

Assessing Factors Affecting marketing of vegetable product: The Case of Qewet woreda, Ethiopia

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Abstract: Agriculture is an important sector in Ethiopia. It plays a great role in poverty alleviation, food security, and economic growth. The main objective of this study was to assess factors affecting marketing of vegetable product in Qewet woreda, Vegetables producers, North Shewa Zone, Amhara Regional State. From 6 potential vegetable producer kebeles in the woreda 3 kebeles were selected purposively. Multistage sampling technique and proportional stratified sampling technique was used to select sample vegetable producers from each stratum. 346 vegetable producers were selected by using proportionate stratified random sampling technique. A structured enumerator administered schedule was used to collect the primary data. Descriptive and inferential statistical tools are used to analyze the data. Based on the regression model, the study identified that price, infrastructure, market information, middlemen, and education and training factors significantly affect vegetable product marketing. The value of R Square was 0.636. This shows that 63.6 percent of vegetable product marketing can be explained by the independent variables. While, the remaining 36.4 percent vegetable marketing is influenced by other factors. The findings of this study implied that, farmers Union, the regional government and other responsible bodies should formulate and implement appropriate market and pricing policy, disseminate market information in proper media, and improve road networks to enhance the effectiveness of vegetable marketing in the woreda. The union should collect products from individual farmers and search a better market to sell vegetables. It has to provide adequate storage facilities for vegetable products. The union also should protect vegetable producers from exploitations of middlemen.

Keywords: Factors, Vegetable marketing, Qewet woreda,

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I. Introduction

Agricultural marketing involve mainly planning production, grading of products, transport, distribution and pricing, sending information from production area to market and from market back to producing areas. Recently, the governments of developing countries have sought to promote diversification of production and exports away from the traditional commodities in order to accelerate economic growth, expand employment opportunities, and reduce rural poverty (Solomon et al., 2010) Market oriented production can allow households to increase their income by producing output with higher returns to land and labour and using the income generated from sales to purchase goods for consumption (Schneider & Gugerty, 2010). Markets are important for economic growth and sustainable development of a given country, but, emphases in development policies in agrarian countries have usually been placed on increasing agricultural production to serve as a base for rural development. In the absence of well functioning markets, agricultural production can experience several drawbacks(Belay, 2009) Increased national and growing regional demand for vegetables has triggered commercial production and boosted private investment in the sector by both national and international entrepreneurs(EHDA, 2011, 2012)

Diversification into horticultural crops is becoming attractive for many poor farmers around the world. Worldwide production of fruit and vegetable crops has grown faster than that of cereal crops, albeit from a much lower base. Between 1960 and 2000, the area under horticultural crops worldwide has more than doubled. There are several reasons for the global increase in production and trade of fruit and vegetable crops. Horticultural production is profitable. Farmers involved in horticultural production usually earn much higher farm incomes as compared to cereal producers and per capita farm income has been reported up to five times higher(Lumpkin, et al., 2005)

Vegetable production is an important economic activity in Ethiopia, ranging from smallholder farming to large scale commercial farms (Zeleeke & Gebremariam, 1991). More than 85% of the population of Ethiopia is small farmers dominating agrarian economy. Although population with this high number is living in the rural area, the production and productivity is very low. Vegetable production can contribute to rural livelihood and development on the basis of its high added value and the high nutritional value that the products represent

(Muthyalu & Meniga, 2014). In Qewet woreda different Vegetables are grown on 6450 hectares of land with different intensities depending on environmental condition and level of marketability. In 2016 232,200 quintal of vegetable were produced in the woreda, from this 80% of the total product was onion, and 13% of the total product was tomato (Qewet woreda agricultural sector, annual report, 2016).

This study focused on investigating factors that affect vegetable marketing in Qewet woreda. The research also investigates the effect of middlemen, education/ training of farmers, market information, price and infrastructures on marketing of vegetable products.

1.2 Statement of the Problem

Horticultural marketing involves mainly planning production, grading of products, transport, distribution and pricing, exchanging information from production area to market and from market back to producing areas (FAO, 2004). Horticultural farmers frequently consider marketing as being their major problem. However, while they are able to identify such problems as poor prices, lack of transport, and high post-harvest losses, they are often poorly equipped to identify potential solutions

It is common to see imperfect markets in countries mainly depending on the primary agricultural commodities. The problem is severe for countries like Ethiopia that obtain a big share of their gross domestic product, employment opportunity, etc from agricultural sector. Million and Belay (2004) found that lack of market outlets, storage and processing problems, lack of marketing information, capital constraints, high transportation cost, and price variation are some of the important constraints in vegetable product marketing.

