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Factors That Affect Participation of Households in "Iqub" in Arba Minch Town: A Case of Wuha Minch Kebele

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Abstract: The main objective of this research was to identify factors that affect participation of households in "Iqub"in Arba Minch town Wuha Minch Kebele. To reach the aim, the data have been collected largely through questionnaire from 85 households selected by simple random sample out of 1925 total population during the time of study conducted. The results of this study showed that 76.5% of households were participated and the remaining 23.5% were not participated. Household participation was associated with Age, occupation, changes in living standard, income, Expenditure.

Keywords: Participation of Households, Binary Logistic Regression, Odds Ratio

1. Introduction

1.1. Background of the Study

Cooperatives are about people working together to meet their common needs and aspirations of its members, sharing ownership and making decisions democratically. They are a major force in achieving Socio-economic development among its members in urban and rural areas in Ethiopia. Cooperatives in their various forms (modern and traditional) promote the fullest possible participation in economic and social development of people, including women, youth, older persons and persons with disabilities are becoming a major factor of economic and social development and contribute to the eradication of poverty (Destahun, 2008).

Informal finance, once the preserve of anthropologists and sociologists, is progressively capturing the attention of a growing number of economists. The common view among economists is that informal credit markets are not competitive. In addition, government intervention is recommended by many to address imperfections and failures in the formal credit market (Besley, 1994).

There are probably two reasons for the growing interest to investigate informal finance among economists. First, the findings from field research in several developing countries suggest that the role of informal finance in resource mobilization and resource allocation is quantitatively significant. Second, disappointment with the effectiveness of formal financial systems in fostering economic growth has led to a reevaluation of the role of informal finance (Callier, 1990).

"Iqub": is a form of traditional cooperative or traditional self-help group in Ethiopia. "Iqub" is a financial form of traditional cooperative formed voluntarily. It is a rotating saving and credit type association whose members make regular contributions to a revolving loan fund. The formation of "Iqub" "is based on classes of people who have identical (similar) earning or income. Unlike saving and credit cooperatives, it does not bear interest on the money saved (collected). The person who has got the money on his turn basis solves his immediate economic and social problem. To minimize risk in an "Iqub", personal guarantee should be given by payee to the traditional society when he/she takes the money from the "Iqub" members. Many people use this form of traditional cooperative as a means of financial solution to their economic problems. "Iqub" is somewhat similar to the modern saving and credit cooperatives. Therefore, there is a chance that this traditional form of cooperative could be changed into modern cooperative societies with some adjustments on their operation and making them to have legal bases. The amount of money which is now used for immediate problem solving could be changed into sustainable and continuous problem solving system of modern cooperative by convincing and promoting the "Iqub" members. This alleviates the temporary nature of "Iqub" (Tenaw, 2007).

1.2. Statement of Problem

"Iqub" offers a savings mechanism for households in Ethiopia and it is a high contributing factor for economic sustainability of households. However, now a day due to some challenges "Iqub" may not play such activities. In practice we observe individuals/household join "Iqub" for multiple reasons without a focus exclusively on one motive as indicated earlier, and the participants of "Iqub" are decreasing. The reason might be the rising cost of living. So the study investigates what attention should be given for "Iqub" to achieve the sustainable life of households by taking the following questions:-

- Can "Iqub" guarantee a sustainable life for households?
- What is the purpose of households' participation in "Iqub"?
- What is the distribution of participation of government and non-government employees in "Iqub" in Arba Minch town Wuha Minch Kebele?
- What is the distribution of households' participation in "Iqub" with respect to monthly income?
- What is the relationship between monthly income of "Iqub" participants and its capital in the local community in Arba Minch town Wuha Minch Kebele?

1.3. Objectives of the Study

1.3.1. General Objective

The main objective of this research was to identify factors that affect participation of households in "Iqub" in Arba Minch town Wuha Minch Kebele.

1.3.2. Specific Objectives

- To test whether the amount of "Iqub" contribution is negatively related to number of "Iqub" participants.
- To explore whether association exists on monthly income of a household and amount of money contributed to "Iqub".
- To know which employee categories of households more participate in "Iqub".
- To know which age group of households is more participate in "Iqub".
- To know whether households' participation in "Iqub" is for the purpose of business, paying debt, or expense.

