Innovations

Analysis of Smallholder Farmers' Wheat Product Market Linkage: In Case of Bale Zone Sinana Woreda, Oromia Region, Ethiopia

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Abstract
Ethiopia suffers from weak market linkages on both the input and output side. Weak systems connection prevent quality products from reaching end users, such as insufficient packaging and storing inability of Ethiopian products to meet international market standards and restrictive trade regulations. The purpose of this study is to analyze market linkage of smallholder wheat farmers' of Bale zone Sinana district. To attain this objective, closed ended questionnaire and interview are selected. The total sample that was selected for this study is 418. This study was used descriptive and causal research design to implement the study and both primary and secondary data were comprised in the study. The data was analyzed with the help of SPSS version 20. Descriptive statistical techniques used to analyze both qualitative and quantitative data, and linear regressions analysis were used to investigate the relationship between dependent and independent variables of constraints that affect market linkage. Results of multi linear regression model indicated the relative influence of determinants of different independent variables on market linkage of wheat in the study area. Hence any improvement in one of the dimensions will positively contribute in enhancing the smallholders' farmer market linkage. Therefore, the researchers recommend improving wheat market failure through enhances farmers' awareness on market oriented wheat production, strong farmers' market linkage and strategies of marketing are help to get access of wheat market and strengthen smallholder market linkage.

Key Words: 1.*Market Linkage, 2.Market Information, 3.Farmer Capacity, 4.Marketing Channel*

1. Introduction

Markets Linkages connect the parties involved in producing the products and delivering the services for any and every market. As such when linkages are absent or weak, markets become inefficient. Weak linkages between Market and farmers within an economy result in inefficiencies: missed opportunities and often, over reliance upon imported goods and services (Thomas, 2014). According to Thomas(2014) Smallholder farmers are the major players in agricultural production and food supply systems in Africa. However, poor access to market limits their productivity growth. This brings into focus the need to support smallholders to become less subsistence-based and more entrepreneurial by tailoring production to market forces.

It is not an easy task to generate systematic linkages between and among smallholder cooperatives, manufacturers and consumers in a relatively nascent value chain. Efforts to address this situation require attention to wheat production quality, input and output market failures and coordination problems facing smallholder farmers and other actors in the value chain. This implies, in particular, identifying

institutional arrangements for linking farmers with each other and to marketing channels as well as bringing together public and private stakeholders (e.g. research, extension, and banking institutions) (FAO, 2018)

However smallholder farmer participation in modern marketing channel is not well functioning as well as not properly linked to market, and not use market information. Another challenge limiting farmers' participation possibilities is that smallholder farmers are problematic in dealing with the quality and continuity of products supplied to market. Because smallholder farmers are characterized by small farm size and low productivity, it is usually difficult to meet the basic requirements regarding quality and consistent supply. Hence, instead of participating in modern market channel, smallholder farmer prefer to sell products through the traditional market channels.

Few studies on value chain and market chain analysis of wheat were done in different parts of Ethiopia. Among others, Muhammed (2014) on market chain analysis of *teff*and wheat production in Halaba Special *Woreda*. That provides empirical evidence for improving the farmer's market outlet choice of wheat and wheat supplied to the market, but there is a need to employ a market linkage approach to fully understand and resolve the problem of wheat at all levels.

Therefore, The researchers have been motivated to conduct this study, because the study support the purpose of zonal and regional interest by work better on improved strategies for inadequate market linkage for the benefit of smallholder farmers' sustainable market development. Most importantly, the study was expected to investigating smallholder farmers' market linkage of wheat producers.

1.1. Research questions

1. What are the factors that affect the strength of smallholder farmer's market access?
2. What is the levelof markets linkage performances in the study area?
3. What are the integrations of wheat market in theSinanaWoreda of Bale Zone?
4. Which effective marketing strategies improve the market linkage for smallholder wheat farmers in SinanaWoreda of Bale Zone?

1.2. Objectives of the study

1.2.1. General objective of the study

The general objective of this study is to analyze smallholder farmers' wheat product market linkage in Bale Zone (SinanaWoreda).

