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GRUPO AN COOPERATIVE OWNERS' SUCCESSION: FRUIT AND VEGETABLE SECTOR.

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ABSTRACT

The manifestation of the lack of generational renewal, affecting both the agricultural and cooperative sectors, has generated the need to carry out a study that allows us to anticipate to its consequences. Through the devising of surveys to Grupo AN fruit and vegetable cooperative owners and through statistical analyses, we have tried to answer the hypothesis that justifies the aforementioned lack of succession, which is based on sub-hypotheses that explain the causes of this phenomenon. As a result of this analysis we have obtained six owner profiles that are grouped around three behaviors in relation to the generational relay: owners without generational relay, owners with generational relay and owners with potential generational relay.

KEY WORDS

Generational renewal, Social Economy, agriculture, agrarian sector, structural change, cooperatives, Grupo AN.

RESUMEN

La manifestación de carencia de relevo generacional, que afecta tanto al sector agrario como al cooperativo, ha generado la necesidad de realizar un estudio que nos permita anticiparnos a sus consecuencias. Mediante la elaboración de encuestas a los socios hortofrutícolas de Grupo AN y a través de análisis estadísticos, se ha buscado responder a la hipótesis que justifica la falta de sucesión mencionada anteriormente, la cual se apoya en sub-hipótesis que explican las causas de dicho fenómeno. Como resultado de este análisis hemos obtenido seis perfiles de socios que se agrupan en torno a tres comportamientos en relación al relevo generacional: socios sin relevo generacional, socios con relevo generacional y socios con potencial relevo generacional.

INDEX

1. INTRODUCTION AND OBJECTIVES

New day, 8 am, you quickly switch on your China-made mobile phone, open the application designed in Silicon Valley and see what your friends, made during your Erasmus course, are doing in their respective households across the world. This is a clear example of how globalization has reached our daily life, completely changing the way of life of society. Since the end of the XX century, this transformation process is taking place, which until very recently was one of the current issues worldwide. This phenomenon, however, does not only affect the activities that we regularly carry out in our day to day, but it reaches any field that belongs to the human being, and among them, indeed, to the agricultural field. The opening of the global market, the membership to supranational organizations that directly affect the performance of the economic activity, or changes in trends and habits, are causing a socio-demographic transformation that is conditioning territorial development and, therefore, challenging the future of both the agricultural sector and the cooperative, which is closely linked to it.

After the fulfillment of several studies about these challenges by both government agencies and groups related to this guild, certain consequences have been identified that will transform this economic branch. On the one hand, the *Millenial* generation's entry into the labor market, whose segment shows a certain rejection to the agrarian activities and a trend of withdrawal of the rural areas, and the old age prevalent in those that practice it today, causes a fall in the labor supply, which, in turn, calls into question the continuity of many farms. On the other hand, and as a result of a process of globalization and the opening of trade barriers, the market has become more competitive, forcing down settlement prices. This fact is even further aggravated, bearing in mind that, being such an ageing sector, tends to avoid possible investments, especially in technological areas, that little help to get products more efficiently and be a more competitive supplier.

Facing such defiance, Grupo AN, a second-degree cooperative from Navarra, and one of the main companies within the agricultural cooperative sector, identified this challenge and created the academic chair that serves as a platform for carrying out a project, which not only seeks to confirm the aforementioned omens, but rather seeks to decipher how this structural change will affect the future of the Navarre firm's activity.

Therefore, through this Final Degree Project we aim to address, especially, one of the challenges, resulting from this process, which is affecting the future of the agricultural system and causing an unprecedented structural change: the lack of generational renewal. This defiance, we emphasize, appears in a sector whose activity is strongly influenced by natural

characteristics: climatology and environment, economic: loss of regulatory competences, at the same time as it is traded in a liberalized market, and socio-demographic: rural exodus, low birth rates and an ageing population.

To this end, a survey was elaborated and answered by a representative sample of Grupo AN owners. After this, and with the answers obtained, the statistical analyses were carried out, with which we wanted to obtain results that show the current situation that revolves around the company, as well as a forecast of the situation that will be found, above all, in a short-term. Likewise, different profiles of cooperative owners have been identified and grouped in relation to their attitude towards generational relay.

We don't want to conclude this first part without thanking our academic tutor, Katrin Simón, for her involvement in helping us learn about the agricultural and cooperative world; to our colleagues in the department during our internships at the Fundación Grupo AN, Eva Aoiz, Elena Lizarraga, Andrea Hurtado and Sara Esparza, who in every moment lent us a hand by solving any doubt that was emerging and guiding us in the preparation of the survey, providing us a more experienced perspective; to our curricular practices tutors, Maite Muruzábal and Pedro Belzunce, for having given us the opportunity to participate in this project, from which we have turn out enriched and with a knowledge acquired on the sector, which for us, was previously unknown; to the cooperative managers who, from the beginning, have been involved in the study and have supported us to reach the farmers more easily; as well as the farmers themselves, who, with their answers, have allowed the elaboration of this Final Degree Project to be possible.

The same, has been organized as the following way: firstly, we will introduce both sectors agricultural and cooperativism, which play as the background that surrounds the Grupo AN activity, on the one hand, from where the firm extracts its production, and on the other hand, the enterprise system selected, the most characteristic in that field; secondly, we will show the problem statement that is facing these two sectors and that directly affects the company's performance; third, it will be noted the material and methodology used during the study; and then, the results and conclusions obtained from the analyses done.

2. BACKGROUND

2.1. Agriculture

In our first steps through the economic world we started by classifying the economic activities in three sectors: the primary, the secondary and the tertiary. It is in this primary sector and, more specifically, in agriculture where Grupo AN performs and, therefore, which we will deeply develop in the following sections.

In most of the textbooks, as could be an ordinary one from a 3ºESO classroom, like Demos, we are given a sector's definition as the set of economic activities that people perform to obtain natural resources. From that point comes the name "primary", as it encompasses the most basic resources and that can at the same time be the basis of other economic activities. In turn, this sector is made up of agriculture, livestock, forestry, fishing and mining (Albet et al, 2011)

In addition, this set of activities are the oldest known, since they have been carried out since the Paleolithic. Although it was the appearance of agriculture, at the same time as livestock, what gave way to the Neolithic Revolution, in which those who, until then, were nomadic people acquired knowledge in the cultivation of land and this caused them to become sedentary and begin to produce food for their survival. This process was an outstanding progress factor at the time.

Despite having spent more than 6000 years, agriculture is still related to subsistence. According to the Food and Agriculture Organization of the United Nations (FAO), 42% of humanity continue working in this activity in order to survive. Moreover, it should be emphasized that it forms the economy driving engine in most of developing countries.

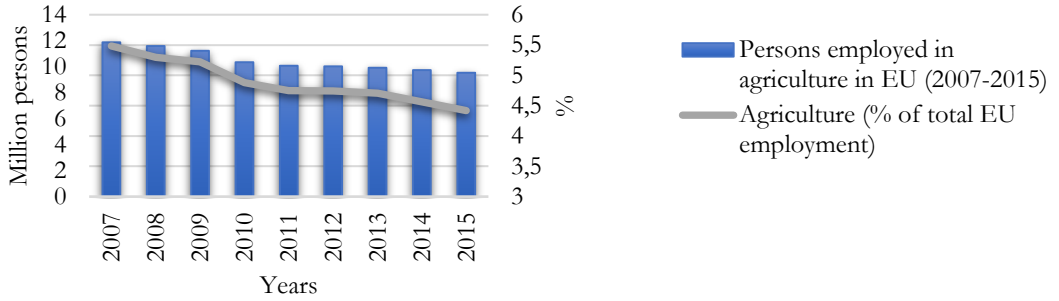
Nevertheless, in the developed Western world, where Grupo AN is located, it is agriculture the one that has been fighting for its survival for a while (Olona, 1993). To this, it should be added, as well as its importance in terms of production and employment, its multifunctional character. This is because the agriculture sector also serves as the food supplier to citizens, helps in the sustainability of the environment and plays a fundamental role in territorial development and maintenance of the rural area (Hierro, 2007).

For all this, in the following sections we will explain the situation that the sector is suffering, starting with the wider environment, the European Union, followed by the national one, Spain and concluding with the closest one, the regional, Navarra.

2.1.1. *Agriculture in Europe*

For better capture Grupo AN's activity and to make a reliable analysis, we also need to understand under which frame performs and how his competitive market is. Hence, we cannot disregard the importance to belong to a common market, since the European Union "is the natural framework for political and economic development in our country" (MAEC, 2015).

Graph 1: Persons employed in agriculture in EU (2007-2015)



Source: Own elaboration, data extracted from European Commissions, Eurostat (Labor Force Survey)(2017)

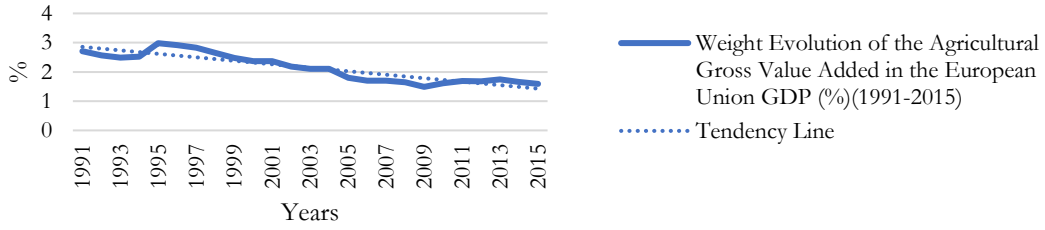
The 1st January 1986, Spain became part of the European Union (EU), as result of a stony process[1]. This fact supposed a complete change in the running of the Spanish agricultural sector, above all, because of the common prize system, the transfer of the relevant decisions faculties to Brussels, a tough legislative adaptation process and the implementation of the Common Agricultural Policy (CAP). This last must be highlighted due to the key role that is carrying out, providing a stability in the whole processed food sector, one which tends to be uncertain, among other things, because of its climatology dependency (Badosa, 2005). Furthermore, it is strengthening the food security and employment. In fact, it seems that figures support him, since with a mere representation of a 1% of the total EU public expense, it is helping to supply employment in agriculture to more than 9,5 million people, which means a 4,4% of the share in employment civilian working of EU population in 2015 (Graph 1), whereas in the whole food processed industry, the figures are even higher; around 30 million people employed, translated into a 13,4% of the total EU working population, and meaning a 3,5% of the European GDP[2].

[1] In 1977, the Spanish government launched the inclusion petition, which gave rise to a host of negotiations that didn't finish in successful agreements. Comparing with the rest of state members, the Spanish agricultural sector had such a huge size that its enter had to be carefully analysed. That caused a paralysation and the appearance of internal problems at a European level. Eventually, through a series of treaties (Stuttgart, 1983 and Fontainbleau, 1984), the lead on to the incorporation of Spain into the European common market was achieved. (MAPAMA, 1986).

[2] European Commission; Agriculture and Rural Development Report 2013 (Data extracted from Eurostat).

Even so, everything that glitters are not gold, since, although beforehand all the data seems to be positive, it is true that the sector's trend in the last decades has been decadent. Starting from the graph we have just seen, although the employment figures are high, we can see how in recent years the number of employed in the sector has been drastically reduced, from almost 12 million to 9,5, suffering a loss of a 1% within the total EU employment, in only 8 years. Moreover, as it is shown in Graph 2, the weight of agriculture in the gross value added of the European Union GDP has been decreasing reaching 1.5% in 2009, with a slight upturn due to the crisis' years that affected in a more forceful way to other sectors but that doesn't prevent that currently is still prowling that percentage.

