



Analysis and investigate the component affecting the improvement of apple marketing in West Azerbaijan province

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Abstract

The aim of this study was to analyze and investigate the influential components (economic, social and cultural, educational, promotional, infrastructure) on apple marketing improvement in West Azerbaijan province by Pearson correlation coefficient and multiple regression of Inter model. The results of Pearson correlation coefficient showed that there is a positive and significant relationship between the factors affecting this research (economic, educational, promotional, infrastructure and cultural and social components) and the variable of improving apple marketing status. Also, considering the calculated beta values in the inter model multiple regression, the results showed that among the factors affecting the improvement of apple marketing, economic, educational and promotional components had the highest contribution and role in explaining the mentioned dependent variable.

Keywords: Marketing, Apple, Improvement, Component, Influential

Introduction

Marketing, understanding consumers' actions, measuring it, converting this information into planning products with the aim of meeting the needs. In other words, marketing is an informed effort to optimally allocate resources and create a kind of expertise in the market. Organizations need to find their target market so that they can better identify their needs, provide and provide appropriate

products and services with them. The basis of marketing movement is to prevent wasting resources and facilities. Marketing means segmenting or regulating markets and determining products for the most suitable markets (Mirloy Mousavi et al., 2016).

The new marketing process begins by identifying and measuring the needs, demands and interests of customers, and after selecting the market or target markets with a systemic approach, the strategies of

serving customers and obtaining their complete satisfaction, the main goal of new marketing is realized (Venus, 2017). Apple is one of the main products of production in the agricultural sector and has a growing consumption, as well as the area under the production of apple orchards in the country to more than 170,000 hectares and nearly 2.7 million tons of production, great importance in employment and in (Davood Cheraghy, 2013).

West Azarbaijan province, the income of most rural households depends on the agricultural sector, but due to problems such as lack of grading and packaging facilities, poor cooperatives in services, lack of market information services and inadequate resources and price fluctuations, inadequate trained force has reduced farmers' income, which due to the variables affecting the problem and turning farmers to marketing, which is a new opportunity to join the market system and can increase income. Farmers and increase their welfare and quality of life (Anabestani and Tolabynejad, 2018).

West Azerbaijan province in the country has a significant role in the production of apples, but due to the smallness of the parts, the lack of laws regarding the removal of gardens in unfavorable areas and abandoned gardens in the margins of large towns and villages The pests and diseases are the seeds of existing gardens, uncertain sales status, lack of sorting and packaging units, including problems and problems in the way of apple production in the province, including Other problems are the lack of supervision of government

agencies on cold storage and inappropriate packaging of wood Accumulated on top of each other and damaged during the transfer to the product and reduced from its sales value, the most important problem of apple producers in the province is the low price of domestic consumption market, and the arrival of dealers and intermediaries imposes high costs on apple producers (Jahad Keshavarzi, 2020).

Apple is a strategic product for West Azerbaijan province. West Azerbaijan produced 1.2 million tons of apples in the past year, of which 300 to 350,000 tons are industrial and grade 3, and last year 540,000 tons Apples were exported to neighboring countries and the European Union, and due to the prohibition of apple accumulation on the side of the road, the number of shopping centers has been added and this year 52 shopping centers are responsible for the purchase. 37 centers belong to the Rural Cooperative Organization and the rest of the private sector (Islamic Republic of Iran News Agency, 2020).

Due to the difficulties in buying and selling apples, the country presented a plan for market regulation policies. These policies are very useful in the production of apple products, but there is little to do with the commercial sector (Alikhah, 2017).

Agriculture plays a major role in the economic and social development of most rural areas (Connolly Boutin and Smit, 2016).

However, the production of agricultural products is declining and it is not enough to meet the demand for food for the



growing population (Atelaet et al, 2016), one of the reasons for the decline in agricultural production, incessancy to Marketing of products, which reduces the profitability of agricultural products and consequently reduces the motivation of farmers for agriculture, and if marketing is accompanied by rural management and collective effort, it can lead To develop the village comprehensively and stalely (Anabestani and toulabinejad, 2018).

