targets for a better life. The range of assets available influences these methods while societal structures and processes either open up opportunities or impose restrictions on usable approaches. Ultimately, "livelihood outcomes" are what individuals attain through their strategic endeavors. Yet defining these outcomes remains primarily within the purview of local communities since they entail more than mere financial gain—a myriad of cultural influences and societal standards can shape these pursuits in ways that may elude external understanding (UNDP, 2020).

2.1.4. The Women Labour Force Participation Rate

Determining the participation rate of women in the labor force counts both employment and job-seeking among the female working-age populace, including those who are self-employed—poses a challenge in developing countries. This is due to difficulties in differentiating work from non-work within subsistence economies. In such economies, work-related activities often mesh with daily living, like in Nigeria where numerous wedded women simultaneously tend gardens and look after their families. The participation rate of women in the labor force is quantified as a ratio that compares economically active women (embracing those employed, unemployed, and in quest of work) to those who are non-participants in the workforce (this excludes populations such as children, institutionalized individuals, persons with disabilities, and the elderly).

Therefore, a fitting measure of this rate would be the proportion of the female populace that either has engaged in work during a set period or is open to participating (ILO,2019).

2.1.5. Economic Impacts of Women's Empowerment

Women's economic empowerment denotes their capacity to engage fully in economic activities and reap benefits from economic progress and evolution. This concept covers a range of economic strategies that are interrelated yet comprehensive (World Bank,2021). It also recognizes that there are specific subsectors that merit additional focus such as marginalized community women, young girls, females dealing with disabilities, and those residing in rural settings. Acknowledgment is crucial given that women are not homogenous; they come with varying requirements, prospects, and competencies which influence their economic empowerment prospects. According to ILO (2018), empowering women financially spans various tactics which include but are not restricted to (a) boosting the presence of women at the helm of businesses and ownership of productive resources, (b) fostering human resource development alongside skill enhancements, (c) ensuring equitable representation across all occupational classes and echelons within the workforce, (d) targeted procurement policies, and (e) promoting investment into enterprises owned or operated by females. While integrating women's empowerment within broader agendas can effectively propel gender equality and their financial upliftment, it necessitates meticulous and continuous planning alongside evaluation.

The enhancement of women's economic status greatly influences their personal lives and is vital for fostering their capabilities for enduring growth and minimizing poverty. Generally, women invest a larger share of their earnings into caring for and educating their offspring, thereby improving the health and prosperity of their households. The financial self-sufficiency of women is key to averting mistreatment, curtailing the increased poverty among women, eradicating bias, and safeguarding their essential human rights. Consequently, gender parity in economic spheres is directly connected to diminishing poverty and advancing global development. (Chicheste, 2020). In Bangladesh, the restricted ability of women to make decisions and control aspects of their wellbeing can be attributed to cultural, fiscal, and political systems that relegate them beneath men (Chicheste, 2020).

2.1.6. Social consequences of empowering women

There's a recognized association between uplifting women and their education, as proposed by Seng (2015). Education may arm them with abilities to question gender disparities; however, broader societal mindsets need transformation for true progress. It's often seen that parental and spousal influence plays a role in shaping women's educational journeys and job choices. The reliance on husbands financially further reduces their sway over assets and earnings. Additionally, societal expectations stress the significance of matrimony for women (Seng, 2015).

The role of education in elevating women's socioeconomic status is proven to be substantial. Educated women have the aptitude to not only capitalize on prevailing resources but also forge new chances for work and communal networks (Varghese,, 2021). Such education paves the way for better income prospects, empowered family decision-making processes, independence in making choices, influence over childbearing decisions, and engagement in civic activities.

However, research in Burkina Faso conducted by Heliyon (2020) showed that despite being educated and employed, many women had limited authority in decision-making processes. The study highlighted that those with more education were more participatory in deliberations concerning their health care, significant household acquisitions, and social visits. Nonetheless, household affluence was less influential over decision-making power; it was predominantly the wealthiest strata of women—and to a lesser extent those who were formally educated—that exercised considerable control over decision-making.

The influence of educational attainment among women is diverse, shaped by factors such as the stage of economic growth, labor market dynamics, and the extent of gender-based hierarchies. In liberal societies, studies indicate that women with even a moderate level of education are more engaged in critical domestic decision-making, tend to seek employment outside the agricultural sector, and exercise greater financial autonomy.

Educated women typically marry later and opt for smaller families that are healthier. They possess a better grasp on healthcare essentials and successfully navigate systems to ensure the well-being of themselves and their children (Montanari, B., & Bergh, 2019).

In West African cultures, it's common for couples to manage their incomes separately. This practice is often attributed to the prevalence of polygynous marriages, stronger ties to their bloodlines than to their partners, and a preference for personal control over their financial resources (Mulugeta,2021). In these societies, whether rural or urban, there's a gender-based division of fiscal duties: men cover large sporadic costs like education fees, housing, and significant medical bills; women handle day-to-day expenditures including food purchasing, household supplies, regular medical costs, and clothing (Mussida, C., &Patimo, R. (2020).). Despite this division, the economic part played by women within households is substantial.

As noted by researchers Astatike&Gazuma (2019), granting women ample chances to amplify their productivity can elevate their status within the familial unit. Further evidence suggests that when women can independently manage their earnings, outcomes for their offspring improve in terms of education, health standards, and survival rates. It follows then that boosting women's productivity through better access to knowledge conduits and supportive services has the potential to unlock the full capacity of nearly fifty percent of a nation's workforce.

