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Factors That Affect Rural Financial Inclusion: A Case of Gambella Town, Gambell Peoples National Regional State, Ethiopia

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Abstract.

The significance of an inclusive financial system is widely acknowledged in the policy community, and it is now a top priority in many nations, including Ethiopia. This study aimed to analyze the elements that affect financial inclusion in rural areas and how to increase it among customers and residents of Gambella People's National Regional State in Ethiopia. The population was condensed to include only the staff of the Gambella Saving and Credit Institution in Gambella town. The study employed primary data, and STATA 13 and the Statistical Package of Social Science (SPSS) 23 were used to analyze the data. Data were collected in the form of descriptive and inferential statistics. The study discovered that characteristics that affect financial inclusion had statistically significant and positive relationships with sex, marital status, religion, degree of education, service quality, income, and trust in financial services. However, the proximity to a financial institution's branch and a resident's ID card had a detrimental impact on the characteristics that influence financial inclusion. The report also suggests managers and decision-makers at the Oromia Credit and Saving Association should take great care in how they carry out their duties and consistently seek to inspire and raise awareness among the people by emphasizing the value and benefits of being financially integrated.

Keywords: credit and saving institution, factors, financial inclusion, gambella, logit model.

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1. Introduction

1.1. Backgrounds of The Study

It is possible to dispute the claim that opening an account at a formal financial institution constitutes financial inclusion. This erroneous perception is likely supported by the observation that the creation of an account has no impact on a household's daily activities. However, this is not always the case, and the benefits of having an account go much beyond the initial use. According to [1], an account should have a saving rate increase of at least 3 to 5 percentage points.

Financial inclusion as a concept is very difficult to define, but generally it has been conceived in terms of financial exclusion, which is defined as the inability to access

necessary financial services in the appropriate form due to issues with access, conditions, prices, marketing, or self-exclusion. According to [2], “Financial inclusion may be described as the process of ensuring that vulnerable groups, such as weaker sections and low income groups, have inexpensive access to financial services and timely and enough credit as needed. The goal of financial inclusion is to make sure that everyone has access to a variety of suitable financial services and to provide them with the information they need to comprehend and use those services [3].

In worldwide view, financial inclusion is derived by the objective of achieving universal financial since it plays important role of financial inclusion for economic growth and alleviation of poverty [4]. However, the exclusion of large population share from access to compressive banking service has been discovered as major obstacle to development in recent years [5]. As the result of this its worth of empirical attention to analyses immediate and remote causes of financial inclusion. This is an effort to bring about all inclusive growing through better financial spread. According to the World Bank in 2011 only 50% of all adults (aged 15+) in the world have an account at formal financial institution. The United Nations report, played a significant role in bringing international attention on this issue.

In Africa the percentage of adults with a bank account is 20% and in latin America 39%. In India, half of the poor are financially excluded from the country mainstream of the banking sector [6]. The national financial access survey of 2009 shows that 32% of Kenyan bankable population remains totally outside the orbit of financial service and many more being served by the informal financial system CBK 2009. This shows that development agenda cannot be attained without including all people around the world in financial matters and this has made organizations and countries across the world advocate for financial inclusion of all.

The study conducted in sub- Saharan countries concluded that financial inclusion in sub-Saharan African can be meaningfully influenced by both demand factors (gross domestic per capita and literacy level) and supply side factor are also known as interest rate and ATM service. Also, it’s documented that the socio-economic characters affecting the use of financial service system by both household and enterprises. According to the research conducted in Kenya the study has established that financial education, infrastructure provision, network access and quality of agent are significant factors in predicting financial inclusion for rural development in marakwet west [7].

Ethiopia is the second highest populous nation in Africa with only 22% banked population compared to 34.2% sub-Saharan African countries [8]. Moreover as per Ethiopia national financial inclusion strategy document only 22% of the population are banked in 2014 and projected to reach to 60% by 2020 NBE 2017. Besides to that,

the country may seize alarmingly increasing mobile penetration rate as opportunity to promote financial inclusion NBE 2017.

In this context, it is worth researching the possibility of identifying and addressing barriers in the financial exclusion as well as financial inclusion status, and thereby, enhancing the inclusive financial system for reducing poverty and achieving economic growth. So many research has been conducted worldwide at different times indicate different findings with respect to factors affecting the financial inclusion. In Ethiopia as to the knowledge of the researcher is concerned, and for different findings and very few research conducted in Ethiopia especially factors affecting rural financial inclusion is not conducted on Gambella Microfinance and credit and saving association. So, this study selected Microfinance and saving institution in found in Gambella town of Gambella People National Regional State, of Ethiopia. The head quarter of the region is Gambella town where several financial institutions like banks (CBE And private bank), insurance, and macro finance (MFI). Most of the financial institution are located in urban centers especially Gambella town where people have to move out of their remate areas to come and make the use of financial service in the town. With the advent of mobile and agency banking, the rural population can now access financial service within their vicinity. However, in the reality most of the rural population is still unbanked because of some factors. This is what motivates me to investigate probable factors affecting the rural financial inclusion with specific focus on Gambella Micro finance and credit and saving association in Gambella town.

1.2. Statement of The Problem

Financial inclusion is derived by the objective of synchronizing income flow and consumption needs since the use of financial service is an important tool for smoothing the cycles in consumption. As to [9], Financial inclusion is important for improving the living conditions of poor farmers, rural nonfarm enterprises and other vulnerable groups. The link between banking service penetration and poverty starts from the premises that household try to maximize their profit and not their income [4].

Financial inclusion has various challenges, including bridging the gap between the economically excluded segments of society and the formal financial system, promoting financial literacy, and enhancing credit delivery systems. [8] asserts that a lack of financial services contributes to the spread of inequality and the trapping of people in poverty. The primary goal of financial inclusion programs is thought to be eradicating poverty by bridging the gap between the less fortunate segments of society and the sources of income and livelihood that can be generated for them through loans and advances.

This leads to more stable economic conditions because the less fortunate segments of society received loans for a small amount of money that they could use to support themselves.