In the sixth development plan, the agricultural sector has been emphasized and many cases such as self-improvement, productivity promotion of production factors, food security and development and increasing agricultural revenues have been emphasized, as well as in supporting this sector, such as export development and competitiveness and price reduction and organizing resource management has been seen (Noroozi, 2016). Saboohi and Azadegan, 2014, in order to grow supply and increase the level of welfare and income of agricultural producers, as well as to support the consumer, numerous policies are used by the country's policymakers (Saboohi and Azadegan, 2014).

In research, Kumar concluded that lack of physical infrastructure, farmers' distrust of financial institutions, long market channels and lack of new technology are the most important barriers to marketing rural agricultural products (Kumar, 2015).

In ju research, a comparative study of international expertise of farmers and economic research organization in marketing agricultural products in China and Korea was investigated and concluded

that agricultural cooperatives have been successful in marketing (Ju , 2016).

Ahmadi (2020) conducted a research titled the role of agricultural extension in apple product marketing in Paktia province (Afghanistan). The results showed that the weakness of suitable technology in the field of planting, and harvesting, extreme price fluctuations and lack of guaranteed price are the most important problems of apple growers in Paktia province. Analytical results show that there is a direct and significant relationship between the use of promotion structures and the knowledge of apple producers about marketing knowledge. The results of regression show that meeting promoters, using visual and audio media and participating in training classes explains about 50% of farmers' awareness level in apple marketing .

Anviah Tekyeh (2019) conducted a study titled Market Analysis and Apple Tree Marketing Management based on P4P and P8P model in West Azerbaijan province. The results showed that among the components of marketing, product, price, promotion strategies and location and distribution, respectively, the first to fourth place, and among the sub-components of the product, importance, packaging is of great importance and other components are important in the next priorities and should be considered as a policy recommendation for planners in designing and formulating marketing models.

The results of Anabestani and toulabinejad (2018) showed that among the five obstacles and challenges facing agricultural marketing, lack of physical

infrastructure, cultural barriers and market structure were the most important barriers to marketing agricultural products in Poldokhtar city, respectively. In the following context, the lack of conversion and processing industries, lack of knowledge of farmers and the presence of intermediaries and dealers have been important in this regard, respectively.

Padaf and Rahman (2017) concluded in their paper that measuring consumers' perceptions of marketing activities through social media has a positive and significant effect on purchasing intention and presents the theories as well as management strategies along with ways to investigate the upcoming researches. The problems of farmers' advancement in West Azerbaijan province have caused the apple crop to not be sold properly and the lack of transparent market, cold storage capacity and export challenges, increased cost of transportation, multiplier growth of apple production, which has reduced the price of apples are not accountable for the costs of farmers, all of these factors have caused the apple crop to remain in the hands of farmers. These solutions can lead to effective marketing and better sales and provide farmers with the necessary information in terms of price, packaging, etc.

Research Purposes

The aim of this study was to analyze and investigate the factors affecting the improvement of apple marketing in West Azerbaijan province. The specific objectives of abast are to investigate the

economic factors affecting the improvement of marketing situation in West Azerbaijan province, the study of promotional factors affecting the improvement of apple marketing in West Azerbaijan province, the study of infrastructure factors affecting the improvement of the situation. Apple Marketing in West Azerbaijan Province, Study of educational factors affecting the improvement of apple marketing in West Azerbaijan province, investigation of cultural and social factors affecting the improvement of apple marketing in West Azerbaijan province.