2.2. Empircal Literature Review

2.3. Conceptual Framework of the Study

A conceptual framework has been established after examining the relevant literature for this research. This study focuses on various determinants that influence women's engagement in non-agricultural income-generating activities. These determinants include demographic elements (such as age, marital status, size of the family, position as head of the household, and level of education), socio-economic aspects (like participation in social organizations, the triple role of gender, magnitude of landholdings, and availability of water resources), institutional considerations (accessibility to training unrelated to farming and financial service availability), and location-specific factors (proximity to nearest major roadways and main markets for products).see below figure

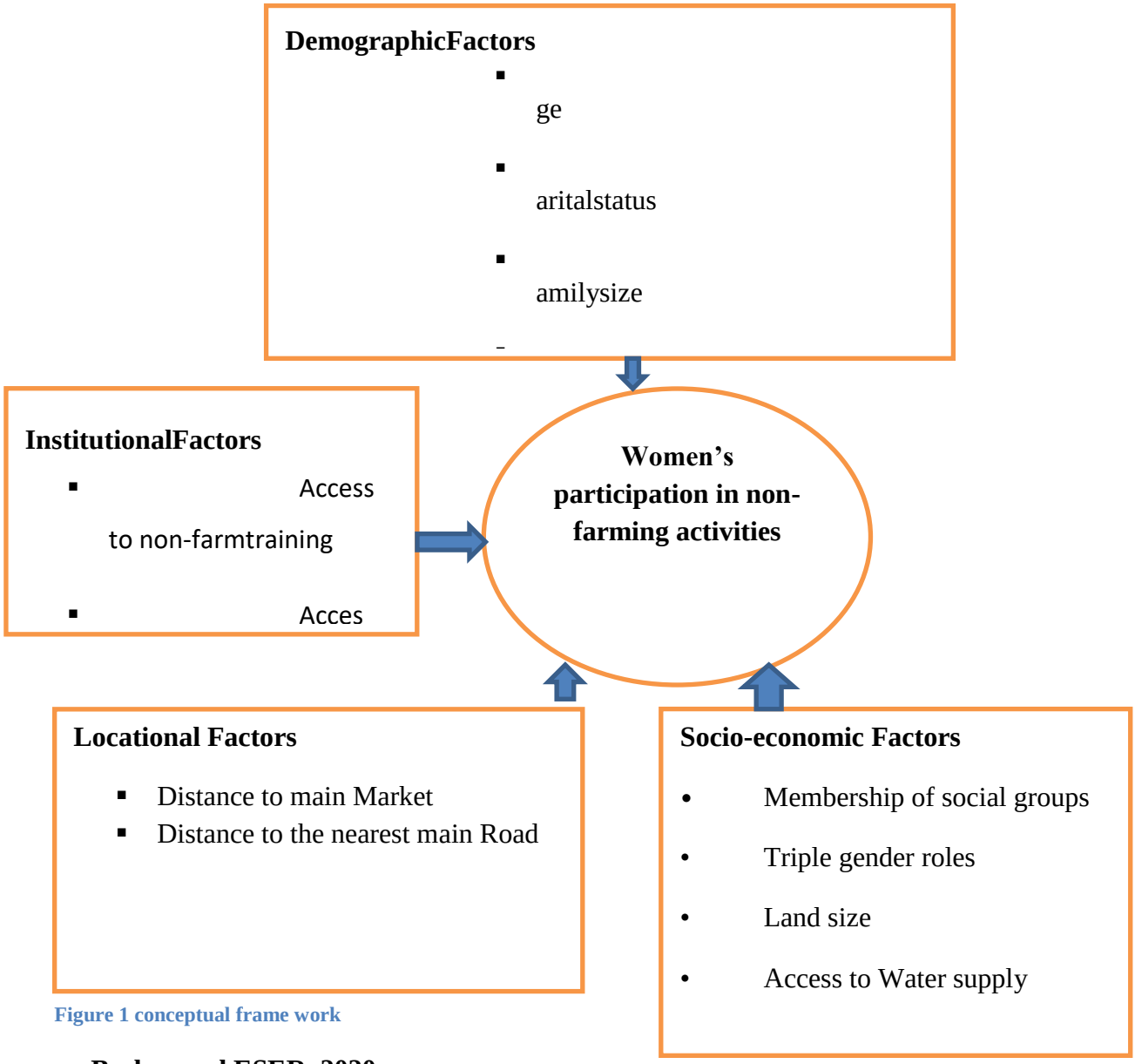


Figure 1 conceptual frame work

Source : Berber and ESER, 2020

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Description of the Study Area

The study was conducted at Misrak Silti Woreda; Central Ethiopia Region. Misrak Silti Woreda is located in Silte zone in SNNP which is 208 km far from Addis Ababa, 159km from Hawassa and 37 km from Werabe (capital town of Silte administrative zone). (TTPO, 2021).Tora has 07 rural kebeles and 02 urban kebeles namely tora meltama and tora millennium, rural kebeles has mejatora, torakekora, tora amicha, tora warisha, tora kusaya, tora chefuna and toragerare. Its area of 3704 hectares regarding the topography of tora city, 60%is plain 15% is mountainous, 25% is hilly. The city is estimated to be 1700to 2500 meters above sea level. Absolute location of Tora town is 70 51’75’’ N of latitude and 380 26’E of longitude. On the other hands when we see Misrak Silti Woreda relative location it bordered Lanfuro in the south, in the north by Gurage Zone , in the west by silti and Gurage zone in the east (TTMO,2021).