In Ethiopia, [10], conducted a research using three indicators for financial inclusion: account ownership, saving and the use of financial product and service including ATM, mobile banking, internet banking and agent banking. Accordingly, financial inclusion in term of all the indicators, account ownership, saving and use of financial service like ATM and internet is low among Ethiopian adults compared to those in sub- Saharan. In Jimma zone financial inclusion is determined by age, education, financial literacy, and income are positively related to financial inclusion, and distance to the nearest provider of financial service negatively impact financial inclusion [11].

However, gaps existed as to previous studies especially low use of financial product and service, low level of financial inclusion in Ethiopia and most of the rural population where unbanked. Other research conducted in Kenya by using variable like financial education, network connectivity, infrastructure access and branch service quality is looked specially from supply side but for better findings both supply and demand side would be important for this study with adding some variable like, level of household income, Age, sex, Residence ID and degree of trust in financial service are as additional variable. And different research conducted throughout the world on factors affecting financial inclusion by using different variable and come up with different findings. However, there are few research conducted in Ethiopia especially factors affecting rural financial inclusion is specifically not conducted on Gambella credit and saving institution in Gambella town, Gambella People National Regional State, Western part of Ethiopia. So, the focus of this study was to examine factors affecting the rural financial inclusion in Gambella credit and saving institution in Gambella town found in Gambella People National Regional State, Ethiopia. Objective

The purpose of this research was to investigate factors affecting rural financial inclusion (in the case Gambella saving and credit institution). Specifically,

1. To determine how the financial education of employees of Gambella saving and credit bureau, Gambella town influence rural financial inclusion.
2. To determine the effect of the Gambella saving and credit bureau on financial inclusion in in Gambella town.
3. To examine how Gambella saving and credit institution service quality influence rural financial inclusion.
4. To examine whether the household income level affect the rural financial inclusion.

5. To determine the influence of Age on rural financial inclusion
6. To determine the influence of Sex difference on rural financial inclusion
7. To examine weather Residence ID card Affect rural financial inclusion
8. To determine the influence of trust adult individual or household in rural financial inclusion.
9. To determine the influence of infrastructure status on financial inclusion.

2. Theory, Literature Review, and Hypothesis

2.1. Theoretical Framework

Agency theory served as the basis for the study's theoretical framework. The corporation is seen by agency theory as a chain of agreements among self-interested persons rather than as a single, profit-maximizing organization, according to [13]It illustrates how principals and agents work together in business. The goal of agency theory is to provide solutions to issues that may arise in relationships between principals and their agents. The two issues that agency theory focuses on are those that arise when the principal and agent have divergent views on risk as well as those that occur when the principal and agent's goals or desires are at odds and the principal is unable to confirm what the agent is actually doing. The principle and agent may have different tendencies to act since they each have a varied risk tolerance. As a result, agents require ongoing management and supervision to guarantee that the goals of their principals are achieved. By making information acquisition and analysis more affordable, information technology enables businesses to save overall management expenses, increase revenues, and decrease the need for middle management and support staff. Agency theory research has produced a number of conclusions. Most importantly, when the contract is outcome-based, an agent is more likely to embrace the aims of the principal and, as a result, operate in the principle's interest.

Modern development theorists were able to recognize financial market inefficiencies as forming a significant roadblock to progress by studying the evolution of growth, relative income inequality, as well as their degree of persistence. Given this, it has the potential to affect the accumulation of human and physical capital as well as career decisions. For instance, in theories underlying capital accumulation, flaws in the financial market dictate how much money the poor can borrow to spend on education or physical capital. Similar to that, it establishes the degree to which gifted but underprivileged people can secure outside funding to launch projects. Finance, then, affects both the

effectiveness of resource distribution and the relative economic chances for those from relatively wealthy or poor homes. The significance of finance has also been emphasized. For instance, it was found in the model of [12]. that despite the poor's high marginal investment productivity, financial market frictions made it difficult for them to invest in their education. Additionally, according to Banerjee and Newman's 1993 model, a person's initial endowments can influence their choice of career. These models make it abundantly evident that weaker growth and chronic income disparity or poverty traps can both be caused by a lack of access to financing. In the literature, a number of elements have been named as important FI drivers. These include, among other things, a large volume of transactions, inadequate infrastructure, high rates of poverty and banking fees, a small population, and illiteracy.

2.2. Factors Associated with Financial Inclusion and Overview

2.2.1. Agency Banking and Financial Inclusion

An agency bank is a business or institution that represents another bank; as such, it is unable to accept deposits or make loans in its own right; instead, it serves as the parent bank's agent. It is a retail location that has been hired by a bank or a mobile network provider to handle customer transactions. Instead of a branch teller, the retail outlet's owner or employee handles the transaction and enables customers to deposit, withdraw, and transfer funds, pay their bills, check their account balance, or receive government benefits or a direct deposit from their employer, according to Central Bank of Kenya [CBK], 2011. Among other factors, infrastructure development, extreme poverty, banking fees, sparse population, and illiteracy.

2.2.2. Financial Education and Financial Inclusion

The process by which financial consumers/ investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being [14]. According to [9], most agents are not properly trained on know your customer (KYC) they do not know how to distinguish a fake identification document and a real one. Accounts opened at agent locations are also prone to money laundering transactions this is because of a few irregularities that happen during account opening [15].

2.2.3. Distance of Bank Branch

This obstacle is common throughout the world, but more specifically to developing and under developing countries. Around 27.5million of Pakistaniadultscite distance to a financial institution as a barrier to opening a financial account [8]. Therefore, to tackle this problem, today there is strong appetite for reducing the distance between the user and financial service globally, and for the sake of that a lot of banks and countries has started to digitalize their banking services, for example Somalia, Kenya and more others of Sub-Sahara African Countries. Hence, Digital financial services present an enormous opportunity to bring more women into formal financial system by bridging the distance and service gaps from formal banking services.