Research Methods

The present research method is descriptive-survey and field method and librarians were used to collect data so that in order to compile the research literature, the theoretical framework of the theoretical framework was used by the world wide web by examining books and magazines, and to test the regulated hypotheses and answer the questions, field method and questionnaire distribution were used. The statistical population of the study includes all gardeners in west Azerbaijan province, 39315 gardeners, of which urmia cities with statistical population (17750), Miandoab (7096), Mahabad (5269), Oshnavieh (5000), Naqadeh (4200). Krejcie and Morgan table were used to determine the sample size (360 samples). Random sampling was used with appropriate assignment. In this research, a researcher-made questionnaire was used which consisted of two parts, the first part



was the items of effective components and the second part was improving apple marketing. Face validity was used to assess the validity of the questionnaire. Therefore, the viewpoints of supervisors, advisors, managers and experts of agricultural jihad in West Azerbaijan province were used. Cronbach's alpha coefficient was used to determine the reliability of the research questionnaire. Cronbach's alpha was 0.864. Pearson's multiple regression test and correlation coefficient were used to analyze the data.

Results

The results showed that the mean age of respondents was approximately 44 years and had a work experience of 13 years. Also, the area of the gardens was 3.30 hectares, the annual production rate of apple had an average production of 22 tons and the sale price per kilogram of apple had an average selling price of 8500 Tomans. The average cost for a kilogram of apples was 5500 Tomans (Table 1).

Table 1. Frequency distribution and Individual characteristics of the respondents

variable	Mainline	Standard deviation	The least	The most
Age	43.74	10.96	18	75
Work experience	35.1	5.85	1	28
Garden area	3.30	1.49	1	6
Production rate	22.33	6. 69	11	42
Sales price	8445.8	1589.8	6000	11500
Cost of production	5501.6	949.4	4000	7000

Prioritization of effective components and improving apple marketing in the province of west Azarbaijan from the perspective of respondents

The results showed that among the items of economic component of demand fluctuations items with a coefficient of variation of 0.246, demand for apple with a coefficient of variation of 0.253, variation coefficient of apple product with coefficient of changes of 0.257 was identified as the most important items of economic component. The results also showed that among the items of cultural and social components, the items of cultural commonalities of West Azerbaijan with other provinces with a coefficient of changes of 0.289 and farmers' awareness with a coefficient of changes of 0.358 were identified as the most important items of cultural and social components. The results showed that among the items of the infrastructure component, three items were, respectively; The maintenance and storage

of apples with a coefficient of variations of 0.306, the suitability of transportation with a coefficient of variation of 0.373, packaging with a coefficient of changes of 0.400 was identified as the most important items of the infrastructure component from the respondents' point of view. Also, among the items of the promotional component of the items of holding annual conferences with a coefficient of changes of 0.473, the existence of marketing associations with a coefficient of changes of 0.482 was recognized as the most important items of the promotional component from the respondents' point of view. Among the items of educational component, the items of using expert opinions with a coefficient of variation of 0.354 and teaching how to adapt to new technology and technology with a coefficient of variation of 0.457 were identified as the most important items of the educational component from the respondents' point of view. Other results are shown in Table 2.



Table 2. Priority of component items effecting the improvement of apple marketing from the perspective of respondents

Component	Items	Mean	S.D	CV	rate
Economic	Demand fluctuations	3.45	0.851	0.246	1
	Demand for apples	2.03	0.810	0.253	2
	Apple product variety	2.88	0.742	0.257	3
	Seasonal price fluctuations	3.92	1.031	0.263	4
	Consumer Price	3.66	1.069	0.292	5
	Apple's finished price	3.76	1.153	0.304	6
	How to supply apples	3.17	1.117	0.352	7
	Livelihoods and public welfare in the province	2.45	0.987	0.402	8
	Product Price Transparency	2.64	2.150	0.435	9
	Border markets in the province	2.71	1.342	0.495	10
	The amount of government investment in agricultural products	2	1.133	0.566	11
	Payment of facilities and credits to beneficiaries	1.89	1.072	0.567	12
Sociocultural	Cultural participation of West Azerbaijan with other provinces	3.01	0.870	0.289	1
	Farmers' Literacy	2.64	0.946	0.358	2
	Farmers' Awareness	2.89	1.075	0.371	3
	University Centers	2.58	1.108	0.429	4
	The existence of rural cooperatives	2.25	1.193	0.530	5
	The existence of NGOs	1.90	1.008	0.530	6
Infrastructure	How to store and store apples	3.60	1.102	0.306	1
	Transportation suitability	2.96	1.106	0.373	2
	Packaging	3.03	1.214	0.400	3
	Suitable distribution network	2.06	1.022	0.496	4
	The existence of conversion industries	2.12	1.101	0.519	5
	Providing new processes	2/03	1.055	0.519	6
Extension	Holding annual conferences	1.60	0.758	0.473	1
	The existence of marketing associations	1.76	0.863	0.482	2
	Investing in advertising	1.78	0.946	0.531	3
	Using new marketing methods	1.99	1.021	0.543	4
	Mass media coverage	1.88	1.095	0.550	5
Educational	Use expert opinions	2.91	1.031	0.354	1
	Learn how to adapt to new technology	2.47	1.130	0.457	2
	Transfer marketing practices	1.98	1.019	0.514	3
	Teaching new marketing methods	1.94	1.103	0.568	4
	Passing training courses	1.99	1.131	0.568	5
	Use expert opinions	2.91	1.031	0.354	1
	Learn how to adapt to new technology	2.47	1.130	0.457	2

