

The competitiveness of quinoa producer associations in the Andahuaylas-Apurímac district, 2019

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ABSTRACT : The objective of this research was to determine how competitiveness is in the associations of quinoa producers in the Andahuaylas-Apurímac district, 2019, with a quantitative approach, descriptive scope and cross-sectional non-experimental design, probabilistic sampling, consisting of 113 quinoa producers Organized in associations, the survey was used as a technique and the questionnaire was validated by judges criteria and by Cronbach's alpha coefficient, observing a coefficient of 0.762 from the Kuder Richardson table with a very reliable result. The results of the investigation show; that 37.9% of producer associations have a low level of competitiveness, and in its dimensions; 70.1% show that there is a low level of leadership, 66.7% have a low level of competitive advantages, 49.4% have a medium level with technology and infrastructure, 43.7% have a medium level of productive capacity, 40.2% have a low level of human resources management and 36.8% of associations have a low and medium level of business strategies, and it is concluded that the competitiveness of the associations of quinoa producers is between the low to medium level of competitiveness, low level technology and infrastructure, low level of leadership, low level of competitive advantages, low level of human resource management, low level of productive capacity and low and medium level of business capacity.

KEYWORDS: Competitiveness, technology, leadership, productive capacity, business strategies, competitive advantages.

I. INTRODUCTION

This research deals with the competitiveness of associations of quinoa producers in the Andahuaylas-Apurímac district, 2019. Currently the agricultural sector is becoming complex in Peru, Latin America and the world, facing these challenges, farmers or small producers are forced to form associations to improve the quality of their product, their income and improve living conditions. And face and enter the competitive world, respond to changes in new scenarios in local, regional, national and international markets, after consultation with different stakeholders, to achieve competitive advantages that allow achieving and improving ownership in socioeconomic environments. The “Peruvian state supports and promotes productive competitiveness and associativity through various laws, decrees and policies through Law No. 29337 with the aim of improving the competitiveness of productive chains, through the development, adaptation, improvement or transfer of technologies which in the practice is not evident.” (Ley N° 29337, 2009).

Quinoa is a native and Andean plant of South America that is found in the Andes of Peru and Bolivia, cultivated since pre-Hispanic civilizations and currently in Peru the sowing of quinoa has been diversified, especially in the Ayacucho and Apurímac Region, especially in the Andahuaylas province where they have been formalized through associations due to their revaluation of food and the demand for the product, according to (Agraria.pe, 2019) For the year 2019, quinoa exports by Peru reached 48,300 tons for a value of US \$ 133 million, Fresh Fruit Peru reported. To analyze this problem of quinoa producers in the Andahuaylas-Apurímac district, it is necessary to mention its causes, among them the excessive parceling of land, smallholdings, lack of technology, acquisition of inputs, negotiation capacity, lower prices of their products, some They prefer to work individually and not in association, they focus on covering local markets and not global markets, therefore, many of them opted for associativity, to improve the business of their quinoa products and improve their family well-being.

The investigation of this problem of associations of quinoa producers was carried out for academic interest, since the issue of competitiveness in the associations of quinoa producers in the Andahuaylas-Apurímac district is

relevant and to know the level at which they are in terms of technology and infrastructure, leadership, competitive advantages, human resource management, the level of productive capacity, business strategies applied by the associations of quinoa producers in the Andahuaylas-Apurímac district. In this way, know the reality closely and understand the problem of competitiveness of the associations of quinoa producers in the Andahuaylas-Apurímac district. And it is of utmost importance according to Ferrando (2014), García (1995) and Rosales (1997), state that "competitiveness are mechanisms where people freely group by their own decision, initiatives and manage resources to carry out activities to achieve common objectives with the vision of achieving goals, as in the agri-food sector to place the goods they produce in the markets, under fair conditions of competition, in such a way that it translates into well-being in the population ". This research is of importance in the social aspect since the results will contribute to the associations of quinoa producers and government authorities that have competences in the agricultural sector who must introduce various process improvements to increase the production rate and will help to increase profits. to the association of quinoa producers of the Apurímac region.

For the present research, the method used was a quantitative approach, a descriptive study type, a non-experimental, transactional descriptive research design, and the collection of information was through survey questionnaires, probabilistic sampling and during the field research one of the obstacles in the survey was the fear of the quinoa producers. There is some background related to research on competitiveness in associations of quinoa producers such as Sisa (2018), the general objective was to determine the relationship between business associations and the commercialization of quinoa in the province of Andahuaylas, concluding that there Moderate positive correlation between business associativity and the commercialization of quinoa in the province of Andahuaylas, in the descriptive analysis concludes; 32.93% of producers disagree with associativity, 70.73% disagree with trust, 42.68% disagree with cooperation, 53.66% of producers accept that leadership exists, 48.78% totally disagree with the commercialization, and 59.76% of producers mention that they totally disagree with productivity.

Del Valle (2019), in his research, the objective was to establish whether the competitive capacities of small and medium quinoa producers in the district of Puno, concluding; that individual producers present significant limitations to become exporters, however, if there were political support from the national, regional and local government, it would lead to making it possible for organized producers to become direct exporters. And according to the descriptive analysis it was evidenced that; 58.8% of quinoa producers are men, 41.2% are women and their educational level of the producer 45.6% have secondary education, 35.3% primary education and 19.1% with higher education, 97.1% of producers do not have machines 98.5% are supplied with their own seeds, 98.5% are fully certified for organic production to have organic production, 88.2% of producers do not have an exclusive or shared environment for the processing of harvested quinoa , 91.2% of producers show dissatisfaction with the financing received, only the Sierra y Selva exporting entity is the main or only provider of information (82.3%), 88.2% producers express that there is not enough technical assistance to producers, 89.7% declare having received training for the field or production phase of quinoa, and 75.0% of producers received the training received in management business, and 70.6% express satisfaction with the training of quinoa by some state agency.