2.2.4. Agent service Quality and Financial Inclusion

Agent quality is assessed using three parameters namely float adequacy, age of an agent in agency business and the core business of the agent. According to CGAP 2011, the top concerns among agents are low remuneration, liquidity management and network availability. The operation of the agency is such that a customer deposit at the agent means customer giving cash to the agent and is accounted by the bank by debiting the agent account at bank and crediting the customer's account at the bank [16].

2.2.5. Income level

Income can be defined as the amount of money received in an exchange for labor or selling of goods or services [17]. Income levels are being considered and observed as the intimate factor to financial sector development and increase of the demand for financial services in both developed and developing countries. This is explained that, the volume and sophistication of the financial services demanded is much greater in the higher income economies than in the lower income economies and as such developed countries are better able to achieve economies of scale in banking [10]. Being financially excluded is linked to income level: The richest 20% of adults in developing countries are more than twice as likely to have a formal account as the poorest 20% [18].

2.2.6. Age

This means the household heads age at the time of the study measured in years Rehmanet al. (2010). Jas to [19] also noted age had important influence of financial inclusion, as older people were much more likely to use a bank account than younger people where financial exclusion affects some age groups more than the others [20]. Generally speaking, the aged (65+) and the young (18-25) are at greater risk of being excluded.

2.2.7. Sex

Sex has an effect on asset accumulation as women own fewer assets than men in sub-Sahara Africa [21]. In most developing countries, Zimbabwe included, and the rest of Africa, statistics have favored men than women in accessing financial services [18].

2.2.8. Trust in Financial Service

[22] also reported that lack of trust in the banking system has caused disparities in financial inclusion. Lack of the customer trust in the financial system could be a result of improper supervisory mechanisms.

2.3. Empirical Literature

[23] examined the status as well as the determinants of financial inclusion in India using both the fixed effects and dynamic panel generalized methods of moments (GMM) methodologies on 29 major states and union territories between 1995 and 2008. The results showed that branch network has unambiguous beneficial impact on financial inclusion.

[21] undertook a study to understand determinants of range of banking financial services in UK. Results indicated that although factors vary according to kind of financial service, however certain variables portray consistent and significant influence across an array of financial services. Variables concomitantly affecting dependent variable turned out to be employment status, household income and housing tenure.

[24] attempted measuring the inter-state variations in the access to finance using a composite index of financial inclusion. In their paper, they identified the underlying factors that constituted obstacles in the process of financial inclusion in rural West Bengal. Using Binary Probit Regression Model, it was established that the greater

degree of awareness of basic banking services, diversification of rural non-farm sector, literacy drive to rural households and an expansion of household level assets were some of the crucial factors which have significant bearings, creating an enabling environment in reducing the obstacles in the process of financial inclusion.

A micro-data-based paper by [10] estimates several Probity models for a total of 123 countries to analyses the relationship between financial inclusion and individual- and country-level variables, such as regulatory aspects, the implementation. Of the policies and alternative banking designs. These authors found that greater financial inclusion has a positive correlation with better access to formal financial services (lower banking costs, greater proximity to bank branch offices and reduced documentation requirements). Living in rural areas and low income are negatively correlated with financial inclusion.

[25] studied the factors determining financial inclusion in central and West Africa. The study employed the global financial inclusion data base (Global index). The authors found that financial inclusions was driven by gender, education, age, income, residence area, employment status, marital status, household size and degree of trust in financial institutions.

In this study, the researchers used three indicators for financial inclusion: account ownership, saving, and the uses of financial products and services including ATM, mobile banking, internet banking and agent banking [10]. According to Findex data, 2 billion adults are unbanked worldwide as of 2014. Since 2011, adult population account ownership has risen from 51 to 62 percent. Similarly, developing countries are making substantial progress towards financial inclusion. Account ownership has increased, on average, from 41 percent to 54 percent in the same period. In Africa, the average account ownership (35%) is low when compared to both the world and developing countries. Only 22 percent of Ethiopian adults had accounts as of 2014. This is very low compared to the sub-Saharan average (34%). In addition, the use of financial products and services such as savings, ATM, mobile banking, internet banking and agent banking is in its infancy. For example, mobile banking in the neighboring Kenya is 75 percent compared to only 1 percent in Ethiopia. [26] investigated the reason for the low level of financial inclusion in Africa where Ethiopia is one of the samples. However, for the knowledge of the researchers, there is no single or specific study focused factors affecting rural financial inclusion particularly in Gambella credit and saving association in Gambella town.

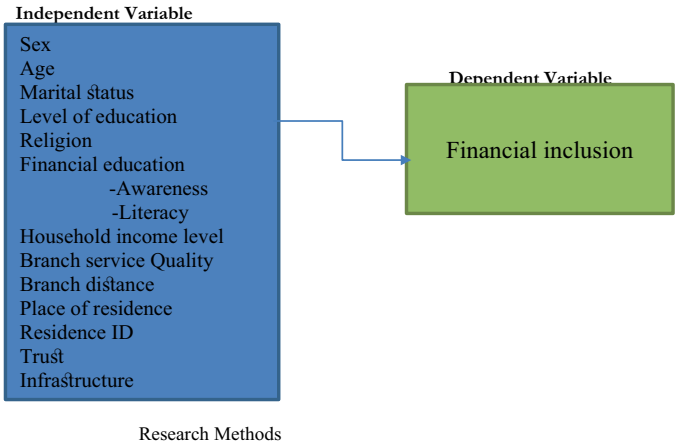

Figure 1:

3. Research Methods

Gambella (Amharic: ⊠⊠⊠) city is the capital of Gambella Peoples' Regional State or Kilil, one of the nine National Regions of Ethiopia that have been formed by the Federal Democratic Republic of Ethiopia in 1995. As marked with green color in the Ethiopia Map shown above, the region is located in the South western part of the country at distant of 766.11km away from Addis Ababa city, 705⊠ - 8045⊠ N Latitude and 33010⊠ - 35015⊠ E Longitude, bordering with Benishangul Gumuz and Oromia regions to the North, the Southern Nations, Nationalities and Peoples" Regional State and the Republic of South Sudan to the South, Oromia and SNNPRS to the East and the Republic of North Sudan to the West [27]. Gambella town/city is located at the confluence of the Baro River and its tributary the Jajjaba, the city has a latitude and longitude of 8°15′N 34°35′ECoordinates: 8°15′N 34°35′E and an elevation of 526 meters. Gambella city administration has five kebeles.