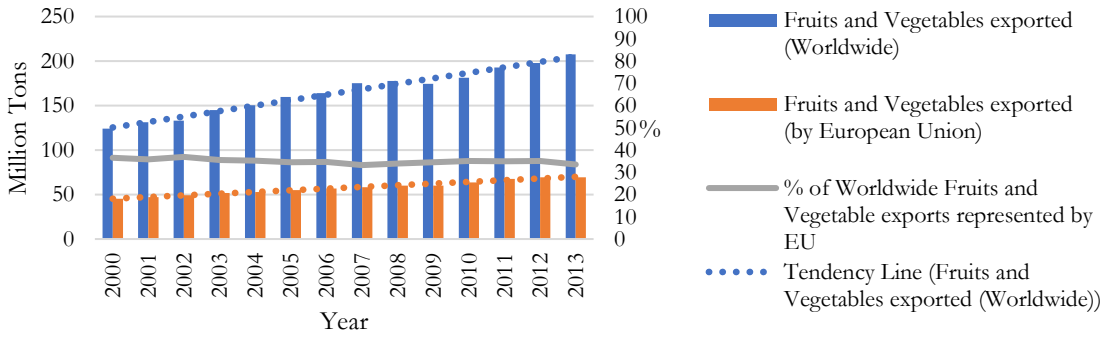
Graph 2:Weight Evolution of the Agricultural Gross Value Added in the European Union GDP (%)(1991-2015)



Source: Own elaboration, data extracted from World Bank (2017)

Regarding land, we can see in Table 1 (Appendix) that between 2005 and 2013, the Useful Agricultural Area (UAA) was not only maintained, but slightly increased, by a 1,52%. Nevertheless, the number of farms has been drastically reduced, by a 25,16%, over the same period. These figures make us corroborate the agrarian property concentration phenomenon that is taking place, in which large farms are gradually absorbing the small ones (Borras Jr. and Franco, 2013), and which, in a certain way, has affected the sector employment.

Graph 3: Export of Fruits and Vegetables (2000-2013)



Source: Own elaboration, data extracted from FAOSTAT (2016)

Lastly, and referring to the specific subject of this analysis, it is required to stand out that Europe is the world's largest exporter of fruit and vegetable products, meaning a third of the world's exports (70 of the 207 million Tons), as we can see in the Graph 3. Besides, we must

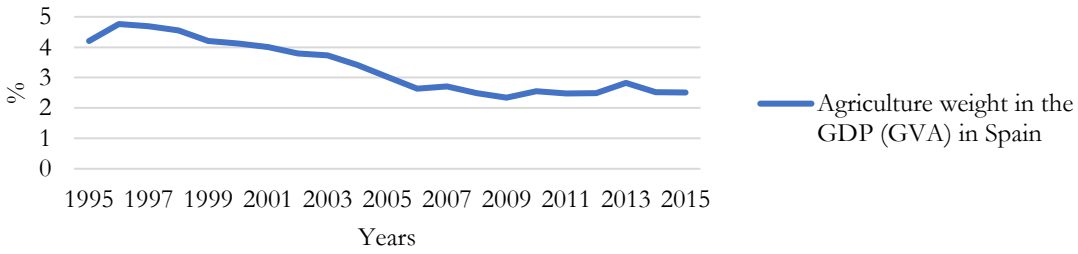
highlight the relevance of the European agricultural industry's output, surpassing the EUR 400.000 million in 2014 (EUROSTAT).

2.1.2. Agriculture in Spain

After the analysis, we have done, on the agricultural sector in Europe, we will go down one level below, to the national level. In this section, we will see the situation of the aforesaid sector in Spain.

Firstly, and in relation to the previous content, we will highlight the importance of Spanish agriculture within the European Union (EU). As can be seen in the Table 1 (Appendix), Spain stands for the 8.90% of European farms in 2013, having increased by a 19.46% its weight in the EU since 2005, although falling by 10.60% within our borders. Furthermore, in that same year (2013), it had the 13.34% of the UAA being the second country within the Union with the greatest number of hectares dedicated to the agricultural activity, more than 23 million, being in turn, almost half of the Spanish territory. If we look at the agricultural products' output, we see that the weight of Spain in the European count has been declining in recent years, assuming in 2013 a 10.87%, around the € 36 billion, but, at a national level, in the period 2005-2013 has experienced an increase of the 7%. We finally pull out from the table that, in Spain, the agricultural sector has also suffered a notable loss on employment. Since 2005, 179.090 jobs have been lost, meaning a reduction of a 18.04%. However, at European level, employment in Spanish agriculture has increased its weight from the 7.97% to the 8.56% in the period previously indicated, which illustrates that in other European countries the sector has suffered this phenomenon more forceful way.

Graph 4: Agriculture as a GDP% (Gross Value Added) in Spain



Source: Own elaboration, data extracted from World Bank (2017)

Another important fact that well reflects how is the sector's condition in the national economy, is the percentage with which the agriculture contributes to the Spanish GDP. In the Graph 4 we see that the agriculture relevance has been gradually declining, although, as it also happened in the European context, it had a slight rebound in the economic crisis period. Notwithstanding, if we adhere to the figures, we see that in the last 20 years it has

changed from representing the 5% to the 2.5% of Spanish GDP (measured by the Gross Value Added (GVA)).

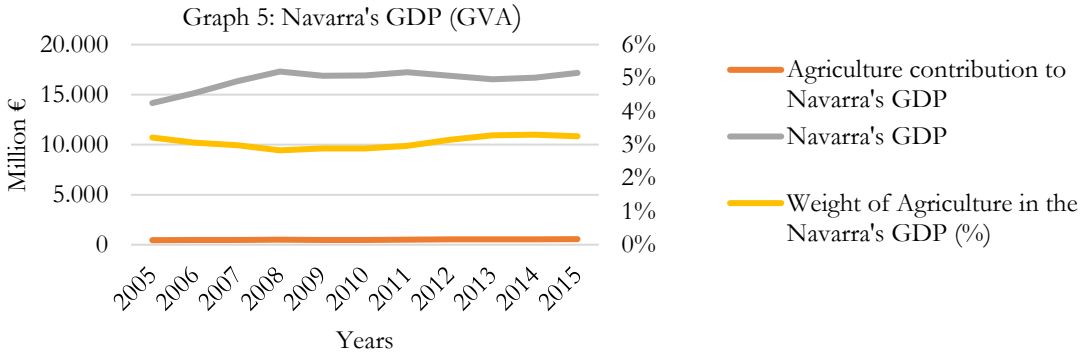
In any case, although its value has been reduced, the sector does not give up in providing us positive data in terms of foreign trade. In 2015, exports of processed food products increased by a 7.5%, a record figure never obtained in the balance sheet of the Spanish Foreign Trade, being the 4th largest exporter of these products at European level (MAPAMA, 2016).

It should be noted, ending, this way, this section, the importance of fruit and vegetable products has acquired to achieve such results, and above all, of their value increase since in 2016, the Spanish fruits and vegetables sector invoiced € 17.272 million, meaning the 36.9% of the total agricultural national products.

2.1.3. Agriculture in Navarra

As the *Sociedad de Desarrllo de Navarra* (SODENA) pointed out in its publication *Guía para invertir en Navarra*: "The good reputation of the food and agriculture sector in Navarra is important for the strategic development of the community. The potential growth of this sector is high, given its capacity to generate wealth and employment. Navarra is one of the leading agri-food clusters in Spain". In this section we will see how, indeed, the agricultural sector, as this important public financial instrument affirms, count with a remarkable relevance in the Navarra's outlook.

Graph 5: Navarra's GDP (GVA)



Souce: Own elaboration, data extracted from Table 2 (Appendix)

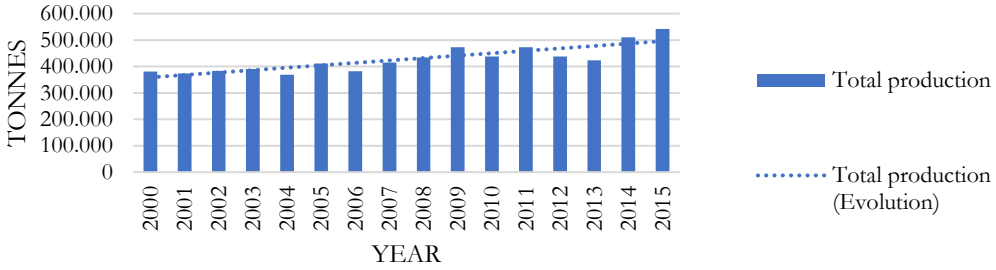
We start by mentioning that, as was the case at national and European levels, and resorting again to Table 1 (Appendix), we see that between 2005 and 2013, the number of farms in Navarre has dropped by a 15.91%, setting in 14.960. This may be due, in part, to the reduction of the Useful Agricultural Area (UAA), although this one, to a lesser extent (7.11%), being fixed at 546.890 hectares in 2013, which represents more than half the surface of the Regional Community.

Turning now our attention to the Navarre macroeconomic figures, we see in Graph 5 how the Gross Domestic Product (GDP) of Navarra (measured by the Gross Value Added (GVA)) has been increasing and, unlike Spain and Europe, the agricultural sector has grown approximately in a similar measure. This has allowed its weight within the provincial GDP, to have been positioned around the 3%, with a slight increase of 2 tenths from the years in which the economic recovery began. Nevertheless, if we take into account the totality of the agri-food sector, it is praiseworthy to see how in 2016, it represented about 8% of the total Navarra GDP, and, at the same time, 11.10% of the total production of the region (Gobierno de Navarra, 2017).

Looking now at the contribution of agriculture to the labor market, we see that in the overall calculation, the trend has been decadent. As in Spain and Europe, employment has tailed off over time. Despite this, we see that its weight in this market has remained more or less stable, around 4.3%, which shows us that, and as we have seen in the section about cooperativism, bearing in mind its influence in the agricultural sector in the Regional Community, it has endured tight even in times of crisis.

Finally, and to conclude with the agriculture topic, we have to emphasize the exporting character of Navarra. In the last 10 years, it has managed to have a positive foreign trade balance related to agricultural products. Moreover, this balance has been increasing year by year, from € 64 million in 2006 to € 496 million in 2015. Much of this is blamed on the fruit and vegetable sector. In 2016, these products accounted for more than a third of the products marketed abroad. This is due to the high volume of production, 542 million tons in 2016, and as we see in Graph 6, has followed an upward trend, which seems not to have an end.

Graph 6: Fruits and vegetables production (2000-2015)



Source: Own elaboration, data extracted from Table 2 (Appendix)

As we have just seen in these sections, agriculture is not only a basic element of our daily life, but still having a relevant weight within the main macro-magnitudes of any territorial level. However, over the years, this sector has been pushed into the background, and made it somewhat fragile. This fragility causes social problems to arise, and then, the need to be

intervened. To that end, what is known as Social Economy has begun to concentrate efforts in this sector to such an extent that one is not conceived without the other (Cittadini, 2010).

2.2. The Social Economy

In 1776, Adam Smith already metaphorized the economy as an invisible hand that enabled the achievement of maximum social welfare through self-interest. However, over the time course this hand has become more of a "devilish claw" that spreads inequalities and, therefore, problems as fateful as poverty or famine. This makes that the term "Social Economy "awakens in us an idea of "another way to make economy; more social and human", which will be a faithful reality reflection (Chaves, 1999).