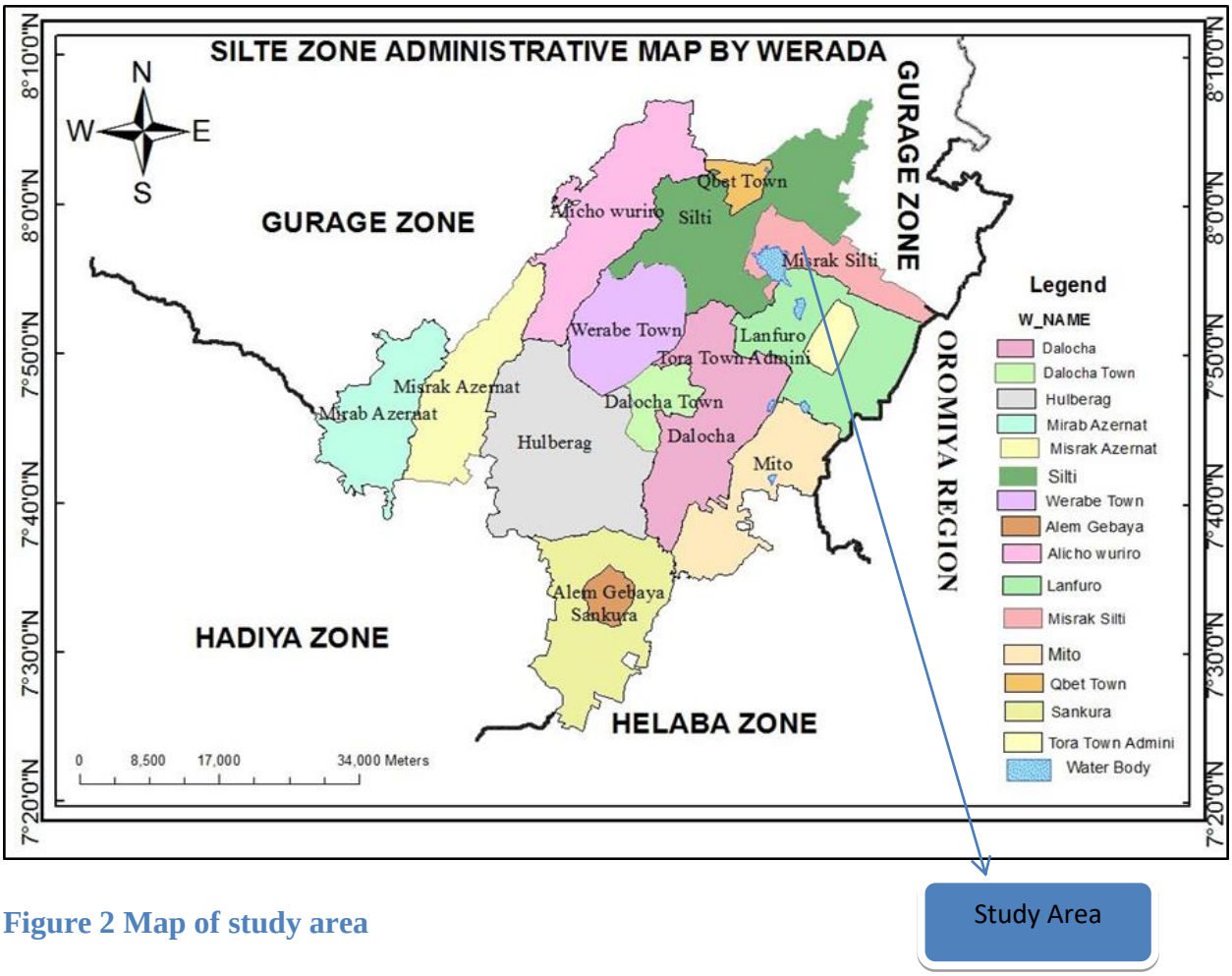


Figure 2 Map of study area

3.2. Research Design

Given the complexity and multi-faceted nature of the research topic "Determinants of women's participation in non-farm income generating activities in MisrakSiltiWoreda, Central Ethiopia Region," a mixed- research design wasused . This design allows for a comprehensive exploration of quantitative aspects related to women's participation in non-farm activities.

By combining quantitative, researchers can gain a more holistic understanding of the determinants influencing women's decision-making regarding non-farm income generation. The quantitative phase can provide statistical evidence on the relationships between various factors and women's participation, while the qualitative phase can offer deeper insights into the underlying social, cultural, and economic dynamics at play.

Overall, a mixed- research design was used to explore of the determinants of women's participation in non-farm income generating activities in Misrak Silti Woreda, Central Ethiopia Region, allowing for a more comprehensive and insightful study.

3.3. Research Approach

Given the nature of the research question and the specific context of the study in Misrak Silti Woreda and quantitative technique were used to provide a comprehensive understanding of the research problem. In this case, quantitative methods such as surveys and statistical analysis were used to capture both the depth and breadth of information needed to explore the factors influencing women's participation in non-farm income activities.

Overall, quantitative approach was used to address the research question and provide valuable insights for policymakers, practitioners, and stakeholders working to promote women's economic empowerment in study area.

3.4. Target Population

The target population of the study was women are who are able to participate in non-farm activity and live in Misrak Silti Woreda. According to data obtained from the Woreda administration, there are 10,522 women’s in Misrak Silti Woreda that have an ability to participate in non-farm activity.

3.5. Sampling Techniques

In order to select samples from the target population, this study was employed; simple random sampling technique was utilized to achieve the study objective. The sample was taken from a kebele through random sampling since the target residents share at least one common characteristic. A sample size of 385 was randomly selected from the target population of 10,522 estimated using the widely recognized and simplified formula provided by Yamane (1967) to determine the required sample size with a 95% confidence level and a 5% level of precision error.

3.6. Sample Size Determination

The study was focus on the women population residing in Misrak Silti Woreda. To determine the appropriate sample size, the research were utilized Yamane's (1967) formula for sample size determination.. Therefore, the sample size determination formula is presented below as follows;

n=N/1+N 10,522/1+10,522(0.05^2) =385

Where:-

e =0.05

N= the size of the population

n = the required sample size

e = the error of precision or margin of error

3.7. Source of Data

In order to achieve the objectives of the study, this study was used primary data and secondary data. The primary data can be obtained from individual households. Primary data for the study will be collected from women's from Misrak Silti Woreda,. Secondary data was collected from the relevant literature, research publications and policy documents. .

3.8. Method of Data Analysis

To analyze the collected data, both descriptive and economic model was employed. For research employing quantitative techniques, the data were undergo coding, editing, and input into SPSS (Statistical Package for the Social Sciences) version 24 post-collection. Subsequent analysis were involved both descriptive measures such as frequency and percentage distributions as well as inferential analysis. The evaluative approach to understanding women's involvement in non-farm-related activities was specifically utilized descriptive statistics.

This investigation was employed t-tests or chi-square tests to investigate how categorical variables—such as demographic, socio-economic, institutional, and locational factors—are associated with the dependent variable under study.

3.9. Model Specification

This study was used binary logistic regression model. The dependent variable is binary outcome it denoted by 1 if the women is participating in non- farm activities and0, if women is not participating in non- farm activities.

The functional form of the binary logistic regression model is presented as follows:

$$P_i = \mathrm{E}\left(Yi/Xi\right) = \frac{1}{1+e^{-(\beta_0+\beta_1 X_i)}} \quad \ldots\ldots\ldots \text{ equation } (1)$$

$$P_i = \mathrm{E}\left(\frac{\mathrm{Yi}}{\mathrm{Xi}}\right) = \frac{1}{1+e^{-Z_i}}$$

Where

Pi =is a probability of a i^{th} women participated in non- farm activityand ranges from 0 to1;

Zi= is a functional form of explanatory variables(X) which is expressed as:

Zi =β0+β1X1+β2X2+ Bx3…+βnXn)…… equation (2)

Where;

β_0 = is the intercept and

β_i = the coefficient of explanatory variable . The slope tells how the log-odds in favour of a given women participation in non-farming activity.