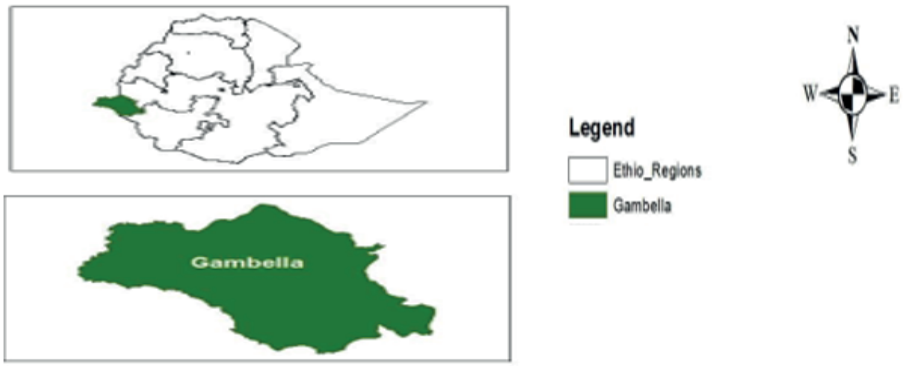

Figure 2:

In order to achieve objective of the study, quantitative research methodology was used to provide numerical measurement analysis of the adoption dynamic. The study

used a survey research design plan to acquiring enough information from target respondents by using closed ended and open ended questioner and interview as research instruments. Survey research as defined by [28] is acquiring information about one or more groups of people about their characters, opinions, attitudes, or previous experience by asking question and tabulating their answers.

Primary data as the main data for this study were collected from primary sources using structured questionnaire from selected sample of 394 respondents through simple and stratified random sampling techniques. Secondary data were used as supplemental of the primary data and were collected from secondary sources such as annual reports, Journals, Books, and Articles, websites, and conference papers.

3.1. Method of Data Analysis

After the data were collected from primary and secondary sources, those data were prepared for readiness by editing, coding and logging in the computer using Statistical Package for Social Science (SPSS v.21) and STATA is used for model regression and content analysis used for qualitative data. SPSS and STATA were used to produce descriptive and inferential statistics so as to drive conclusions and summarization regarding the population to see the overall agricultural investment financing challenges. In this research report, descriptive statistics was applied using percentages, and frequencies and inferential statistic which is correlation and regression analysis was also applied.

3.2. Specification and Justification of Model Used

Financial inclusion determining factors can be analyzed by using the logistic model or the probit model [29]. According to [30], logit and probit models are similar in most applications. Despite similarity among the models, the estimated coefficients are not directly comparable [30]. The current study employs the logit model to investigate the factors affecting financial inclusion following the work of [31]. The underlying thinking behind the use of the logit model is premised on the fact that people are faced with decision on whether to be included or not on the reaction threshold inherent in them based on a number of factors, beyond the threshold the person would not seek to be included in the formal financial market while at the critical threshold level the desire to be included in the formal financial market is motivated.

The Logit regression based on previous model designed by [31] was adapted using the variables from the above conceptual framework and It follows that the estimated Logit Model equation:

FinIncl = *f*(financial education, Branch service quality, and branch distance, level of household income, Age, Marital status, Religion, sex, Residence ID and Degree of trust in financial service)

To capture such phenomena in mathematical form:

Specifically, thus, the model is specified as;

$$Y = (X1, X2..XK) + \epsilon i$$

Where,

Y = Dependent Variable

Xi = Independent Variables

i= 1, 2...k

ϵ_i = Disturbance

The analyses began with the Absolute Income Hypotheses. This model, based on Keynesian theory which relates household saving with household income and other socio-economic variables.

$$FinIncl = \alpha + \beta 1X1 + \beta 2X2 \ldots . + \beta kXk + \epsilon i$$

Where,

FinIncl = Finance inclusion,

α = the constant or the intercept of the equation,

= the coefficient of each explanatory variable and

ϵ_i = the error terms.

The specific model is:

ϵ_i = the error terms.

The specific model is:

$$FinIncl = \alpha + \beta 1SEX + \beta 2AGE + \beta 3MS + \beta 4EDL + \beta 5Rel + \beta 6FEdu + \beta 7HInco + \beta 8BSQ + \beta 9Ds + \beta 10PoR + \beta 11ID + \beta 12Trs + \beta 13Infra + \epsilon i$$

4. Results and Discussion

This section discusses the descriptive and inferential results of factors affecting financial inclusion so as to come up with conclusion and recommendations.

Table 1: Description of Variables.

S/n	Variable	Code	Description
1	Financial inclusion	FinInclc	
2	Financial Education and literacy	FinItry	Is the Knowledge of using financial product and service
3	Education level	EDL	The level of education attained by adult individual or household head
4	Distance	Dist	Is the distance to the nearest bank or financial institution
5	Service Quality	SQ	Is offering quality service to rural development
6	Income	Inco	The level of income of the adult individual or household head
7	Age	Ag	The Age of the adult individual or household head In years
8	Sex	Sx	Is the sex difference weather male or female
9	Marital status	MS	Is whether or not the respondent married or not, divorce or not, widow/widower or not
10	Religion	Relg	Is the believe of the respondents
11	Residence ID	Rid	Is the document required by banks and other financial institution in offering their product or service to customers
12	Trust	Cdt	The trust of adult individual or household head in formal financial service
13	Infra	Infra	The availability of road to from the respondents' household credit and saving institution

4.1. Descriptive statistics Analysis

Factors that can affect the rural financial inclusion including Sex, Age, religion, marital status, and place of residence, level of education, financial literacy, distance, and level of income, service quality, residence ID card, trust and infrastructure were analyzed and the following descriptive results were obtained and presented below.