In this research, a series of objectives was defined, of which the general objective was: To determine how competitiveness is in the associations of quinoa producers in the Andahuaylas-Apurímac district, 2019. This general objective is broken down into the following specific objectives: a) Describe what the technology and infrastructure are like in the associations of quinoa producers in the Andahuaylas-Apurímac district. b) Describe what the leadership is like within the associations of quinoa producers in the Andahuaylas-Apurímac district, c) Describe what the competitive advantages are like in associations of quinoa producers in the Andahuaylas-Apurímac district, d) Describe how manages human resources in the associations of quinoa producers in the Andahuaylas-Apurímac district, e) Describe what is the level of productive capacity in the associations of quinoa producers in the Andahuaylas-Apurímac district, f) Describe how are the business strategies applied by associations of quinoa producers in the Andahuaylas-Apurímac district.

II. LITERATURE REVIEW

As a result of this research, a broad review of the different existing conceptions regarding competitiveness was carried out: According to Raffino(2020), Defines competitiveness as the ability of an entity or organization for profit or non-profit to compete in the economic field and plays a fundamental role in companies and countries, where they will provide the scope, maintenance and improvement of the socioeconomic position, which means that a company or nation has proposed new business methods and market strategies that give it a positive and transcendent evolution to adapt to the current economic model. And the types of competitiveness are; internal, which is its ability to efficiently exploit a company, and external competitiveness are taking advantage of external

factors, achieving achievements such as in the market context and maintaining survival over time, generating new future ideas.

According to the Royal Spanish Academy [RAE](1992), defines that competitiveness is the ability to compete and rivalry to achieve an end and etymologically comes from the word competition, opposition or rivalry between two or more who aspire to obtain the same thing; It can also be associated with the ability to compete, in particular of firms (Abdel y Romo, 2005). According to Rojas y Sepúlveda(1999) cites Bejarano who refers to competitiveness as an ability of a country to create, produce, distribute, products or services in international trade, maintaining increasing profits from its resources” (Bejarano, 1995); According to García(1995), “The competitiveness of the agri-food sector is its ability to place the goods it produces in the markets, under fair conditions of competition, in such a way that it translates into well-being in the population”, and for Alic (1988), “competitiveness means the capacity of companies in a given country to design, develop, produce and sell their products in competition with companies based in other countries” (Alic, 1988). In the same way Suñol(2006). In his article on theoretical aspects of competitiveness, he quotes Michael Porter, who defines as “The ability to sustain and increase participation in international markets, with a parallel rise in the standard of living of the population and is the only solid way to achieve it, is based on increased productivity”, who also defines that “Productivity in the long run is a primary determinant of a country's standard of living and national income per inhabitant, it determines wages, and the productivity from capital that determines the benefits it obtains for its owners” (Porter, 1990).

According to Cabrera, The OECD, the World Bank, the Inter-American Development Bank and various authors have proposed several indicators to measure “competitiveness, such as: technology, innovation, marketing, human resources, managerial capacities, financial resources, culture, quality, production, logistics, internal organization, purchasing, research and development and interaction with suppliers and customers” (García Ramírez, 2015). In the same way López and Ramírez(2011), state that the variables to quantify the level of competitiveness of a firm or company are innovation, intellectual capital or human team, quality, technology, market knowledge, research and development, associativity (understood as strategic alliances or cooperative relationships with other companies), business strategies, differentiation, productivity, prices, financial management, organizational culture and service. On the other hand, McFetridge(1995), cited in Ubfal(2004) considers that “competitiveness can be measured from variables such as unit labor costs, market shares and total factor productivity, that these variables that affect the competitiveness of companies are linked to the market structure and the strategy that the company has to increase its market share and therefore, its economic benefits”. According to Narváez(2014), “Rural producer associations are understood as organizations that bring together a group of peasant farmers, ranchers, etc., who share common circumstances, such as the region or sub-region where they are settled or the types of crops”; All these organizations have the objective of optimizing the associated productive units, improving the level of negotiation with clients and suppliers, forming alliances with different public or private organizations and accessing better economic or financial resources. For their part, rural cooperatives according to Narvaez (2014), it classifies them as common property companies with the objective of production, marketing, transformation and distribution of goods and services, where they compete with private firms in the market. Both cooperatives and associations have social purposes, and surpluses are reinvested in the organization or used for community projects.

Competitiveness, from the micro point of view, is “a multidimensional phenomenon that encompasses different aspects, both qualitative and quantitative, including profitability, productivity, costs, added value, market share, exports, technological innovation and product quality, among others” (McFetridge, 1995), according to Rojas and Sepúlveda(1999), they also identify at the micro level, different variables such as productivity, costs, organizational schemes, innovation with clean technologies, business management, the size of the firm, cultural practices in the field, the type of technologies used, the environmental awareness, diversification and quality control of products, progress in marketing schemes and the distances between sources of raw materials, companies and markets. The levels of competitiveness are as follows as; *At the company level* “It is competitive when it is capable of formulating and applying strategies that lead to a sustained or expanded market position in the industrial segment in which it operates”(Ferraz, Kupfer, & Looty, 2004, pp. 91-119). Regarding the *regional level* “It is when they generate more quality and well-paid employment, production of goods and services that do not affect the environment, with high income elasticity of demand, with positive economic growth and a trend towards sectoral specialization, improving the position of the national urban system” (Sobrinho, 2002). *At an industrial level*, competitiveness measured “the immediate and future capacity of the industrial sector to design, produce and sell goods whose attributes manage to form a more attractive package than similar products offered by competitors and the final judge is the market “European Management Forum(1980)cited in (Berdugo, 2014). *At the country level* is “the ability to enter international markets through increased exports, which is also the objective

of increasing total GDP and per capita, standard of living of the population, eradicate poverty, reduce unemployment, increase income real people in the long run.” (Berdugo, 2014).”In the case of micro, small and medium-sized companies, good management is required to increase competitiveness, therefore, given the nature of this type of company, a key factor to achieve this lies in optimal leadership” (López, Ulibarri, & Canto, 2017, p. 2).