The results showed that among the items of three items of marketing system, increasing the income of farmers and producers of agricultural products with a coefficient of changes of 0.371, development of agricultural products with a coefficient of

changes of 0.388, direct access of consumers to products with reasonable prices and high quality with coefficient of changes of 0.394 was recognized as the most important items of marketing system characteristics in terms of respondents.

Table 3. Prioritize items the property of the apple marketing system from the perspective of the respondents

Items	Mainline	Standard Deviation	Coefficient of changes	rate
Increase income of farmers and producers of agricultural products	3.06	1.136	0.371	1
Agricultural Production Development	2.92	1.134	0.388	2
Direct consumer access to products with reasonable price and high quality	2.85	1.123	0.394	3
Pricing of agricultural products	2.47	1.039	0.429	4
Reducing the initial price difference between the manufacturer and the end consumer	3.04	1.345	0.442	5
Providing facilities to enhance the quality of products and proper sales of the product	3.02	1.335	0.442	6
Empowering the agricultural sector	2.73	1.211	0.443	7
Market Regulation	2.55	1.191	0.467	8
Expand exports	2.69	1.364	0.507	9
Remove brokers and intermediaries	2.38	1.401	0.588	10

Kolmogorov-Smirnov test was used to determine the normality of the data distribution. According to this test, when the distribution is normal, the P value is greater than the critical number at the level

of 0.05. According to the table of results of Kolmogorov-Smirnov test, it is shown that the obtained data have a normal distribution. As a result, parametric tests can be used to analyze the data.

Table 4. Kolmogorov Smirnov Test

Variable	The significance	Number
Economic component	0.2000	360
Educational component	0.190	360
Extension component	0.089	360
Infrastructure component	0.085	360
Cultural and social component	0.2000	360
Features of the marketing system	0.155	360



The results of Pearson correlation coefficient show that there is a positive and significant relationship between apple marketing improvement variable and

economic, educational, extension, infrastructure, cultural and social components at the error level of 1%. The results are shown in Table 5.

Table5. Correlation coefficients obtained between variables and marketing improvement

variable	The Correlation coefficient(r)	The significance level (p)
Economic component	**0.652	0.000
Extension component	**0.721	0.000
Educational component	**0.628	0.000
Cultural and social component	**0.475	0.000
Infrastructure component	**0.503	0.000

Multiple regression was used by Inter method to predict the changes in apple marketing improvement as the dependent variable of the research and to determine the contribution of each independent variable (economic component, promotional component, educational component, cultural and social component, infrastructure component) in explaining the dependent variable changes. The results in table (6) show that about 49% of the changes related to the dependent variable i.e. (improving apple marketing) have been determined by the mentioned variables. Based on the results of regression test, a predictive equation can

be used with the combination of these several factors was achieved. Also, according to the calculated beta values, it was stated that among the factors affecting the improvement of apple marketing, economic, educational and promotional components had the highest contribution and role in explaining the mentioned dependent variable. Also, according to table coefficients (6) the final model of multi-variable regression in this study is based on B coefficients as follows:

$$Y=9/582+0/405X_1+0/385X_2+0/461X_3+0/183X_4+0/502X_5$$

Table6. The coefficients of the variables entered in to the Chen variable regression equation