The Social Economy, also known as "Third Sector" owing to its classification as the intermediate point between the private and public economy, has its origins in the greats ideological trends of the XIX century (socialism, anarchism, …) and being eventually defined and studied by renowned authors like John Stuart Mill and Leon Walras. It was born to answer to the social problems that rose since the Industrial Revolution's early ages, but that would be further exacerbated by the settlement of the capitalist model, also adding a socio-cultural side to create a group belonging feeling, which included on the one hand a collective identity and on the other hand with a common purpose; to break with the capitalism that was making a dent in that moment (Guridi and P. de Mendiguren, 2014).

Nevertheless, in the post-war era, the Social Economy was adapted according to the Fordist characteristics that reigned at the time, setting moderately aside that political-claiming character in favour of certain aspects that prevailed in the economic sphere linked, above all, to the competitiveness and efficiency (Guridi and P. de Mendiguren, 2014).

Even though it is in the 70's, when it ends by building up a clear definition of what we understand nowadays as Social Economy. Fruit of the famous 1973 oil crisis, which would be followed by a strong collapse of the whole economic model, caused that the States were incapable of exercising the one that was their function as main invigorating and economic regulator that ended in a strong lack of employment. In such a context, a strong mobilization for the generation of self-employment and solidarity between the different economic mediums arose (Guridi et al, 2008).

In these years and as a result of the set of cooperative, mutualist and associative movements, is born in France, the *Comité National de Liaison des Activités Mutualistes, Coopératives et Associatives* (CNLAMCA). Through its Charter of the Social Economy, published in 1980, they would provide us the definition of Social Economy that up to now is still being the most recognized; "group of organizations that don't belong to the public sector that, with

democratic operation and management and equality in rights and duties between the partners, possess a special property ownership and profits distribution, employing the year surplus to support the firm's growth and the improvement of owners' services and society" (Chaves and Monzón, 2007).

This evolution has led to the fact that nowadays this "Third Sector" is benefiting from a significant relevance in the worldwide economy. If we turn this weight into figures, we can see how in the European Union, for instance, this sector was providing more than 14 million jobs in 2010, which represented, accurately, the 6.53% of total salaried jobs and closing a growth rate of 26.79% since 2003, corroborating that this sector is not only prepared to resist the crises, but even taking profit to generate employment (Chaves and Monzón, 2007). At a national level, we have 43002 entities within this sector, which are generating 2.230.781 direct and indirect jobs, 12.5% of total employment and meaning a 10% of Spanish GDP (CEPES, 2017).

Finally, and without leaving our borders, we conclude by pointing out that the Spanish Law groups the following types of organizations within the Social Economy; Labor societies, special employment centers, insertion companies, fishermen's guilds, foundations, mutual societies, associations and, the one which we will be studied more deeply, cooperatives (CEPES, 2017).

2.3. Cooperativism

Etymologically, the word "cooperativism" has its origin in the cooperation, which consists on a work done in a common way and carried out by a group of people with aim is the achievement of a shared objective. Since its infancy, human being has cooperated, for instance, to something as basic as to be nourished. The primitives already joined in groups and they divided different tasks; some hunted, others were in charge of light a fire, and then the rest cooked. Therefore, cooperation has allowed human being to develop, since through it, specialisation could be attained, what helped to cause the start of the evolutive process.

However, it is not possible to speak of the cooperative movement as an economic activity until the birth of the social economy, and the thing is that, for a long time, both terms have been conceived almost as the same. Such is the relationship that unites them that, even today, cooperativism still representing the social economy's backbone (Chaves, 1999).

Therefore, as we have done with the Third Sector, we should go back to the beginning of the XIXth century to see how the first cooperatives began to emerge in England as a response of the industrial workers to the harsh living conditions they suffered. But it was in 1844 when modern cooperativism was born as a result of a strong influence of socialist and

anticapitalist thought trends on the cooperative movement, especially through several studies done by leading economists such as Owen, Thompson, Buchez, Fourier, Proudhon, Blanc, King, Raiffeisen or Schultze-Delistz, together with the creation of Rochdale's pioneering cooperative[3] (Monzón, 2003).

This cooperative has been gaining historical importance since the cooperative principles, which it has promoted, have been adopted by the different cooperatives, regardless of their category, until nowadays, representing the root from which the International Cooperative Alliance[4] is born. This way, the following 7 principles can be identified by which they are regulated and which form the basis of the cooperative movement[5]: free and open adhesion and withdrawal (open door principle); The democratic control of the owners (one man, one vote); The economic participation of these owners; Autonomy and independence; Education, training and information; The compromise between cooperatives; and Commitment to the community (Poirier, 2014).

Nowadays, cooperatives continue to represent that alternative form of business activity that has little to do with capital companies (S.L. and S.A) but also with the concept that once was. Given the development of the competitive market economy and the process of globalization that has been taking place for some decade, cooperativism has had to break away from the revolutionary character that stood out in its infancy to conform to the prevailing economic models of today. Still, maintaining their core values and principles have served to make cooperatives a strong and consolidated business organization (Monzón, 2003).

In addition, depending on the social object it pursues, we could classify them as cooperatives of associated work, consumers and users, housing, services, sea, transport, insurance, health, education, credit, community exploitation of land and, the one on we will focus, since our company belongs to such group, the agricultural.

Agricultural cooperatives are currently standing out due to their formula considered as the most appropriate to face the threats and weaknesses of the agriculture sector. This is possible because they are able to implement both differentiation strategies based on high

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[3] The well-known "Rochdale Equitable Pioneers Society" was a consumer cooperative (which they would use to avoid intermediaries' speculation) founded by 28 workers, of whom 6 were Owen's disciples, who were unemployed. It was the first to distribute surpluses among the different partners (Lezamiz, 1994).

[4] Formed in 1895, it is a non-governmental organization that assembles and acts on behalf of cooperatives around the world. At the same time, it manages the overall management of the Declaration on Cooperative Identity, ensuring the correct interpretation of cooperative values and principles (De Miranda, 2014).

[5] These principles are the result of the different adjustments that have been underway in the Paris Congress of 1937, the Vienna Congress of 1966 and the Manchester Assembly of 1995.

quality and strategies to reduce production costs by concentrating the agricultural supply. In turn, the union of farmers through the establishment of cooperatives allows them to increase their bargaining power with commercial distribution companies (Campos and Chaves, 2012).

In the following subsections, we will see which is the situation of the cooperative sector in the different frameworks where Grupo AN performs, to end with a review of the internal situation of the company.

2.3.1. Cooperativism: Europe

We will begin by expounding on the situation of cooperativism to the more general framework in which Grupo AN performs, the European Union (EU). To do this, we will make use of the report done by the International Cooperative Alliance in 2016.

Firstly, we are shown that cooperativism has a total of more than 127 million members (owners) in Europe (in 2015), which means that 1 out of 5 people in the EU belongs to a cooperative, and such number has increased since 2009 by a 16%. In addition, it provides direct employment to more than 4 million people, about 2% of the common area total employment.

Secondly, we can observe that the number of cooperative enterprises was closed in 131.090, and with an annual turnover that slightly exceeded the 990€ billion, a figure that is located far above from GDPs of countries like Netherlands or Turkey. Moreover, the cooperativism makes up the source from where a 5% of the EU GDP is generated.

Focusing more on the agricultural cooperative model, we see that they represent the 30,36% of the total. Nevertheless, they are only composed by the 6,93% of the total number of members, but with a higher weight in generating direct employment, as it provides the 14,16% of the whole cooperativism sector. Finishing with this part, we should also highlight that agriculture is the sector in where cooperativism achieve its highest figures related to the cooperative annual turnover, 347€ billion (more than the 39%).

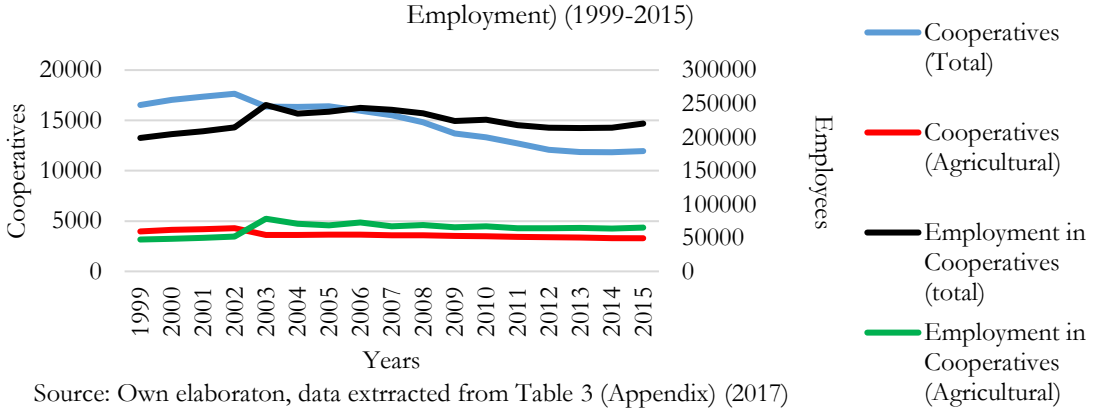
2.3.2. Cooperativism: Spain

In this section, we will descend one step ad study how is the situation of cooperativsm at the national level.

First of all, and turning to Graph 7, we see that the number of cooperatives has been reduced since the beginning of the century, from more than 17.500 cooperatives to around 12.000. However, the employment generated by cooperativism figures have not followed the same trend, and more if compared to the total of the Spanish economy. We see how the evolution of employment in cooperatives has remained more or less stable, being

noteworthy, its resistance in times of crisis, which reinforces the theory of the countercyclical behavior of cooperativism, which argues that in economic recession, it is given a refugee effect of employment in cooperatives (Díaz and Marcuello, 2010).

Graph 7: Total and Agricultural Cooperatives in Spain (Number and Employment) (1999-2015)



Source: Own elaboraton, data extrracted from Table 3 (Appendix) (2017)

This theory holds greater importance, if possible, if we emphasize in agricultural cooperatives. As we see in the same graph, these cooperatives have also maintained a singular stability over the last years, both in number of registered societies and generated employment. Nevertheless, this cooperative subsector has increased its weight with respect to the others. And it is that, as we see in Table 3, in the recent years, agricultural cooperatives have gone from meaning the 24% to the 27.5% of total cooperatives. Whereas, in employment figures, the increase was even greater, from almost, also, 24% to more than 29.5%. All this has favored that in 2014 this cooperative sector closed with very positive data. On the one hand, its turnover was equivalent to 64% of the value of the final agricultural production. On the other hand, it represented 17% of the total revenue generated through the Spanish processed food exports (Cooperativas Agro-alimentarias España, 2017).