A variety of vegetable crops are produced by small farmers in Qewet Woreda. Producers are also involved in the production, processing, and marketing of vegetables. The crops are produced using rain and irrigation. However, small farmers are not the beneficiary from marketing of their product. The challenges of these producers are: lack of transport, storage; knowledge about post harvest handling facilities, organized market information, and poor pricing system. Furthermore, there is no empirical evidence on factors affecting vegetable marketing in North Shewa Qewet woreda. Hence, this study intended to investigate factors that affect marketing of vegetable product in Qewet woreda.

1.3 Objectives of the Study

1.3.1 General objective

The general objective of this study is to investigate factors affecting marketing of vegetable product in North Shewa, Qewet Woreda.

1.3.2 Specific Objective

- ❖ To examine the effects of price on vegetable marketing
- ❖ To evaluate the influence of infrastructural facility on vegetable marketing
- ❖ To examine the effect of market information on vegetable marketing
- ❖ To assess the effects of middlemen on vegetable marketing
- ❖ To investigate the effects of education and training on vegetable product marketing

1.4 Research Hypothesis

A research hypothesis is predictive statement, capable of being tested by scientific methods; it relates an independent variable to some dependent variable. Based on the above objective and different literature, the following hypotheses are set for the study

Ho1: Price has no positive and significant effect on marketing of vegetable product in the woreda.

Ho2: Infrastructure facility has no positive effect on vegetable product marketing.

Ho3: Middlemen have no positive effect on vegetable product marketing

Ho4: Market information has no significant effect on vegetable products marketing

Ho5: Education and training have no significant effect on vegetable products marketing.

1.5 Significance of the Study

The study investigated the effects of factors such as price, infrastructure, middlemen, market information, and education and training on vegetable marketing. The result obtained from this study is believed to have benefit for vegetable producers, traders, and marketing agents to make appropriate decisions in vegetable production and marketing. The research benefits different parties, among them are the following

For government: The study investigated the influence of middlemen, and Education/training on vegetable farmers. The study further identified the effects of market information, price, and infrastructure on vegetable product marketing. It will inform the ministry of agriculture to design appropriate strategy that will improve the effectiveness of vegetable product marketing in the study area.

For investors: The study also has benefit to organizations that are interested in funding vegetable production and marketing in the area. It provides information for foreign and domestic investors about the suitability of the Qewet Woreda for vegetable production.

Researchers: From the academic point of view, this research would initiate other researchers to carry out more extensive studies in the area and explore other factors associated with vegetable productivity and market. Moreover, it may serve as a reference material for both academicians and practitioners to conduct further research.

II. Literature review

The middleman concept is frequently used in marketing literature to denote a particular category of market actors. A major problem is that the notion of a middleman is used to describe actors with quite different roles in the market system (Carl, 2010). Brokers play a decisive role in the marketing system and determine the benefit reaching the producer. Onion and tomato are quite often purchased in the field with brokers. Bezabih and Hadera (2007) stated that there are three types of brokers: the farm level broker, local broker and urban broker. Each has its own separate task where the farmer level broker identifies plots with good produces and links the producer with a local broker. The local broker in turn communicates with the farmer and conveys the decisions made to the urban broker or collector. In this process the producer has contact with local agents and do not have direct contact with the other intermediaries. The third broker, urban broker, gets the information from ultimate buyers and sets the price. Here neither the farmer nor the traders set actual prices for the products. If the farmer insists on negotiating the price, the brokers gang up and boycott purchasing of the product leaving the product to rot. The farm level and local brokers get 5ETB while the urban broker gets 10 ETB per quintal.