1.2.2. Specific objectives of the study

→ To identify factors that affecting wheat farmers to access market.
→ To examine the level of wheat market linkage performance in the study area.
→ To evaluate the integration of the wheat market in Sinana Woreda of Bale Zone.
→ To examine marketing strategies that improves market linkage of smallholder wheat farmers in SinanaWoreda of Bale Zone.

2. Review of related literature

2.1. Marketing Linkages

Marketing problems identified by producers are often attributed to the commercial sector and the capacity to access it: lack of buyers, unreasonably low farm gate prices, inflexible requirements, and so on. Links between NGOs /community based organizations, the governmental sector and commercial agents are usually weak. Yet working together with the private sector is an important way for farmers to access relevant market information, technologies and new market opportunities (Kindness and Gordon, 2001).

Private sector agents are sometimes willing to collaborate with NGOs and farmer groups to share in the costs of providing training and information, if they see it as an investment through which they can increase their own revenue. In these circumstances, both the producers and traders can benefit. Developing and strengthening associations between farmers and traders can reduce transaction costs, transport costs and risk on both sides (Kindness and Gordon, 2001).

2.1.1. Market access to smallholder farmers

Market access is crucial in smallholder development because it creates the necessary demand, offers remunerative prices, thereby increasing smallholder incomes (Al-Hassan *et al*., 2006). The concept of market access or access to markets is broad and has as many definitions as practitioners and is used interchangeably (Hugo *et al*., 2006). This study describes market access as the sum total of all skills acquired through experience or training that allow a farmer to get and maintain regular customers to his/her produce (Shepherd, 2007). In other words it is a long term marketing relationship among a seller and a buyer. Better access to market can result in expanded production and the adoption of productivity enhancing technologies (Al-Hassan *et al*., 2006). Thus improving market access is vital in efforts at developing small-scale agriculture for poverty reduction.

2.1.2. Wheat Market Transparency (Flow of Wheat Market Information)

Degree of market transparency is the consistency of market information that the market participants have to make decisions regarding to marketing activities. According to Hailu (2010), degree of market transparency can be calculated using perfect information flow, sources of information, proper standards and grades, measuring tools accuracy, unfair practices.

Having market information is critical for enhancing market performance by improving the knowledge of buyers and sellers concerning supply and demand. Although it is critical, there was no organized system to provide reliable market information to all market participants. Thus, traders found the market information through telephone, brokers, neighbors, friends, discussion with other traders, and personal observation (Abate, 2018). Generally, the market information is the core problems in wheat markets in many areas of Ethiopia. But if market members do not have perfect market information, the market structure is tempted to market imperfection. Therefore, the market structure of wheat in Ethiopia is not perfectly competitive market and the market information is not transparent (Ibid).

2.1.3. Market integration

Market integration is an vital economic concept, on both equity and efficiency grounds. Regarding equity, if prices are thoroughly higher in some markets than others, this could imply greater spatial inequality of economic wellbeing across markets/regions, insofar as wages do not adjust to account for differentiated costs of living. The commodity exchanges for futures trading of commodities produced a single, nation-wide market for various agricultural commodities through an online trading platform. Though their objectives were very different, they provided a template of how a combined market for the country as a whole could be created (FICCI, 2017).

2.2. Empirical literature review

A number of studies investigated about factors that mainly affect marketable supply of agricultural commodities. Ayelech (2011) identified factors affecting the marketable surplus of fruits by using OLS regression. The study found that fruit marketable supply was affected by; education level of household head, quantity of fruit produced, fruit production experience, extension contact, lagged price and distance to market.

Study by Muhammed (2011) found out the major factors that affect the marketed supply of wheat in Halaba Special *Woreda*using multiple linear regression model. He investigated among the different variables hypothesized to determine the supply of wheat, econometric result showed that quantity of

wheat produced, price of other crops and access to credit were found to influence marketable supply of wheat positively and significantly.

Study by Haymanot (2014) found out the major factors that affect the marketed supply of durum wheat in Gololcha*Woreda*using multiple linear regression model. She investigated that volume of wheat marketed was affected by; sex of the household heads, land allocation for durum wheat, amount of credit, quantity of improved seed varieties used, lag (previous) durum wheat price and tropical livestock size were found to influence volume of durum wheat marketed positively and significantly. Contrary to this, family size had shown negative and significant relationship with volume of wheat marketed.