Regarding the factors that determine competitiveness according to Leal and Labarca(2013), mention the following: that most of the SMEs studied are characterized by technological lag, difficulty in financing, few commercial links, reduced market participation, conservative management styles, personnel with little training and little willingness to carry out innovation processes and business cooperation and they have achieved a successful development have been supported by factors such as the quality of their products, competitive prices, adequate management of human resources, incorporation of advanced technology, speed in delivery times, response capacity, adequate systems of information and strong commercial ties (p.151).Some of the essential factors that determine competitiveness within organizations is the ability of managers to generate strategies and adapt to changes in the environment, where their character, attitudes, skills and behaviors determine that ability, representing a success factor, where The manager plays a very important role as the main actor in the SME for decision making, development and implementation of strategies that lead the future of the organization, otherwise they can lead to the failure of the organization (López, Ulibarri, and Canto, 2017, p. 2).

Several authors mention different factors related to competitiveness according to the sector or item to which each organization is dedicated, such as the production sector, industry, manufacturing, among others; That is why the corresponding comparisons were made and worked with 6 main factors which are adapted to the type of organization in which it was worked and will be developed next:

Technology and infrastructure According. Claver, Llopis, Molina, Conca and Molina(2009), "Technology is configured as a strategic variable capable of providing competitive opportunities to organizations that know how to use them properly" (p.127). it is also the way for a company “to be more competitive is to invest in technology to be at the level of its competitors and superiors, where managers must take advantage of and be aware of the opportunities of the national and international market that are challenging and this entails to the possibilities of expansion and opening of new business opportunities” (Castro, 2016).And the incorporation of "technology in SMEs is essential so that they can be current and last over time and technology allows small and medium-sized companies to compete with large organizations" (Tala, 2018). and infrastructure is a set of capital goods that, although not used directly in the production process, supports the productive structure and contributes to effectively improve social relations, individual and collective economic activities and the exchange of goods and services , also having the peculiarity of simultaneously providing services to multiple users or to society as a whole in case of being a public good (Pópulo and Gil, 2002, p. 176).

Leadership. According to Huerta and Rodríguez(2006), leadership is "the interpersonal influence oriented towards the achievement of goals, through communication that allows the coordinated performance of work oriented by a shared direction within an organization". And according to Hunter cited in Madrigal (2009), maintains that "leadership is the art of influencing people to work with enthusiasm to achieve objectives for the common good".

Competitive advantages. The "competitive advantage is a set of special skills or abilities to consolidate a company that allows developing one or more differential factors in its operations, products and / or services where it is placed in a preferential position in the eyes of the market" (Ediciones Díaz de Santos S.A, 1996, pág. 45). For Sevilla(s.f.), a competitive advantage is "any characteristic of a company, country or person that differentiates it from others, placing it in a higher relative position to compete, that is, any attribute that makes it more competitive than the others".

Human Resources. Competitiveness is to ensure that an organization remains and remains in the market in the long term; For this you need to develop one of the factors such as human resources because many times the success of organizations depends on the strategic management of human resources. According to Boyero (2016),Human resources are people, the most important value that any organization has that contribute to achieving the objectives of the company and a motivated and qualified staff contributes to being a highly competitive organization, and there is pleasure in the development of activities and elements are offered essential to satisfy the needs and expectations of internal and external users " (pp.63-66)."Today's organizations provide qualified human resources continuously and try to reinvent their processes and systems in an efficient and competitive way from a functional and attitudinal point of view that literally revolutionizes the way of doing things" (Araujo and Brunet, 2012, pp. 10).

Productive capacity. According to Fullana and Paredes(2008), it is “the potential capacity of a process, an industrial plant or the facilities of a company; in other words, the amount of production that can be obtained

with certain available structural means: equipment, facilities, personnel, raw material " (p.342). Likewise, Chase, Jacobs and Aquilano(2009), they define it as: "the amount of production that a system can achieve in a certain period where the input of resources and output of products must be taken into account" (p.122).For Conalep (2016), "The production capacity represents the installed capacity plus the material, human and financial resources available" (p.61). It can also be said that production capacity is the response of a production or service system to a stimulus from the environment, that is, a maximum amount of product or service in a certain period of time and production capacity is measured by tons per hour, revolutions per minute (Camacho & Gil, 2017, p.10).

Business strategy. Maldonado (2016)It states that "business strategy is of vital importance for a company where the entire structure of a strategic plan is articulated and is the mobilization of all the company's resources together, to try to achieve long-term objectives and its purpose is to improve its position with respect to its competitors "pp.10, 42.LikewiseTarziján(2008), mentions that: "the business strategy requires the company to carry out some actions and activities that are different from those carried out by competitors since only then will it obtain a higher performance and be able to compete in the market" (p.18).

The associations. According to Ferrando(2014), The "Association is made up of people who join together freely and by their own decision, to carry out activities in common with the vision of achieving stated goals, which constitutes the basis of these groups." it means that they do not carry out lucrative activities for the collective benefit and the achievement of objectives, they have legal status that attributes them obligations and rights equally" (IICA, 2017)."The association constitutes the expression of the associative process, it is a group made up of people of common and collective interest, not for profit" (Maldonado G. M., 2012).According to Castrillón (2015) "They are groups of people, communities, which have come together to fight for the common interests of the group, such as, for example: production, marketing, access to credit, education, infrastructure works, etc." In addition, it is mentioned that "association is a stable organization of natural or legal persons, or both, that through a common activity pursues a non-profit purpose" (Código Civil Peruano, 200, art.80). (Seoane Linares, 2005)

Quinoa also called *Chenopodium quinoa* Willd is a native species of South America whose center of origin, According to Buskasov is found in the Andes of Bolivia and Peru and the FAO(2013)In its technical report entitled "Quinoa: Ancient Crop to Contribute to World Food Security", it quotes Cardenas(1944),Heisser and D.C(1974)indicate finds in archaeological zones, and According to Rojas (1998)the geographical distribution of "quinoa in the region extends from the 5th North latitude in the south of Colombia, to the 43rd South latitude in the Tenth Region of Chile, and its altitudinal distribution varies from sea level in Chile to 4000 **m.a.s.l.** in the highlands shared by Peru and Bolivia, thus existing quinoas from the coast, valleys, inter-Andean valleys, puna and highlands". The peculiar benefits of the cultivation of quinoa are given by its high nutritional value, the protein content of quinoa varies between 13.81 and 21.9% depending on the variety, Due to the high content of essential amino acids of its protein, Quinoa is considered and is the only food of the plant kingdom that provides all essential amino acids, and has a high percentage of total dietary fiber (TDF), in medicinal use for internal and external use, the most frequent treatment of abscesses, hemorrhages and dislocations and in infusion of the leaves it is used to treat urinary tract infections or as a laxative. In Peru, they traditionally preserve and produce quinoa in the highlands, 35 food preparations have been identified, made with quinoa. Among these we have soups and seconds, pastries, drinks and dry snacks and the diet of families in rural areas includes a variety of Kispíñas, P'esques, Soups, Mucuna, Pito and refreshing drinks; and on certain special occasions non-traditional foods such as cookies, cakes, fritters and juices are prepared. The consumption of these foods varies according to the times of the year and the agricultural activities that are developed. They are often eaten for breakfast, lunch, dinner, or a snack.

