

FACTORS AFFECTING MARKET ACCESS OF AGRICULTURAL PRODUCTS: A CASE STUDY GREEN TEA IN VEN VILLAGE

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Abstract

Market development of agricultural products has been a fashionable trend in research, in particular the transition economy like Vietnam. The purpose of the current study is to analyze the impact of determinants of market accessibility of green tea. This paper applies a mixed approach including both quantitative methodology based on 110 observations collected through survey questionnaire and qualitative methodology with 06 in-depth interviews that are conducted in Ven village, Yen The District. The research results show that road status, market information access, agricultural extension services, the linkage and age significantly positively affect the market accessibility of Ven village's green tea. Conversely, educational level and distance to output market impose weak impacts while gender and ownership of communication electronic devices have no significant impacts on market accessibility of this product.

Keywords: *Ven village's green tea, market accessibility, information, access*

1. Introduction

Agriculture plays an extremely important role in social - economic development, especially for developing countries. It not only helps ensure national food security but also provides inputs for processing industries. In addition, agricultural development is associated with rural development and poverty reduction because most of the poor's livelihoods depend on agriculture (Ahmed et al., 2016; Markelova et al., 2009). As an inevitable consequence in the context of industrialization and modernization in many countries, industry is having a significantly reduced share in the economic structure. According to World Bank statistics, the share of agriculture in Vietnam is only approximately 14% (World Bank, 2019). Contrary to this trend, some localities in Vietnam still take agricultural development as the focus for local social - economic development. Yen The district, Bac Giang province is one of the typical examples of this approach.

Taking advantage of the conditions of soil, climate and terrain conditions, Yen The district has successfully built and developed many agricultural models, creating recognizable

brands in the market such as Yen The chicken, Hong Ky mountain goat, Hong Ky wild honey... Besides, the locality is also promoting the development of the green tea brand in Ven village. In recent years, green tea in Ven village has been one of the main crops of the locality, becoming the main source of livelihood for farmers, helping to improve living standards and reduce poverty. Contrary to the existing results of quality-based certification (Ven village green tea was recognized as a 4 - star product in 2019), this product is still mainly consumed in Yen The district and surrounding areas. From the above analysis, the main research question that the research team propounded is: what factors have affected the market access of Ven village green tea products?

This study has the following main contributions: (1) In terms of academic contributions, this study approaches the research problem based on mixed research methods. This allows to provide more in - depth results about the research problem. Besides, this study approaches the problem of a brand with low brand awareness - as opposed to the technical standard endorsement achieved by the product. Finally, this study takes into account the linking factors in market development, age in the research model; (2) On practical contributions, first of all, the result of this study answers the question of policy makers and managers about the phenomenon of low market access of agricultural products under supported conditions by local and international stakeholders. On the other hand, policy suggestions from this study may be of specific policy application to promote market expansion and development of Ven village green tea in particular, and agricultural products in general.

This study focuses on analyzing the following three main contents: firstly, assessing the status of market access of green tea in Ven village; secondly, identifying influencing factors and analyzing their impact on market access; thirdly, it provides policy implications to enhance market access of green tea in Ven village.

2. Literature Review

Some scholars such as Machete (2004), Mwangi et al. (2015), and Ahmed et al (2016) believe that poor market access of households is the main cause of the phenomenon of a product that meets the standards. quality but sold at low prices and small market size. Previous research by Sendal et al (2007) also showed that low access to output markets will have a negative impact on increasing profits and improving the quality of life of farmers, because thereby, reducing the motivation of farmers to participate in the market (A. De Janvry et al., 1991). Market access plays an extremely important role in promoting rural development, poverty reduction and income enhancement (Jayne et al., 2010; Cai et al., 2012; Ahmed et al., 2016).

According to Nutilus Consultants (quoted in Nguyen Tien Hung, 2009, p.5), market access is defined as a series of commercial activities by which producers bring goods to consumers. Another definition is that market access is the researching of the product output market, in order to grasp the needs and tastes of consumers in order to build an appropriate production organization plan to meet the requirements and wishes of customers in the best way

(Luu Thanh Duc Hai, 2007). Thus, it can be generalized that: Market access is a multi-step process of a supplier from determining the output market to bringing its products to the market.