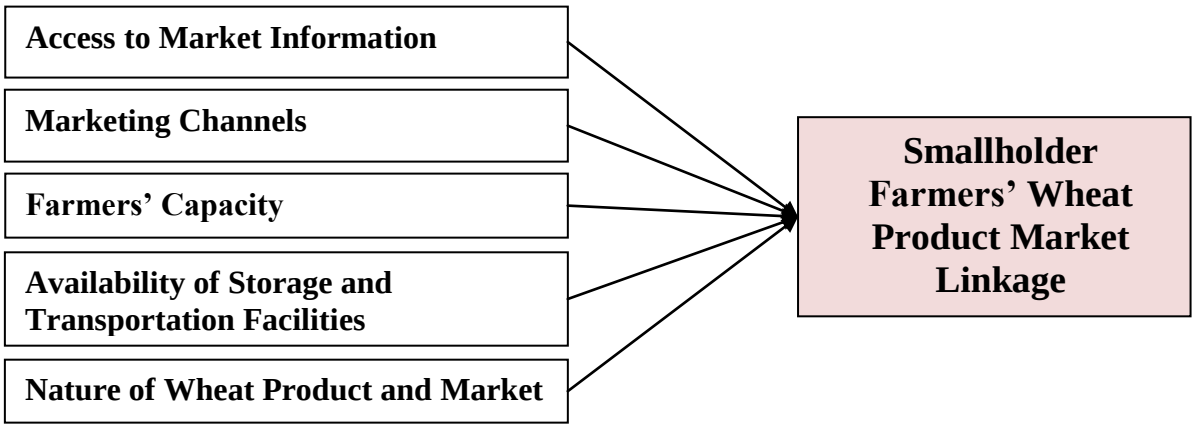
Study by Tura (2015) identified major factors that affect wheat at Tiyo and Hetosa Districts. He studied the relationship of farm level marketed supply of the wheat using cross-sectional data. To capture the influence of the independent variables on the marketed supply of wheat, he adopted Tobit model analysis with both dummy and continuous variables as independent variables. He found out that value adding activities, livestock holding, distance to nearest market, land allocate to wheat, type of wheat used, perception to lag market price, family size and access to credit had affected marketed supply of wheat grain.

Study by Sultan (2016) found out the major factors that affect the marketed surplus of wheat at Sinana District using two-stage least squares (2SLS) regression model. He investigated the quantity of wheat supplied to market is influenced positively and significantly by quantity of wheat produced, livestock ownership (TLU) and total area of farmland owned by farmers and also negatively and significantly affected by family size.

2.3. Conceptual framework

The conceptual frame work of the study is developed by observing the relationship and interaction of the surrounding variables which negatively or positively affects small holder farmers' market linkage.

2.4. Figure 2-1: Conceptual framework of the study



Source: Own Construction Based On Literature Review (2019)

The framework shows the relationship between smallholder farmers marketing linkage and factors affecting marketing linkage specifically; access to market information, marketing channels, farmers' capacity, availability of storage and transportation facilities, and nature of wheat product and market. Market linkage is the dependent variable which is influenced by factors affecting market linkage, as independent variables. To measure the market linkage of Sinana district small holder farmers' regression model will be used because a *regression model* is used to investigate the relationship between two or more variables and approximation one variable based on the others.

2.4.1. Operational and Explanation of the Variables

According to FAO (2019) the following variables are discussed and suggested by researcher as if properly utilized and managed the farmers could create good market linkage.

Marketing Channel: - In Ethiopia, there are formal and informal marketing channels. Wheat marketing is mostly informal. The informal channelis dominant among smallholders in rural areas, especially where cooperatives are absent or weak. Smallholders usually opt for selling their products to local collectors at lower prices due to lack of storage facilities and transportation services. They also sell their produce rapidly to get quick cash in order to cover their expenses. The formal market is helping the farmer to have good market linkage.

Access to Market Information: - Improving the information flow and communication between producers and other value chain actors will result in a more equal distribution of gains along the value chain, benefiting smallholder producers in particular. Since price is determined by supply and demand, it is important to promote a reliable, up-to-date and consistent market information system, to support investments on marketing and market infrastructure.