Table 2: Response Rate.

S/N	Respondent category	Frequency	Percentage
1	Responded	394	93.8
2	Not responded	26	6.2
3	Total	**420**	100

A total of 110 questioners where distributed to the customer of Gambella credit and saving institution of Gambella town and out of this questioner a total of 108 questioners

where successful completed and returned. The total response rate was 93.8%. As a result the analysis of this research is based on the number of questionaries' collected and interview.

Table 3: Sex of Respondent.

Sex	Frequency	Percent
Female	249	63.2
Male	145	36.8
Total	394	100.0

Sex is one of the variables that can explain rural financial inclusion. As indicated in Table 3 63.2% of respondent where male and 36.8% where female. This implies that the number of female respondent were less than male respondent.

Table 4: Age of Respondent.

Age	Frequency	Percent
less than 20 years old	17	4.3
between 20-30 years old	86	21.8
between 31-40 years old	172	43.7
between 41-50 years old	106	27.0
above 50 years old	13	3.3
Total	394	100.0

The result indicate that majority of the customer (43.7% range between 31-40 years while 27.0% range between 41- 50, 21.8% range between 20-30, 4.3% less than 20 years and 3.3% above 50 years old. So the result implies that majority of the customer 43.8% which range between 31-40 year where economically active and age during above 50 year and below 20 year where economically inactive and less financially included.

Table 5: Marital Status of Respondent.

Marital status	Frequency	Percent
Single	169	42.9
Married	225	57.1
Total	394	100.0

Table 5 indicate that Majority of the respondent 57.1% where married and 42.9% of respondent where single so the result indicate that married people are more used and included in the financial service than the single.

The result show that 59.1% of the customer came from the rural place and 40.6% of the customer live in the urban area, this result indicated most of the respondent 59.1%

Table 6: Customer Residence Area.

Place of residence	Frequency	Percent
Urban	160	40.6
Rural	234	59.1
Total	394	100.0

where rural dwellers and 40.6% are urban dwellers and in reality most of the financial institution where found in town while majority of the respondent came from the rural area and have not equal chance to get financial service. The prior Research conducted show that bank are mostly located in towns as opposed to being equally spread across all regions [6]. The high response rate of rural dwellers was by the fact that majority of the Kenyan citizens live in rural area. MDP 2013. Similarly the [bigger part of Nyeri and Kirinyaga counties is a rural area KCG& NCG 2013.

Table 7: Religion of Respondent.

Religion	Frequency	Percent
Christian	298	75.6
Muslim	61	15.5
Others	35	8.9
Total	394	100.0

Religions plays an important role in affecting the rural financial inclusion. The survey result revealed that majority of the respondent Christians who constituted of 75.6% while Muslim religion followers and others are 15.5% and 8.9% respectively. So the result of Table 7 show that majority of the respondent is Muslim religion followers.

Table 8: Education Level of Customer.

Level of education	Frequency	Percent
Illiterate	256	65.0
Literate	139	35.0
Total	394	100.0

Education enhances the capacity of individuals to obtain, process, and utilize information through different sources and it support clients to make financial inclusion decision and support them to access financial service. The result indicated that majority of the customer literate (256 =65%) where literate and 35% where illiterate and this indicate that majority of the respondent where literate people and implies they are able to make decision of financial usage.

Table 9: Financial Education and Literacy.

Financial literacy		Frequency	Percent
Do you have concept of financial inclusion	No	236	60.0
	Yes	158	40.0
	Total	394	100.0

The result where indicate that majority of the respondent 60% have no the knowledge of financial inclusion which may increase the exclusion of large number of the population out of the financial service while 40% have the knowledge of using financial service and product. Also the result of interview held with staff members of Gambella credit and saving association in Gambella town to method used by organization to promote financial education and literacy among branch and population showed that they go to the rural people area to teach culture of saving in community and school area, advice on unnecessary credit, give training for new clients advice how to use financial service, advertise their goal and objective to the community and providing training about meaning and importance of financial inclusion however based on client response still majority of rural people have a lack of knowledge about financial inclusion.

Table 10: Types of Account with in Financial Institution Do You Have.

Type of account	Frequency	Percent
Current account	54	13.7
Saving account	248	63.0
Fixed account	31	7.9
Loan account	62	15.7
Total	394	100.0

Table 10 indicates that 63% of respondent have saving account, 15.7% respondent have loan account, 13.7% have current account and 7.9% have fixed account. Most of clients where having a saving account which implies majority of the rural people are used saving account than loan account. The result indicates the rate of loan used by the rural people is still low.

The result shows that majority of the respondents 64.7% of the respondent agreed as distance is the major obstacle to use financial service while 35.3% not agreed and also majority of respond 74.4% said accessibility of road discourage the use of financial service while 25.6% said it's not a matter. So it implies distance from branch of financial

Table 11: Distance from Financial Institution.

Distance	Response	Frequency	Percent
Do you think distance is the problem to use financial service?	No	139	35.3
	Yes	255	64.7
Is the un accessibility of road discouraging you to use financial service?	Total	394	100
	No	101	25.6
	Yes	293	74.4
	Total	394	100

institution and lack of the road accessibility is the main problem to use financial service and product based on majority response.

Table 12: Distance from Branch of Financial Institution.

	Frequency	Percent
Near	172	43.7
Average	93	23.6
Far away	74	18.8
Very far away	55	14.0
Total	394	100.0

Also depending on this computation it indicate that majority of the respondent 43.7% near to the financial institution, 23.6% are average, 18.8% are far from financial institution and 14% are very far away from the financial institution. This implies that based on the majority of the respondent rural people in the Gambella town are near to financial institution to get financial service and product so distance is not as much problematic to include in the financial service in this area.

Table 13: Branch Service Quality.