Niyibigira et al.,(2003) also noted that the main constraints in the production and marketing of horticultural product, included lack of technical know-how on scientific management practices. Kameri(2012) stated training and research is one of the major requirements for profitable enterprise and recommended that research on marketing should be intensified and the findings made available to farmers. Farmers' success and sustainability are determined by extent of their equitable participation in markets accompanied by their higher level of training on marketing (Serem, 2010)

On the other hand, Infrastructure such as rural roads and means of communication for efficient flow of goods and market information is a limiting factor. Most of the rural area is not accessible by vehicle. The products are transported to the road side by donkeys or by people. This requires longer time to reach the market and affects the quality of the products (Bezabih & Hadera 2007). Villages with good road network have a significantly improved situation in terms of agricultural production and incomes compared to the villages with poor road network (Raisuddin & Hossain, 1990). Good road accessibility significantly reduces farm gate prices of manufactured goods and increase farm gate prices of agricultural goods (Torbjorn & Bharat, 2012). According to (Yadav, 2010) proper connectivity and transport links are considered to be most critical for delivery of services, transaction of commerce, and connection with growth canter around the country and therefore has far-reaching implications on the agricultural development

In addition, agricultural prices depend upon various factors which depend upon the conditions of demand and supply. Supply depends upon the local production, the needs of producers for ready cash: the more they need cash at harvest-time, the more they will be inclined to accept low prices (Trostle, 2008). Demand originates from the end users or consumers and is supplied by dealers or intermediaries. End user demand is influenced by product quality and price. Consumers will buy more if the price is low, but they may be willing to pay a higher price. The ability of producers to stockpile their produce can help to minimize these seasonal fluctuations by placing on the market only amounts of produce sufficient to maintain a given price.

Rural producers, and especially small farmers, have little information about the market demand and price, which is costly to obtain. They may gather information through contact with other actors in the commodity chain, but the accuracy of this information is not certified, since those actors might to be exhibiting "opportunistic behaviour" (Bienabe et al., 2004). Smallholder farmers lack information about product price and times to sell their products, and about potential buyers. This in turn reduces their ability to trade their products efficiently and to derive the full benefit from the marketable part of their production.

Conceptual Framework

The following figure shows the structural relationship between independent variable (role of middlemen, education/ training, pricing, and infrastructure) and dependent variable (vegetable marketing)

. Independent variables

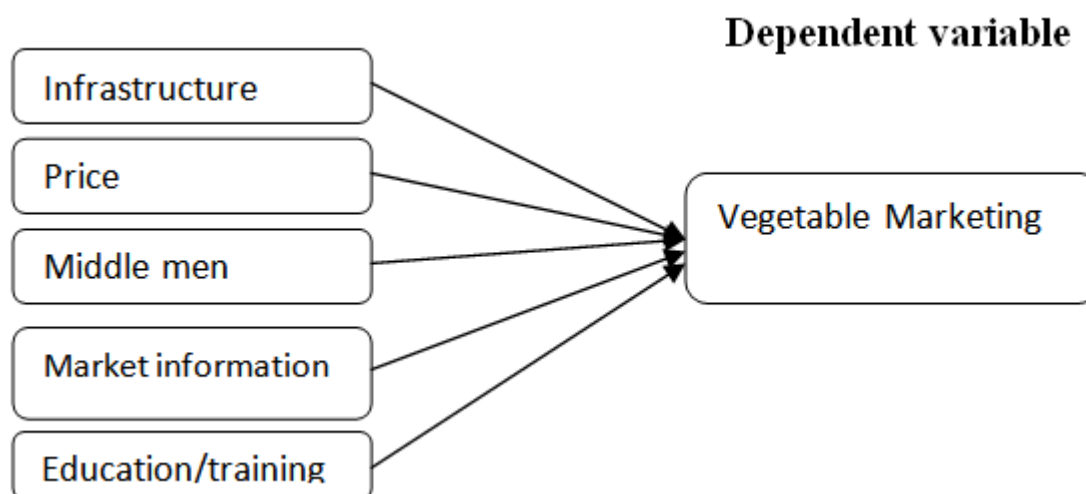


Fig 2.1Factors affecting marketing of vegetable product

Source: (own work, 2019)

III. Research Methodology

3.1 Research Design

Research design is the general plan of how the researcher will go about answering research questions. It specifies the sources from which the researcher intends to collect data, measurement, and analysis of data (Saunders, Lewis and Thornhill, 2009). Both qualitative and quantitative approaches are used in this study. The study also adopted both descriptive and explanatory research designs. A descriptive study is undertaken in order to ascertain and be able to describe the characteristics of the variables of interest in a situation. Descriptive research design was used because it often uses visual aids such as graphs and charts to aid the reader in understanding the data distribution. Explanatory research design is also used to explain the effect of independent variables (price, infrastructure, middlemen, market information, and education and training) on dependent variable (vegetable product marketing)

3.2Types and source of Data

Kothari(2004) discussed that Primary data are fresh data that are gathered for the first time and thus happened to be original in character. Secondary data’s are those which are made available or have been collected for other research purposes. Within the secondary data exploration, a researcher should start first with an organization’s own data archives (Saunders et al., 2009). Primary data is collected through enumerator administered schedules. While, Secondary data for this research is collected from different magazines, journals, government office reports, previous research, documents, and other available sources.