Farmer Capacity: - Production and productivity enhancement of the wheat sub-sector should be realized by interventions in support of both smallholder and large-scale producers for: (i) supply of quality agricultural inputs – i.e. seeds, fertilizers and agro-chemicals – and increased irrigation and mechanization; (ii) improved capacity of value chain actors; (iii) increased quality and coverage of extension/advisory services; and (iv) gender specific interventions.

Availability of Facility and Infrastructure: - Adequate **storage facilities** (including community based warehousing) are generally missing along the wheat value chain, especially in rural areas. Often, producers are forced to sell their wheat at low farm-gate prices due to the lack of storage. Inadequate infrastructure for aggregation of wheat grain is the main reason for quality deterioration and **post-harvest losses**, with implications on prices and sale volumes. Also, **transportation** is particularly important in the wheat value chain because production is highly concentrated in Arsi, Bale and West Arsi zones – and because of the seasonality. In particular, *durum* wheat is produced mainly on scattered pieces of land, resulting in more costly aggregation practises compared to bread wheat. As wheat smallholder producers are geographically dispersed, transportation costs are very high. Poor logistics and transportation practices influence post-harvest losses as well.

Nature of Wheat Market: - Seasonality affects the production volumes available to processors. In rural areas, most of the smallholders are highly dependent on rain-fed agriculture, which influences harvesting. In addition, due to seasonality, market demand suffers of severe fluctuations throughout the year. Also, there is hardly any **quality consistency** of both breadand *durum* wheat along the value chain. Producers bringdifferent varieties to the market place, where local tradersoften mix different types of wheat.

3. Research methodology

3.1. Research approaches

This study was combined both qualitative research methods and quantitative survey methods for the sake of understanding nature of agricultural marketing system and examining the effect agricultural marketing linkage on small scale farmers' market access.

3.2. Research design

From different types of research designs, descriptive and causal type of research design has been employed as main research design for this study to the realization of intended objectives.

3.3. Population, sampling method and sample size

The researchers purposively select Bale zone of Sinanaworeda because of high production area of wheat product and more closer to the center of Bale zone market. From the variety of probabilistic sampling techniques, the researchers had been used simple random sampling methods for a large target population of the study. In the first stage, Sinana district were selected purposely as it has the largest area under wheat production in the study zone. In second stage out 23,053 Sinana district household were 393 selected randomly by lottery methods as all household are live in rural areas they are producers of wheat in the district.

3.3.1. Farmers sampling size

Appropriate numbers of sample farmers of the district were selected in proportional to population size using Yemane (1967) formula. Accordingly, the required sample size at 95% confidence level with degree of variability of 5% and level of precision equal to 5% are recommended to obtain a sample size required which represent a true population.

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

Where, n = sample size, N= Population size and e = level of precision assumed 5%.Using the above formula, totally 393 farm household heads were selected from the totalworeda farmer household heads of 23,053. $n = \frac{23{,}053}{1+23{,}053(0.05)^2}$ =**393**

3.3.2. Wholesalers and wheat flour factory sampling

The lists of wholesalers and wheat flour factory were obtained from Robe Office of Trade and Industry (OoTI). Based on the number of wholesalers available in the district, from forty licensed wholesaler twenty wholesalers was selected through snowball sampling method. The researcher select because a researcher begins with a known wholesaler and expands the sample by asking those initial participants to identify others that should participate in the study.Since wheat flour factory is only established in zonal town Robe, all five flour factory manager available in Robe town were selected for interview.

3.4. Type and source of data

Both quantitative and qualitative type of data had been used in this study. Source of data are both primary and secondary.

3.5. Method of Data Collection

For the purpose of the study, primary data had been collectedfrom the sample through both closed ended questionnaire, and non-structured personal interview.Questionnaire was designed separately to collect data from selected smallholder farmers. Non-structured personal interview has been prepared to collect data from wholesaler, and managers of wheat flour factory. The questionnaire that wasprepared and proofread had translated in to the local language (Afaan Oromo language). The questionnaires had been pilot in order to determine the clarity and understandability of the question and to assess whether the questionnaire is able to collect the intended information.

Moreover, secondary data was collected from different data sources especially from journal article that helps to fill the knowledge gap and understand the concepts, definitions, theories and empirical results through reviewing various relevant journals articles from internet sources.