Indeed, access to output markets is influenced by many factors. For example, Kyaw et al (2018) and Kuma (2012) conclude that distance has a strong and negative impact on market access. On the other hand, there are studies that show that access to the output market is strongly influenced by the gender variable, in which, men have better market access than women (Asfaw et al., 2012; Sigei et al., 2012). 2014; Kihiu & Amuakwa-Mensah, 2020). In contrast, research by La Nguyen Thuy Dung & Mai Van Nam (2015) found that gender is not correlated with market access. Not only that, age is also one of the factors that strongly affect market access (Asfaw et al., 2012; Kassa et al., 2017; La Nguyen Thuy Dung & Mai Van Nam, 2015; Nguyen Quoc Nghi & Mai Van Nam, 2014). In addition, factors such as education level, road conditions, access to market information, linkages, ownership and access to extension services have also been shown to have a positive and very strong impact. to market access (Ahmed et al., 2016; Apind et al., 2015; Kuma, 2012; Kassa et al., 2017; Kyaw et al., 2018; La Nguyen Thuy Dung & Mai Van Nam, 2015 ; Mwangi et al., 2015; Nguyen Quoc Nghi & Mai Van Nam, 2014; Onoja et al., 2014; Siziba et al., 2011).

The common thread in previous studies is that they look at developing countries and often assess market access for agricultural products as a whole, rather than a particular local product. In addition, these studies have not considered the linkages between stakeholders including farmers, cooperatives and localities. Besides, past studies have not built a measurement framework to measure market access, but mainly use dummy variables with two values of 0 and 1 (Ahmed et al., 2016; Asfaw). & associates, 2012; La Nguyen Thuy Dung & Mai Van Nam, 2015; Nguyen Quoc Nghi & Mai Van Nam, 2014). Therefore, this study used observed variables to measure the dependent variable (market access) and used a 5-level Likert measure to be able to clearly and more closely reflect on the level of market access. market access of green tea in Ven village. Specifically, the study examines the influence of 9 factors on the dependent variable, including: distance, gender, age, education level, access to market information, road conditions, association connect, own and access agricultural extension services.

3. Methods

3.1. Researching methods and materials collecting

With the quantitative research method, the study uses primary data, collected from the survey for Yen The district officials, cooperative officials and tea farmers. These are the people who are directly involved in the production and consumption of local Ven village green tea. The questionnaire was designed in two parts. The first part is the personal information of the survey respondents, including gender, age, education and occupation. The rest builds on the development of a measure to understand the factors that influence the marketability of tea products. In the second part, in addition to the questions designed in an integrated form (distance and access to extension services), the remaining questions about

road conditions, access to market information, linkages, Ownership and market access are used 5-level Likert measure to show the level of agreement of the surveyed subjects, in which 1 is completely disagree and 5 is completely agree.

After designing the survey questionnaire, the author used a combination of Anket method by sending online questionnaires and direct distribution of questionnaires to collect data. Specifically, the online survey was sent to district and cooperative officials. As for farmers, the method of submitting online survey forms is not suitable because many tea farmers do not have smart electronic devices and have difficulty using these devices. On the other hand, if the household fills out the survey by themselves, the probability of incorrect filling out the form will be higher due to misunderstanding of the question. Therefore, the questionnaire needs to be distributed directly so that reliable and accurate answers can be obtained. The data collection process took place for 1 month and collected 115 votes. However, after processing (cleaning) the data, 5 invalid votes were eliminated because the participants only filled in 1 answer for different questions, which did not guarantee reliability.

In addition to the survey survey with a quantitative approach, primary data was also collected through in-depth interviews by purposefully sampling six people with certain knowledge about the aspects and issues that the topic asked. I want to clarify. The questions aim to clarify and provide more in-depth analysis of the factors affecting market access of green tea in Ven village and help explain the regression results.