3.3Target population of the Study

Target Population of this study comprised vegetable producers. The target populations of farmers number who engaged in producing vegetable product crop in selected kebeles are 2634(Qewet woreda report, 2015/ 2016)

3.4 Sampling Size and Sampling techniques

In order to select a representative samples a multi-stage random sampling technique was implemented to select vegetables producer kebeles and sample farm households. In the first stage from all of north shewa zone woredas, Qewet woreda was selected purposively, in the second stage with the consultation of Woreda agricultural experts and development agents, out of 18 Qewet woreda kebeles 6 potential vegetables producer kebeles were selected by using purposive sampling technique. In the third stage, 3 sample kebeles namely yelen, birbira, and terea are selected based on vegetable production amount ranks by using purposive sampling technique. In the fourth stage, the kebel selected above are divided in to strata by using proportionate stratified random sampling techniques. In the fifth stage, 346 sample farmers are selected from each stratum. Stratified random sampling technique is used to arrive at a representative sample from selected kebeles

3.4.1 Sample Size

The following sample size determination formula is used to estimate the representative sample from vegetable producers. The formula was developed by Taro Yamane (1967)

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

Where:

n – Is the sample size

N – Is the population size

e – Is the level of precision or sampling error

$$346 = \frac{2634}{1 + 2634(.05)^2}$$

To select sample from each strata the researcher uses the formula developed by khotari (2004)

$$I = n * \pi_i$$

Where, I represents sample size of each strata

$$n = \text{Total sample size}$$

$$\pi_i = \frac{\text{Population of strata}}{\text{Total population}}$$

$$\text{Total population}$$

$$I = \frac{\text{Total sample size} * \text{Population of strata}}{\text{Total population}}$$

$$\text{Total population}$$

Based on the above formula the sample size from each stratum is shown on table 3.1 below

Table 3.1 Sample size of producers from selected kebeles

No	Kebele	Total population	Sample
1	Yelen	1100	144
2	Birbira	920	121
3	Terea	614	81
4	Total	2634	346

Source: (Qewet woreda report, 2015/2016)

3.5 Methods of Data Collection and instrument

The tools used in this research for data collection was survey questionnaire, focus group discussion, and key informant interview. Before the schedule had distributed to the data enumerators, it was translated into Amharic version by native speakers of Amharic language. To collect the data, the researcher recruited six data enumerators, two for each kebeles, who are fluent speakers of Amharic. They are trained on how to approach respondents, on data collection methods and how to manage the schedule. Farmers of vegetable product were asked for cooperation before the schedule has provided to them

3.6 Data analysis and presentation method

Descriptive and inferential analysis technique was used in this study. The descriptive analysis includes mean and standard deviation. This method is preferred because it facilitates the organization of data, early detection of error, ease of comparison of findings and statistical simplification of data computation. For inferential analysis correlation and regression analyses was employed. The reason is that correlation analysis helps to show the relationship between variables of the study while regression analysis is used to measure the effect of independent variables (Market information, Infrastructure, Price, Middlemen and Education and training) on the dependent variable (Vegetable product marketing).

3.7 Reliability and Validity

Zikmund (2003) stated that the researcher should conduct the pre-testing to ensure the questionnaire's reliability and to make sure that measures are free from error and therefore yield consistent result. The reliability of the questions for each variables are obtained when Cronbach's coefficient alpha is at least 0.6. And the internal consistency and reliability of the questions will be considered higher, if the result is near to 1. In general, a reliability of a scale or item may fall between 0 and 1. In this research, Cronbach's alpha model was used to evaluate the reliability of the instrument

Table 3.2 Reliability analysis

Independent variable	Cronbach Alpha result	No.of items
Market information	.707	5
Infrastructure	.846	5
Price	.849	5
Middlemen	.706	5
Education and training	.600	4
Dependent variable		
Vegetable product marketing	.795	6

From the table above, it can be concluded that the instrument used in this study are reliable. In order to evaluate the validity of the study the research questionnaire is evaluated by experts in the field.