3.6. Methods of data analysis

The collected data was analyzed by descriptive statistics instruments such as mean and standard deviation and also inferential statistics particularly linear regressions. Statistical Package for Social Science (SPSS) software version 25was employed to analyze and present the data through the statistical tools of this study, namely descriptive analysis, and linear regression analysis.

Regression functions the equation of multiple regressions in this study was generally built around two sets of variable, namely dependent and independent variables. The basic objective of using regression equation is to make the researcher more effective at describing, understanding, predicting, and controlling the stated variables. Regress market linkage on the constraints Y = β1 + β2X2 + β3X3 + β 4X4 + β 5X5 + β6X6 Where Y is the dependent variable- (Market linkage), Access to Market Information=X2, Marketing channels=X3, Farmers capacity =X4, Availability of storage and transportation facilities=X5 and Nature of wheat product and market=X6 are the explanatory variables (or the regresses). β1 is the intercept term- it gives the mean or average effect on Y of all the variables excluded from the equation, although its mechanical interpretation is the average value of Y when the stated independent variables are set equal to zero. β2, β3, β4, β5 and β6 refer to the coefficient of their respective independent variable which measures the change in the mean value of Y, per unit change in their respective independent variables and Spearman's rank correlation have been used.

4. Results and discussions

4.1. Descriptive analysis of independent variable

4.2. Table 4-1: Descriptive analysis of independent variable

Descriptive Statistics					
Description	N	Minimum	Maximum	Mean	Std. Deviation
Access to market information	393	1.00	5.00	2.75	1.394
Deliver the wheat product at the right place and time.	393	1	5	1.99	1.053
Use indirect channel to deliver my product.	393	1	5	3.98	1.147
Produce marketable wheat product.	393	1	5	2.22	1.295
Capacity to perform marketing function.	393	1	5	2.18	1.191
Use agricultural input and technology.	393	1	5	2.21	1.283
Access to transportation.	393	1	5	4.06	1.055
Reliable storage.	393	1	5	3.81	1.233
Seasonality of wheat product affects the marketing of wheat product.	393	1	5	3.84	1.210
Price is determined by nature of wheat product.	393	1	5	3.95	1.110
Valid N (listwise)	393				

Source: Own Survey Data (2020)

Access to Market Information: Agricultural market information is essential for farmers who wish to become fully market orientated and ensure that their production is in line with market demand. The availability of reliable market information can help farmers to reduce the risks associated with marketing, decide where to sell their produce, check whether or not the prices they are offered are in line with market prices, decide whether or not to store, grow produce "out of season" or grow different products. Reliable market information also improves market transparency and farmers' bargaining power.Based on the sampled survey data, mean of 2.75 and standard deviation of 1.394, from this the researchers understand that the average of the respondent had not got reliable market information.

Marketing Channels: The analysis of marketing channel was intended to provide a systematic knowledge of the flow of the goods and services from its origin of production to the final destination of ultimate consumers (Muhammed, 2011). During the survey, the following wheat marketing channels were identified.According to the survey question on delivering the wheat product at the right place and time, average mean of 1.99 and standard deviation of 1.053 of respondents were fair or poor deliver of their wheat product at the right place and time.

Regarding the use of indirect channel to deliver wheat product, the survey result indicate 3.98 mean and standard deviation of 1.147 of respondents were strongly use of indirect channel to deliver wheat product.

Farmer's Capacity: Access to agricultural marketing skills is one of the critical tools that are required to move smallholder farmers towards the desired level of commercialization. Therefore implement an agricultural marketing skills development and capacity building program to help smallholder farmers to better plan their production and marketing activities in accordance with the market requirements, as well as to participate effectively in the mainstream agricultural markets.According to survey result, mean of 2.22 and standard deviation of 1.295 of respondents fair or poor toproduce marketable wheat product.

Concerning capacity to perform marketing function about mean of 2.18 and standard deviation of 1.191of respondents were indicate they have low capacity to perform marketing function.

Respondent replied on the use of agricultural input and technology. The survey result depict that average mean of 2.21 and 1.283 standard deviation implies that smallholder farmers were fair or poor use of agricultural input and technology.