III. METHODOLOGY

Kind of investigation. The present investigation is of a basic type of quantitative approach and has followed the guidelines of a descriptive type because it describes the facts of the problematic reality of the competitiveness of the Quinoa producer associations that have motivated the investigation; **Design of the investigation.** It is of a non-experimental cross-sectional design, because the competitiveness of the associations of quinoa producers in a certain period was investigated; **Population and sample.** The Population was made up of 113 quinoa producers organized in associations of the Andahuaylas district and whose sample was probabilistic of 87 quinoa producers, said sample was calculated with 1.96 of confidence and a margin of error of 0.05, of a population; **Data collection technique.** The survey was used as a technique and the questionnaire was used as a data collection instrument, which were validated by judges' criteria and by Cronbach's Alpha coefficient, observing a coefficient of 0.762 according to the Kuder Richardson table means a result "Very reliable" in the application of the research instrument.

IV. RESULTS

Table 1 shows the gender frequencies of the associates of quinoa producers in the Andahuaylas-Apurímac district -2019, that 74.7% of quinoa producers are male and 25.3% are female.

Table1

According to the gender of the associates of quinoa producers in the District of Andahuaylas-Apurímac,2019

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	Male	65	74,7	74,7	74,7
	Female	22	25,3	25,3	100,0
Total		87	100,0	100,0	

Table 2 indicates that of the 100% of quinoa producers from the Andahuaylas-Apurímac district associations, 47.1% of producers do not have any degree of education, 41.4% have a complete primary education degree, 11.5% have completed high school education and 0% have university education.

Table2

According to the rank of educational level of the associates of quinoa producers in the District of Andahuaylas-Apurímac,2019

		Frequency	Percentage	Validpercentage	Accumulated percentage
Valid	Without studies	41	47,1	47,1	47,1
	Complete Primary	36	41,4	41,4	88,5
	Completed secondary	10	11,5	11,5	100,0
	Total	87	100,0	100,0	

In table 3 when performing the descriptive analysis of competitiveness according to the dimensions and indicators in the associations of quinoa producers in the District of Andahuaylas-Apurímac ,2019

Technology and Infrastructure; Table 3 indicates that the associations of quinoa producers in the Andahuaylas-Apurímac district, 2019, in the aspect of technology and infrastructure, 95.4% quinoa producers affirm that they do not have adequate communication channels; and 89.7% affirm that they do not have agricultural machinery; 87.4% of producers affirm that they do not have a computer equipment; and 57.5% of producers indicate that they do not have means of transportation and 42.5% of producers state that they do have means of transportation; and 50.6% of producers affirm that they have industrial equipment and 49.4% of producers state that they do not have industrial equipment.

Leadership; Table 3 shows that 79.3% of producer associations do not practice teamwork; 74.7% of associations do not carry out management or training, and 73.6% of producer associations have mistrust; and 70.1% of the association of quinoa producers do not have the communication capacity.

Competitive advantages; Table 3 shows that 95.4% of associations of quinoa producers do not have quality human talent, 87.4% do not agree on price policies and do not provide added value; 81.6% of associations do not carry out organic production and 66.7% of associations of quinoa producers do not have organic certification.

Human Resources; ; Table 3 indicates that 59.8% of the associates of quinoa producers in the Andahuaylas district have participation in the institutional life of the quinoa producers association, but 25.3% of associations do not participate; and 83.9% of quinoa producer associations are not committed, and in 79.3% of producer associations are dissatisfied with the associations and only 20.7% of producer associations are satisfied and 51.7% of producer associations are not trained and only 33.3% of quinoa producer associations are trained.

Productive capacity; Table 3 shows that 50.6% of associations of quinoa producers do not have financing, while 44.8% of associations do have financing, and 50.6% of associations have productive technology and 32.2% of

associations only sometimes in a while; and 80.5% of associations of quinoa producers do not have certified seeds, 43.7% of associations of quinoa producers do not have fertilizer quality.

Business Strategy; In table 3, 80.5% of quinoa producer associations do not have associativity, and 79.3% of producer associations do not have strategic planning, 73.6% of associations do not have Strategic Alliances and 64.4% of producer associations They do not have productive flexibility and in 63.2% of associations of quinoa producers sometimes have institutional agreements.

Table3
Descriptive analysis of competitiveness according to dimensions and indicators in quinoa producer associations in the Andahuaylas District - Apurímac ,2019

Dimensions	Indicators	Never		Sometimes		Always		total	%
		Frequenc y	Percent age	Frequenc y	Percenta ge	Frequenc y	Percenta ge		
D1: Technology Infrastructure	Farm Equipment	78	89.7	0	0	9	10.3	87	100
	Transport	50	57.5	0	0	37	42.5	87	100
	Computer equipment	76	87.4	0	0	11	12.6	87	100
	Communication routes	83	95.4	0	0	4	4.6	87	100
	Industrial equipment	43	49.4	0	0	44	50.6	87	100
D2: Leadership	Management	65	74.7	13	14.9	9	10.3	87	100
	Communication skills	61	70.1	21	24.1	5	5.7	87	100
	Training	65	74.7	22	25.3	0	0	87	100
	Trust	64	73.6	23	26.4	0	0	87	100
	Teamwork	69	79.3	18	20.7	0	0	87	100
D3: Competitive advantages	Qualityof human talent	83	95.4	0	0	4	4.6	87	100
	Pricingpolicy	76	87.4	6	6.9	5	5.7	87	100
	Valueadded	76	87.4	10	11.5	1	1.1	87	100
	Organicproduct ion	71	81.6	16	18.4	0	0	87	100
	Organiccertifica tion	58	66.7	17	19.5	12	13.8	87	100
D4: Human Resources	Training	45	51.7	29	33.3	13	14.9	87	100
	Satisfaction	69	79.3	18	20.7	0	0	87	100
	Commitment	73	83.9	9	10.3	5	5.7	87	100
	Participation	22	25.3	13	14.9	52	59.8	87	100