3.2. Researching hypothesis

Based on an overview of previous research papers, the author has developed a research hypothesis about the market accessibility of green tea in Ven village as shown in **Figure 1** below:

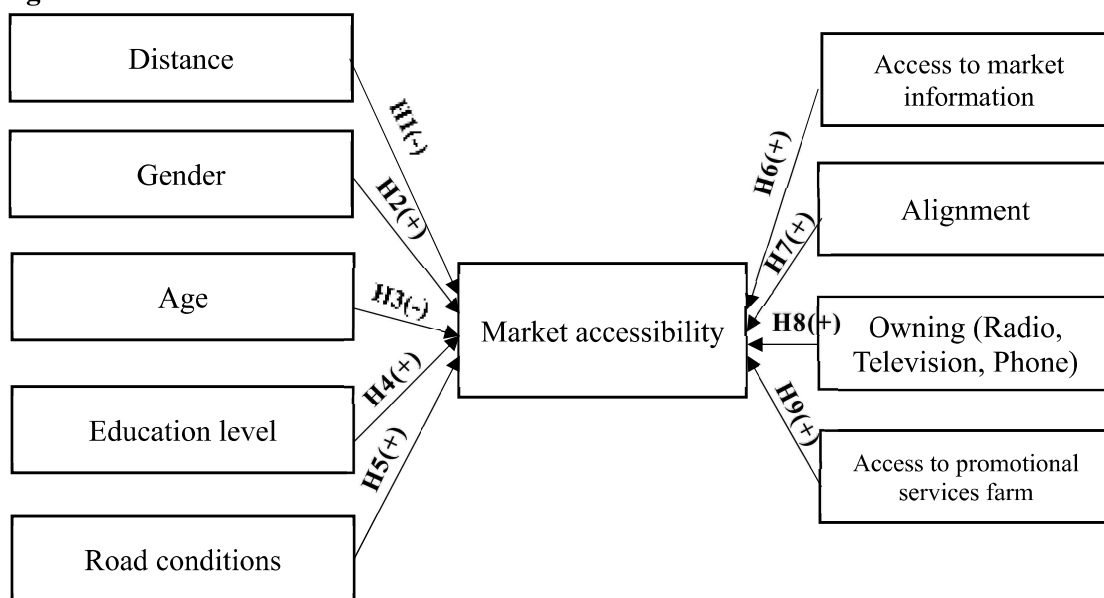


Figure 1: Research hypothesis about market access of green tea in Ven village

Source: Author's team

3.3. Researching paradigm

Many previous studies have used quantitative research methods with multivariate regression models to identify factors affecting the ability to access output markets, such as the study of La Nguyen Thuy Dung & Mai Van. Nam (2015), Nguyen Quoc Nghi & Mai Van Nam (2014), Ahmed et al (2016), and Kihiu & Amnuakwa-Mensah (2020). Based on those studies, this study builds a regression model of factors affecting market access of green tea in Ven village as follows:

$$MA = \alpha + \beta_1 * DIS + \beta_2 * GEN + \beta_3 * AGE + \beta_4 * EDU + \beta_5 * ROAD + \beta_6 * INF + \beta_7 * ASS + \beta_8 * OWN + \beta_9 * EXT + \mu$$

Insides: α , β_1 , β_2 , β_3 , β_4 , β_5 , β_6 , β_7 , β_8 , β_9 are the coefficients; μ is the error

Accordingly, MA: Accessibility to market, DIS: Distance to market, GEN: gender of owner of household or cooperative, AGE: Age of farmer or cooperative, EDU: Education level of farmer or cooperative, ROAD: Road conditions, INF: Access to market information, ASS: Alignment, OWN: Owning at least one of three radio, TV, smartphone devices, EXT: Access to promotional services farm.

4. Results

4.1. Testing result Cronbach's Alpha and EFA

To check the reliability and suitability of the measure, the authors used Cronbach's Alpha test and Exploratory Factor Analysis (EFA). The test results show that the values of Cronbach's Alpha coefficient are all greater than 0.7, so the measure used is good. In particular, the two total variables Connectivity and Market Access have Cronbach's Alpha coefficients of 0.957 and 0.968, respectively, very close to 1, reflecting this measure very well. Thus, there is no case where removing the observed variable can make the Cronbach's Alpha of these measures greater than the value of its Cronbach's Alpha coefficient. At the same time, no observed variables will be removed from the measure because their correlation coefficients with the total variable are all greater than 0.3. Therefore, all observed variables are accepted and will be used in the next factor analysis. In other words, the measures all meet the requirements of statistical reliability.