P_i = is the probability of womens participation in non farm activity

3.10. Definition and Hypotheses of Variables

Dependent Variable (Explained variable)

Participation in Non-farm activity: The predicted or outcome variable of the study is participation in non-farm activity (Atieno,2020). The nature of dependent variable is

dichotomous or dummy variable. The dependent variable non-farm activity has two values. The values 1 represents if women participated in non- farm activity and 0, otherwise.

Independent Variables

Predictors or explanatory variables are the variables that influence the predicted or dependent variable. In this study, the independent variables is assumed that determine the participation of women in non-farm activities. Based on the review of literature, the researcher identified the following determinant factors, which are the combination of demographic factors, socio-economic factors, institutional factors, and locational factors in the study area as shown below.

1. **Age:**was a variable expected to influence non-farm activity participation positively when age of women increases, their level of understanding and possibility of engaging in non-farm activity also increases (Endalew, 2020). This means that, the adult age groups assumed more non-farm activity participant than the young one.
2. **Marital status:** constitutes four marital status categories and stipulates whether respondents are single, married, divorced, and widowed. It is hypothesized that single, divorced or widowed type of marital status positively affects women's participation in non-farm activity. Because, these women do not have assistance from men's counterpart and take the responsibility of both income generating and household tasks; increase their engagement in non-farm work decisions (Mideksa, 2015).
3. **Family Size:** It is the variable refers to the number of family members in the household or in one roof: hypothesized that if women with in household size large, their participation in non-farm activity might increase (Mulugeta, 2021).
4. **Educational status:** Education is a potentially important determinant of non-farm activity. Education improves an individual’s prospects for non-farm jobs as well as increases the ability to allocate time to work efficiently among income producing activities (Sackey,2020). It was expected to have a positive impact on non-farm activityparticipation.
5. **Status of Household:** was a dummy variable of either male-headed household or female-headed household (Ojulu,2015). It was expected that women in female-headed household would have a better participation in non-farm activities: since they are a sole income earner

that takes the household responsibility to generating income for their household through different income generating tasks

6. **Landholding size:** was the variable refers to the size of land holding operated by the household measured in Hectare (Bekana, 2019). It was expected that positively influence the probability of participating in non-farm employment. The probabilities of participating in non-farm activity increase, when women who have large land size since it used as the motivating factors to participate in non-farm activity.
7. **Access to formal credit:** Accessibility of credit from a financial institution would facilitate the participation of women in non-farm activity (Gebreyes,2019). Women who have access to credit expected more propensities to be involved in non-farm activity, while women who have no access to credit expected less propensity to engage in non-farm activity. Thus, it was expected that a positive influence on women towards non-farm activity participation.
8. **Access to non-farm training:** was dummy variable and most of the non-farm activities being skill based; training increases the possibility of getting non-farm jobs (World Bank., 2021). Hence, if they have access to non-farm skill training, it was expected to have a positive influence on their participation in non-farm activity.
9. **Membership of Social groups:** was dummy variable and refers to the ability of engagement in a certain community association or village and social groups. It was hypothesized that membership of social groups affects the participation of women in non-farm activity positively (Bekana, 2019).
10. **Access to Water Supply:** was a dummy variable and the presence of rural water supply expected to have a positive influence on the participation of women in rural non-farm activity (Asfaw,2022)
11. **Having triple gender roles:** was a dummy variable and it refers the presence of combination of roles in the household and it was hypothesized to have negative impact on women to their non-farm work decisions since they busy with household obligations; they have no time for economic opportunities when women having a combination of roles at a time(Osarfo et al.,2016).
12. **Distance to the nearest Main Road:** was hypothesized that, when the women's village is far away from the main nearest road, it will affect their participation in non-farm

activitynegatively. However, if women village is the nearest to the main road, it will increase their mobility and communication, which enables them to be engaged in non- farm work.(Osarfo et al.,2018).

13. **Distance to the nearest main Market:** The distance of product market from the household, residence is measured in the inhabitants (women in this study) walking times of her and then converted into Km. It was hypothesized that, when women's village is far away from the main product market, it will affect their participation to non-farm activity negatively (Mideksa, 2015).

Table 1 Descriptions of Variables

Variables	VariableDescription	VariableCode
Ageofwomen	CategoricalVariable,1ifawomanhasage18-29,2=between 30-41,3=42-53,4=54-65,and5=>65yearsofage	**Agecat**
Maritalstatus	Categoricalvariable:1if awomanisUnmarried,2=if Married,3=ifDivorced,and 4=ifwidowed	**Maristat**
Familysize	Categoricalvariable:1ifwomanhouseholdhas1-3family size,2=if4 up to 6,3= ifwoman has>6 familysize	**Famsize**
Educationallevel	Categoricalvariable:1ifawomanisilliterate,2=ifawomen can readandwrite,3=ifawomanhasprimaryeducation,and4 =ifsecondaryeducation or above	**Edulevel**
Status of the Household	DummyVariable:1ifwomanhouseholdismaleheaded,and 2=iffemaleheaded	**Stathhd**
Landholdingsize	CategoricalVariable:1ifwomenhouseholdhavecultivatedlandsizeof<0.5hectare,2=if0.51upto1hectare,and3=if >1hectare	**Landsize**

Accessofcredit	DummyVariable:1ifwomenobtainedformalcredit,and 0=ifnot	**Accesscredt**
AccessofNon –farmtraining	DummyVariable:1ifawomanobtainednon-farm activity training,and0=ifnot	**Accesstraining**
Membershipof SocialGroups	DummyVariable:1ifwomenaremembershipinsocial groups,and0=ifnot	**Membingroup**
Access of Watersupply	Dummyvariable:1ifwomenhavingaccessofwatersupply and0=ifnot	**Wateracess**
Triple gender Roles	DummyVariable:1ifawomanhavingcombinationoftriple rolesand0 ifnot	**Tiplegenderol**
Distanceto Mainroad	CategoricalVariable:1ifmainroadfarfrom awoman residence<1 Km,2=if1-2 Km, and3=if >2Km	**Distnearstroad**
Distanceto Market	**CategoricalVariable:1iftheproductmarketfarawayfrom awoman residence<4Km,2=if4upto8 Km ,and 3=if >8Km**	**Distmainmarkt**

3.11. Instrument, reliability and Accuracy

The strength and consistency of research findings rely on the development of a robust research framework, proper selection of methods and samples, and meticulous execution of the research. In this study, which utilized a quantitative research approach, validity and reliability issues will be tackled by designing precise questionnaires and sampling techniques.