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D5: Productive capacity	Financing	44	50.6	4	4.6	39	44.8	87	100
	Productive technology	15	17.2	28	32.2	44	50.6	87	100
	Compost quality	38	43.7	16	18.4	33	37.9	87	100
	Certified seed	70	80.5	8	9.2	9	10.3	87	100
D6: Business Strategy	Strategic planning	69	79.3	9	10.3	9	10.3	87	100
	Associativity	70	80.5	4	4.6	13	14.9	87	100
	Institutional agreements	32	36.8	55	63.2	0	0	87	100
	Strategic Alliances	34	73.6	14	16.1	9	10.3	87	100
	Productive flexibility	56	64.4	0	0	31	35.6	87	100

Table 4 indicates that the competitiveness in the associations of quinoa producers in the Andahuaylas-Apurímac district, 2019 is at a low level of competitiveness (37.9%); and the other part, producer associations are at a medium level of competitiveness (35.6%) and 26.4% of producer associations are at a high level of competitiveness.

Table4

Levels of competitiveness in the associations of quinoa producers in the district of Andahuaylas-Apurímac,2019

		Frecuency	Percentage	Valid percentage	Accumulated percentage
Valid	Low	33	37,9	37,9	37,9
	Medium	31	35,6	35,6	73,6
	High	23	26,4	26,4	100,0
	Total	87	100,0	100,0	

Table 5 indicates that the levels of competitiveness according to its dimensions such as the leadership dimension, it is evident that there is a low level of *leadership* (70.1%) and only a small percentage (29.9%) of associations have a high level of leadership and in terms of *competitive advantages*, 66.7% of associations of quinoa producers have low-level competitive advantages and only 18.4% of associations of quinoa producers have a high level of competitive advantages; and in terms of *technology and infrastructure* they have a low level (49.4%) and 37.9% of associations have medium level technology and infrastructure and 12.6% of associations have a high level of technology and infrastructure; *the productive capacity* is low (43.7%) but 36.8% of producer associations have a medium level of productive capacity and 19.5% of associations have a high level of productive capacity; Regarding the dimension of *human resources* management, 40.2% of associations have a low level and 20.7% of high level associates have human resources management, however 39.8% of quinoa producer associations have a medium level human resource management; and regarding *business strategies*, 36.8% of associations have a low and medium level and only a minimum percentage of 26% of associations have a high level of business strategies.

Table5

Levels of competitiveness according to the dimensions in the associations of quinoa producers in the District of Andahuaylas-Apurímac ,2019

Dimensions	Low		Medium		High		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage

Technology and infrastructure	43	49.4	33	37.9	11	12.6	87	100
Leadership	61.0	70.1	0	0.0	26	29.9	87	100
Competitive advantages	58.0	66.7	13	14.9	16	18.4	87	100.0
Human Resources	35	40.2	34	39.1	18	20.7	87	100
Productive capacity	38	43.7	32	36.8	17	19.5	87	100
Business strategies	32	36.8	32	36.8	23	26	87	100.0

V. DISCUSSION

After conducting the research entitled "Analysis of the competitiveness of the associations of quinoa producers in the district of Andahuaylas-Apurímac 2019", the results are discussed according to the problem and objectives of the investigation; establishing for this the comparison of the antecedents, bibliographic review and data processing which justify the investigation. In the present investigation, according to table 1, it is evident that 74.7% of quinoa producers are male and 25.3% are female, data that when compared with what was found by Del Valle (2019) in his thesis entitled "The competitive capacity and its incidence in the export of small and medium quinoa producers in the district of Puno-2019" who concluded that 58.8% are male and 41.2% are female, with these results it can be inferred that most of the associates of quinoa producers are male, but it is also worth highlighting the participation as quinoa producers a considerable percentage of female sex, but in the Andahuaylas district there is a minimal percentage of female gender compared to the district from Puno.

Regarding the degree of education of the associates of quinoa producers of the Andahuaylas district, as indicated in table 2, it indicates that of the 100% of producers, 47.1% of associates of quinoa producers do not have any degree of instruction, 41.4% have the grade of complete primary instruction, 11.5% have the grade of complete secondary instruction and 0% of grade of university instruction. Data that when compared with what was found by Del Valle (2019) in his research concluded that their educational level of small and medium quinoa producers of the district of Puno 45.6% have a secondary education, followed by 35.3% have primary education and the 19.1% have higher education, which allowed to identify that in the association of quinoa producers of the Andahuaylas district, most of them do not have any degree of education that could be due to dedication to agriculture, postponing their own education and few quinoa producers alone have a grade from primary to a grade of complete secondary instruction compared to small and medium quinoa producers in the district of Puno, the grade of instruction would be a limitation for the adoption of technology or transfer of knowledge and agricultural technologies, which is that implement adequate and reality-adapted workshops to level that grade gap of Education.

According to the descriptive analysis, the results found in table 3 of this investigation were reached, the characteristics found on the competitiveness of associations of quinoa producers, it was possible to show that in the aspect of technology and infrastructure; 89.7% of producer associations do not have agricultural machinery, 57.5% do not have means of transport, 87.4% of associations do not have computer equipment, 95.4% of associations do not have communication channels, and 50.6% have industrial equipment but almost half of quinoa producing associations never had industrial equipment (49.4%).As for *leadership*. That exists in the associations of quinoa producers described in table 3; 74.7% of associations never carry out procedures, 70.1% of associations of quinoa producers do not have the capacity to communicate with their associates; 74.7% of associations never carry out training, 73.6% of associations never trust their associations and 79.3% of associations never have teamwork..

Competitive advantages. Table 3 shows that 95.4% of quinoa producer associations do not have quality human talent, 87.4% do not agree on price policies and do not provide added value; 81.6% of associations do not carry out organic production and 66.7% of associations of quinoa producers do not have organic certification.

