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**ASSESSMENT ON POTATO MARKET OUTLET CHOICES OF MEMBERS' OF PRIMARY AGRICULTURAL COOPERATIVE SOCIETIES: THE CASE OF JELDU WOREDA, WEST SHOA ZONE, OROMIA REGIONAL STATE, ETHIOPIA**

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**Abstract**

Potato popularly known as 'The king of vegetables', which is the fourth most important food crop next to maize, wheat and rice worldwide. The choice of market outlet for smallholder potato producers is very important, since potato is perishable product and more demanded by the society. A random sample of 159 members of cooperatives societies have been selected for interview. Both descriptive and econometric methods have been employed for data analysis. Results from descriptive statistics shows that 69.8% of the total members have chosen non-cooperative firms as their potential market outlet for their potato produces, while 30.2% of them have chosen cooperatives as their outlets since the majority of the members have witnessed that non-cooperative firms have provided relatively fair price to their potato produced. The study shows that cooperatives failed to be chosen as premier and potential market outlet by members in the study area. Therefore, the researcher suggested that institutional capacity of cooperatives should be strengthened in order to face unfair competition, thereby bring about real participation in potato market and ensure sustainable growth.

**Keywords:** Determinants, Logistic regression model, Market outlet, Potato, Study area

**INTRODUCTION**

Agriculture is one of the pillars of the Ethiopian economy and the overall

economic growth of the country is highly correlated to the success of agricultural sector. The agricultural sector accounts

for nearly 46.7% of the GDP and provides employment for 85% of the population. Ethiopian agriculture is dominated by subsistence oriented, natural resource intensive, low input low output; rain-fed farming system(Abera, 2016).

Potato is one of the agricultural crops and more than 320 million tones are being cultivated annually on 20 million hectares of land worldwide. In Ethiopia, potato can play an important role in improving food security and cash income of smallholder potato growers (Tufa, et., 2015).

The potato holds great promise for improving the livelihoods of millions of smallholder farmers in the highlands of Ethiopia. The lack of market participation that many agricultural households face is considered to be a major constraint to combating poverty (Wainaina, 2016).

There are several factors that determine members' decision to choice appropriate market outlet for delivering their products to the market.

### Reviews of Literature

Many studies on members' choices of marketing outlet found that factors such as quantity of sold, frequency extension contact, production experience, and distance to nearest market, market information about each outlet, cooperative membership, and trust in buyers determine market outlet choice (Tarekegn et al., 2017), (Honja et al., 2017) .

(Wosene et al., 2018), also revealed that quantity of produced, farming experience, extension contact, year of schooling, bargaining power of the producer; post-harvest value addition, market distance, and livestock ownership had influence on choices of the market outlet.

(Jebesa, 2019), noted household characteristics, transaction costs, product characteristics, household asset and trusts on buyers were determinants of smallholder farmers' market outlet choice in Ethiopia.

### The research gap of the study

Various studies have been conducted on the factors determining market outlet choices in different countries. However, majority of the past empirical studies that were conducted on the factors determining market outlet choices in different regions are not similar, and the issue that was identified as a problem in the previous studies may not issue in the study area. Therefore, this study was aimed to identifying and examining factors determining potato market outlet choices of members' primary agricultural cooperative societies in Jeldu Woreda of West Shoa Zone, Oromia Regional State, Ethiopia.

### Methodology of the Study

#### Description of the study area

Jeldu Woreda, in which the study was conducted, is located about 115km west of the capital city of the country, Addis Ababa and 72km East of Ambo town, the capital of western Shoa Zone of Oromia region. It is bordered by Meta Robi and Ejere district in East, Gindeberet district in North, Dendi district in South and Ambo, Ilfeta and Cobi in west. The total area of the district is 139,389 hek, of which annual crops cover 64,500 hek and the remaining land is allocated for grazing, forest and other purposes. The annual rainfall of the study area ranges from 812-1699mm with an annual temperature of 17-25C. The study area has total population of 199,563 of which 97,786 are male and 101,777 are female. Moreover, among these 185,622 and 13941 live in rural and urban areas respectively. ( CSA-2007)