1.4. Significance of the Study

This study relies on identifying the determinants that affect participation of households on "Iqub" for sustainable economic development. The study would have the following significant importance.

- It helps to undertake the appropriate recommendation on "Iqub" under the study depending on the output of the research.
- It provides reliable information about "Iqub" to which contribute sustainable economic development.
- Cooperative researchers, organizers, and managers can determine the differences in perceptions of risk between members and non-members.
- It can be used as a basis for further investigation of the problem.

2. Literature Review

As many literatures indicate, cooperative life is very common and old-age practice among the Ethiopian communities. According to these literatures, the country has experienced various traditional/informal/institutions both in rural and urban areas for a long time. Some of such informal cooperation's include: "Iqub", Debo, senbete, Iddir, Mahiber, and etc. These traditional forms of institutions are autonomous, and highly respected organizations, that perform diverse socio-economic activities. The various socio-economic activities that are undertaken through such organizations includes moving, harvesting, house construction, and conducting wedding and funeral ceremonies and so on. The embedded social capital between the members of such organizations facilitates cooperation, information communication, trust and linkage among members, all of which are very important to undertake the aforementioned functions. However, the development potentials of such institutions have not been fully utilized yet mainly because of absence supportive legal and policy framework (Hailu, 2007).

The study presented some econometric evidence using data on "Iqub"s (Ethiopian roscas) from seven major urban centres in Ethiopia. A number of theoretical predictions have been supported by our data. We obtained an inverse relationship between "Iqub" contribution and size of "Iqub" (Besley et at 1993; Hand and Kirton, 1999); most of the "Iqub" participants join the informal saving scheme to buy consumer durables (Handa and Kirton, 1999); the larger proportion of rosca members are females (Anderson and Baland, 2002); a negative relationship between frequency of draw and volume of saving; and, finally, richer households tend to join "Iqub" (Levensohn and Besley, 1996). Some of the future possible direction of this study includes the need to allow for the endogeneity of the frequency of saving in the contribution equation. Because our data consist of information on employment of individuals, we will produce also IV estimates using pay period as potential instruments. More important and worthwhile future exercise is the investigation of household participation in formal and informal financial institution. Again very little is known about the micro-level determinants of individual/household participation in the various instruments. We focus on saving through banks and roscas as these represent the prevalent forms of saving. Some work has already been done. Bivariate probit equations estimated to test whether saving in formal institutions (banks) are substitutes/complements for saving in informal institutions (such as "Iqub"). The results indicate a statistically significant term for ρ which suggests that informal saving mechanisms are perfect substitutes for the formal saving institutions in the urban centers of Ethiopia.

3. Methodology

3.1. Study Area and Target Population

The study would be conducted in Arba Minch Town located in the Gamo Gofa the Southern Nations, Nationalities, and Peoples Region (SNNPR). It is located about 505 Kilometers south of Addis Ababa, at an elevation of 1285 meters above sea level. It is the largest town in Gamo Gofa Zone and the second town in SNNPR next to Hawassa. Arba Minch was established in the early 1960s and the city succeeded Chencha as the provincial capital of Gamo Gofa. In this study, the target population is households living in Arba Minch town Wuha Minch kebele.

3.2. Sampling Techniques

Sampling technique is a method of selecting sample from entire population. For this study, the respondents were gone to be selected using simple random sampling methods from total population of 1925 households' in Wuha Minch Kebele.

3.3. Sample Size Determination

The target population of this study was the total number of households in Arba Minch town Wuha Minch Kebele. For this study the sample size determination formula is: (Cochran, 1977).

$$n_0 = \frac{{Z_{\alpha/2}}^2 pq}{d^2}$$

Then, for $\frac{n_0}{N}$> 0.05 the sample size is observed as the following:-

$$n = \frac{n_0}{(1+n_0/N)},$$

Where:-

- p is proportion of households who participated in traditional cooperatives from pilot survey made by taking 15 households among the total of 1925 households.
- q = 1-p
- d=marginal error 9% (to minimize sample size)
- α=level of significant which is 0.05
- $z_{\alpha/2}$ =the accuracy level of significance takenas 1.96
- N = total number of households

3.4. Method of Data Collection

In this study, data is collected by using structured questionnaire from selected sample households. A questionnaire is self-report instrument used for gathering information about variables of in list of an investigator.