IV. Data analysis

Table 4.1 Response Rate

Response rate	Frequency	Percent
Returned questionnaire	315	91.04
Unreturned	31	8.96
Total	346	100

Source : (own survey, 2018)

4.2 Demographic characteristics of respondents

Table 4.2 Demographic characteristics of respondents

Item	Response	Frequency	Percent
Sex	Male	310	98.4
	Female	5	1.6
	Total	315	100
Age	15-25	21	6.7
	26-35	114	36.2
	36-45	170	54.0
	45-56	10	3.2
	Total	315	100
Marital status	Single	30	9.5
	Married	244	77.5
	Divorced	21	6.7
	Widowed	20	6.3
	Total	315	100
Education level	Have no formal education	154	48.9
	1-8	110	34.9
	8-12	50	15.9
	College diploma	1	0.03
	Total	315	100
Income per production period	Below 5000	0	0
	5001-10000	2	0.6
	10001-15000	4	1.2
	15001-20000	13	13.6
	20001-25000	169	53.4
	Above 25001	98	31.2
	Total	315	100

4.3 Factors affecting marketing of vegetable product

Sample respondents were asked different questions regarding the factors affecting marketing of vegetable product in Qewet woreda. Their response is summarized in the following tables.

Table 4.3 Five –scaled likert-scale criterion

No	Mean range	Response options
1	[1,00, 1.80)	Strongly disagree
2	[1.80, 2.6)	Disagree
3	[2.60, 3.40)	Neutral
4	[3.40, 4.20)	Agree
5	[4.20 , 50)	Strongly agree

Source: (Al-Sayaadet.al, 2006).

Table 4.4 Summary of independent variables

No	Independent Variables	Minimum	Maximum	Mean	Std.Dev
1	Price	1.6	5	3.71	.6708
2	Infrastructure	1.6	5	4.12	.6474
3	Middlemen	1.6	5	3.86	.6376
4	Market information	1.2	5	3.84	.6376
5	Education and training	1.5	5	3.82	.6498
	Dependent variable				
	Vegetable Marketing	1.5	5	4.02	.7405

As stated in the table 4.4, all independent variables cumulative mean value lies between in the range of 3.40 and 4.20. All of this result falls at “agree level” based on the criterion set under table 4.4 above. Infrastructural factors have the highest mean value (4.12) followed by middle men (3.86), market information (3.84), Educational and training (3.82), and price (3.71). The results showed that all study variables affect vegetable marketing in the study area.

4.2.2 Inferential analyses

Pearson correlation and multiple linear regressions are the main inferential methods employed in this study to analyze the relationship between the dependent and independent variables

4.2.2.1 Karl Pearson’s coefficient of correlation analysis

In this study Karl Pearson’s coefficient of correlation analysis is used because it is the most widely used method of measuring the degree of relationship between two variables. Moreover, the two variables are casually related which means that one of the variables is independent and the other one is dependent; and a large number of independent causes are operating in both variables so as to produce a normal distribution (Kothari, 2004). To know the strength and type of correlation between variables, the following table is set as a rule of thumb for measuring the strength of correlation

Table 4.5 Rule of thumb

Range of coefficient	strength
+0.8 to +1.00	Very strong
+0.61 to +0.8	strong
+0.41 to +0.60	Moderate
+0.21 to +0.40	Weak
+00 to + 0.20	No relation

Source: (Bhattacharjee, 2012)

Table 4.6 Results of correlation analysis

		Vpm	MI	P	mm	et	INF
Vpm	Pearson Correlation	1	.738**	.672**	.700**	.419**	.701**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	315	315	315	315	315	315
MI	Pearson Correlation	.738**	1	.743**	.775**	.406**	.811**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	315	315	315	315	315	315
P	Pearson Correlation	.672**	.743**	1	.645**	.379**	.585**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	315	315	315	315	315	315
Mm	Pearson Correlation	.700**	.775**	.645**	1	.319**	.781**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	315	315	315	315	315	315
Et	Pearson Correlation	.419**	.406**	.379**	.319**	1	.313**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	315	315	315	315	315	315
INF	Pearson Correlation	.701**	.811**	.585**	.781**	.313**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	315	315	315	315	315	315