Human Resources. Table 3 indicates that 59.8% of the associates of quinoa producers of the Andahuaylas district have participation in the institutional life of the association of quinoa producers but 25.3% do not participate, and 83.9% of quinoa producers do not. They are committed to the association, and 79.3% of producers are dissatisfied with the associations, 51.7% of producers are not trained and only 33.3% of quinoa producers are trained.

Productive capacity; Table 3 shows that 50.6% of associations of quinoa producers do not have financing, while 44.8% of associations do have financing, and 50.6% of associations have productive technology and 32.2% of associations only sometimes in a while; and 80.5% of associations of quinoa producers do not have certified seeds, 43.7% of associations of quinoa producers do not have fertilizer quality.

Business Strategy; In table 3, 80.5% of quinoa producer associations do not have associativity, and 79.3% of producer associations do not have strategic planning, 73.6% of associations do not have Strategic Alliances and 64.4% of producer associations They do not have productive flexibility and in 63.2% of associations of quinoa producers sometimes have institutional agreements. Data found that when compared with the researcher Del Valle (2019) in his research entitled the competitive capacities of small and medium quinoa producers in the district of Puno, concludes similar to the results obtained in this research, they do not have machinery for field work (97.1%). Their own seeds are supplied for the new campaigns (98.5%), 98.5% are in full certification to have organic production, 88.2% do not have an exclusive environment for the processing of harvested quinoa, 91.2% show the dissatisfaction with the financing received, the Sierra y Selva exporting entity is the main or only provider of information (82.3%), 88.2% do not have sufficient technical assistance, 89.7% declare they have received training and 75.0% of Producers received training in business management. With these results we can infer that quinoa producers do not have institutional support, they do not have management documents such as the strategic plan, they also do not have technical support and training and therefore they do not have the business capacity, and clearly abandonment of the three levels of government and other private entities, and the competitiveness indicators are not strengthened as stated by López and Ramírez (2011), state that the variables to quantify the level of competitiveness of a firm or company are innovation, intellectual capital or human team, quality, technology, market knowledge, research and development, associativity (understood as strategic alliances or cooperative relationships with other companies), business strategies, differentiation, productivity, prices, financial management, organizational culture and service, which lead to being competitive.

According to the *general objective* of the research to determine how competitiveness is in the associations of quinoa producers in the district of Andahuaylas-Apurímac, 2018, The results that are demonstrated In table 4 indicates that the competitiveness in the associations of quinoa producers in the Andahuaylas-Apurímac district, 2018, 37.9% of associations are at a low level of competitiveness and 35.6% of medium level competitiveness and 26.4% of producer associations are at a high level of competitiveness. This allowed us to identify that the level of competitiveness in quinoa producers' associations in the Andahuaylas-Apurímac district is between the low and medium levels of competitiveness and only a minimal percentage of quinoa producers are at the high level. competitiveness. Data that when bought with what was found by Del Valle (2019) in his thesis, who concluded that individual producers present significant limitations to become exporters and according to Sisa (2018), in his research on business associativity and the commercialization of the quinoa in the Province of Andahuaylas, 2016 concludes that 32.93% of producers disagree with associativity, according to these results it is evidenced that there are weaknesses in associativity and associations of producers of quinoa producers are not competitive, this happens as It is stated by Leal and La Barca (2013), their technology lagged behind, difficulty in financing, few commercial links, reduced market participation, conservative management styles, personnel with little training and little willingness to carry out innovation processes and business cooperation and they have achieved a successful development have been supported or developed adequately all the factors described above. And Ferraz, Kupfer and Looity (2004) state "that companies are competitive when they are capable of formulating and applying strategies that lead to a sustained or expanded market position in the industrial segment in which they operate".

According to the *first specific objective* describe how the technology and infrastructure are in the associations of quinoa producers in the Andahuaylas-Apurímac district, The results shown in table 5, that 49.4% of associations have low-level technology and infrastructure and 37.9% of associations have medium-level technology and infrastructure and 12.6% of associations of quinoa producers have a high level of technology and infrastructure data that when purchased with what was found by Del Valle (2019) in his thesis entitled "The capacity competitive and its incidence in the export of small and medium quinoa producers of the district of Puno-2019 "concludes that 97.1% have machinery for field work. These results make us infer the technology and infrastructure of the associations of quinoa producers is at a low level and a part has a medium level of technology, according to Tala (2018), which indicates that the incorporation of technology in SMEs is essential that helps to be current and last over time and that helps to compete side by side with large organizations so that systems are more efficient and that their operations can be optimized and even address an international audience, supporting a culture of innovation.

According to the second **specific objective**, describe how is the leadership within the associations of quinoa producers in the district of Andahuaylas-Apurímac. The results in table 5 show that 70.1% associations of quinoa producers have a low level of leadership and 29.9% of associations have a high level of leadership; data that when compared with what was found by Sisa (2018), in his research entitled business associativity and the marketing of quinoa in the Province of Andahuaylas. It concludes that 53.66% of quinoa producers have leadership and 48.78% of producers do not have leadership. These results lead us to deduce that leadership does not exist in associations of quinoa producers and according to López, Ulibarri and Canto (2017) indicates that "in micro, small and medium-sized companies, good management is required to increase competitiveness, therefore, given the nature of this type of company, a key factor to achieve it lies in optimal leadership "(pp. 2) and according to Hunter cited in Madrigal (2009), he argues that " leadership is the art of influencing people so that he works with enthusiasm in the achievement of objectives for the common good ".

According to the **third specific objectives** to describe how are the competitive advantages in associations of quinoa producers in the Andahuaylas-Apurímac district, the results found in table 5, 66.7% of associations of quinoa producers have low-level competitive advantages and only 18.4% of Quinoa producer associations have a high level of competitive advantages. This result shows us that there is no competitive advantage in the associations of quinoa producers in the Andahuaylas district, which is of importance for all types of companies and associations as expressed by Ediciones Díaz de Santos SA, (1996), maintains that "Competitive advantage is a set of special skills or abilities to consolidate a company that allows the development of one or more differential factors in its operations, products and / or services where it is placed in a preferential position in the eyes of the market"(p. 45).