3.5. Study Variables

Dependent Variable

The response variable (Y) in this study was the participation of households in ""Iqub"". The households can be identified by either participated (1) or not participated (0)

Independent Variables

The independent variables used in this study are Sex, Age, marital status, education status, family size, occupation of households, monthly income, monthly expenditure, religion, the frequency of saving per month, amount of "Iqub" contribution per month, amount paid out by "Iqub" and amount expected to be received from "Iqub".

3.6. Statistical Method for Data Analysis

3.6.1. Descriptive Statistics

To have insight about the collected data, an exploratory data analysis using; graphs, tables and diagrams are used.

3.6.2. Inferential Statistics

Binary Logistic Regression

Binary logistic regression is most useful when you want to model the event probability for a categorical response variable with two outcomes. Since the probability of an event must lie between 0 and 1,

$$\pi_i = \frac{e^{(\alpha+\beta_1 X_1+\beta_2 X_2+\ldots+\beta_i X_i)}}{1+e^{(\alpha+\beta_1 X_1+\beta_2 X_2+\ldots+\beta_i X_i)}}$$

Suppose that a participated household is denoted by "Y" which has binary values. When Y=1, it shows that households participated in "Iqub" and y=0, it shows households that are not participated in traditional cooperatives.

If π is the probability households that participated in "Iqub" and if $(1-\pi)$ will be the probability of households that are not participated in "Iqub". This means, that will be the odds that, households that participated in "Iqub" to households who are not participated in ""Iqub"".

In terms of odd ratio the logistic regression model can be written as

$$\frac{\pi(x)}{1-\pi(x)} = \exp(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k)$$

Which means that exp (β_i), i =1, 2... K is the factor by which the odd of occurrence of success (in this case households that participate in "Iqub") change by a unit increases in the i^{th} independent variable.

4. Results and Discussions

4.1. Descriptive Statistics

Table 1. *Frequency distribution of the dependent and explanatory variables.*

Variable	Category of the variables	Frequency	Percent
	Male	60	70.6
Sex	Female	25	29.4
	Total	85	100
	Single	29	34.1
	Married	47	55.3
Marital status	Divorced	7	8.2
	Widowed	2	2.4
	Total	85	100
Educational level	Not educated	7	8.2

Variable	Category of the variables	Frequency	Percent
	Primary	18	21.2
	Secondary	2	2.4
	Diploma and Above	58	68.2
	Total	85	100
Households participate in ""IQUB""	Yes	65	76.5
	No	20	23.5
	Total	85	100
Occupation	Government employee	40	47.1
	Others	45	52.9
	Total	85	100
Religion	Orthodox	51	60
	Muslim	13	15.3
	Protestant	18	21.2
	Catholic	3	3.5
	Others	0	0
	Total	85	100
Interval of contribution	Daily	1	1.3
	Weekly	15	17.6
	Monthly	49	57. 6
	Missing values	20	23.5
	Total	85	100
Changes in living standard	Yes	73	85.9
	No	12	14.1
	Total	85	100

From table 1 households who participate and not participate in "Iqub"are 76.5% and 23.5% respectively. The table shows that 70.6% of respondents are male and 29.4% are females and respondents that are married counts 55.3%. From 85 household respondents 68.2% have diploma and above. And respondents who are government employee and others counts 47.1% and 52.9% respectively. Respondents whose religion orthodox have maximum count from others i.e. 60%. And large number of respondents contributes monthly for "Iqub" (57.6%). Finally 85.9% of respondents think that participating in "Iqub" changes living standard.