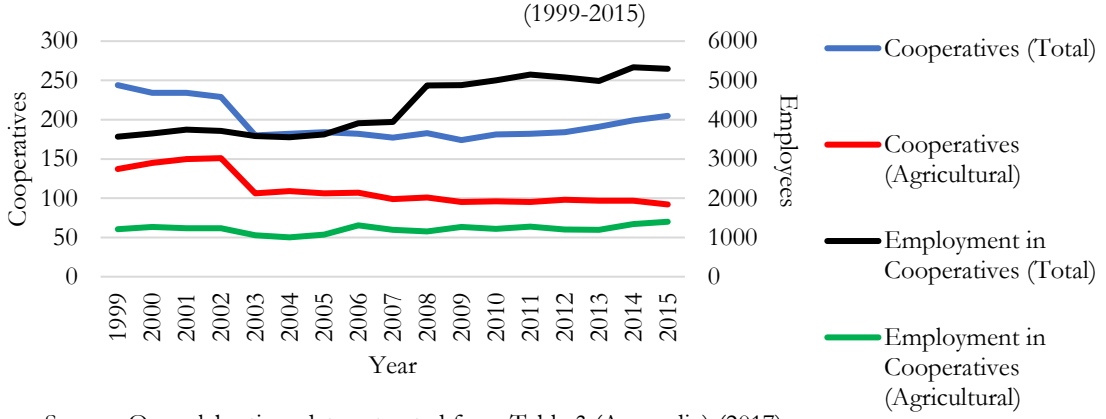
Finally, it may be highlighted the unequal distribution given in the national agricultural cooperativism. The 74% of the cooperatives are located in only 6 Autonomous Communities (Andalucia, Castilla La Mancha, Castilla y León, C. Valenciana, Cataluña and Extremadura), while Navarra, the community in which our company is located, counts on only a 3%. %. In the following section, we will focus on the situation found in this region.

2.3.3. Cooperativism: Navarra

To begin, we must highlight the distinctive feature that characterizes the region related to its legal distinction with respect to the rest of the national territory. And is that, in Navarra, the voting system differs from the rest of the regions, considering the business volume an owner has within the cooperative to assign proportionally the rights it will have in the assembly. This way, the good activity performance will be rewarded, encouraging the effort

and the efficiency (Ley Foral 14/2006). Nevertheless, we see that in Navarra the same phenomenon, which we find in the national panorama, has been given. On the one hand, and as we see in Graph 8, in the agricultural cooperatives, the number of companies has not stopped declining due to the growing mergers between them. On the other hand, the total number of cooperatives has also been reduced, but there is a slight recovery from the start of the 2008 financial crisis. As we saw in the previous section, cooperatives are used by workers to maintain the employment, and in Navarra, there were many who, after their companies declared themselves in state of insolvency, decided to begin a process of transformation towards the cooperative labor system (Plan de Economía Social de Navarra 2017-2020, 2017).

Graph 8: Total and Agricultural Cooperatives in Navarra (Number and Employment) (1999-2015)



Source: Own elabration, data extracted from Table 3 (Appendix) (2017)

Thus, the employment figures of cooperativism are a faithful representation of this, having grown in this time period (1999-2015) by almost a 50%, although the agricultural has only grown in a very moderately way, but having effectively resisted the crisis.

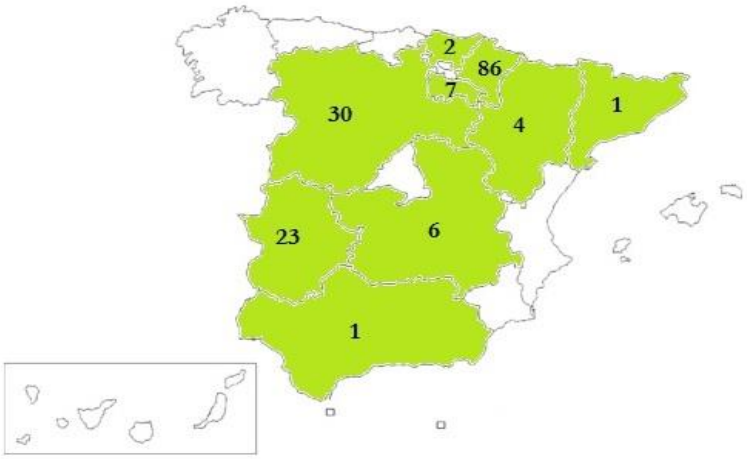
Lastly, we want to highlight another figure that seems relevant, the large turnover achieved by the agricultural cooperativism, which is located around the 1100 million euros, and where more than half comes from the Grupo AN performance (Unión de Cooperativas Agrarias de Navarra (UCAN), 2015).

2.3.4. Cooperativism: Grupo AN

We are now preparing to present a brief review of the main axis of our study, the company whose problematic we are studying, Grupo AN.

To do this, we go back to 1910 when the Social Catholic Federation of Navarre was born, first name with which the society would count, and whose purpose was to centralize the fertilizers' purchase and to provide a credit section for the 96 agricultural cooperatives belonging to the Region (Grupo AN, 2017).

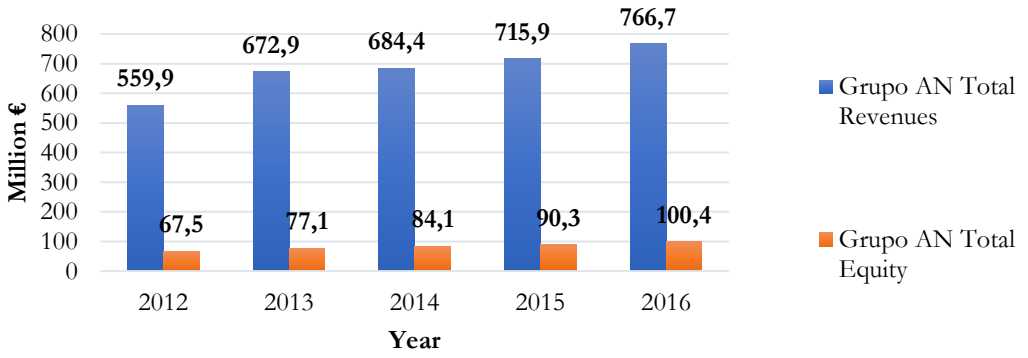
Picture 1: Number of Grupo AN Cooperatives in Spain (2016)



Source: Own elaboration, data extracted from Grupo AN, 2017.

More than a century later, we find a second-degree cooperative grouping a total of 160 cooperatives distributed throughout the national territory, as we can see in Picture 1, and reaching around 30.000 cooperative owners, representing an increase of more than a 30% since 2014, when the number of owners was 23000 (Beroiz, 2016).

Graph 9: Grupo AN Revenues and Equity (2012-2016)



Source: Own eaboration, data extracted from *Acción Cooperativa* (2016)

With € 766 million of revenues in 2016, as shown in Graph 9, which represented an increase of more than 7% over the previous year, Grupo AN has reached to close that year with an equity of more than 100 million €, that allows it to make investments without having to turn to external financing, which also gives it a great business strength. With this, the cooperative from Navarra carries out operations to obtain new innovative products (R&D) with which to increase in quality while trying to set a cost reduction policy. Furthermore, it has also managed to increase, in the last year, its number of employees by a 4.5%, reaching 1525 workers, which clearly shows the need of labor force in order be able to carry out such volume of operations applied in the exercise of its activity. If, as we have done in each previous section, we focus on the data found in the fruits and vegetables sector, we see that

in this department, Grupo AN stands out, having gone from commercializing 140.000 tons to more than 500.000, reaching, in monetary terms, € 70 million, becoming the cooperative with the largest volume of sales in that field. This growth is due, in part, to the internationalization process through its brand *Dantza*, whose exports have increased by 20%, and because of the incorporation of cooperatives in communities such as Extremadura or Castilla y León, that fostered this rise (Beroiz, 2016).

Lastly, and concluding with the study of the society's background, it should be pointed out that thanks to have attained such a dimension in the revenues volume, to group cooperatives located throughout the national territory and to focus the offer towards an international framework, Grupo AN achieved the recognition to be named Priority Associative Entity (PAE), which allows cooperatives and farmers members to obtain priority and more aid in public calls (Cano, 2015).

3. PROBLEM STATEMENT: LACK OF GENERATIONAL RELAY

Nowadays, as we have seen in the previous section, even its multifunctional character that allows agriculture to be determining in the territorial development and being the supplier of the basic products, the sector is suffering a noteworthy loss in weight within the economy in every level (Molinero, 2006). This fact also affects to such a linked sector as it is the cooperative, where the number of firms is reducing (Baamonde, 2003). Therefore, we are realising that the agriculture is facing a structural changing process, which directly influence to the cooperative atmosphere, above all, in developed countries. Although, the most relevant factors are appearing in a global context (Dirven, 2013), and whose consequences will end up in the challenge we will study during this Final Degree Project: the lack of generational renewal. When we talk about generational renewal, we are meaning to this process in which the both the property and management of the holding are being transferred to a new generation (Perrachón, 2012). This fact will be the base of our null hypothesis studied, but within the Grupo AN framework (and according to the statistical population selected, as shown in the following section).

H0: There is no guarantee that there will be a generational relay in the Grupo AN fruits and vegetables cooperative owners.

At the same time, this null hypothesis will be based on sub-hypotheses that explain what factors affect whether or not this relay is given and which will be grouped according to the character to which they refer: social, economic, farm and investment.

3.1. Social factors

In this first sub-hypothesis, we are summing a blend on demographic changes that are causing a restructuration of the sector (collected in Table 4.1.). First and foremost, the phenomenon that has appeared in the last years and already threatening society, the population ageing[6]. Caused by low fertility rates and the rise in life expectancy, this problem will be the critical root from which will born the studied issue, generational renewal (Hierro, 2007).

TABLE 4.1.: SUB-HYPOTHESIS, EXPECTATIONS AND THEIR INFLUENCE

VARIABLES	SUB-HYPOTHESES	EXPECTATION	INFLUENCE ON GENERATIONAL RELAY
SOCIAL CHARACTER			
Gender	There is sector's masculinization.	+	-
Age	There is sector's ageig.	+	-
Offspring	There could exist generational replacement.	-	+
Offspring's age		-	+
Offspring's education		+	-

Source: Own elaboration

In order to support that the aforementioned fact is really occurring, we came up with Table 5 (Appendix). We can see that in every frame (EU, Spain and Navarra) where Grupo AN is carrying out its activity, the tendencies fulfilled. Indeed, the weight of population older than 65 years' percentage is continuously increasing. We should bring out that in Europe, in this 10-years-period, the weight has grown by a 11,45%[7], while in Navarra has also grown but in lower extent, by a 4,44%[8]. Regarding life expectancy, it has increased by around 3 years in developed countries, being in developing ones even much greater. The fall in disease mortality or the rising of healthy habits are some of the main reasons that caused that propensity[9]. Lastly, at any level, we are facing so low fertility rates that the substitution[10] one

[6] Which, in the future, will lead to some demographic unprecedented changes, restructuring society since its infancy.

[7] 2005-2014 EU population >65 years' variation rate extracted from EUROSTAT

[8] 2005-2014 Navarra population > 65 years' variation rate extracted from EUROSTAT

[9] Some of the conclusions extracted from the study done by more than 700 University of Washington researchers for the British magazine, *The Lancet*.

[10] The least fertility rate needed to be achieved in order to keep a population indefinitely without diminishing its volume.

(2,1 children per woman) remains too far, which is alarming. Brought about by uncertainty associated with unemployment, increase in birth cost, contraceptive measures improvements and a change in society preferences to the "better spent on oneself", added to the previous ones, have lead, as we have said, on an unprecedented population ageing. Besides, the future predictions foresee a 10% rise in the median age of the European Union population between 2015 and 2050, almost reaching the 47 years old (EUROSTAT, 2017).