For EFA exploratory factor analysis, the results of KMO coefficient and Bartlett's test both reflect that the factors in the model are consistent with the research data and there is a correlation between the observed variables in the factors. element. Besides, the results also show that the Eigenvalue at the fourth variable is 1.142 (> 1), which implies that 04 factors are significant and will be retained in the model. Furthermore, the cumulative variance is 72.972% ($> 50\%$), so the EFA model is completely suitable. This means that 04 factors in the model are explained by 72.972% of the variation of observed variables. In addition, the analysis results of the rotation factor matrix also show that there is no change in the observed variables measuring the independent variable compared to the original. Thus, through Cronbach's Alpha coefficient test and EFA exploratory factor analysis, it can be

seen that the independent and dependent variable measures ensure the reliability to perform regression analysis.

4.2. Status of market access of green tea in Ven village

Table 1 below presents the status of market access of green tea in Ven village. All observed variables for the MA factor have a minimum value of 2 and a maximum value of 5. The observed variable MA1 has a mean value of 3.09, which is normal, reflecting the products from Green tea in Ven village has not really met the needs of consumers. Besides, the average value of the observed variable MA5 is 3.52, which is greater than 3.5, so it can be said that the survey participants agree with the view that the difference between production and consumption is negligible. In other words, the amount of tea inventory after each crop is relatively low.

In contrast, with other observed variables of MA such as MA2, MA3, MA4 and MA6, the mean value is relatively low, below 3. Therefore, the descriptive results of the observed variables MA2, MA3, MA4 and MA6, showing that the green tea market in Ven village is not known to many people, the market has not been expanded, has not been consumed in many parts of the country and the farmers in Yen The are still not really satisfied. about the current selling price. On the other hand, the average agreement of the observations of the MA variable is 2,735, less than 3. Therefore, it can be concluded that the accessibility to the green tea market in Ven village, Yen The district, Bac Giang province is still poor.

Table 1: Statistics describing the status of market accessing

Variable name	Describe	N	GNNN	GTLN	Average	Standard deviation
MA1	I see that green tea products in Ven village are gradually meeting the needs of consumers better	110	2	5	3,09	1,064
MA2	I noticed that green tea products in Ven village are becoming more and more popular	110	2	5	2,8	1,107
MA3	I noticed that green tea in Ven village has more and more new markets	110	2	5	2,46	1,163
MA4	Currently, the market for green tea consumption in Ven village is available in many places across the country	110	2	5	2,23	0,974
MA5	I find the difference between total production and total consumption to be negligible	110	2	5	3,52	1,141
MA6	I feel satisfied with the current selling price	110	2	5	2,31	1,139
MA					2,735	

Source: Analysis from the author's survey (2021)

4.3. Analysis of factors affecting market accessing

Linear regression results in the analysis model of factors affecting market access of green tea in Ven village are shown in Table 2 below. Specifically, the research results show that the sex variable is not statistically significant in the regression model because the Sig coefficient has a value of 0.706 (>0.1). Thus, this result is completely similar to the study in Vietnam by La Nguyen Thuy Dung & Mai Van Nam (2015), but contrary to the previous conclusion of Asfaw et al (2012) and Sigei et al. (2014) in an output market access study in Kenya.

Besides, the ownership factor does not affect the market access of green tea in Ven village because the Sig coefficient of the OWN variable is 0.269 (>0.1). This result is in contrast to previous studies where most of the authors believe that owning a smartphone, radio or TV will help them increase their market access (Asfaw et al., 2012; Bwalya & associates, 2013; Mwangi et al., 2015). Therefore, the research results do not support the hypothesis H2 and H8.