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

The results in table 4.6 indicated that, there is a positive and significant relationship between all independent variables and vegetable product marketing. Market information and vegetable marketing (r = 0.738, p < 0.01), infrastructure and vegetable marketing (r = 0.701, P < 0.01),

Middlemen and vegetable product marketing (r = 0.700, P < 0.01), Price and vegetable product marketing (r = 0.672, p < 0.01) Education and training and vegetable product marketing (r = 0.419, P < 0.01). Based on the criteria set on table 4.6, four independent variables; Market information, Infrastructure, Middlemen, and Price have strong relationship with vegetable product marketing, and one independent variable Education and Training has moderate relationship with dependent variable (vegetable marketing).

4.4.2 Multiple linear Regression analysis

In this paper, the researcher applies multiple regression analysis. Multiple regression analysis is used where two or more independent variables that are hypothesized influence one or more dependent variables (Baker, 2006). The equation of multiple regressions was generally built around two sets of variables, namely dependent, and independent variables

$$Y_i = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5$$

Where:

Y is the dependent variable (vegetable product market),

a, is the constant (the value of y when the value of all independent variables are 0),

X1 = Market information, X2= price, X3 = middlemen, X4 = infrastructure, and X5= Education and training

β1 is the intercept term which gives the mean or average effect on Y if all the variables excluded from the equation. β2, β3, β4, and β5 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.

Assumptions of Multiple Regression Model

Table 4.7 Co linearity statistics test

Collinearity Statistics	
Tolerance	VIF
.422	2.370
.320	3.126
.821	1.218
.273	3.668
.210	4.770

The variance inflation factor (VIF) was employed to test the existence of multi co linearity Problem among explanatory variables. VIF shows how the variance of an estimator is inflated by the presence of multi co linearity co linearity (Gujarati, 2003). In this study all independent values are less than 10. This indicates absence of serious multi co linearity problem among independent variables

Test of Independent of Residuals

Multiple linear regression models assume the residuals are independent of one another. The Durbin-Watson statistic is used to test for the presence of serial correlation among the residuals. The value of the Durbin-Watson statistic ranges from 0 to 4.

Table 4.8

Durbin-Watson
1.749

As a general rule, the residuals are not correlated if the Durbin-Watson statistic is approximately 2, and an acceptable range is 1.50 -2.50. Durbin-Watson statistic result (1.749) in this research showed that the assumption of independence of residuals is met

The other methods used in this research to test the normality checked using skewness and kurtosis to determine whether the data were normally distributed. According to Donna (2009), variables with skew index absolute value greater than 3 and kurtosis index absolute value greater 10 has problematic level of skewnees and kurtosis. However, in this research there is no variable and an item which has problematic level of skewness and kurtosis(see appendix 1)

Table 4.9 Results of regression analysis

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig.
	Beta	Std. Error	Beta		
(Constant)	-.468	1.268		-.369	.713
Price	.265	.059	.236	4.474	.000
Middlemen	.246	.077	.193	3.190	.002
Education and trainin	.340	.103	.125	3.312	.001
Infrastructure	.292	.082	.232	3.537	.000
Market information	.206	.090	.172	2.290	.023

Based on the above table using (standardized) coefficients, the regression equation of the Study model is elaborated below

$$VPM = -.468 + .172*MI + .236*P + .193*MM + .232*INF + .125ET$$

Where,

VPM=Vegetable product marketing, MI=market information, INF= infrastructure, P= Price, MM= Middlemen, and ET= Education and training

Table 4.9 indicates that .172*MI means that one percent change in Market information (or one standard deviation), keeping other variables constant, results 17.2% percent of the variation / change in vegetable product marketing. This is the partial effect of Market information on Vegetable Marketing, With regard to .236*P, in the assumption of keeping stable other variables, 1 percent change in Price (i.e., 1 standard deviation), brings about 23.6 percent increase on vegetable product marketing. .193*MM is due to 1 percent increase on MM (or 1 standard deviation), keeping other variables constant, results in increase on vegetable product marketing by 19.3 percent. .232*INF means that one percent change in Infrastructure (or one standard deviation), keeping other variables constant, results in 23.2 percent of the variation or change in vegetable marketing. This is the partial effect of Infrastructure on Vegetable marketing. The effect of price coefficient is larger than the other four coefficients of the regression equation. The least coefficient is the variable Education and Training which shows that .125*ET, that one percent change in Education and training (or one standard deviation), keeping other variables constant, results 12.5 percent of the variation / change in vegetable product marketing. Therefore, all independent variables have significant and positive effect on vegetable product marketing in Qewet woreda