Concluding with that part, another critical fact and that could be extracted from Table 6 (Appendix) would be the sector's masculinization. We notice that in both classifications (1000 and 500 inhabitants) the trend has been the same. Around twice as many females than males have left the countryside, what in the future will keep helping in the decline on the number of families, and therefore, on the number of farmers. Because of all that we formulate the following statement:

H0.1.: There are social factors that can influence the Grupo AN owners' generational relay.

3.2. Economic factors

In this second sub-hypothesis, summed up in Table 4.2., we firstly stand out some other problems that are affecting more directly the rural medium and, consequently, to the agricultural sector.

TABLE 4.2.: SUB-HYPOTHESIS, EXPECTATIONS AND THEIR INFLUENCE

VARIABLES	SUB-HYPOTHESES	EXPECTATION	INFLUENCE ON GENERATIONAL RELAY
ECONOMIC CHARACTER			
Economic activities	There is Farmer on Full-Time (FFT)	+	+
Farm continuity	They will continue with the farm activity in the future and if it is planned the generational replacement.	-	+
Main productions	They produce cereal in addition to fruits and vegetables	-	+
Aids and payments	They get aids and if they insure their farms	+	+

Source: Own elaboration

It is well known that since the second half of the XX century the "rural exodus" phenomenon was shown up. That fact is still being present nowadays, as we see in causing the progressive migration from small rural areas to big industrialised ones and, therefore, a depletion of

employment related to agriculture. Between the main causes, we could find the human capital surplus as the result of the land mechanization, the emerging attraction towards urban areas because of the job supplied, higher salaries and better working conditions and the desire to live in a more cosmopolitan environment and with access to a more leisurely life (Hierro, 2007).

In Table 6 (Appendix), we can see some figures that reinforce the flow of migrants to urban areas. In this case, it refers to the population changes happened in Navarra in the last 20 years. First of all, we can realise that, between 1996 and 2016, the population in the region increased by a 23,07% (more than 120000 inhabitants). Nevertheless, in the rural area the tendency has just been the opposite. If we focus in the range of villages with less than 1000 inhabitants, population has decreased by a 5,08%, being even more critical in those with less than 500, where the variation population rate has been -6,81%.

This number will also be reduced, because new activities are setting up, especially rural tourism, which are capturing the human capital provided, above all, by the young people that are staying (Hierro, 2007).

All that is doing, as we have pointed out at the beginning, that a restructuring of the sector is taking place. The aforementioned ageing, together with the increase on economic costs carried out by performing the activity, the characteristic sacrifice that accompanies the activity and the technological development, which allows machinery for making most of the work that was formerly done by man, has made that agriculture have gradually lost economic weight.

Furthermore, and claiming to a global level, the progressive world trade liberalization is weakening the sector, since it means an increase in supply (of agricultural products, in this case) and then in competence, causing a price fall due to, above all, the low costs carried by the developing countries[11]. Because of that, we have to point out measures in a European frame, as the reforms concerning to the Common Agricultural Policy (PAC) that are being done[12], which are also affecting the sector's performance (Hierro, 2007).

Finally, owing to the emerging concern related to the environment and climate change, the authorities are launching demanding initiatives and measures, in one hand necessary for

[11] Not just because of low wages but due to the lack of health and quality inspections.

[12] Concerning the conversion of decoupled aid into a multifunctional aid system, the consolidation of the two CAP pillars; direct aid (market policy) and rural development financing, as well as of the World Trade Organization (WTO) tools. Finally, a more integrate, oriented and local focus on rural development, concentrating on competitivity, innovation, knowledge and the incorporation of young farmers.

a sustainable utilization of resources, but in the other hand a push up in operating costs that further hinders the obtaining of a competitive product.

H0.2.: There are economic factors that can influence the Grupo AN owners' generational relay.

3.3. Farm factors

In this third sub-hypothesis, we refer to the farm characteristics (Table 4.3.). Introducing it, we start by saying that what is defining this century entry is the quick technological development, what is allowing the creation of new machinery and facilities, which is helping to achieve a notable increase in productivity simultaneously to efficiency (Jiménez, 1993). Nevertheless, it wouldn't be fair to give the whole acknowledgement to this development, since the combination of properties has also played an important role in this topic, as it represented a profitability improvement through a more efficient use of production facilities mainly due to the reduction and merger of properties and to the increase of their average dimension. The first law related to that issue dates from 1952. Known as "Law of Combination of Properties"[13], it tried to fight against the excessive division of properties that didn't allow to reach an economical land atomization (Moreno, 1956).

TABLE 4.3.: SUB-HYPOTHESIS, EXPECTATIONS AND THEIR INFLUENCE

VARIABLES	SUB-HYPOTHESES	EXPECTATION	INFLUENCE ON GENERATIONAL RELAY
FARM CHARACTER			
Farm size	The farm is extensive enough to be attractive for future generations to maintain the activity	+	+
Inherited land	They have inherited the land	+	+
Employees	There are people working in the farm.	+	+
Family assistance		+	+
Services hired	They hire services to carry out their activity	+	+
Irrigation	They have irrigation systems or they are willing to invest on irrigation	+	+
Source: Own elaboration			

[13] Although the problem was even previously realised. Gaspar Melchor de Jovellanos had already written concerning to this problem that was present in his homeland, Asturias, in his report about the Agrarian Law, more than one century before.

Even so, nowadays, this is possibly happening as a consequence of the lack of generational relay. In general terms, the population ageing that pursues the agricultural sector, together with the fact that most of the farmers don't have offspring that will clearly inherit the family farm is causing that those who still having activity are buying or renting out these properties. This way, the land that was once exploited by many farmers but in a small quantity, is being left in great professional farmers' hands, whose activity is considerable (Fernández and Soler, 2017). Thereby, the cooperative system could be undermined, since the more professional and higher-volume farmers will not need the services of the cooperative, so that the less professional would be grouped in the cooperatives (Campos and Chaves, 2012).

H0.3.: There are factors according to the farm characteristics that can influence the Grupo AN owners' generational relay.

3.4. Investment factors

In this sub-hypothesis (Table 4.4.), we will refer to the investment character that goes together with the agricultural activity exercise. Tanto a nivel regional, con el Plan de Desarrollo Rural de Navarra 2014-2020, a nivel nacional, con el Real Decreto 613/2001, como a nivel supra-nacional, con la PAC, vemos que ambos programas otorgan una importancia más que relevantes al apoyo a inversiones en las explotaciones agrarias, sobre todo a las llevadas a cabo por el sector más joven. Estas inversiones, según se dice, acarrean consigo la modernización de las explotaciones y un aumento en implicación con la actividad.

TABLE 4.4.: SUB-HYPOTHESIS, EXPECTATIONS AND THEIR INFLUENCE

VARIABLES	SUB-HYPOTHESES	EXPECTATION	INFLUENCE ON GENERATIONAL RELAY
INVESTMENT CHARACTER			
Investment in the past 5 years	They did investments in the past 5 years or they will do them in the following ones		+
Investment in the following 5 years			+
Particular investment	The investments were done in a particular way	+	+
Common investment			

Source: Own elaboration

H0.4.: There are factors according to the investment character that can influence the Grupo AN owners' generational relay.

3.5. Satisfaction factors

In this last sub-hypothesis (Table 4.5.), we are focusing on the perceived satisfaction character. Nowadays, and referring to previous sections, even their distinctive features, cooperative products are competing against the ones produced by traditional enterprises. Therefore, the efficacy and efficiency standards need to be pursued in order to survive successfully in the market. For a cooperative, its labour force is composed by its owners, and for them to work on the achievement of these standards, we need to increase their motivation and involvement towards the cooperative. For that purpose, measures to increase the owners' satisfaction may be carried out (Gargallo, 2008).

TABLE 4.5.: SUB-HYPOTHESIS, EXPECTATIONS AND THEIR INFLUENCE

VARIABLES	SUB-HYPOTHESES	EXPECTATION	INFLUENCE ON GENERATIONAL RELAY
SATISFACTION CHARACTER			
Services valuation, sale price and sale security provided by the cooperative	The owners are satisfied with the services provided by the cooperative	+	
Additional services required by the owner	They demand new services		
Desire to lend the farm to the cooperative in the future	It would be possible to create a "Land Bank"		+

Source: Own elaboration

H0.5.: There are factors according to the satisfaction character that can influence the Grupo AN owners' generational relay.

4. MATERIAL AND METHODOLOGY

4.1. Material

In this section, we will present the material used for our analysis, indicating the source of information of our data, the structure of the survey elaborated to obtain it, as well as indicate the steps followed in its debugging.

The field work that we have done for the present analysis, has been materialized through surveys done to the Grupo AN cooperative (Table 7 in the Appendix) owners in Navarre and Aragon. Of these, we have extracted primary data referring to the 42 fruits and vegetables cooperatives belonging to Grupo AN in the aforementioned communities and with a total of 6912 owners, which will make up our statistical population. This population has been

obtained after a filtration process, given that the totality of cooperatives in Navarre and Aragon is 90, reaching the 18430 members, in order to reach only the ones that have fruits and vegetables products among those with which they commercialise. The reasons why we rejected each of the 48 cooperatives are shown in the attached Table 8 (Appendix), but summed up, were those without activity, merged, of second degree or that they didn't trade with fruit and vegetable products.

Likewise, we have limited the population size to the regions of Navarre and Aragon due to reasons of proximity that enabled us to obtain a primary source of information. This is possible because, as this is a structural problem of the sector, the conclusions could be extrapolated to a general level.

The number of owners has been obtained through direct and phone contact with the managers of the different cooperatives and through the lists of partners required to be part of the PAE (Priority Associative Entity), whose access has been provided by the Grupo AN Foundation.

TABLE 9: VARIABLES AND TYPE

VARIABLES	VARIABLE TYPE	VARIABLES	VARIABLE TYPE
SOCIAL CHARACTER		Family assistance	Qualitative: Binomial Quantitative: Numerical
Gender	Qualitative: Binomial	Services hired	Qualitative: Binomial
Age	Quantitative: Numerical	Irrigation	Qualitative: Binomial
Offspring	Quantitative: Numerical	INVESTMENT CHARACTER	
Offspring's age	Quantitative: Numerical	Investment in the past 5 years	Qualitative: Binomial and Ordinal
Offspring's education	Qualitative: Ordinal	Investment in the following 5 years	Qualitative: Binomial and Ordinal
ECONOMIC CHARACTER		Particular investment	Qualitative: Binomial
Economic activities	Qualitative: Binomial Quantitative: Numerical	Common investment	Qualitative: Binomial
Farm continuity	Qualitative: Binomial	SATISFACTION CHARACTER	
Main productions	Qualitative: Binomial and Text Quantitative: Numerical	Services valuation, sale price and sale security provided by the cooperative	Qualitative: Ordinal
Aids and payments	Qualitative: Binomial	Additional services required by the owner	Qualitative: Text
FARM CHARACTER		Desire to lend the farm to the cooperative in the future	Qualitative: binomial
Inherited land	Qualitative: Binomial		

Source: Own elaboration

As indicated above, to obtain the required data, we created a survey (Appendix) with which we try to collect information about the problem that we want to study: the profile identification of cooperative owners who are representative of a farmer with generational relay and its influence on the Grupo AN's cooperatives future. To do this, we structured the

survey into 5 sections containing a total of 25 questions. In Table 9, we can observe the said structure, as well as the variables used, the objectives that are pursued with them and the methods of analysis used in the study.