Service quality		Frequency	Percent
Do you have got service in a single days	No	151	38.9
	Yes	253	61.1
Do you have got service during weekend and holiday	Total	394	100
	No	268	68.0
	Yes	126	32.0
	Total	394	100

The result show that majority of respondent 61.1% got service in a single day and 38.9% of respondent where not and also majority of respondent 68% respond as they not get service during weekend and holiday time while 38% response they got service during weekend and holiday time. This implies that majority of the respondent got service always in a single day and no more service during holiday and weekend time. Also the result of interview held with staff members of oromia credit and saving association in Gambella town regarding to the quality service towards promoting financial inclusion in the area of operation, to insure the quality service it shows that all employees providing quality service based on their responsibility area.

TABLE 14: Income Level.

Level of income		Frequency	Percent
Do you have any income per month	No	175	44.4
	Yes	219	55.6
Do you belief the level of income have an effect on financial inclusion	Total	394	100
	No	26	6.6
	Yes	268	93.4
	Total	394	100

As stated in the above table majority of the respondent 55.6% have income per month and 44.4% have no income per month. Based on the above result it implies that majority of the respondent where have income per month which is support them to include in financial service usage.

TABLE 15: Level of Customer Income.

	Frequency	Percent
Relatively low	140	35.5
Low	173	43.9
Medium	56	14.2
High	25	6.3
Total	394	100.0

And based on the above information it is indicated that from total customer of 394 in Table 35.5%. 43.9%, 14.2%, and 6.3% got relatively low, low, medium and high income respectively. As to majority (173 = 43.9%) of the respondents, this result implies that majority of the respondent got low level of income which has an effect on the level of financial inclusion. So the result indicate majority of people live in rural area have low

level of income which exclude majority of the total population out of financial service and make unbanked.

Table 16: Residence ID Card.

Id card		Frequency	Percent
Do you have residence id card	No	292	74.1
	Yes	102	25.9
Is id card is required by FI	Total	394	100.0
	No	83	21.0
	Yes	311	79.0
	Total	394	100.0

The above result indicate that majority of the respondent 74.1% have no id card and only 25.9% have residence id card , and 79% of the customer respond id card is document required by financial institution at the time of using financial service while only 21% respond as not required . So this implies that majority of the respondent have no id card and is a document require by financial institution during rendering service to their customer.

Table 17: Degree of Trust in Financial Service.

Trust		Frequency	Percent
Do you have trust in service provided by financial institution	No	120	30.5
	Yes	274	69.5
	Total	394	100.0
Do you know and see people not trust in financial service	No	278	70.6
	Yes	116	29.4
	Total	394	100.0
Is financial inclusion affected by status of infrastructure in the area?	No	130	33.0
	Yes	264	67.0
	Total	394	100.0

The result indicate that majority of the respondent 69.5% trust in financial service provided by financial institution while only 30.5% where not believe and 70.6% do not know and see people in trust in financial service and 29.4% do not trust in financial service in their residence area. Therefore the result indicates that most of the rural people are trust in financial service provided by the financial institution. It is also revealed

in the same table that, 67% and 33% said yes to the positive and negative relationship between infrastructure and financial inclusion respectively.

4.2. Inferential statistics Analysis

Inferential statistics is used to determine the probability of characteristics of population based on the characteristics of sample and help to access the strength of relationship between independent(casual) variable, and dependent (effect) variable and for this study the correlation analysis and chi-square test where discussed under this inferential analysis.

4.3. Correlations Analysis

Is one of the widely used measure of association between two or more variables by describing the direction of correlation whether it's positive or negative and the strength of correlation and ether an existing correlation is strong or weak.

The Second important things taken into consideration for the application binary logit regression like multiple linear regression there should be no high correlation (multicollinearity) among the predictors (independent variables) this can be assessed by a correlation matrix among the predictors (independent variables). According to [32] and also [33] suggest that as long correlation coefficient among independent variables are less than 0.9 the assumption is met. So in order to detect multicollinearity problem in this study the researcher apply the correlation matrix. According to [33] by citing [33]. Correlation coefficients for nominal variable Pearson correlation can be applied then the result of the matrix shows that all independent variable correlation below 0.9 which means there is no Multicollinearity problem.

4.4. Evaluation of a Logistic Regression Model

According to [34] there are several parts involved in the evaluation of the logistic regression model. First, the overall model (relationship between all of the independent variables and dependent variable) needs to be assessed. Second, the importance of each of the independent variables needs to be assessed. Third, goodness-of-fit statistics; finally, predictive accuracy or discriminating ability of the model needs to be evaluated.

The relationship between the dependent variable and the overall combination of the independent variables (predictors) is tested in the Omnibus Tests of Model Coefficients

Table 18: Correlation Between Variable.

	SEX	AGE	MS	EDL	Rel	FEdu	HInco	BSQ	Ds	PoR	ID	Trs	Infra
SEX	1												
AGE	-0.035	1											
MS	-0.016	0.053**	1										
EDL	0.213	0.072	0.127*	1									
Rel	0.037	0.017	0.034*	0.252**	1								
FEdu	0.149	-0.008*	0.111**	0.271**	0.275	1							
HInco	-0.013	0.086**	0.191	-0.06	-0.07	-0.08**	1						
BSQ	-0.086	0.026	0.634**	-0.02*	0.032*	-0.02**	0.352	1					
Ds	-0.011	0.009	0.034	-0.01	-0.02	0.052*	-0.05	-0.08*	1				
PoR	0.002	0.077**	0.255	0.112	0.097	0.149	-0.03*	0.273	0.066	1			
ID	-0.123	0.014*	0.423*	0.000*	0.036	-0.06**	0.357	0.642*	0.041	0.168*	1		
Trs	0.007.	0.062*	0.507	0.102	0-0.04	0.029	0.269**	0.501	0.026	0.174*	0.520	1	
Infra	-0.021	0.042	0.078	0.010	0.127*	0.437	0.465	0.511	0.132	0.540	0.350	0.501	1

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed

Table 19: Omnibus Tests of Model Coefficients.