#### Sampling Techniques and Sample Size Determination

In the study area, from the total of six agricultural cooperative societies, three primary agricultural cooperative societies were selected by purposive sampling technique depend up on; the longevity of the cooperatives societies, Accordingly, Gudina Waqi, Gamachisi

and Darara (WB Moossee) cooperatives societies were selected randomly. There are about 459, 175, and 80 members in Gudina Waqi, Gamachisi and Darara (WB Moossee) The sample size of the study or the number of member respondents was determined by using Yamane (1967) sampling design formula: Accordingly, the sample size of the study or the number of member respondents was determined by using Yamane (1967) sampling design formula:

$$n = \frac{N}{1 + N(e^2)}$$

Where: -n= Denotes sample size

N= Denotes total number of members in the selected cooperatives (714) and e=Denotes the desired level of precision (taking 7%). Therefore;

$$n = \frac{714}{1 + 714(0.07^2)}$$

$$= 159$$

**Types, Sources and Methods of Data Collection**

To conduct this study, both qualitative and quantitative types of data were used. Qualitative data collected, to generate sufficient information for this study, both primary and secondary data were used. The primary data was collected from the sampled respondents, The major sources of secondary data were: profile of cooperatives societies of Jeldu Woreda, profile of primary agricultural cooperative societies; Woreda and Zonal cooperative promotion offices; Zonal and Woreda agricultural offices.

**Results of this Study**

**Table 1**

**Number of Respondents sold outlet to Cooperatives and Non-Cooperatives**

Number of respondents choice cooperatives market outlet		Number of respondents choice non-cooperatives market outlet		Total	
N	Percent	N	Percent	N	Percent
49	30.2	110	69.8	159	100

Source: Primary Data: 2020

**Method of Data Analysis**

In order to analyze the collected data, descriptive and econometric model was used. Descriptive statistics, the binary logit model was used to analyze the determinants of market outlet choices of cooperative members.

**Model Specification**

$$P_i = F(Z_i)$$

$$Z_i = \beta_0 + \sum_{j=1}^m \beta_j \times x_{ji}$$

$$= \log\left(\frac{p}{1-p}\right) + \beta_1 x_{i1} + \dots + \beta_n x_{in}$$

Where, P<sub>i</sub> is the probability that an individual member who sell the potato to cooperative, the binary variable, P<sub>i</sub>=1 for members selling their produce to cooperative and P<sub>i</sub>=0, for not selling.

Z<sub>i</sub> is estimated variable for the i<sup>th</sup> observation; F is the functional relationship between P<sub>i</sub> and Z<sub>i</sub>. i= 1, 2, 3...m are observation on variables of market outlet, m being the sample size 159. x<sub>ji</sub> -is the j<sup>th</sup> explanatory variable for i<sup>th</sup> observation = 1,2,...n. B<sub>j</sub> is a parameter,

j=0, 1,...n where n is the total number of explanatory variable. The logit model assumes the underlying index; Z<sub>i</sub> is a random variable that predicts the probability of the members selling to cooperative.

From the total respondents of 159 only 13.84% of them were female while 86.16% of them were male. From those who sold their potato product to cooperatives 83.7% of them were male and the rest 16.32 were female.

77.98 % of the respondents were not getting credit service from cooperative, while only 22.01% of respondents were getting the service. The reason why they could not get the service was the cooperative is not offering the credit service equal to the demands of the society or the credit is not adequate to operate the members activities.

79.8% members replied that they were not getting training service by market expert, development agents and from any other of the district while only 20.12% of members take service of training out of the total respondents.

12.57% of respondents were getting the accessibility of extension service while 87.42% of respondents were not getting the accessibility of extension service. 27.67% of respondents obtain full

market information from cooperative outlet was while 72.32% was given by no-cooperative market outlet. Due to lack of reliable market information, members were failing to negotiate better on the prices of their products and thus are paid lower prices.

20.75% of the respondents were selling their potato in cash while 79.24% of the respondents selling their potato in credit. It was found that from the total respondents, who were selling to the cooperatives, 46.93% of them were selling on credit basis and 53.06% of them were selling on cash basis. From respondents who were selling their product to cooperatives, 46.93 of them received dividend from cooperatives while 53.06 of them did not received dividend from the cooperatives.

83.01% of the respondents reported that non-cooperative market outlet offer fair price while about 16.98% of the respondents reported that cooperative offer fair price for members.