After the preparation of the survey and with the collaboration of Grupo AN Foundation's manager, the head of Grupo AN's delegations and the president of the *Unión de Cooperativas Agrarias de Navarra (UCAN)*, we proceeded to the sending and subsequent collection of the surveys.

As a result, a total of 82 surveys were received. The next step was the transcribing process of the information into Excel tables in order to facilitate the subsequent analysis in SPSS. Once the data were entered in SPSS, we proceeded to clean it, performing the following steps:

- Elimination of variables: the variables whose response rate was less than 20% were rejected from the study, being: the age of the child 5,6 and 7, the education of the child 5, 6 and 7, the municipality of cooperative 3 and 4, as well as the products traded through them, variables that refer to the inputs and services that the partner has in the different cooperatives, and finally, the hectares dedicated to livestock and their production volume.
- Elimination of surveys: they are rejected from the sample those in which less than 20% of questions were answered reducing, this way, our sample from 82 to 79 surveys, due to their lack of information.
- Univariate Analysis: after carrying out the analysis through which the residual values are identified, the data cleaning process has been concluded, obtaining as a result the information contained in Table 10, where it is shown a summary of the technical details of the analysis.

TABLE 10: TECHNICAL DETAILS OF THE ANALYSIS

CHARACTERISTCS	DETAILS
AREA	Grupo AN's fruits and vegetables cooperatives in Navarra and Aragón
POPULATION	Grupo AN's fruits and vegetables partners
POPULATION SIZE	6912 partners
SAMPLE SIZE	79 surveys
SAMPLE ERROR	+/- 10,96%
CONFIDENCE LEVEL	95%
HETEROGENEITY	50%
METHOD OF COLLECTING DATA	Questionnaires sent to home and to the cooperatives Questionnaires done face to face
DATE OF FIELDWORK	March-April 2017

Source: Own elaboration

To conclude with this section, we will sum up that, after the process of data debugging, we have achieved the total of 79 surveys that will form our sample to be studied. It should be noted that the response rate by the owners hasn't been as high as wanted, limiting the study representativeness to a sample error of +/- 10,96%, at a 95% level of confidence.

4.2. Methodology

In this part of the Final Degree Project, we will explain the methodology employed over our study, pointing out the instruments used to obtain the results that will form the basis of our conclusions.

4.2.1. Univariate Analysis

Firstly, we will analyse the behaviour of the studied variables independently. With this, we want to achieve the organization and positioning of the profiles recognized in the survey, as well as allowing us to reduce the information in order to facilitate its reading and interpretation. Throughout the analysis, we will employ different types of techniques to arrive to the desired results. On the one hand, we will use the frequencies table for the measurement of the qualitative variables, and on the other hand, to study the quantitative ones, we will extract the descriptive statistics. With all this, we want to see the assiduousness with which the behaviours, represented by the variables, are repeated. In addition, we want to obtain the central values and the average dispersion of the data. For this, we will emphasize on the values obtained from the frequencies (expressed in %) in the binomials variables, the mode in the ordinals and in the quantitatives, we will focus on the means and standard deviations (Arriaza, 2006).

4.2.2. Bivariate Analysis

Our first objective pursued with this analysis is to recognize between which variables there exists a connection, so that when carrying out the multivariate analysis, we might face multicollinearity, which would alter its execution. With such purpose, different statistical analyses of two variables will be made depending on their nature. First of all, we will use the contingency tables so that, through the Chi-square value, we study the relation that qualitative (binomial) variables have between them. Straightaway, a correlation analysis will be done, whereby the values of the Kendall tau coefficient will be obtained, which will stand out the relationship among ordinal variables. Then, we will use the ANOVA analysis, in order to check the relation between qualitative and quantitative ones. Finally, to see how these last

ones are linked, another correlation analysis will be carried out, this time focusing on the Pearson coefficient values that will represent the connection (Arriaza, 2006).

This section will also allow us to support the results obtained in the multivariate analysis, especially when justifying some groupings and especially its relationship with some variables that may be representative of the tendency that can have the different factors towards the generational relieve.

4.2.3. Multivariate Analysis

Finally, we will prepare to do a multivariate analysis in which we will end up considering more than two variables. This analysis allows a wide range of statistical techniques but the ones chosen are, firstly, the analysis of principal or factorial components, with which the different variables will be grouped into "components", and, later, the hierarchical cluster, with which these components will be classified according to their behavior towards the generational relay.

As we have already indicated, firstly, we will perform the analysis of principal components. As a result, we will obtain some components, which unite the variables through linear combination, which will end up representing different profiles of owners, being this, one of the main objectives of this study. To do this, we selected weight variables that did not have a high correlation between them (<0.600), in order to avoid multicollinearity. After this, the analysis had to surpass both the KMO test, having a value greater than 0.500 and that of Bartlett's sphericity, whose level of significance should be below 0.05. Then, for the resulting components to be valid, each of them should represent more than a 5% of the model's variability explanation and, all together, had to be above the 40% (Grande and Abascal, 2005).

Secondly, as we have previously pointed out, and closing the study, a hierarchical cluster will be carried out with which we seek to classify the profiles according to their behavior regarding the issue treated throughout the study, the generational renewal. With this, we look for the extraction of three clusters that will represent the owners' profiles with high, medium and low evidences of having assured the continuity of their farm (Grande and Abascal, 2005).

For this to be possible, we will erase those surveys that have blanks in those questions that contain weight variables selected in the model, otherwise this could alter and hinder our analysis. Finally, we will force the clusters to assign the factors to the diverse groups according to the contained variables and not to the cases (individuals).

As a result of these steps, we will arrive with the results that we will show in the next section.

5. RESULTS

After examining the data obtained and applying the methodology explained above for our study, we proceed to show, in this section, the results derived from this process.

5.1. Descriptives

As given in the descriptives obtained in the univariate analysis, and pointing out that these results we will show are calculated through the valid percentage, which excludes the unanswered (white), we will highlight the most significant characteristics of the individuals set that make up our study. These will be grouped according to their social, economic, agronomic, production and satisfaction character.

Regarding the social character, the data support the phenomena already mentioned in previous sections that directly affect to the structural development of the sector. On one hand, we find that 92% of the owners are men, a fact that clearly reflects the masculinization given in this area. On the other hand, and, in support of the deep demographic change that is taking place, result of an ageing society and low birth rates, we see that the average age of the survey respondents is 50.62 years, and that only 12% are young (<40 years) farmers. Consequently, the remaining 88%, will be in retirement age in the short or medium term, figures that reveal the aforementioned population ageing that characterizes nowadays the agricultural sector. In addition, an average of 1.46 children per fruit and vegetable cooperative owner has been found, which, although it is above the national average, is far from the 2.1 that represents the replacement fecundity rate (ideal fecundity).

Putting the spotlight on what is related to the economic character, we began by highlighting the high number of owners whose main activity is the field (full-time farmers), a 92%, while it is noteworthy that only 4 % are already retired. Even so, we should underline that this result is conditioned, since the type of partner surveyed is, for the most part, a farmer with regular activity through the cooperative. At the same time, we observe that most of the owners, nothing less than 88%, let us know that they pretend to retire at age 65, although, of that group, just over half (58%) of them would be interested in maintaining their farm activity once retired.

Continuing with the analysis, we arrived at one of the most outstanding answers of the whole study, from where we have extracted that only 28% of the owners has foreseen the incorporation of some family to the farm, and therefore, can have guaranteed its continuity. Even so, such low figure reflects in a reliable way the problem that we are facing, the shortage of generational relay.

To conclude with this economic character, it attracts our attention that, although horticultural products are exempt from CAP subsidies, except processed tomatoes, 81% of respondents say they receive such aid. Besides, we see that there still being a 9% of owners that do not have any of their crops insured, arguing the high price of these, added to 29% that only have some. This data allows us to identify a small potential market that allows Grupo AN to still growing internally, in this case, from its Insurance Department.

Focusing now on the farm characteristics, we see that the data shows the tendency that a substantial proportion of the land is managed in few hands. We show that the fruit and vegetable owner has an average of 102,65 hectares, but observing the variance, we see that the data are highly dispersed. Therefore, we turn to the percentiles distribution, where, finally, we confirm what was said above, less than 30% of the individuals managed to exceed the average size obtained, consequently the idea that there are large horticultural farmers that possess larger and, at the same time, unequal, land expanse come to the fore.

Additionally, and related to the figures obtained about the employment generated, we see that the fruit and vegetable sector requires more labor force than other agricultural activities, which is why 56% of the respondents claim to have employees working on the farm. Of these, the average is 5.63 workers per farm, although with a high dispersion, which means that there are large farms where there is a greater need for employees, especially seasonal workers, who represent three quarters of the total employment generated by the sector, sticking to the results obtained.

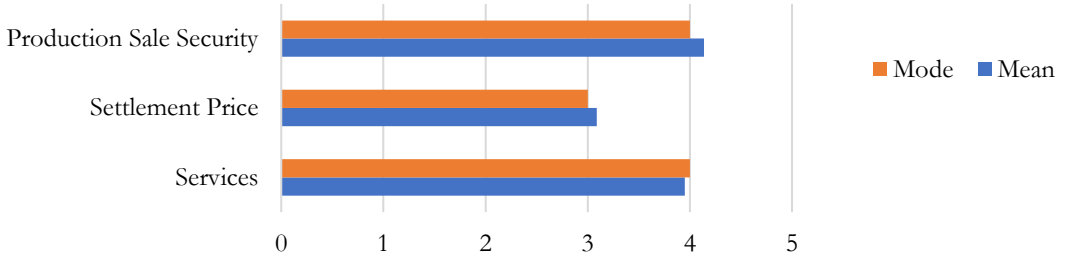
Turning to the production character, we see that, on average, about 31 hectares are used for fruits and vegetables production, although the variance is very high, which reflects again a high dispersion and therefore unequal distribution, there are farmers with very large farms, compared to others with small ones. This is also given in the volume of production, with a central tendency of more than € 150000, a figure that is reached by just over the 25% of individuals. On the other hand, we see that those who combine its fruit and vegetable production with cereal, their farms are much more extensive, on average three times, but whose turnover is less than half of the horticultural fruit, a faithful representation of how these two products are traded on the market.

Straightaway, we see that, of the 14% of respondents who do not have irrigation systems, 92.86% of that group would not be willing to invest in it. In a sector where irrigation is so important, this figure will be a negative factor that influences the generational relay, since it shows a lack of interest and future perspective in the respondent.

And, closing, in this way, with what is related to farm characteristics, the following item reflects us a market with regard to Grupo AN looks attractive to still growing internally. And the thing is that only the 14% of respondents, contract services through their cooperative, while 43% do it through external and another 47% who don't even hire them. This would represent a potential market segment in which the cooperative form Navarra can put its spotlight.

Concluding with this univariate analysis, we are prepared to value the responses obtained related to the perceived satisfaction of the cooperative owners.

Graph 10: Member's Satisfaction figures



Source: Own elaboration, data extracted from the survey results (2017)

As we can see in Graph 10, all satisfaction rates exceed the 3/5 on average, which shows that the owners are quite satisfied with everything the cooperative brings them. Nevertheless, we must emphasize how the settlement price is the worst valuation, therefore, even if the owners consider themselves satisfied, there still being an improvement room.

Furthermore, among the other services required by the owners, it can be highlighted that many of them ask for better advice from the cooperative, especially regarding the CAP; that the cooperative offers a common machinery service, especially focused on small farmers, which cannot cope with such an investment; and an increase in settlement prices.