Table 2: Regression results of the market access model of tea in Ven village

Model		Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-2.671	.398		1.684	.095		
	DIS	-.017	.025	-.025	-1.495	.038	.736	1.359
	GEN	.026	.028	.013	.378	.706	.887	1.128
	AGE	-.606	.003	-.593	-2.116	.037	.513	1.851
	EDU	.100	.055	.099	1.821	.072	.334	1.493
	ROAD	.882	.079	.865	3.560	.000	.481	1.079
	INF	.918	.044	.914	1.407	.035	.797	1.255
	ASS	1.218	.068	1.398	7.641	.000	.235	1.263
	OWN	.006	.041	.008	1.111	.269	.833	1.200
	EXT	.795	.019	.794	3.320	.000	.292	1.423

a. Dependent Variable: MA

Source: Analysis from survey (2021)

On the other hand, with 95% confidence, the variables DIS, AGE, ROAD, INF, ASS and EXT are statistically significant in the regression model because their Sig coefficients are all less than 0.05. However, the EDU variable is not statistically significant at the 95% confidence level because the Sig coefficient has a value of 0.702 (>0.05), but it is statistically significant at the 90% confidence level. Thus, the market accessibility of green tea in Ven village is affected by 07 factors, including distance, age, education level, road conditions, access to market information, linkage and access to agricultural extension services.

The values of the normalized regression coefficients show that the link between the actors in the tea consumption in Ven village has the strongest and positive impact on market

access, similar to the research results of Anteneh & associates (2011) and Kuma (2012).

Next, the second positive and strong factor affecting market access is access to market information with a standardized regression coefficient of 0.914 (hypothesis H6 is supported). Indeed, most of the previous studies also came to the same conclusion that the relationship between access to market information and market access is a positive and very close relationship (Ahmed et al., 2016; Apind et al., 2015; Maziku, 2015; Nguyen Tien Hung, 2009; Onoja et al., 2014).

Moreover, road conditions and access to agricultural extension services are also factors that positively and greatly affect the dependent variable, similar to the research results of Kyaw et al (2018), Kassa et al. (2017), and Siziba et al (2011). In other words, hypotheses H5 and H9 are supported. Moreover, the study also shows that the variable 'age' has a large and negative influence on the market access of green tea in Ven village. This means that young people will have better market access than older people (hypothesis H3 is supported). This result is similar to other studies (Asfaw et al., 2012; Kassa et al., 2017; La Nguyen Thuy Dung & Mai Van Nam, 2015).

In contrast, the correlation between distance and market access is very weak. With a standardized regression coefficient of -0.025, distance is the negative and least influential factor on market access (hypothesis H1 is supported). Indeed, the greater the distance from the subject's home to the market, the worse the market access and vice versa. This finding is also shown in the study of Kyaw et al (2018), Kuma (2012), and Nguyen Tien Hung (2009).

Besides, education level also has a small impact on market access with a standardized regression coefficient of 0.099. With such a regression coefficient, education level has a positive and relatively small impact on market access (hypothesis H4 is also supported). In other words, the higher the education level, the better the accessibility to the green tea market in Ven village. Although previous studies have also concluded that the correlation between education level and market access is positive, most scholars have demonstrated that education level has a strong influence on market access. market access (Ahmed et al., 2016; Bwalya et al., 2013; La Nguyen Thuy Dung & Mai Van Nam, 2015; Nguyen Quoc Nghi & Mai Van Nam, 2014).

Thus, the degree of impact of the independent variables on the accessibility of green tea market in Ven village in order from strongest to weakest, respectively as follows:

ASS>INF>ROAD>EXT>AGE>EDU>DIS

From the research results, we have a linear regression function:

$$MA = -2,671 - 0,017*DIS - 0,606*AGE + 0,1*EDU + 0,882*ROAD + 0,918*INF + 1,218*ASS + 1,795*EXT$$

To clarify some quantitative research results, this study also uses qualitative research methods through in-depth interviews. All three farmers participating in the in-depth interviews said that the reason why owning electronic devices does not affect their market access is because most of the farmers research prices and input markets. out through merchants and neighbors. In addition, finding market information through electronic devices helps them know prices and market information, but finding markets and connecting with new markets costs a lot, so they will choose sell to traders instead of looking for new markets and new customers. This is reflected in the following excerpt from the interview with Ms. HL: “Even if we find out what the customer wants on the internet or TV, we will still accept that we can't do it, because it spends a lot of money that we can't afford. Here, we only sell dried tea, if they ask for incense, we will do it.”