4.5 Hypothesis test

In this part of the study, proof of the null hypothesis is made based on a hypothetical table 4.8 here below for the variables price, infrastructure, middle men, market information, and Education and training either to accept or reject the null hypotheses. Because, to test the research hypotheses already set in section1, it is possible to find out if the independent variables are significant predictors of the dependent variables. To test the relationship and the set hypotheses, the regression analysis was applied here under in table 4.8.

Table 4.8 Independent Variables with their Coefficients and P-Value

Hypotheses			P-Value (Sig.)	Tool	Result
	Unstand ardzied	Stand ardzied			
	B	β			
Price has no significant effect on vegetable marketing	.265	.236	.000	Regression	Rejected
Infrastructure has no significant effect on vegetable marketing	.292	.232	.000	Regression	Rejected
Middle men have no significant effect on vegetable marketing	.246	.193	.000	Regression	Rejected
Market information has no significant effect on vegetable marketing	.206	.172	.001	Regression	Rejected
Education & training have no significant effect on vegetable marketing	.340	.125	.023	Regression	Rejected

V. Conclusions

The study was conducted to assess factors which affect marketing of vegetable products in north shewa Qewetworeda. Based on the finding it has been concluded that even though farmers are members of cooperative, the union did not provide adequate services to the members, farmers still need more support than the existing services. Vegetable marketing varies from the first production with the second production period and from year to year. In addition farmers have lack of information regarding the prices of the market, potential customers, and lack of reliable source etc. Poor information leads to poor problems in setting the right prices, high amount of losses, late delivery of goods in the market place. As most of the respondents response in each items and variables inclined to agree level. This implies that vegetable marketing is affected by price, promotion, infrastructure facility factors, market information, middlemen, and education and training.

The results of the study also indicated that, price, infrastructure, middlemen, market information, and education and training factors significantly affect vegetable marketing in Qewet Woreda.. It is found that; price has high significant effect on vegetable marketing followed by infrastructure factors, market information, market information middlemen, and education and training factors respectively. The results of the study implied that the union, Agricultural office in the woreda, other responsible bodies, and the regional government should protect vegetable producers from exploitations of the middlemen.

5.1 Recommendation

The following recommendation provided to enhance vegetable marketing performance in

Qewet woreda

- Based on the finding of the study the role of union was restricted only by providing input. In order to make small farmers effective in their vegetable product, the union should collect products from individual producers.
- The union should create transportation and market access for vegetable products; it also should prepare storage facilities and organize exports. In addition the union should facilitate conditions to bring farmers and buyers together.
- Processing, transporting, and marketing, and vegetables require adequate knowledge. To realize this training should be given by union, responsible bodies and other stake holders to increase the income of small farmers
- Price fluctuation in vegetable product is the major problem for smaller farmers. The union and regional government should organize market committee headed by marketing professionals. Furthermore, undesirable restriction on agricultural market should be removed to facilitate fair trade in vegetable marketing

Concerned bodies should provide reliable and updated agricultural marketing information to farmers via union, SMS, and other communication systems in order to update farmers in

- Market price
- Grading and standard information
- Annual price trends
- Marketing news, and
- Potential customers

5.2 Implication for future studies

The current study is undertaken on Qewet woreda, there is a need for more enquiries to be conducted in other Woreda in Amhara region or in other parts of Ethiopia. Further research can be conducted on the role of vegetable production and marketing in poverty reduction in the country

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Appendix 1

Normality Test of Skewness and Kurtosis

	MI	P	mm	et	INF
N	Valid	315	315	315	315
	Missing	0	0	0	0
Skewness	-.628	-.321	-.370	-.545	-.445
Std. Error of	.137	.137	.137	.137	.137
Kurtosis	-.170	-.022	-.510	1.464	-.509
Std. Error of	.274	.274	.274	.274	.274
Minimum	9.40	8.40	9.40	9.00	11.40
Maximum	20.00	21.00	20.00	15.25	20.80

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