Finally, and concluding with this univariate analysis, we see that 60% of individuals have the desire that the cooperative manage their farm in the future, and among the reasons given, we find that many of them want it because this would solve everything that have to do with the paperwork, highlighting, moreover, the good management that usually carries out the cooperative. They also argue that the close treatment and trust make them choose this option.

We go on through this section by proceeding to the signaling of the results obtained after the multivariate analysis. First, we will show the results of the Principal Component Analysis, which shows us a division of six owner profiles, and after this, those resultants of the Hierarchical Cluster with which these profiles are classified according to the tendency to have or not generational relay.

5.2. Grupo AN owner's profiles

We begin this section signaling that, as we have previously said, the results were obtained through a Principal Component Analysis, the one that has satisfied the validity requirements of the model required by the KMO (0.564) and Bartlett tests (0.000 of significance), as shown in Table 11 (Appendix). From this process, the individuals have been grouped in six components that represent the different fruit and vegetable cooperative owner's profiles (Table 12), which have an explanation of the variability of the original model greater than 5% and which in their totality explain the 52,822% (Table 13 in Appendix).

Table 12: Rotated Component Matrix

	C1	C2	C3	C4	C5	C6
SOCIAL CHARACTER						
Gender						+0.544
Age <40			-0.543			
Age >58			+0.624			
Offsprings			+0.660			
ECONOMIC CHARACTER						
Principal Activity Retired		+0.481				
Principal Activity Services to Other Farmers					+0.692	
Secondary Activity Land	-0.367					
Career years in Activity "Land"			+0.661			
65 years old retirement desire					-0.513	
Wants to keep its activity after retirement		+0.455				
Has expected a family incorporation into the holding		+0.486				
Receives CAP aids for Cereal				+0.630		
Ensures all the land			-0.504			
FARM CHARACTERISTICS						
Hectares in Ownership	+0.603					
Hectares rented					+0.797	
Land is not inherited						-0.532
Land is inherited				+0.618		
Has family helping in the land						-0.500
Crop Rotation					+0.374	
Non-Irrigated Land				+0.700		
Irrigated Land						+0.668
INVESTMENT CHARACTERISTICS						
Ready to invest in Irrigation	+0.544					
Land investment in the last 5 years	+0.688					
Machinery investment in the last 5 years		+0.640				
Facilities investment in the last 5 years	+0.546					
Private investment in the last 5 years		+0.677				
Common investment in the last 5 years				+0.506		
Land investment in the following 5 years	+0.744					
Machinery investment in the following 5 years		+0.491				
Facilities investment in the following 5 years	+0.555					
Private investment in the following 5 years		+0.713				

Source: Own elaboration

Focusing, now, on the profiles derived from the analysis, we first obtain a profile in which we have been grouped to those owners who stand out because of their great tendency to carry out investment operations, since they are, in turn, farmers whose main activity is agriculture. The same, explains 11.528% of the model's variability. In depth, we see that in the last 5 years these individuals have made expenditures in investments concerning land and facilities. Moreover, this doesn't end here, since it identifies the willingness to continue with these investments in a near future, and adding that they see with good eyes those concerning to irrigation. We also see that these owners have very extensive and owned farms, as a result of the aforementioned investments and the large volumes obtained.

In the second profile, and explaining the 9.236% of the variability of the model, they have been grouped together owners that we could call "retired with relay". This group of individuals is characterized by their old age whose main economic support is the retirement pension, although it continues to maintain its activity on the farm because, having descendants who are planning the incorporation or even having already given, these individuals decide to continue giving support in the first steps of its successors. In addition, we see that this relay is reliable as these owners have invested in machinery in the last 5 years and privately, and show an intention to continue with this practice in the following years.

Thirdly, with a weight within the variability of the 9,021% model, the profile that has been recognized it is one of an aged farmer without signals of having generational relay. As said, the owner is also of an old age, surpassing the 58 years and that has a lengthy career path in the agricultural field. But in this case, we see that, even if they have descendants, they show us that they do not even insure their crops, a fact that represent the lack of involvement with the activity that makes us intuit a generational relieve shortage.

Fourth, and explaining the 8,081% of the model's variability, we find a profile that is none other than that of a cooperative owner that combines the production of fruit and vegetable goods with that of cereals. Therefore, we find that this individual receives CAP aid on cereal and that usually has a rainfed system. It also coincides that the holdings have been acquired partly or fully by inheritance, a fact that may have tended the balance to enter into the agricultural activity, since, having made investments through *CUMAS*, we see that the capital they initially had was not high enough to start by their own.

After this, we discovered the fifth profile, in this case, being explained an 8.080% of the variability. This profile is noteworthy, since it is not an ordinary farmer. The way to enter the agricultural sphere is usually through the provision of services to other farmers, who make up their main economic activity, but that, in dribs and drabs and among land renting they

begin to earn hectares with which carry out their own farm. It is also noted that they exercise the crop rotation, due to their lack of capital to invest in irrigation and they do not show a clear goodwill to retire at age 65.

Lastly, and being the one with the lowest weight in the explained percentage of the variability of the model with a 6.877%, we find an owner who has a holding as something extra (low involvement). This one addresses a masculinized owner profile, whose farm is inherited with a system of irrigation already implemented. We see that this owner doesn't have a high involvement with its holding, as it does not encourage their relatives to help him with it, as an introductory way to start in that field.

To this analysis, we wanted to add some extra information extracted from the bivariate analysis and which relates the components to the different year intervals (Table 14 in Appendix). We see that, as we said, component 3 is an aged owner, but what is more remarkable is what has to be with the rest. Both components 1 and 5 are found in the intermediate interval, component 6 is not a youth farmer, whereas component 4 it is. These results will help us to argue the different clusters that will be given.

5.3. Behaviour towards generational relay

After having recognized the six different cooperative owner profiles, through the Analysis of Principal Components, and as we have previously indicated, we made a Hierarchical Cluster, in order to identify the behavior of these profiles towards the generational relieve. From this process, the following results were obtained (shown in Table 15).

Table 15: Hierarchical Cluster

	Cluster 1	Cluster 2	Cluster 3
Component 1: Investors whose main activity is farming		X	
Component 2: Aged owner with generational relay	X		
Component 3: Aged owner without generational relay			X
Component 4: Fruit and vegetable owners that combine with cereal			X
Component 5: Owners that have entered to the agricultural activity providing services to other farmers			X
Component 6: Owners without involvement with their holdings, as something extra			X

Source: Own elaboration

On the one hand, and in the first cluster, only one of the profiles showed clear signals of generational relay, being this one, the profile 2. Due to its efforts to incorporate their descendants, having also made some investment to ensure the continuity of its holding, this

owner profile is a representative example of the prototype that will help in the sustainability of the sector in the future.

On the other hand, and grouped in the rest of the clusters, the five remaining groups don't show obvious signals of having generational relieve, even though the individual situation of each profile might be put into context.

Firstly, and composing the second cluster, from profile 1, it should be noted that, due to their large volumes of both revenues and farm size, they are able to live comfortably thanks to their agrarian activity. This make us intuit the attraction that will create in their successors in the future.

Next, and focusing now on the third cluster, it should be emphasized that the owner profile 4, from what has been previously observed, we sense that the individuals are too young not to consider yet the future of their holding, and retirement is still being in a long term. Furthermore, we stand out that profile 5, even if they are not facing yet retirement, as it is not in a short term, they are not young enough to let this topic into the background. Therefore, even if they don't show interest in retiring, it will come the time when they won't be able to still carry out the activity, so it is appealing to focus efforts on capturing these farms. Finally, we identify two profiles in which there are clear signals of, in this case, lack of generational relieve. In both cases, we see that there is a lack of involvement on the part of the owner towards its holding. In case of profile 3, being this one of an advanced age and with successors, and that this doesn't hire services as basic as insuring their crops, we intuit that this activity is not relevant in their daily life and that, in the future, there is no expectancy of maintaining it. Nevertheless, in the case of profile 6, we see that the individuals have gradually followed up with a holding with which they have been found, as a result of inheritance and having received it with an irrigation system already implemented, so that, its maintenance has not involved major economic efforts. Even so, the fact of not having introduced relatives to help them, represent a lack of interest that will end up in a lack of relieve once the owner cannot exercise the activity. Translated to number of hectares, these two components group the 32% of the cultivated land, whereas in number of owners the percentage increase until the 41%.

To conclude with this section, we resort once again to the bivariate analysis to see how is the involvement of the owners towards the cooperative, standing out that from the youth farmers, the 89% are willing to let the cooperative manage their holdings in the future, while from the older ones, the figure is reduced to the half of them. Moreover, from this first group, we have extracted that the 33% hire services through the cooperative, whereas from

the intermediate group only the 11% do it, and the oldest one, in which the percentage of owners who use this via to get services doesn't exceed the 8%. All this is showing us that even if the sector is aged, the young farmers are the ones who are supporting the cooperative spirit.

6. CONCLUSIONS

Putting down an end to our study, we are ready to point out the most relevant conclusions obtained from it. On the one hand, we will highlight the importance of the agricultural and cooperative sector. On the other hand, how the lack of generational renewal can have profound consequences in the running of this sector. Straightaway, we will show the most significant items of our study, and conclude with some recommendations.

As we have been indicating throughout the study, the agricultural sector enjoys a more than significant importance in society. Thanks to its multifunctional character, agriculture not only serves as a supplier of something as basic as food, but also helps in territorial development (especially in rural areas) and sustainability of the environment. Adding to this, to the influences of the western market model, which is making the sector to be orientated to the export, is allowing the sector to achieve a production and employment figures worthy of being highlighted. However, many of the achievements have been possible since agriculture features from the cooperative sector in which to settle, which model allows small farmers to secure their sales, at fixed settlement prices, in a market characterized by their volatility, and serve as an employment bastion in times of crisis, where these individuals are, if possible, more unprotected. This is possible thanks to second-degree cooperatives, such as Grupo AN, which enable small ones to have services and a platform to face the markets on their own, as well as supporting territorial development in rural areas and fighting for the interests of the small farmer.

Focusing on the future of these sectors, a structural change, caused by sociodemographic, economic, technological and environmental factors, has been identified that will affect their future. And it is that, on the one hand, this change is leading to the agricultural field to be facing, and will continue to do it in the following years, challenges concerning the shortage of labor force in rural areas. This also affects the cooperative system, which will result in a drastic loss of ownership, which will be followed by an increase in fixed costs, imbalances and inequalities in land distribution, thereby the identity of the cooperative sector would be threatened.

To corroborate the reality of these generic changes, we carried out this study through the elaboration of surveys that have confirmed us the same. In fact, masculinization, ageing or professionalization (farmers with large volumes of production and extension of cultivated land) of the sector, are facts that remains evident after the results obtained from the analyses done. On the other hand, and at the corporate level of Grupo AN, the survey has allowed us to identify 6 different fruit and vegetable owner profiles, which, in turn, have been classified according to their tendency (low, medium and high) to have a relay that guarantees the activity in the future.