3.11.1. Accuracy

To minimize measurement errors, it's essential to establish attributes of the measurement that inspire confidence. The first attribute is accuracy, which determines if an instrument truly

measures what it intends to measure. It also refers to how well an empirical measure accurately represents the concept being examined.

3.11.2. Consistency

To ensure the consistency of the instrument in this particular study, the researcher examined its reliability using Cronbach's Alpha (α). Cronbach's Coefficient (α) is computed to assess the internal coherence of a measurement scale's reliability. This coefficient works well as an indicator of internal consistency for instruments without rigid marking schemes, such as those utilizing rating scales in questionnaires.

3.11.3. Reliability

Reliability is the extent to which the measuring instrument yields consistent and accurate results when the characteristic being measured remains constant. One means of increasing the reliability of the instrument is the inclusion of more items in the questionnaire. In this study, the researcher will ensure enough items per construct. In order to determine the reliability of the questionnaire in the study, Cronbach alpha will be computed for each of the five main variables.Research items with a Cronbach's Alpha value of at least 0.7will be considered as having been measured consistently and acceptable, while those with values below 0.7 is unreliable.

CHAPTER FOUR

4. RESULT AND DISCUSSION

This chapter presents the study findings discussed under different sections. Descriptive statistics was employed to describe the general socio-demographic characteristics of sample women respondents. Structure, conduct and performance analyses were also used to analyse the participation of women in the study area. Inferential analysis was employed to identify factors that determine the non- farm income generating activity in study area.

4.1. Participation Rate of Women's In Non- Farm Income Generating Activity

As indicated in below table 3, out of 392 women's respondents 178 (45.41%) women's were not participated in non- farm income generating activity 214(44.13%) women's were participated in non- farm income generating activity in study area. Women's were asked about the factors which affect them to participated non- farm income generating activity these are socio- economic factors, institutional factors, organizational factors, cultural factors and personally factors were the main determinants.

Table 2 Participation Rate of Women's In Non- Farm Income Generating Activity

Women Labour Force Partcipation	**Freq.**	**Percent**
women is not participating in non- farm income generating activity	178	45.41
Women is participating in non- farm income generating activity	214	54.59
Total	392	100.00

Source: own Survey, 2024

4.2. Factors Affecting Participation of Women's in non- farm income generating activity in study area.

1. Age of the Respondents

As indicated in below table 3 the maximum age of the respondents were 65 and the minimum age of respondents is 20.for this study the age between 20 up to 65 years of age were participated. In order to check the significance mean difference between participant women's and non-participant women's in non-farming income generating activity, t -test were conducted. As indicated in below table 1, the p- value is 0.0017. The p- value is less than 0.05; hence there is significant mean difference between participation in farming generating activity and non-farming income generating activity in terms of age.

Table 3 Ageof the Respondents

Variable	Obs	Mean	Std. Dev.	Min	Max	T-test
Age	392	47.12755	10.00967	20	65	**Pr(|T| > |t|) = 0.0017**

Source: own Survey, 2024

2. Family Size

According to below table 4, the maximum family size of the respondents is 13 and the minimum family size of respondents is 1. the mean of family size was 5. In order to see whether there is the association between family size and women‟s participation into non-farm income generating activities -test was employed. The result confirms that there was the significant association between family size and women participation in non-farm income generating activities (Pr(|T| > |t|) = 0.0001).

Table 4Family Size of respondents

Variable	Obs	Mean	Std.Dev.	Min	Max	t- test
Familysize	392	5.497449	2.823901	1	13	0.0001

Source: own Survey, 2024

3. Education Level of the Respondents

The survey result of respondents show that out of 392 respondents 145 (36.99%) of The respondents were not attend formal education, 59(15.05%) respondents enrolledprimary school, 31(7.91%) respondents enrolled secondary school, 79(20.15%) respondents were holder of diploma and the remaining 78(19.9%) were holder of degree. In order to check whether or not significant mean difference between participants of non-farm income generating activity and non-participant of non-farm income generating activity in terms of education , the chi2 test were conducted. The Pearson Pearsonchi2(4)=6.1599 Pr = 0.188 which indicated that there is insignificant mean difference between participant and non- participant in terms of education.

This finding is inconsistent with Yuanxiang's (2017) research, which demonstrates that education boosts both farm and non-farm production and has a major beneficial impact on rural families' engagement in non-farm activities.

Table 5 Educational Status of Respondents

Educational status of respondents	**Freq.**	**Percent**	**Chi2**
Not attended formal education	145	36.99	Pearson chi2(4)=6.1599 Pr = 0.188
Primary	59	15.05	
Secondary	31	7.91	
Diploma	79	20.15	
Degree and above	78	19.90	
Tertiary school	158	40.31	
Total	392	100.00	

Source: own Survey, 2024

4. Marital Status of the households

As indicated in below table 6, from total of 392 respondents 148 (37.76%) respondents were single, 163 (41%) respondents were married, 17(4.34%) respondents were divorced. The survey result showed that majority of respondents in this study area married. The chi2 test was conducted to check significance mean difference participants of non-farm income generating activity and non-participant of non-farm income generating activity in terms of education in terms of marital status. The pearsonchi2(2) = 1.3532 Pr = 0.508 which indicated that there is no significant mean difference between participant and non- participant in terms of marital status

Table 6. **Marital Status of the households**

Marital status	**Freq.**	**Percent**	**chi2**
Single	148	37.76	Pr = 0.008
Married	163	41.58	
Divorced	81	20.66	
Total	392	100.00	

Source: own Survey, 2024

5. AccesstoNon-farmActivity Training

Additionally, the results indicated that around 158 (40.31%) of the participants stated they had not received any training related to non-farm activities and 234 (59.69%) respondents have access to training. Additionally, the results indicated that women who received skill training were found to participate in non-farm activity at higher rates than women who did not receive such training, indicating the importance of skill training for women in non-farming income generation activity. In a similar spirit, Yishak et al.'s (2014) study shows a strong impact of non-farm skill training on non-farm diversification tactics. The statistically significant correlation between women's engagement in non-farming income generation activity and non-farm activity training (Pearson chi2(1) = 297.4268 Pr = 0.000, $p<0.05$) is further supported by the chi-square finding.