Table 2. *Summary measures for age, family size, monthly income, expenditure, iqub contribution and size of Iqub.*

	Minimum	Maximum	Mean	Std. Deviation
Age of households	23	66	42.18	12.129
Family size	1	8	4.5	2.158
Monthly income	700	50000	5443.84	8240.458
Monthly expenditure	555	30000	2955.19	4195.696
Amount of "Iqub" contribution per unit of time	50	10000	1000.77	1398.450
Size of "Iqub" members	10	150	34.71	28.660

From table 2 descriptive statistics for continuous variables shows that the minimum and maximum age of households are 23 and 66 approximately and the mean age is 42.18. The minimum and maximum of family size of households are 1 and 8 approximately and mean family size is 4.5. Monthly income of households also have minimum 700 birr and maximum 50000 with mean 5443.84 and also households have the minimum, maximum and mean of expenditure are 555, 30000 and 2955.19 approximately. Household's amount of "Iqub" contribution per unit of time have minimum 50 and maximum 10000 birr and have mean of 1000.77. Lastly minimum, maximum and mean size of "Iqub" members is 10, 150 and 34.71. As a general there is a high variance on monthly income, expenditure and amount of "Iqub" contribution per unit of time which shows that there is large difference between the minimum and maximum values.

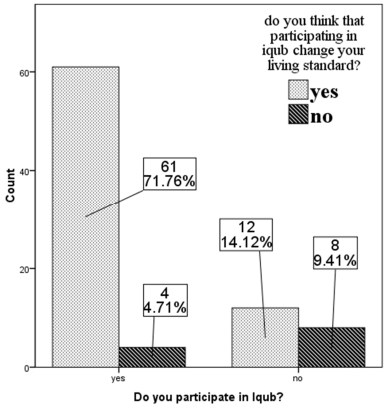

Figure 1. *Bar chart of household's participation and their attitude on Iqub changing living standard.*

From Figure 1, the bar graph shows that respondents who participate in "Iqub" and think that participating in "Iqub" changes living standard is 71.76% and 4.71% are participate in "Iqub" but who think participating in "Iqub" does not changes living standard. And also respondents who do not participate in "Iqub" and think that participating in "Iqub" changes living standard is 14.12% and 9.41% are not participate in "Iqub" and who think participating in "Iqub" does not changes living standard.

4.2. Inferential Statistics

The Chi-square test of independence between participation and predictors variables and estimated parameter of binary logistic regression model that relate participation with predictors under consideration are used to make inference or conclusion about population based on sample data results are displayed in table 3.

Table 3. *Chi square tests of independence between Participation of Iqub and some attributes.*

Variable	x^2-value	Df	p-value
sex	2.616	1	0.106
Age	50.353	35	0.045
Marital status	7.173	3	0.067
Education status	2.333	3	0.506
Family size	6.930	8	0.544
Job/occupation	7.686	1	0.006
religion	1.010	3	0.799
Changes in living standard	14.450	1	0.000
Monthly Income	65.945	28	0.000
Monthly Expenditure	70.047	31	0.000
Contribution for "Iqub"	4.486	18	0.999
Interval of contribution	31.992	24	0.127

Table 3 shows Chi-square test of independence between participation of "Iqub" and independent variables under consideration. Based on the Table 3 the different possible associated variables Age, occupation, changes in living standard, income, Expenditure and has p-value less than α-level of significance (α=0.05). Therefore, we conclude that there is association between the different possible associated variables and with at 5% level of significance (i.e. those different possible predictor variables have significant effect on participation of "Iqub"). On the other hand, sex, Education, Family size, religion, Contribution for "Iqub", Interval of contribution has p-value greater than α-level of significance. Therefore, we conclude that there is no association between the different possible associated variables and with participation of "Iqub" at 5% level of significance (i.e. those different possible predictor variables have no significant effect on participation of "Iqub").

4.3. Binary Logistic Regression Analysis

The binary logistic regression model is constructed in order to examine whether the participation of "Iqub" depends on predictors and the result presented in table 4.