**Table 2**  
**Statistical result for binary logistic model**

Independent Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Marstatus	2.50	2.7	1.716	1	.708	6.98
EdU	.188	2.628	.01	1	.831	2.198
Gend	2.550	1.508	5.724	1	.810	7.16
Acctocdit	3.722	2.818	.000	1	.036**	12.866
Distfromcoop	4.376	2.15	8.282	1	.001**	17.844
Belfoncoop	.46	.254	6.504	1	.010**	2.516
marktinfo	.712	.88	1.308	1	.317	2.856
Extservice	5.648	3.074	6.75	1	.000***	33.688
Modofsale	2.374	4.674	.516	1	.446	6.554
Divdend	4.976	3.036	5.37	1	.081*	7.166
price	.658	1.586	.344	1	.710	2.78
Transpfacility	5.354	2.716	7.77	1	.000***	29.082
Storefacility	3.02	1.892	5.096	1	.063*	9.058
Training	1.063	.914	.915	1	.120	2.115
Distfromrkt	.712	.474	4.498	1	.000***	12.856
constant	2.766	5.34	.536	1	0.000	15.134

Variables entered on step 1: Marstatus, EdU, Gend, Belfoncoop, marktinfo, Extservice, Modofsale, Divdend, price,

Transpfacility, Acctocdit, Training, Storefacility, Distfromcoop and Distfromrkt.

\*\*\*, \*\* and \* Significant at 1%, 5% and 10% probability level respectively

**Exp (B)** is the predict changes in odds for a unit increase in the predictor.

**Extension service:** it is negatively correlated with the dependent variables and statistically significant at 1% significance level ( $p < 0.000$ ). This indicates that members obtaining regular cooperatives extension service have developed their knowledge or awareness towards cooperatives market outlet.

**Transportation facilities:** It was observed in the analysis model, transportation facilities had a significant effect at 1% ( $p < 0.000$ ) and positive association with cooperatives market outlet choices. The odds ratio for transportation facilities indicates that with the assumption of other things kept constant, the probability of choosing cooperatives market outlet increases by a factor of 29.082 as transportation facilities increases by one unit.

**Distance from market:** in accordance with expectation, distance from market of the members affects members cooperatives market outlet choices positively and significant at 1% significance level ( $p < 0.000$ ). That is the unit increase in distance from market of agricultural market result in an increase of members chooses cooperatives as market outlet.

**Distance from cooperatives:** statistically significance at 5% significant level ( $p < 0.001$ ). The implication is a unit increase in members' distance from cooperatives on their cooperatives will decrease the likelihood of that members will choose cooperatives as market outlet by the value of the odds ratio 17.844.

**Access to credit:** As the access to credit of the respondent increase by one unit, the probability of choosing cooperatives as market outlet increases by a factor of 12.866 times. This means members who obtain access to credit more had 12.866 times more selling potato through

cooperatives than those do not obtain access to credit.

**Belief on cooperatives:** statistically significant at 5% significance level ( $p < 0.010$ ). The result of binary logistic regression shows that there were negative relationship between belief on cooperatives and potato market outlet choices of members. This means as the members do not belief on cooperatives will decrease the likelihood that members will choose cooperatives as market outlet increases by the value of odds ratio 2.516.

**Dividend:** statistically significant at 10% significance level ( $p < 0.081$ ). This indicate that a unit increase in the payment of surplus to members through dividend will increase the likelihood that members will choose cooperatives as market outlet increases by the value of odds ratio 7.166. This result reveals that the payment of patronage dividends to members is a major factor in influencing the loyalty and willingness of members to participate and sell through cooperatives.

**Storage Facility:** members that have best warehouse want to sell their product to cooperatives. This helps them to realize the benefits gained from their cooperatives. It was observed in the analysis model, storage facility had a significant effect at 10% ( $p < 0.063$ ) and positive association with cooperatives market outlet choices. The odds ratio for storage facility indicates that with the assumption of other things kept constant, the probability of choosing cooperatives market outlet increases by a factor of 9.058 as storage facility increases by one unit.

### Recommendations

From the findings of this study the following recommendations were thrown for the market outlet of the potato:

The government should enhance on improving rural infrastructure and developing market infrastructure in the form of establishing member collection point in order to support poor farmers for faster delivering of their product.

Increase awareness of members by expanding equal accessibility of market information to link members and cooperatives outlet when they produce relatively large quantity of potato.

As the access to credit of the members' increase, the probability of choosing cooperatives as market outlet increases. Therefore, cooperatives should

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be, provide credit services for the members.

The more storage facility the members obtained, they were sending to supply more product as a result of the storage facility they have in making transaction with cooperatives. Therefore, should provide best storage facility for producers.