Table 7 AccesstoNon-farmActivity Training

Training	Freq.	Percent	Chi2
Have no access to training	158	40.31	Pearson chi2(1) = 297.4268 Pr = 0.000
have access to training	234	59.69	.
Total	392	100.00	

Source: own Survey, 2024

6. Access To Water Supply

Table 8 indicates that from total of 392 respondents, a considerable proportion of the respondents 136 (34.69%) lacked access to a water supply, whereas 256 (65.31%) of the respondents had s access to water supply. The finding of this study was contradicted with Mesay (2008) also discovered that the absence of fundamental rural infrastructure, such as a road network and a potable water supply, limits non-farm activities and has a significant effect on rural households' means of subsistence. The chi-square result further not supports the observation of a substantial

correlation (^{n} 2 = 30.850, df=1, p=0.000, p<0.05) between involvement in non-farming activity and access to a water supply.

Table 8 Access to Water supply

Access to water supply	**Freq.**	**Percent**	**Chi2**
no access to water supply	136	34.69	Pearsonchi2(1) =3.0876
there is access of water supply	256	65.31%	Pr = 0.079 .
Total	392	100.00	

Source: own Survey, 2024

7. Access To Credit

As can be seen in Table 9, a sizable portion of respondents 180 (45.92%) did not have access to credit services, whereas 212 (54%) of respondents have access to credit. The chi-square test was used to determine if there was a relationship between women's engagement in non-farm work and their access to credit services. The outcome validates the noteworthy correlation found between women's decision to engage in non-farm activities and their ability to obtain credit services (Pearson chi2(1)=228.5536 Pr=0.000).According to Kalalto's (2016) study, peasants' decisions on non-farm jobs are highly influenced by their access to credit, which is consistent with this finding. However, a research by Kassie et al. (2017) showed that having access to financial services had a detrimental impact on people's decisions to diversify their non-agricultural livelihoods.

Table 9**Access To Credit**

Access to credit	**Freq.**	**Percent**	**Chi2**
No	180	45.92	Pearson chi2(1) = 228.5536
Yes	212	54.08%	Pr = 0.000

Total	392	100.00	.

8. Distance from Work Area

Based on table below, the distance of work area is believed to have their own impact on participation of women's in non-farming income generating activity. As showed table, from total of 392 respondents 267 (68.11%) of respondents were far work area and 125(31.89%) of respondents were near to work area. As shown in below table 10, Tested chi2 indicated that, there is significant mean difference between the mean participant and non-participant in terms of Distance from Work Area (Pearson chi2 (1) = 112.6508 Pr = 0.000).

Table 10. **Distance from Work Area**

Distance from Work Area	**Freq.**	**Percent**	**Chi 2**	**p- value**
Far	267	68.11	Pearson chi2(1) =112.6508	Pr=0.000
Near	125	31.89		
Total	392	100.00		

9. Membership in Social Groups (Association)

According to Table 10, the majority of respondents 256 (65.31 %) not belonged to social groups (had social networks and associations), whereas 136 (34.69 %) ofrespondents are belong to social groups.Contrary to what was previously said, however, belonging to social groupings also prevented people from engaging in non-farm activities, particularly handicrafts (including leatherworking, carpentry, blacksmithing, and pottery). As confirmed by focus group participants, those who belong to official social groups (Iddir, Iqub, women's association) are prohibited from participating in some non-farm activities outside from their own association.

The chi-square test was utilized to investigate the potential correlation between women's involvement in non-farm activities and their membership in social groups. The findings indicated

a substantial correlation between women's engagement in non-farm activities and their ability to join social groups (Pearson chi2(1) = 167.6529 Pr = 0.000).

Table 11**Access To Credit**

Distance from Work Area	**Freq.**	**Percent**	**Chi 2**
Far	256	65.31	Pearson chi2(1) = 167.6529 Pr = 0.000
Near	136	34.69 %)	
Total	392	100.00	

4.3. MultipleLinear Regression Test

4.3.1. Multicollinearity (MC) Test

Prior to running the Logit regression model, both the continuous and discrete explanatory variables were checked for the existence of multicollinearity (MC) problem. MC problem arises when at least one of the explanatory variables is a linear combination of the others. The existence of MC might cause the estimated regression coefficients to have the wrong sign and smaller t-ratios that might lead to wrong conclusion. To test the presence of serious multicollinearity problem, Variance Inflation Factor test for both discrete and continuous variables was applied. From this test the value of Variance Inflation Factor (VIF) was used as a rule of thumb, if VIF of the variable exceeds 10, there is MC problem. The mean VIF values (2.17) displayed in below Table 13 in the appendix part have shown that all the continuous and discrete variables have no serious multicollinearity problem.

Variables	**VIF**	**1/VIF**
TrainigNFA	4.11	0.243296
AccessTocr~t	3.57	0.279834
SexOfHead	2.91	0.343783
Membership~s	2.29	0.436019
DistanceFWA	1.31	0.763170

Familysize	1.09	0.920696
Accesstowa~y	1.07	0.931604
Educ	1.02	0.983806
Mean VIF	**2.17**	

4.3.2. Hetroscedasticity Diagnosis Test

Hetroscedasticity problem arises when the variance of the error term may increase or decreases with the dependent variable or one of the independent variables (Gujarati, 2003). Under hetroscedasticity problems, the estimators of the regression coefficients are unbiased and consistent. However, the estimated variances of the regression estimators are biased and the conventionally calculated confidence intervals and test of significances are invalid which leads to wrong conclusions. According to Breusch-Pagan / Cook-Weisberg test for heteroscedasticity, if the p-value is below the chosen significance level ,then we reject the null hypothsis of homoscedasticity.

theBreusch-Pagan test for hetroscedasticity the p- value is less than 0.05 i,e p=0.000<0.05 we can conclude that there is heteroskedasticity problem. Under this study Prob> chi2 = 0.7124 which is greater than 0.05 , Therefore there is no problem of heteroskedasticity problem see below table

Table 12Hetroscedasticity Diagnosis Test

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of WP
chi2(1) = 0.14
Prob> chi2 = 0.7124

4.4. Logistic Regression Result

The regression result of the model shows that the model is over all (jointly) significant statistically at 95% level of significance or 5% margin error because the probability of the model

is less than 5% (i.e. prob>chi2 = 0.0000<0.05). According to the result, family size, education ,accessibility of water ,accessibility of credit, distance from work area and membership to social group are statistically significant at 5% level of significance because their respective p value is less than five percent (that is (p>¦z¦<0.05). But marital status were statistically insignificant because their p values (p>¦z¦) are greater than 5%. In addition the R2 or Psudo R2 of this study were 0.8147. it is interperated as , about 81 % of dependent variabl;e (women's participation in non-farm income generating activities) is explained by the independent variables such as family size, education ,accessibility of water ,accessibility of credit, distance from work area and membership to social group. The remaining 19% of dependent variable is explained by other variables not included under this study.