Not only that, most of the participants in the in-depth interviews also agreed that the association and cooperation between the participants strongly influenced the accessibility to the green tea market in Ven village. Mr. TNK, an officer of Yen The district's Department of Economic and Social Affairs and Ms. LTH (Than Truong Cooperative) said that "Currently, the linkages in tea production and consumption have been established in Yen The district, however, there are still some gaps in production and consumption. very limited, links between localities, cooperatives, enterprises and farmers are still poor. Thus, making tea prices highly dependent on merchants, making it difficult to expand and connect with new markets and meet the needs of customers in big cities such as Hanoi, Quang Ninh, Hai Phong, etc. ...".

As for farmers, the longer their relationship with traders is, the more stable the price is and the easier it is to sell tea. Ms. HL shared: “She sells to 1 person for a long time, compared to neighboring households, she still doesn't have to force the price because she can still buy the price, she still sells normally...”. Thus, the impact of the linkages between actors in the consumption of tea in Ven village on market access are similar between quantitative and qualitative results.

5. Discussion and Conclusion

5.1. Conclusion

Research results show that the market accessibility of green tea in Ven village, Yen The district, Bac Giang province is relatively low. The products are not diverse and rich, mainly dry tea, so they have not met the needs of consumers. Besides, the consumption market is mostly in the district and surrounding areas, so the ability to recognize the green tea brand in Ven village, especially in big cities like Hanoi and Quang Ninh, Hai Phong, Da Nang, ... are still low. The size of the green tea consumption market in the village is still small, it is still limited in expanding and connecting with new markets due to the lack of linkages in product consumption and the form of advertising and promotion of products has

not yet been established effectively. Besides, tea farmers in Yen The have not yet decided on the price of their products, and are still heavily dependent on traders.

On the other hand, this study shows that linkage is the main factor affecting the market access of green tea in Ven village. Moreover, the dependent variable is strongly influenced by factors such as access to market information, road conditions, access to agricultural extension services and age, however, the direction of impact is opposite. While age has a negative relationship with market access, the remaining factors are positively correlated with the dependent variable. On the contrary, the dependent variable is positively and very little affected by the educational level factor. However, distance is the negative and least impacting factor on the accessibility to the green tea market in Ven village.

5.2. Policy implications

Good market access not only helps to raise incomes and improve people's living standards, but also contributes to promoting social - economic development of the locality. Therefore, the state and local authorities need to issue policies to support and encourage actors in finding, expanding and connecting the market. From the results of the correlation regression analysis and in-depth interviews, the study provides a number of policy implications to increase market access to green tea in Ven village, Yen The district, as follows: 1) It is necessary to strengthen the linkages between the two countries. cooperation in the consumption of green tea in Ven village, based on the principle of ensuring the harmonization of the interests of the parties involved; 2) Promote access to output market information; 3) Policy to increase investment in transport infrastructure; 4) Strengthen agricultural training and extension policies.

Specifically, Yen The is a mountainous district with a low starting point and poor social - economic development conditions, facing many difficulties in mobilizing external capital sources and attracting investment. Therefore, the state should have policies to attract enterprises to invest in building tea processing factories; investment in regional transport infrastructure; encourage private investment to develop transport services from tea plantations to national highways and to city centers such as Hanoi, Hai Phong, Quang Ninh, Bac Ninh, etc. Policies to attract investment Investment can be capital support, preferential land use and creating a stable legal environment.

To promote market access, this study indicates that it is necessary to strengthen close linkages between farmers, extension workers, local authorities and other stakeholders, creating opportunities for farmers to have can accurately, fully and timely capture information on output market and prices. On the other hand, regularly organize training classes for local officials and cooperative officials to improve management capacity and foster knowledge related to market, marketing and application of science and technology. Next, this study also emphasizes the role of training and extension services to help farmers master tea growing and

care procedures to meet standards like Vietgap and find outputs for farmers to grow. ensure that the output they produce is procured in its entirety at a good price.

6. References

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