Multiple correlation coefficient	B	Standard Deviation	Beta	t	Sig.
Economic component (x ₁)	0.405	0.087	0.657	4.65	0.000
Extension component(x ₂)	0.385	0.167	0.307	2.18	0.000
Educational component(x ₃)	0.461	0.177	0.437	2.60	0.000
Infrastructure component(x ₄)	0.183	0.08	0.156	2.28	0.000
Cultural and social component(x ₅)	0.502	0.254	0.126	1.97	0.04
Constant number	9.582	3.280	-	2.920	0.000
R=0.702 R ² =0.492 f=49.25 sig=0.000					

Discussion

Based on the findings of the test, Pearson correlation coefficient was observed, there is a positive and significant relationship between economic, promotional, infrastructure, and social cultural education at the significant level of one percent and a significant relationship with the research dependent variable (improving apple marketing).

The effective economic component has a positive and significant relationship with the improvement of apple marketing and showed that if the demand and supply is balanced and the needs of the domestic consumer market are identified and the products that enter the domestic market are consumed if they have variety, then there will be all tastes in the product market and it will have a greater impact on the economic factors on the improvement of apple marketing. That was consistent with Hosseini Bekati and Beauty Studies (2010). Therefore, the more the amount of identifying consumer needs, diversifying the consumer market of apple product and controlling demand, the greater the impact between the economic sectors of the apple product by improving the marketing of the apple product.

The effective promotional component has a positive and significant relationship with the improvement of apple marketing and showed that the more the amount of marketing associations and annual conferences by the Provincial Agricultural Jihad and service centers, the greater the impact of promotional factors. In this regard, Ahmadi (2020) meeting with promoters, using visual and audio media and participating in educational classes, considers important factors as the role of promoting apple crops, because each factor increases farmers' awareness in apple marketing. Therefore, through social media, annual conferences, marketing associations, visiting gardens by experts and giving the necessary awareness to farmers, rural cooperatives, preparing brochures by experts and distributing them among farmers and pasting posters in service centers or places where farmers are most visited, by improving each of the mentioned cases, the effectiveness of promotional factors can be improved. Improved marketing.

The effective educational component has a positive and significant relationship with the improvement of apple marketing and showed that increasing the use of experts'



opinions using the training classes held for farmers and increasing the training of new technologies for farmers by experts increases the amount of educational factors affecting the improvement of apple marketing. That was consistent with Ahmadi studies (2020). Therefore, by improving the formation of training classes by experts, workshops and the presence of experts in service centers and agricultural jihad, and providing necessary training about apple marketing from the stage of total production and familiarizing farmers with new technologies in the field of apple product marketing, it can increase the effectiveness of educational factors on improving apple marketing.

The effective cultural and social component has a positive and significant relationship with improving apple marketing and showed that the more cultural commonalities of West Azerbaijan province with other provinces are taught to farmers and the higher the amount of these shares, the more it increases the impact of cultural and social factors. In this regard, Padaf and Rahman (2017) who know the consumer's assessment and understanding of marketing activities from social media. Therefore, using and improving social media can be effective in increasing farmers' awareness about apple product prices, demand, production rate and providing necessary information to farmers and also in increasing the impact of cultural and social factors on improving apple marketing in West Azerbaijan province.