		Chi-square	Df	Sig.
Step 1	Step	174.886	12	.000
	Block	174.886	12	.000
	Model	174.886	12	.000

table represented in table above. The model chi-square value of $\chi 2$ = 174.886, *df=12, N=394, P* =.000. With a p-value of less than 0.05 tells us that our model as a whole fits significantly. So, the relationship between the combination of the independent variables and the dependent variable is confirmed.

Table 20: Model Summary.

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	213.073[a]	.459	.617

The model summary table above illustrates the computation of correlation measures to estimate the strength of the relationship so the researcher prefer to use Nagelkerke R Square shows that about 61.7% of the variation in the outcome variable which is the financial inclusion of rural people is explained by this logistic model [35].

TABLE 21: Classification[a,b].

	Observed		Predicted		
			financial inclusion		Percentage Correct
			No	Yes	
Step 0	financial inclusion	No	0	140	.0
		Yes	0	165	100.0
	Overall Percentage				57.9

According to [36], common techniques in social science for judging the classification table accuracy of fitted binary logistic regression model is accuracy ratio. The probability of detecting true signal (sensitivity) and false positivity (specificity) for entire range of possible cut point comes from classification table. According to [34] higher sensitivity and specificity indicate a better fit of the model. Then overall correct prediction, 57.9% shows an improvement over the chance level which is 50%. If the classification table greater than the cut value the model is fit or it is considered as the model performance is excellent.

TABLE 22: Hosmer and Lemeshow Test.

Step	Chi-square	Df	Sig.
1	4.061	8	.852

The Hosmer–Lemeshow test is another test to examine whether the observed proportions of events are similar to the predicted probabilities of occurrence in subgroups of the model population. According to [34] better approach to present any of goodness of fit test available is Hosmer Lemeshow which is commonly used measure of goodness of fit based on the $\chi 2$ distribution with 8 degrees of freedom (with large p-value >0.05) indicate a good fit to the data, therefore, goodness of overall model fit. In generally according to [12] if p-value is less than 0.05 and conclude that the model is not fit but the p value in this model is 0.852 which greater than 0.05 means conclude that the model is fit for the observed data.

4.5. Logistic Regression

The result of the below Table was illustrated like this: LR chi2 (12), Prob>chi2, pseudo R2, and log-likelihood results are used as evaluation of model goodness of fit. The LR chi2 (12) is the likelihood ratio (LR) of the chi-square test which is equal to 174.89. Number in the parenthesis indicates the number of degrees of freedom which is equal to the number of the predictor variable.

Prob > chi2 is the probability of obtaining the chi-square statistic if there is an effect of the independent variables, taken together, on the dependent variable. This is, of course, the p-value, which is compared to a critical value, to determine if the overall model is statistically significant. Thus, the model is statistically significant as the p-value is 0.0000.

Pseudo R2 is the pseudo-R-squared. In this case, logistic regression does not have an equivalent to the R-squared that is found in OLS regression; but pseudo-R2 which indicates how well the regressors Xs explain the participation probability. The low pseudoR2 which is less than half the percentage means about 45.08% also shows the well-fitted model. Thus, in this all instance, as long the goodness of fit concerned the model fitted well.

Table 23: Regression Result.

FI	Coef.	Std. Err.	z	dy/dx	P>|z|
SEX	1.268	0.411	3.08	0.302	0.312**
AGE	1.405	0.415	3.39	0.333	0.001**
MS	1.604	0.483	3.32	0.37	0.001**
EDL	-0.226	0.184	-1.23	-0.052	0.220
Rel	1.369	0.419	3.26	0.324	0.001**
FEdu	0.116	0.376	0.31	0.027	0.758
HInco	-0.355	0.38	-0.94	-0.082	0.350
BSQ	-3.02	1.081	-2.79	-0.694	0.005**
Ds	-3.127	1.105	-2.83	-0.718	0.005**
PoR	1.193	0.542	2.20	0.274	0.028*
ID	5.28	1.12	4.71	1.213	0.000***
Trs	3.674	0.793	4.63	0.844	0.000***
Infra I	3.212	1.122	-2.86	0.844	0.004**
Number of obs		394			
LR chi2(12)		174.89			
Prob > chi2		0.0000			
Pseudo R2		0.4508			

As indicated in the Table 25 When the variables in the equation table is examined p-value of the sex (.002), religion (.001) marital (.001), level of education (.001, distance from branch of financial institution (.005), service quality (.000), level of income (.028), residence id card (.005), degree of trust in financial service (.000), and infrastructure development status(0.004) like access road to Gambella saving and credit institution are critical factors are observed to be less than 0.05 So, these independent variables are

found to be statistically significant and effect on the rural financial inclusion in Gambella saving and credit institution.

4.6. Marginal Effects Analysis

The estimated logistic coefficient couldn't be interpreted directly. To illustrate this, the marginal effect analysis was found to be an important step that could fill such an issue of interpretation with the direction of each explanatory variable that affected depends on the variable. The marginal effect indicates the probability derivatives at the sample mean which is the change in probability due to one unit change in a given explanatory variable after holding all other variables as constant. Amongst, the twelve independent variables, only nine variables are found statistically significant.

5. Finding and Conclusion

As to findings, this study concluded that, sex of the respondent has an influence on the Rural financial inclusion in Gambella Saving and Credit institution and government have aware and highly encourage female to use financial service which lead to increase the probability of female in financial inclusion in the study area. This study also provide the conclusion that single person are less reliable and stable than the married one and married person have huge responsibility to manage the family which pushes to use saving and financial access than a single person, the level of education is an important factor in decision to include in financial service and if the level of educated people high it insures the better probability of included in the financial service, the longer the distance to the nearest financial institution reduce the chance of people being financial included. This implies that the improvement in quality of service were leads to reduce the unbanked population in the study area and it mean that increase in quality service by the organization lead to increase the probability of financial inclusion and keep the organization good will and attract more customer to include in financial service. As income of the people increase the level of financial inclusion also increase and it's advisable if the government supports rural people in the way of generating income which enhance the probability of more people financial included, having ID card during using of financial service increase the probability of being included in financial service. As people trust in financial service increase leads to higher probability to being financial included. Finally, the study has recommended that, Gambella Saving and Credit institution managers and policy makers should give high consideration to perform their activities and commonly work on encouraging and creating awareness to the

public through teaching the importance and advantage of being financial included. The financial institutions and government have to work on promoting female participation on financial service and to encourage female by providing necessary facility and support them to increase number of females in financial inclusion. The government and financial institutions should have to give consideration to the rural people by providing them the needed facilities to them through teaching advantage of saving at formal financial institution, facilitating the way of getting loan or credit in form of IMX or individually.