Availability of Storage and Transportation Facilities: Agricultural marketing infrastructure is generally defined as any facility or tool that can be used by farmers and traders to facilitate trade, transform raw agricultural products into value-added products through processing and packaging, store agricultural products to smooth out supply and fulfill demand, transport agricultural products to satisfy demand, collect, collate, synthesize and disseminate agricultural market related information. Regarding access to transportation from the survey result, 4.06 mean and 1.055 standard deviation shows were farmers agreed that there is access to transportation. As shown in the above table 4-10 with question related to reliable storage, average mean of 3.81 and standard deviation of 1.233 indicate were respondent have reliable storage.

Nature of Wheat Product and Market: The study depicts that, mean of 3.84 and standard deviations of 1.210 were respondents agreed that wheat product nature is a cause for price volatility. From survey result, mean of 3.95 and standard deviations of 1.110 infer were farmers agreed that seasonality of wheat product affects the marketing of wheat product correspondingly.

4.3. Multi Linear Regression Analysis

4.4. Table 4-2: Correlation Analysis

Correlations							
		Market Linkage	Getting Reliable Information About Market	Marketing Channel	Farmer Capacity	Storage and Transport	Wheat of Nature
Pearson Correlation	Market linkage	1.000	.010	.198	-.010	.219	.129
	Access to market information	.010	1.000	.062	.359	.032	.040
	Marketing channel	.198	.062	1.000	.062	.015	.127
	Farmer capacity	-.010	.359	.062	1.000	.031	.239
	Storage and transport	.219	.032	.015	.031	1.000	-.006
	Wheat of nature	.129	.040	.127	.239	-.006	1.000
Sig. (1-tailed)	Market linkage	.	.420	.000	.424	.000	.005
	Access to market information	.420	.	.109	.000	.263	.216
	Marketing channel	.000	.109	.	.109	.384	.006

	Farmer capacity	.424	.000	.109	.	.271	.000
	Storage and transport	.000	.263	.384	.271	.	.452
	Wheat of nature	.005	.216	.006	.000	.452	.
N	Market linkage	393	393	393	393	393	393
	Access to market information	393	393	393	393	393	393
	Marketing channel	393	393	393	393	393	393
	Farmer capacity	393	393	393	393	393	393
	Storage and transport	393	393	393	393	393	393
	Wheat of nature	393	393	393	393	393	393

Source: Own Survey Data (2020)

Among those predictor variables the highest positive relationship is between storage and transportation and market linkage with weak relationship (r=0.219) which is significant at 0.000 level, next is market channel variable with r=0.198 which is significant at 0.000 level, then product nature of wheat product with r=0.129 which is significant at 0.005 level, and afterward access to market information r=0.010 and finally farmer capacity is negative relationship with market linkage at lower (r=-0.010) correlation. Accordingly we can conclude that there is a positive and significant relationship between the predictor variable (marketing channel, storage and transportation, nature of wheat product) and predicted variable (market linkage). Hence any improvement in one of the dimensions will positively contribute in enhancing the smallholders' farmer marketlinkage.

4.5. Table 4-3: Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.317[a]	.100	.089	1.26071	.100	8.627	5	387	.000

a. Predictors: (Constant), nature of wheat, storage and transportation, access to market information, market channel, farmer capacity

b. Dependent Variable: market linkage

Source: Own Survey Data (2020)

The above regression model presents how much of the variance in the measure of farmers' market linkage is explained by the underlying constant variables.As it can be depicted from the above table4-12 there is a positive and statistically significant relationship between the independent variables (Access to market information, Market channel, Farmer capacity, Storage and transportation, and Nature of Wheat) and the dependent variable (market linkage). Thus 10 % (R^2=0.100) variation on market linkage is explained by the independent variables.

4.6. Table 4-4: Analysis of Variance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68.561	5	13.712	8.627	.000[b]
	Residual	615.092	387	1.589		
	Total	683.654	392			

a. Dependent Variable: marketlinkage

a. Predictors: (Constant), nature of wheat, storage and transportation, access to market information, market channel, farmer capacity.

From the ANOVA table it has been determined that F = 8.627 and Sig. is 0.000 which confirms that acceptability of the model and it is good fit for the data.