The effective infrastructure component has a positive and significant relationship with

improving apple marketing and showed that proper and modern packaging and product stamping, suitable transportation and reduction of related costs, how to not store and store in cold storage by equipping cold storage and training the people responsible for keeping the product improves apple marketing in West Azerbaijan province. In this regard, Anviyeh Tekyeh (2019) considers product packaging as an important sub-component of the product, and believes that it should be considered as a recommendation for planners in designing and formulating marketing models. Therefore, by improving the infrastructure sector such as the number of refrigeration and packaging units, providing necessary training to the people in charge of cold storage for how to keep the apple product and training the packaging units in order to pack properly and according to the necessary standards for export can be effective in increasing the level of correlation between the infrastructure sector and improving marketing.

The results of multiline regression test showed that the effect of independent variables in this study was 49% and based on the obtained beta coefficients, it was observed that the most important predictive variables were economic, educational and promotional components.

The results showed that if the amount of demand and supply is balanced and the needs of the domestic consumer market are identified and the products that enter the domestic market are consumed if they are diversification, then there will be a suitable for all tastes in the product market and it

will have a greater impact on economic factors on improving apple marketing. That was consistent with Hosseini Bekati and Beauty Studies (2010). Therefore, the more the amount of identifying consumer needs, diversifying the consumer market of apple product and controlling demand, the greater the impact between the economic sectors of the apple product by improving the marketing of the apple product. The results showed that the higher the rate of marketing associations and annual conferences by the Provincial Agricultural Jihad and service centers, the greater the effectiveness of promotional factors.

In this regard, Ahmadi (2020) meeting with promoters, using visual and audio media and participating in educational classes, considers important factors as the role of promoting apple crops, because each factor increases farmers' awareness in apple marketing. Therefore, through social media, annual conferences, marketing forums, visiting gardens by experts and giving the necessary awareness to farmers, rural cooperatives, preparing brochures by experts and distributing them among farmers and pasting posters in service centers or places where farmers are most visited, by improving each of the mentioned cases, the effectiveness of promotional factors can be improved. Increased marketing improvement.

The results showed that increasing the use of experts' opinions using the training classes held for farmers and increasing the training of new technologies for farmers by experts increase the amount of educational factors affecting the improvement of apple marketing. That was consistent with

Ahmadi studies (2020). Therefore, by improving the formation of training classes by experts, workshops and the presence of experts in service centers and agricultural jihad, and providing necessary training about apple marketing from the stage of total production and familiarizing farmers with new technologies in the field of apple product marketing, it can increase the effectiveness of educational factors on improving apple marketing.

Conclusions

Considering the importance of West Azerbaijan province in the production of apple products, there should be appropriate infrastructures as well as appropriate marketing according to the mass amount of apple production in the province and its accumulation in cold storages, to improve the marketing of apples in the province, the opinions of apple producers in the cities with the most producers using the study of effective components on marketing improvement including economic, social and cultural, educational, promotional, infrastructure use And by examining the results of the comments of apple producers, we concluded that according to the descriptive findings of these components, it showed that among the items of economic component of the items of demand fluctuations for apples, among the items of cultural and social component of the province's cultural commonalities with other provinces, among the items of the infrastructure component of the items of how to store and store apples, among the items of the cultural and social component



of the dialect of holding the ball. The annual conference is one of the items of the educational component of using expert opinions. The results of analytical findings showed that there is a positive and significant relationship between the factors affecting this research (economic, educational, promotional, infrastructure, cultural and social components) and apple marketing improvement variable according to Pearson correlation coefficient. Also, according to the results of multiple regression test, inter-components could explain 49% of the changes in apple marketing improvement among farmers in West Azerbaijan province and according to the calculated beta value, educational, promotional and economic components have the highest share in explaining the amount of dependent variable changes by independent variable.

Based on the result, the following suggestions are presented :

-Holding training classes for farmers by The Agricultural Jihad Organization of West Azerbaijan Province. - Paying attention to the demand and variety of badr products is essential for marketing planning and paying attention to the market.

- Holding apple conferences and festivals is necessary to promote apple marketing.

- Using experts' opinions and training new technology and providing necessary trainings to use the opinions of experts in marketing.

- Providing necessary facilities to improve the packaging system, transportation and maintenance and storage is necessary.

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