Table 4. *Parameter estimates, standard error, and their significance.*

Effect	B	S.E.	Wald	df	Sig.	Exp (B)
age	.125	.051	5.948	1	.015	1.133
job (others)	-3.557	1.323	7.226	1	.007	.029
change (no)	-2.608	1.187	4.825	1	.028	.074
income	.002	.001	7.509	1	.006	.998
expenditure	-.002	.001	5.466	1	.019	1.002
Constant	-3.219	3.513	.839	1	.360	.040

Table 4 shows, the coefficient, standard error, Wald statistics, degree of freedom and odds of the individual. It is important to test the significance of coefficient of individual variable by comparing Wald statistics with x^2_α one degrees of freedom or by comparing the corresponding p-value with α = 0.05. In this study the p-value for age, job (others), change (no), income, expenditure is less than the level of significance (α = 0.05). Therefore, the null hypothesis H_0 is rejected. Hence, the variables of age, job (others), change (no), income, expenditure are statistically significant variables in determining the dependent variable (participation of "Iqub") in binary logistic regression model.

Odd of success is used to describe the chance that a binary response variable leads to success relative to failure. Households who participation"Iqub of their age is corresponding p-value less than prespecified level of significance (i.e. 0.015<0.05). Those the odds of Households to participate in "Iqub" are 1.133 times more for a unit increase in age. On the other hand Households who participation in "Iqub" for their job has corresponding p-value less than pre-specified level of significance (i.e. 0.007<0.05). Those the odds for participation who said participate in "Iqub" Households job other than government is 2.9% times less than for government job. And the odds for participation who said participate in "Iqub" who thinks participation in ""Iqub"" does not change their living standard is 7.4% times less than who thinks change their living standard. Moreover, Households who participation in "Iqub" for their income has corresponding p-value less than pre-specified level of significance (i.e. 0.006<0.05) Those the odds of a person to participate in "Iqub" are 0.998 times more for a unit increase in income. On the other hand the odds of a person to participate in "Iqub" are 1.002 times less for a unit increase in expenditure.

4.4. Goodness of Fit Test

Table 5. *Likelihood-Ratio Test.*

Model Summary			
Step	**-2 Log likelihood**	**Cox & Snell R Square**	**Nagelkerke R Square**
1	35.075[a]	.493	.742

Table 5 shows two way of estimating R^2 as done in multiple linear regressions. These R^2 estimated (0.493 and 0.792) indicates that approximately 49.3% or 74.2% of the variable in which participating in ""IQUB"" can be predicted from the linear combination of the five independent variables. The Cox & Snell R-square (0.493) is usually and under estimates.

Table 6. *Hosmer and Lemeshow Test.*

Hosmer and Lemeshow Test			
Step	**Chi-square**	**df**	**Sig.**
1	12.081	7	.098

H_0: the model is good fit to the data.
Vs
H_1: the model is not good fit to the data

We fail to reject Ho if the p-value is greater than 5% level of significance. From the result since p-value (0.098) is greater than 0.05, we fail to reject the null hypothesis and hence conclude that the model has good fit at 5% level of significance.

5. Conclusion and Recommendation

5.1. Conclusion

The descriptive parts of the analysis show that there are 65 (76.5%) Households who participate in "IQUB" and 20 (23.5%) Households who are not participate in "IQUB" and 73 (85.9%) of Households who Changes in their living standard and 12 (14.1%) of respondent who are not Changes in their living standard. The chi-square test of independent shows that age, job/occupation, changes in living standard, monthly income, and monthly expenditure, are statistically significance associated with the households who participate""iqub.

From the results and discussion, household's participation was associated with Age, occupation, changes in living standard, income, Expenditure and approximately marital status. Moreover from binary logistic regression it can be

concluded that the factors as age, job/occupation, Changes in living standard, income and expenditure had statistically significant effect on participation of households.

5.2. Recommendations

From the above result, Age, occupation, changes in living standard, income, Expenditure and approximately marital status are the major factor that affects' the participate""iqub. So the household's should concerned and improve the habit of participation. Households should Identifying the determinants that affect participation of households on "Iqub" for sustainable economic development. Households should undertake the appropriate recommendation on "Iqub "under the study depending on the output of the research. Finally the household should be giving an idea for people to participation. The household should be motivate persons increase the habit of participate in iqub.

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