4.7. Table 4-5: Coefficient

Coefficients[a]

Model		Unstandardized Coefficients		Stand. Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations		
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	1.373	.254		5.411	.000	.874	1.871			
	Access to market information	.008	.050	.008	.163	.871	-.090	.106	.010	.008	.008
	Market channel	.171	.045	.183	3.754	.000	.081	.260	.198	.187	.181
	Farmer capacity	-.061	.055	-.060	-1.120	.264	-.169	.046	-.010	-.057	-.054
	Storage and transportation	.233	.051	.218	4.527	.000	.132	.334	.219	.224	.218
	Nature of wheat	.117	.049	.121	2.411	.016	.022	.213	.129	.122	.116

a. Dependent Variable: Marketlinkage1

Source: Own Survey Data (2020)

Based on the above table, show the standardize beta coefficient, which tell us the unique contribution of each factor to the model. A high beta value and a small p value (<0.05) indicate the predictor variable has made a significance statistical contribution to the model. On the other hand, a small beta value and a high p value (p >0.05) indicate the predictor variable has little or no significant contribution to the model (George *et al*., 2003).

Table 4-14, also indicates that market channel,storage and transportation and nature of wheathave a significant influence on market linkage at 95% confidence level.

From this the regression equation is derived as:

Regression Equation

Y = β0+ β1X1+ β2X2+ β3X3+ β4X4+ β5X5+ **e**

Y = 1.373 **+** .008**x1 +** .171**x**2 **+ (**-.061**x3) +** .233**x4 +** .117**x5 +e**

4.8. Analysis of Key Informant Interview

4.8.1. Analysis of Wheat Traders

Buying and Selling of Wheat Product: According to key informant, wheat trading is based on eye appraisal of the product and exchange takes place on bargaining. The strategies of traders in maximizing profit and develop bargaining power include the use of regular partner, long term relation with clients or suppliers, the use of intermediaries, trading with personalized network, availability of market information and its impact on price, feasibility of alternative market outlets and price setting practices. Traders purchased wheat product from farmers and collectors and sold to final customer those who use for consumption, to processors and other traders.

Setting Price of Wheat: Informants indicatebuying price set by the market and discussion with other traders. Traders are highly agreed among them to get profit through price setting. They buy wheat from smallholder farmer at farm get with minimum price and provide to market with high price.

Attraction and Communication to Supplier: According to key informant interview, the critical period for wheat purchase was immediately after harvesting. Wholesalers primarily purchase from producers

and also use collectors as second source to purchase. All traders in the local market did not report the use of brokers for purchasing wheat. This indicated that traders in the area used a variety of criteria to attract their suppliers, some of them they attract their suppliers by fair scale-weighing, by giving better price relative to others, by giving credit, and the rest by visiting their suppliers. Majority of the traders of respondent traders said they used quality as a means of attracting their buyers.

Market Information: Key informant replied that, market information is a market facilitation function that plays greater role in improving marketing decisions of traders through avoiding or reducing information gap (irregularity).However, traders face lack of market information providing institution although they were willing full to pay for the required information. Lack of uniform controlling mechanism to enforce unlicensed wheat traders to have license is marketing problem in the districts. About of sample traders reported that there is absence of government control on unlicensed traders.

Marketing Function: These market actors are located at the end of marketing chain, directly servicing the ultimate consumers of the marketing system. They achieve numerous marketing functions such as buying, processing, storing, selling and other functions related to marketing.

Challenge and Benefit of Accessing the Wheat: The major marketing problems sample traders faced in the study area were capital shortage, credit access, poor product quality of the commodity, lack of market information, multiple taxation, higher transportation cost, lack of demand, and unfair competition with unlicensed traders. On the other side used to take advantageof better price choices and take an informed decision.

Any Challenges and Opportunity Faced in Obtaining the Product From the Farmer: With regards processing and marketing, serious constraints included: lack of crop storage facilities leading to post harvest pest and disease problems; lack of knowledge about processing and lack of processing equipment for instance harvesting, drying and grinding mills, which limited opportunity for adding value. At the same time concerns were raised about low market prices, poor transport facilities and sometimes low demand for farm produce. Farmers often sell their crop soon after harvest to avoid pest damage, but when prices are low. Early selling is also necessary to ensure timely loan repayments with late payments attracting high interest rate penalties. Little value addition was reported, with output prices being largely dictated by traders, who are often suspected to fix low prices.