References

[1] Aportela F. Effects of Financial Access on Savings by Low-Income People. Banco Mex.

[2] Ibeachu EH. Comparative analysis of financial inclusion: A study of Nigeria and the UK Master Degree. Thesis Int Bus Leeds Metrop Univ Fac Bus Law.

[3] Rakesh M. Economic Growth, Financial Deepening and Financial Inclusion. Annual Bank Conference Hyderabad. 2006

[4] Honohan P. Making finance work for Africa. World Bank Publications; 2008.

[5] Marktanner G, M. The Growth Potential from Financial Inclusion. Atlanta Fed/GSU International Development Economics Workshop.

[6] Singh AB, Tandon P. Financial Inclusion in India: an Analysis. Int J Mark Financ Serv Manag Res. 2012;1:41–54.

[7] Boit JK. Factors influencing financial inclusion in rural Kenya: a case study of Kenya commercial bank agent outlets in Marakwet west sub county. 2015 [cited 2024 Feb 21]; Available from: http://erepository.uonbi.ac.ke/handle/11295/905238. World Bank. World Development Indicators.

[8] Wambua SM, Datche E. Innovative Factors That Affect Financial Inclusion in Banking Industry.A Case Study of Equity Bank Mombasa County, Kenya. Int J Sci Basic Appl Res. 2013;12:37–56.

[9] Allen F, Demirguc-Kunt A, Klapper L, Martinez Peria MS. The foundations of financial inclusion: Understanding ownership and use of formal accounts. J Financ Intermediation [Internet]. 2016;27:1–30. Available from: http://dx.doi.org/10.1016/j.jfi.2015.12.003

[10] Timbula MA, Mengesha T, Mekonnen Y, Kebede M. Financial inclusion and its determinants among households in Jimma zone of oromia regional state, Ethiopia. Int J Commer Fin [Internet]. 2019. 5(2):106–19. Available from: https://ijcf.ticaret.edu.tr/index.php/ijcf/article/view/124

[11] Aliyu U, Bashar AU, Usman U. Predictors for risk factors of diabetes: binary logistic regression model approach. Int J Stat Distrib Appl. 2021;7(4):89–94.

[12] Eisenberg MA. The duty of good faith in American corporate law. Eur Co Fin Law Rev [Internet]. 2006;3(1):1–44. Available from: http://dx.doi.org/10.1515/ecfr.2006.001

[13] OECD. Improving Financial Literacy: Analysis of Issues and Policies: OECD.

[14] Sirken. Ministry of Finance audit findings on M-PESA money transfer services.

[15] Gitonga CN, Njeru A. Assessment of Factors Influencing Adoption of Agency Banking in Kenya: The Case of Kajiado North Sub County. Int J Bus Commer. 2014;3:91–111.

[16] Abreu, A.G., & Greenstein RK. Defining Income. 2011.

[17] Demirgüç-Kunt A, Singer D. Financial inclusion and inclusive growth: A review of recent empirical evidence. Political Economy - Development: International Development Efforts & Strategies eJournal [Internet]. 2017. Available from: https://papers.ssrn.com/abstract=2958542

[18] Arnold J. Inclusive financial market: is a transformation way under Kenya, development policy review. 2012;30:719–748.

[19] S L. Financial Exclusion and Access to Credit.

[20] Moges F, Senapathy M, Alves P. Determinants of Urban Households Saving: The Case of Wolaita Sodo Town, Southern Ethiopia. 2021.

[21] The global findex data base.

[22] Kumar N. Financial Inclusion and its Determinants: evidence from India. J Financ Econ Policy. 2013;5(1):4–19.

[23] Laha A, Kuri PK. Determinants of financial inclusion: A study of some selected districts of West Bengal, India. Indian Journal of Finance. 2011;5:29–36.

[24] Somure I, Tchana T, Kengne T. Analysis of the determinants of financial inclusion in central and West African. Journal of Transactional Corporations Review. 2016;8:231–249.

[25] Zins A, Weill L. The determinants of financial inclusion in Africa. Rev Dev Financ. 2016;6(1):46–57.

[26] Kenya CB. Guidelines on Agent Banking. 2011.

[27] Leedy PD, Ormrod J. Practical Research, Planning and Design. New York: Pearson; 2010.

[28] Potrich ACG, Vieira KM, Kirch G. Determinants of financial literacy analysis of the influence of socio economic, demographic. Revista contabilidade and finance. 2015; 26: 362–377.

[29] D G. Econometria. 4th ed. Rio Janeiro: Elsevier.

[30] A AM. The Determinants Of Financial Inclusion In Western Africa: Insights From Ghana Research Journal Of Finance And Accounting. 2013;4:1–10.

[31] Tabachnick BG, Fidell L. Using multivariate statistics. 6th ed. 2013.

[32] Kline RB. Principles and practice of structural equation modeling. New York: The Guildford Press.

[33] Park HA. An introduction to logistic regression: from basic concepts to interpretation with particular attention to nursing domain. J Korean Acad Nurs. 2013 Apr;43(2):154–64.

[34] Chan YH. Biostatistics 202: logistic regression analysis. Singapore Med J. 2004 Apr;45(4):149–53.

[35] Midi SKS and H. Importance of assessing the model adequacy of binary logistic regression. J Appl Sci. 2010;10:479–86.