According to the **fourth specific objective** of describing how human resources are managed in the associations of quinoa producers in the Andahuaylas-Apurímac district, according to table 5, 40.2% of associations of quinoa producers are of low level and the 20.7% have a high level, however 39.8% the associations of quinoa producers of the Andahuaylas district have a medium level of human resource management, these results obtained make me deduce that in the associations of quinoa producers there is not adequate management of human resources management due to the fact that every company depends many times on this area as well as Boyero (2016), establishes that a "motivated and qualified staff contributes to being a highly competitive organization, and there is pleasure in the development of activities and they are offered essential elements to satisfy the needs and expectations of internal and external users" (p.66)

According to the **fifth specific objective** of describing the level of productive capacity in the associations of quinoa producers in the Andahuaylas-Apurímac district, table 5 indicates that 43.7% of associations of quinoa producers have a productive capacity of a level low, 36.8% of producer associations have a medium level of productive capacity and 19.5% of associations have a high level of productive capacity, data that when purchased with what was found by Sisa (2018), business associativity and commercialization of quinoa in the province of Andahuaylas, 59.76% of quinoa producers express the non-existence of productivity. These results obtained suggest that the associations of quinoa producers do not have the productive capacity. Fullana and Paredes (2008) "It states that the potential capacity of a process, an industrial plant or the facilities of a company; in other words, the amount of production that can be obtained with certain available structural means: equipment, facilities, personnel, raw material " (p.342)

According to the sixth specific objective of describing how are the business strategies applied by the associations of quinoa producers in the Andahuaylas-Apurímac district, table 5 indicates that 36.8% of associations have a low to medium level and 26% of associations They have a high level of business strategies. Data that when compared with what was found by Del Valle (2019) in his thesis entitled "The competitive capacity and its incidence in the export of small and medium quinoa producers of the district of Puno-2019" concludes that 75.0% of producers received the training received in business management. According to "Maldonado (2016) states that business strategy is of vital importance for a small or large company, with a good strategy it must integrate the goals, policies, and tactics into a cohesive whole, connected to the vision and mission and trends future projects that make it easier for you to carry out your mission effectively and efficiently".

VI. CONCLUSIONS

1. It was determined that the competitiveness in the associations of quinoa producers in the Andahuaylas-Apurímac district; They are divided into levels since 37.9% of associations have a low level of competitiveness, 35.6% producer associations are at a medium level and the other part of 26.4% of producer associations are at a high level of competitiveness.

2. Regarding the technology and infrastructure of the associations of quinoa producers in the Andahuaylas-Apurímac district, they are between the low and medium level of competitiveness, where 49.4% of associations are at a low level and 37.9% of associations have with mid-level technology and infrastructure and only a minimum percentage of 12.6% of associations are at the high level of technology and infrastructure.
3. The leadership within the associations of quinoa producers in the Andahuaylas-Apurímac district are at a low level of leadership (70.1%) and only a small percentage of 29.9% of associations have a high level of leadership and another part of a percentage of 37.9 % of associations have a medium level of leadership.
4. The competitive advantages in associations of quinoa producers in the Andahuaylas-Apurímac district, 66.7%, of associations of quinoa producers have low-level competitive advantages and only 18.4% of associations of quinoa producers have a high level of competitive advantages.
5. Regarding human resource management in the associations of quinoa producers in the Andahuaylas-Apurímac district, 40.2% of associations have a low level of human resources management, 20.7% have a high level, and 39.8% the associations Quinoa producers in the Andahuaylas district have an average level of human resource management.
6. The level of productive capacity in the associations of quinoa producers in the Andahuaylas-Apurímac district. 43.7% of producer associations are at the low level, 36.8% of producer associations have a medium level of productive capacity and only 19.5% of associations have a high level of productive capacity.
7. Regarding the business strategies applied by the associations of quinoa producers in the Andahuaylas-Apurímac district. 36.8% of associations have low and medium level strategies and only a minimum percentage of 26% of associations have high level of business strategies.