4.3. Analysis of wheat processors

Source of Wheat and Its Varieties: These are market actors in the final link of the market chain and reside on the district town. They buy the wheat from farmers' customer directly or through broker in the market and on their purchasing and selling verandahs on the days other than the market days.

Main Suppliers: Farmers who have more experience provide more of their product to market. Hence it is hypothesized that experience of the farmers on farming actions positively influences both supply of wheat and decision of participation in value addition. In addition to this they buy wheat from cooperative farmers.

Improve Business Network: The study noted that the wheat chain assessed was characterized by disintegrated chain where businesses were self-oriented and mutualism has not well-developed. Working towards supply chain management and relational view of business has been recommended based on the problems known in the study.

In order to understand the situation of the supply chain management aspects in the assessed wheat value chain, many explorative questions were asked to the primary chain actors and the condition was analyzed in conjunction with secondary data sources. Result showed how the major wheat supply chain actors interact in the chain. These chain actors were asked how they usually achieved their business with the

upper-stream suppliers and down-stream buyers. Accordingly, the whole producers and retailers responded that their only means of doing business with their transaction partners were spot-market agreement. On the other hand, information from collectors depicted that all of the collectors had neither oral contract nor written contract with the suppliers or the producers but had oral and written contractual agreement with their buyers, respectively. Wholesalers and processors relatively had establishing formal relationships with their transaction partners.

Challenge and Opportunities: Processors main challenges were lack of uniformity in quality of wheat for pasta, macoroni, bread, cakes and cookies all which do not have standards established for them. There are also high production costs relative to selling price, unstable prices of wheat, unfair competition from illegal traders and finally frequent electric power and water interruptions were also mentioned as constraint.

Traders collect their merchandise from different sources, places and individuals and don't have quality standards. What traders tend to do is to purchase any quantity from anyone offering the same price for whatever quality or offering a lesser price for inferior quality products. After purchasing, the traders then don't pack the products they have collected in accordance with the different grades of quality. Rather they tend to mix up the good and bad quality grains together and sell it at the price of good quality as the prevailing price doesn't give quality premium. Traders do this for two reasons, one they increase their profit margin and secondly because buyers are unable to check the quality and pay quality price for quality produce.

Despite the considerable constraints listed above, there are many opportunities for the wheat value chains actors in Sinana district. The potential marketing opportunities of the area are the buildup of asphalt road that connects zone market to different towns in the country which creates potential demand for the products produced in the area. Obviously the increased demand would be followed by improved farm price for producers. As a result farmers will have an incentive to expand their output. Furthermore, the increasing food processing plants in and around Robe town is creating additional demand for agricultural commodities like wheat. Consequently, this contributes for commercialization of rural economy and makes many off-farm jobs opportunities. Furthermore, provision of infrastructure facilities like telecommunication, power supply and financial institutions (Banks, Micro-Finance) supports the marketing activities in the study area.

5. Conclusion and recommendation

5.1. Conclusion

The researchers conclude that the smallholder farmers of wheat in the study area had not got reliable market information, their marketing channel is poor, and poor use of agricultural input and technology. According to analysis of correlation coefficient researchers can conclude that there is a positive and significant relationship between the predictor variable (marketing channel, storage and transportation, nature of wheat product) and predicted variable (market linkage). Hence any improvement in one of the dimensions will positively contribute in enhancing the smallholders' farmer market linkage. From the ANOVA it has been determined that F = 8.627 and Sig. is 0.000 which confirms that acceptability of the model and it is good fit for the data.

5.2. Recommendation

Based on the finding the following possible recommendations that could be considered in the future intervention strategies as promotion of smallholder farmers' wheat market linkage of the study area forwarded. Policymakers (government body) and agriculture actors must take corrective actions to strengthen smallholder farmers' wheat market linkage of the study area through strengthen smallholder farmer market access, guarantee smallholder farmers easy access to reliable market information, enhance the level of market linkage performance and create strong linkages between farmers with similar

operations or between enterprises Equip smallholder farmers with well-developed marketing strategies to enhance wheat product quality to cover market need and helps them to generate profitability.

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