Table 13**Logistic regression Result**

Logistic regression Result			
Pseudo R2=0.8147	Number of obs=392	LR chi2(7)= 440.05	Prob> chi2=0.0000

Marginal effect test

4.4. 1. Interpretation of Marginal Effect

Family Size: family size affects women's participation in non-farm income generating activities positively and is statistically significant at 10% level of significance. This shows that, keeping other things remains constant, Family size increase by one child the probability of women's participation in non-farm income generating activities increased by 3.15%.

Education: the coefficient of education is positive and is statistically significant at 1% level of significance. The regression result showed that, keeping other variables remains constant, when education increased by one year the probability of being women's participation in non-farm income generating activities increase by 8.7%. This may be because as educational levels rise, so does their understanding of gender equality, which encourages women to move freely and engage in income-generating activities. This can be explained by the fact that as the women's education progresses, their self-assurance grows and they become more capable of thinking creatively and critically about how to improve their households' standard of living, including by engaging in income-generating activities. Additionally, as knowledge advances, people become more capable of managing income-generating activities like profit computation and cost benefit analysis, which aids them in choosing which income-generating activities to engage in. This finding is consistent with the research of Atamanov and Berg (2011), which demonstrates that people with higher levels of education, particularly those with vocational training, are more likely to choose non-farming pursuits over farming pursuits, primarily due to their greater suitability for formal non-farm employment. According to research by Gordon and Craig (2001) and Yuanxiang (2017), education improves production on farms as well as off. The study by Kalalto (2016) also demonstrates that as families' average educational attainment rises, so does the likelihood of non-farm work.

Access to Credit service: It is significant at 1% level of significance and its coefficient is positive. Other variables remain constant; the females who have access to credit are higher probability to participate in non-farm employment than those females who have no access to credit by 92%. According to the study, this implies that a unit increase in this factor could lead to an increase in women's involvement in non-farm income generating activities. This may be because their access to credit is likely to facilitate them to invest more in their activities.

Access of Water supply: The regression result shows that access to water supply affects women's participation in non-farm income generating activities. This shows that other things remain constant, regarding participation; women's who have access to water supply has are 43.9% greater than women's who have no access to water supply.

Distance from work area : the coefficient distance from work area is positive and is statistically significant at 1% level of significance. Other variables remain constant; the females who go larger kilometres are lower probability to participate in non-farm income generating activity than those females who go smaller kilometres by 64%. The reason for the negative relationship between work area distance and women participation in non farm income generating activities is that, long distance takes time for the women to reach to work area to buy input for their business and sell their output. As women have a lot of household related burden, they are not much interested to go a long distance and waste their time.

Membership to Social Group: the coefficient membership to social group is positive and is statistically significant at 5% level of significance. The marginal effect for Membership to Social Group is 0.42. This shows that, keeping other variables remains constant, women's who belongs to social group has higher probability than those who are not belongs to social group by 42%

Table 14**Marginal effect test**

Variables	dy/dx	Std. Err.	Z	P>z	[95%	C.I.]	X
Family Size	.0315159	.01658	1.90	0.057	-.000989	.064021	5.49745
Education	.087507	.03383	2.59	0.010	.021201	.153813	1.70918
Access of Water	.4397025	.12457	3.53	0.000	.195541	.683864	.653061
Access of credit	.9257255	.05362	17.27	0.000	.820641	1.03081	.540816
Distancefrom work	.6457705	.13746	4.70	0.000	.376358	.915183	.318878
MembershiptoSocialGroup	.4190876	.07268	5.77	0.000	.276634	.561541	.346939
Marital status	-.0982225	.05867	-1.67	0.094	.213204	.016759	.829082

CHAPTER FIVE

5.1. CONCLUSIONS AND RECOMMENDATIONS

According to World Bank (2019), the engagement of women in the workforce not only boosts productivity but also fosters a more diversified economy and greater parity in earnings (Bayu, 2021). By leveraging education and human capital for higher yields advocating for efficiency and fairness to advance socio-economic progress (Gebreyes, 2019), empowering themselves for stronger influence at home, thereby enhancing family welfare (Alemu et al., 2021), women's economic empowerment contributes to broader family and community prosperity.

The active engagement of women in activities outside of agriculture is vital for the financial wellbeing of their families. However, economic liberty eludes many Ethiopian women, with those in rural regions facing particular challenges .Often, women are compelled to contradict the choices made by their male partners upon whom they are financially dependent (Asfaw, 2022). Therefore, addressing the hurdles that hinder women's progress and tapping into their economic potential is essential (Challa et.al, 2020). Various studies related to non-agricultural activities have inadequately addressed the scope of women's engagement in such activities, failing to look into the full range of these undertakings, or unravel the diverse factors and challenges influencing their involvement. The main objective of this study is to examine the determinants of women's participation in non-farm income generating activities, in the case of MisrakSiltiWoreda,Centeral Ethiopia Region. Given the nature of the research question and the specific context of the study quantitative data was used to provide a comprehensive understanding of the research problem.

The target population of the study was women's who are able to participate in non-farm activity and live in MisrakSiltiWoreda. According to data obtained from the Woreda administration, there are 10,522 women's in MisrakSiltiWoreda that have an ability to participate in non-farm activity.this study was targeted total of 10,522 womens in MisrakSiltiWoreda. In order to select samples from the target population, this study was employed, the probability or lottery method of simple random sampling technique were utilized to achieve the study objective.

To achieve the objectives of the study, this study was used primary data. The primary data can be obtained from individual women by structured questionnaires'.

To analyze the collected data, both descriptive and inferential statistics methods was employed. For research employing quantitative techniques was used SPSS (Statistical Package for the Social Sciences). In contrast, a binary logistic regression model was chosen to scrutinize the elements influencing women's engagement in non-farm happenings due to its effectiveness in assessing the impact of various independent variables on a binary dependent variable.