BIBLIOGRAPHIC REFERENCES

1. Abdel, G., & Romo, D. (2005). revistas.bancomext.gob.mx. Obtenido de <http://revistas.bancomext.gob.mx/rce/magazines/76/1/RCE.pdf>
2. Agraria.pe. (03 de febrero de 2019). <https://agraria.pe>. Obtenido de <https://agraria.pe/noticias/exportacion-de-quinua-supero-las-48-mil-toneladas-en-2019-20772>
3. Alic. (1988). Competitividad. Araujo, J., & Brunet, I. (2012). Compromiso y competitividad en las organizaciones: el caso de una empresa aeronáutica. Tarragona, España: Editorial Publicaciones URV.
4. Bejarano, J. A. (1995). La competitividad en el sector agropecuario. Cuadernos de Desarrollo Agrícola.
5. Berdugo, E. (2014). Competitividad: Recorrido histórico, conceptos Y enfoques recientes. Revista de gestión y desarrollo, 157-182.
6. Boyero, M. (2016). El factor humano como elemento competitivo para la organización moderna. Argentina: Universidad Nacional de las Misiones. Cabrera, A., López, P., & Ramírez, C. (2011). ucentral.edu.co. Obtenido de https://www.ucentral.edu.co/images/documentos/editorial/2015_competitividad_empresarial_001.pdf
7. Camacho, W. A., & Gil, D. J. (2017). El dilema de las capacidades productivas en las empresas actuales. Revista Observatorio de la Economía Latinoamericana, 1-12. Cardenas, M. (1944). Descripción preliminar de las variedades de *Chenopodium quinoa* de Bolivia. Revista de Agricultura- Universidad Mayor San Simón de Cochabamba, 13-26. Castrillón, E. (29 de ENERO de 2015).
8. es.slideshare.net. Obtenido de <https://es.slideshare.net/DavidRuiz116/1-conceptos-basicos-asociatividad> Castro, J. (11 de Agosto de 2016).
9. blog.corponet.com.mx. Obtenido de <https://blog.corponet.com.mx/importancia-de-la-tecnologia-en-las-empresas-en-crecimiento>. Chase, R. B., Jacobs, F. R., & Aquilano, N. J. (2009). Administración de Operaciones. Producción y Cadena de Suministros. México: McGraw-Hill. Claver, E., Llopis, J., Molina, H., Conca, F. J., & Molina, J. F. (2009). La tecnología como factor de competitividad: un análisis a través de la teoría de recursos y capacidades.
10. Boletín de estudios económicos. Conalep. (2016). Obtenido de http://sied.conalep.edu.mx/bv3/Biblioteca/Area/Carrera/Modulo/Unidad/345/mtp_adpro02unid.pdf. Del Valle Días, C. E. La capacidad competitiva y su incidencia en la exportación de los pequeños y medianos productores de quinoa del distrito de Puno. Tesis Doctorado. Universidad Ricardo Palma, Lima. Ediciones Díaz de Santos S.A. (1996).
12. Obtenido de <https://books.google.com.pe/books?id=MQYxXLY00hUC&printsec=frontcover#v=onepage&q&f=false>. FAO. (2013).
13. La quinua, cultivo milenario para contribuir a la seguridad alimentaria mundial. PROINPA, 1-66. Ferraz, J. C., Kupfer, D., & Looty, M. (2004). Competitividad Industrial en Brasil. 10 años Después De La Liberalización. Revista de la CEPAL, 91-119.
14. Fullana, C., & Paredes, J. L. (2008). Manual de contabilidad de costos. España: Editorial Delta Publicaciones. García Ramírez, O. (23 de junio de 2015). www.milenio.com.
15. Obtenido de <https://www.milenio.com/opinion/varios-autores/universidad-tecnologica-del-valle-del-mezquital/competitividad-concepto-e-importancia> Heisser, C. B., & D.C, N. (1974).
16. On the origin of the cultivated chenopods (*Chenopodium*). Genetic. Huerta, J., & Rodríguez, G. (2006). Desarrollo de habilidades directivas. México: Editorial Pearson Educación. IICA. (2017).
17. Institucionalidad de apoyo a la asociatividad en América Latina y el Caribe. (I. I. Agricultura, Ed.) San José de Costa Rica. Jacobsen, S. E., & Sherwood, S. (2002). Cultivo de granos andinos en Ecuador. Informe sobre los rubros de

- quinua, chocho y amaranto. CIP y FAO Global IPM Facility. Quito, Ecuador: Abya Yala. Leal, M. E., & Labarca, N. J. (2013). www.redalyc.org.
18. Obtenido de <https://www.redalyc.org/pdf/4655/465545895004.pdf> Ley N° 29337. (28 de marzo de 2009). Ley N° 29337 Ley que establece disposiciones para apoyar la competitividad productiva. el peruano. Lima, Perú: El Peruano. López, Y., Ulibarri, H., & Canto, A. (2017).
 19. La importancia del liderazgo como factor de competitividad en una empresa constructora de Mérida. Instituto Tecnológico de Mérida, Yucatán, México. Madrigal, B. E. (2009). *Habilidades directivas* (2a ed.). México: McGraw - Hill.
 20. Maldonado, G. M. Determinantes e impactos de la asociatividad para el comercio justo. tesis pregrado. Pontificia Universidad Católica del Perú, Lima, Perú. Maldonado, J. A. (2016). Obtenido de https://www.academia.edu/27474767/ESTRATEGIA_EMPRESARIAL.pdf. McFetridge, D. G. (1995). *Competitiveness: Concepts and measures*.
 21. Obtenido de <http://www.economicas.uba.ar/wp-content/uploads/2016/03/CENES15.pdf> Narváez Rodríguez, C. (2014). [dx.doi.org/10.16925](https://doi.org/10.16925). Obtenido de <https://revistas.ucc.edu.co/index.php/co/article/view/971> Pópulo, M., & Gil, r. (2002).
 22. La explosión universal de Sevilla, efectos sobre el crecimiento económico de andaluz. España. Editorial Universidad de Sevilla. Porter, M. (1990). *The Competitive Advantage of Nations*.
 23. The Free Press. Raffino, M. E. (31 de mayo de 2020). [concepto.de](https://concepto.de/competitividad/). Obtenido de <https://concepto.de/competitividad/> Real Academia Española [RAE]. (1992). *Diccionario de la lengua española*. Madrid- España: Calpe. Rojas, P., & Sepúlveda, S. (1999).
 24. orton.catie.ac.cr. Obtenido de <http://orton.catie.ac.cr/repdoc/A5283e/A5283e.pdf> Rojas, P., & Sepúlveda, S. (1999). repiica.iica.int. Obtenido de <http://repiica.iica.int/docs/B0193e/B0193e.pdf> Rojas, W. (1998). *Análisis de la diversidad genética del germoplasma de quinua (Chenopodium quinoa Willd.)*. Valdivia - Chile: Facultad de Ciencias Agrarias. Rosales. (1997).
 25. La asociatividad como estrategia de fortalecimiento de las Pymes. Caracas, Venezuela: SELA. Seoane Linares, M. (2005). *Personas Jurídicas. Principios generales y su regulación en la legislación peruana*. Lima: Grijley. Sevilla, A. (s.f.).
 26. Obtenido de <https://economipedia.com/author/sevillaa>. Sisa Kacha, D. *Asociatividad empresarial y la comercialización de la quinua en la Provincia de Andahuaylas*, 2016. Tesis para licenciatura. Universidad Nacional José María Arguedas, Andahuaylas. Sobrino, J. (2002). *Competitividad Y Ventajas Competitivas. Revisión teórica y ejercicios de aplicación. estudios demográficos y urbanos*, 311-361.
 27. Suñol, S. (2006). Aspectos teóricos de la competitividad. *Ciencia y Sociedad*, 179-198. Tala, C. (24 de mayo de 2018). cristiantala.cl. Obtenido de <https://cristiantala.cl/importancia-de-la-tecnologia-en-las-pymes/>. Tarziján, J. (2008). *Fundamentos de la estrategia empresarial*. Chile: Editorial Universidad Católica de Chile. Ubfal, D. (2004). Obtenido de [economicas.uba.ar](http://www.economicas.uba.ar): <http://www.economicas.uba.ar/wp-content/uploads/2016/03/CENES15.pdf> 1.