The descriptive result showed that , Out of 392 women's respondents 178 (45.41%) women's were not participated in non- farm income generating activity 214(44.13%) women's were participated in non- farm income generating activity in study area.

The logistic regression result of the model shows that the model is over all (jointly) significant statistically at 95% level of significance or 5% margin error because the probability of the model is less than 5% (i.e. prob>chi2 = 0.0000<0.05). According to the result, family size (familysize), education ,accessibility of water ,accessability of credit, distance from work area and membership to social group are statistically significant at 5% level of significance because their respective p value is less than five percent (that is (p>¦z¦<0.05). In addition the R2 or Psudo R2 of this study was 0.8147. it is interoperated as , about 81 % of dependent variabl;e (women's participation in non-farm income generating activities) is explained by the independent variables such as family size, education ,accessibility of water ,accessibility of credit, distance from work area and membership to social group. The remaining 19% of dependent variable is explained by other variables not included under this study. family size affects women's participation in non-farm income generating activities positively and is statistically significant at 5% level of significance. This shows that, keeping other things remains constant, Family size increase by one child the probability of women's participation in non-farm income generating activities increased by 3% .the coefficient of education is positive and is statistically significant at 1% level of significance. This may be because as educational levels rise, so does their understanding of gender equality, which encourages women to move freely and engage in income-generating activities. This can be explained by the fact that as the women's education progresses, their self-

assurance grows and they become more capable of thinking creatively and critically about how to improve their households' standard of living, including by engaging in income-generating activities.This finding is consistent with the research of Atamanov and Berg According to the study, a unit increase in this factor could lead to an increase in women's involvement in non-farm income generating activities. This may be because their access to credit is likely to facilitate them to invest more in their activities.

The regression result shows that access to water supply affects women's participation in non-farm income generating activities. the coefficient of age is positive and is statically significant at 1% level of significance. This shows that, keeping other things remains constant, when the Age of women increased by one year the likelihood of women labor force participation increased by 4.6%. The likelihood that women will actively participate in activities that generate income rises as they get older or as the years pass by because women become more aware of the nature of work and the conditions associated with it, which encourages them to do so. This outcome differs from the outcome of (Alemu et al., 2022b).

Distance from work area: the coefficient distance from work area is positive and is statistically significant at 1% level of significance. Other variables remain constant; the females who go larger kilometres are lower probability to participate in non-farm income generating activity than those females who go smaller kilometres by 64%. The reason for the negative relationship between work area distance and women participation in non farm income generating activities is that, long distance takes time for the women to reach to work area to buy input for their business and sell their output. As women have a lot of household related burden, they are not much interested to go a long distance and waste their time.

5.2. RECOMMENDATION

Based on the above finding, this study was recommended the following policy implications:

The government and institutions ought to offer suitable assistance for non-farm activities. This is because a large number of women who participate in non-farm activities in rural areas encounter issues with access to raw materials, technology, and a work environment. In addition to providing support for the industry, this policy should also specifically help women become

economically empowered, become active participants in it, reduce time poverty, and avoid gender bias in the industry by mainstreaming the non-farm sector and integrating it with the farm sector.

Administrative officials and experts ought to raise awareness and offer sufficient training to women regarding non-farm income generating activities. In addition, since non-farm income diversification affects women's participation non-farm income generating activities, this education should be extended to all rural residents. Rural residents mistakenly believed that handicrafts were exclusively associated with agriculture, which has a detrimental impact on society's perception of them.

The governments must sufficiently tackle the issues related to the local physical infrastructure, including the roads, markets and water supply. These issues affect not only the participation of women in non-farm activities but also the productivity of farmers. Women's engagement in non-farm activities is hindered by inadequate infrastructural accessibility. Furthermore, locally favoured infrastructure needs should be constructed taking into consideration the opinions of the rural community as a whole and women in particular for agricultural productivity and diversification of non-farm livelihoods.

In order to address financial difficulties and encourage rural residents to engage in non-farm revenue-generating activities, saving and credit institutions expand their branches and offer free loans to pro-poor women, as well as adequate credit services. Put differently, women need to know how to get non-farm business, how to run non-farm business, and how to draw clients.
Women ought to engage in non-farm pursuits by using locally accessible resources and upgrading their existing talents, since certain occupations, including selling and preparing regional beverages, crafting leather goods, and selling produce, don't necessitate significant financial outlays. Women should also take use of the chances that are given to them by the government, institutions, and family members, as well as by asking for advice. This is due to the fact that some women, although having the skills and opportunity to participate in non-farm income generating activity.

Professionals should train women in skill delivery related to customer service and product market linkage, work facilitation with appropriate quality, and easy access to legal non-farm work opportunities. To put it another way, women need to know the advantages of working outside the home and the drawbacks of doing so illegally. Hence, women may readily assimilate the rationale behind the rules and regulations pertaining to non-farm activities, such as roadside trading and charcoal manufacture, and subsequently enhance their willingness to transition to other non-farm occupations.

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Appendix B

Variables	**VIF**	**1/VIF**
TrainigNFA	4.11	0.243296
AccessTocr~t	3.57	0.279834
SexOfHead	2.91	0.343783
Membership~s	2.29	0.436019
DistanceFWA	1.31	0.763170
Familysize	1.09	0.920696
Accesstowa~y	1.07	0.931604
Educ	1.02	0.983806
Mean VIF	**2.17**	

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of WP
chi2(1) = 0.14
Prob> chi2 = 0.7124

Logistic regression Result					
Pseudo R2=0.8147	Number of obs=392	LR chi2(7)= 440.05		Prob> chi2=0.0000	
Variables	dy/dx	Std. Err.	z	P>z	[95% C.I.] X

Family Size	.0315159	.01658	1.90	0.057	-.000989	.064021	5.49745
Education	.087507	.03383	2.59	0.010	.021201	.153813	1.70918
Access of Water	.4397025	.12457	3.53	0.000	.195541	.683864	.653061
Access of credit	.9257255	.05362	17.27	0.000	.820641	1.03081	.540816
Distancefrom work	.6457705	.13746	4.70	0.000	.376358	.915183	.318878
MembershiptoSocialGroup	.4190876	.07268	5.77	0.000	.276634	.561541	.346939
Marital status	-.0982225	.05867	-1.67	0.094	.213204	.016759	.829082