First of all, the profile of the farmer of an old age who assumes the continuity of his exploitation is given, since he has successors already entered in the activity or they will do it soon. Secondly, a profile is identified that does not show clear evidences of relay, but because of their production volumes, the extensions they cultivate and the investments made, they make us intuit that they will remain active in the future. And, finally, four profiles are recognized that leave no sign of being interested in the continuity of their exploitation. On the one hand, there would be two profiles where the generational relieve is completely absent, in that of retired owners who do not have successors that will join the activity, and those who have inherited farms in a disinterested way and that didn't carry extra expenses, what made them maintained it but who have not been involved in introducing their descendants in this area. These wo groups can force the firm to carry out drastic measures in the short-term to face such a challenge. On the other hand, there would be the last two profiles, those that combine fruit and vegetable production with cereal, who, due to their youth, thinking about the future of their holding is still in the long term and therefore not contemplated, and those farmers who have gradually been introduced in the agricultural field through the provision of services to other farmers and that, even if retirement does not stay in a short time, showing, in addition, its rejection towards it, they have to think about the future of their farms. That is why Grupo AN not only has to intensify its efforts in this last group, but to focus on the last two profiles that can be sensitive to any type of capture that can be done to them.

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8. APPENDIX

Table 1: Agriculture figures in EU, Spain and Navarra (2005-2013)		2005	2007	2010	2013	GROWTH RATE 2005-2013
FARM - NUMBER	EU	14.482.010	13.808.470	12.245.700	10.762.360	-25,68%
	Spain	1.079.420	1.043.910	989.800	965.000	-10,60%
	% Spain in EU	7,45%	7,56%	8,08%	8,97%	20,30%
	Navarra	17.790	16.400	15.870	14.960	-15,91%
UTILISED AGRICULTURAL AREA - HECTARE	EU	172.031.760	173.729.730	175.845.490	174.873.160	1,65%
	Spain	24.855.130	24.892.520	23.752.690	23.300.220	-6,26%
	% Spain in EU	14,45%	14,33%	13,51%	13,32%	-7,78%
	Navarra	588.750	588.350	545.520	546.890	-7,11%
STANDARD OUTPUT - EURO	EU	286.344.721.320	285.171.786.510	307.397.677.100	332.599.427.800	16,15%
	Spain	33.625.081.990	33.362.703.070	34.173.689.600	35.978.946.920	7,00%
	% Spain in EU	11,74%	11,70%	11,12%	10,82%	-7,88%
LABOUR FORCE DIRECTLY EMPLOYED - ANNUAL WORKING UNIT	EU	12.455.670	11.850.120	9.943.950	9.443.430	-24,18%
	Spain	992.640	967.680	888.970	813.550	-18,04%
	% Spain in EU	7,97%	8,17%	8,94%	8,61%	8,10%
	Navarra	14.240	13.790	13.250	11.370	-20,15%

Source: Own elaboration, data extracted from EUROSTAT

Table 2: Figures of Agriculture in Navarra	Fruits and Vegetables Production in Navarra (Tons)	Navarra's GDP(GVA)			Navarra's Foreign Trade Balance of agricultural products (€ thousands)
		Contribution of Agriculture to the GDP (€ thousands)	Total GDP (€ thousands)	Weight of Agriculture in the GDP (%)	
2000	381.348,435				
2001	372.982,076				
2002	383.340,2				
2003	390.746,195				
2004	368.466,065				
2005	411.254	454.277 €	14.158.090 €	3,21%	
2006	381.786	463.139 €	15.144.523 €	3,06%	63.705,810 €
2007	415.059	487.005 €	16.352.019 €	2,98%	73.536,247 €
2008	433.921	489.733 €	17.307.145 €	2,83%	140.460,921 €
2009	472.777,5199	487.149 €	16.900.309 €	2,88%	184.262,106 €
2010	438.014,078	488.510 €	16.913.321 €	2,89%	283.494,178 €
2011	473.234,875	511.683 €	17.244.703 €	2,97%	325.199,215 €
2012	438.023,914	531.922 €	16.896.989 €	3,15%	341.617,402 €
2013	422.789,9679	542.310 €	16.547.355 €	3,28%	400.811,601 €
2014	510.546,3608	550.830 €	16.698.369 €	3,30%	467.767,631 €
2015	541.974,155	558.645 €	17.181.548 €	3,25%	496.301,060 €
2016					461.834,903 €

Source: Own elaboration, data extracted from Departamento de Estadísticas y Estudios Agrarios. Gobierno de Navarra (2017)

Table 3.1: Cooperative figures in Spain and Navarra

		1999	2000	2001	2002	2003	2004	2005	2006
Spain	Number of Cooperatives (Total)	16544	17037	17352	17649	16382	16333	16391	15954
	Employment in Cooperatives (Total)	198874	204490	209035	214591	247987	234887	237927	243476
	Gross Value Added created by Cooperatives (% Spanish GDP)	5,50%	5,90%	6,30%	6,40%	6,50%	6,50%	6,30%	6,30%
	Number of Cooperatives (Agricultural)	3968	4118	4184	4293	3634	3624	3659	3650
	Agrarian Cooperatives as a % of the total	23,98%	24,17%	24,11%	24,32%	22,18%	22,19%	22,32%	22,88%
	Employment in Cooperatives (Agricultural)	47500	48437	49878	51675	78444	71157	68413	73121
	Employment in Agricultural Cooperatives as a % of the total	23,88%	23,69%	23,86%	24,08%	31,63%	30,29%	28,75%	30,03%
Navarra	Number of Cooperatives (Total)	244	234	234	229	180	182	184	182
	Employment in Cooperatives (Total)	3566	3649	3750	3715	3582	3552	3620	3908
	Number of Cooperatives (Agricultural)	137	145	150	151	106	109	106	107
	Agrarian Cooperatives as a % of the total	56,15%	61,97%	64,10%	65,94%	58,89%	59,89%	57,61%	58,79%
	Employment in Cooperatives (Agricultural)	1207	1268	1236	1238	1053	1002	1072	1309
	Employment in Agricultural Cooperatives as a % of the total	33,85%	34,75%	32,96%	33,32%	29,40%	28,21%	29,61%	33,50%

Source: Own elaboration, data extracted from MEYSS (2017)

Table 3.2: Cooperative figures in Spain and Navarra

		2007	2008	2009	2010	2011	2012	2013	2014	2015
Spain	Number of Cooperatives (Total)	15524	14825	13701	13310	12720	12095	11862	11838	11956
	Employment in Cooperatives (Total)	240817	235551	224183	226165	218153	214313	213582	214233	220359
	Gross Value Added created by Cooperatives (% Spanish GDP)	6,60%	6,50%							
	Number of Cooperatives (Agricultural)	3596	3576	3514	3487	3415	3397	3379	3313	3292
	Agricultural Cooperatives as a % of the total	23,16%	24,12%	25,65%	26,20%	26,85%	28,09%	28,49%	27,99%	27,53%
	Employment in Cooperatives (Agricultural)	67224	68980	65656	67013	64108	64280	64853	64054	65177
	Employment in Agricultural Cooperatives as a % of the total	27,91%	29,28%	29,29%	29,63%	29,39%	29,99%	30,36%	29,90%	29,58%
Navarra	Number of Cooperatives (Total)	177	183	174	181	182	184	191	199	205
	Employment in Cooperatives (Total)	3941	4873	4878	5003	5148	5072	4989	5334	5296
	Number of Cooperatives (Agricultural)	99	101	95	96	95	98	97	97	92
	Agricultural Cooperatives as a % of the total	55,93%	55,19%	54,60%	53,04%	52,20%	53,26%	50,79%	48,74%	44,88%
	Employment in Cooperatives (Agricultural)	1193	1155	1264	1220	1277	1205	1195	1340	1400
	Employment in Agricultural Cooperatives as a % of the total	30,27%	23,70%	25,91%	24,39%	24,81%	23,76%	23,95%	25,12%	26,44%

Source: Own elaboration, data extracted from MEYSS (2017)

Table 5: Population ageing indicators		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Fertility Rate (children per woman)	EU	1,51	1,54	1,56	1,61	1,61	1,62	1,59	1,59	1,55	1,58
	Spain	1,33	1,36	1,38	1,45	1,38	1,37	1,34	1,32	1,27	1,32
	Navarra	1,33	1,41	1,41	1,49	1,44	1,44	1,43	1,46	1,36	1,44
Life expectancy (years)	EU	78,5	78,9	79,1	79,4	79,6	79,9	80,3	80,3	80,5	80,9
	Spain	80,3	81,1	81,1	81,5	81,9	82,4	82,6	82,5	83,2	83,3
	Navarra	81,8	82,4	82,5	82,6	83,3	84,1	83,9	83,8	84	83,9
Popuation >65 years (%)	EU	16,6	16,8	17	17,1	17,2	17,5	17,6	17,8	18,2	18,5
	Spain	16,6	16,6	16,5	16,4	16,6	16,8	17,1	17,4	17,7	18,1
	Navarra	18,0	18,0	18,1	18,2	18,3	18,4	18,5	18,6	18,7	18,8

Source: Own elaboration, data extracted from EUROSTAT and Instituto de Estadística de Navarra (IEN)

Table 6: Navarra's demographic data			TOTAL	Male	Female
Navarra	1996	Inhabitants	520574	257718	262856
	2016		640647	317840	322807
	Variation rate (2016-1996)		23,07%	23,33%	22,81%
Village (<1000 inhabitants)	1996	Inhabitants	56994	30116	26878
		Proportion (Navarra's population)	10,95%	11,69%	10,23%
	2016	Inhabitants	54707	29193	25514
		Proportion (Navarra's population)	8,54%	9,18%	7,90%
	Variation rate (2016-1996)		-5,08%	-3,09%	-6,58%
Village (<500 inhabitants)	1996	Inhabitants	31383	16729	14654
		Proportion (Navarra's population)	6,03%	6,49%	5,57%
	2016	Inhabitants	29267	15810	13457
		Proportion (Navarra's population)	4,57%	4,97%	4,17%
	Variation rate (2016-1996)		-6,81%	-4,54%	-8,50%

Source: Own elaboration, data extracted from INE

Table 7: Generational relay survey done to Grupo AN cooperative owners

Nº Encuesta ..... Zona ..... Nº Encuestador…….

Buenos días/tardes, Grupo AN, dentro de su colaboración con la Universidad Pública de Navarra, a través de su cátedra con la que se apoya a estudiantes en el desarrollo de su práctica curricular y formación, está realizando un estudio sobre el relevo generacional de sus socios cooperativistas. El trabajo que va a llevar a cabo el estudiante va a estar dentro de su práctica de grado en Economía-Estadística. Sus opiniones nos serán de una gran utilidad, por lo que le pedimos su colaboración. Usted ha sido elegido totalmente al azar y sus contestaciones están sujetas a secreto estadístico. Muchas gracias por su colaboración.

CARÁCTER SOCIAL

1. **Para empezar, por favor indíqueme su género.**

   Mujer ☐ Hombre ☐

2. **Por favor, indíqueme su edad.**

   ……...

3. **Por favor, rellene el siguiente cuadro en relación a sus hijos.**

Nº HIJOS	EDAD	FORMACIÓN
Ninguno		
1		
2		
3		
4		
5		
6		
7		

CARÁCTER ECONÓMICO

4. **Por favor, indíqueme marcando X su/sus actividad/es económica/s.**

	CAMPO	SERVICIOS AGRÍCOLAS A OTROS AGRICULTORES	OTROS (No agrícolas)
ACTIVIDAD PRINCIPAL			
ACTIVIDAD SECUNDARIA			

5. **Por favor, indíqueme cuál es su antigüedad en la actividad "CAMPO".**

   ……

6. **Por favor, indíqueme si tiene intención de jubilarse a los 65 años.**

   Sí ☐ No ☐ NS/NC ☐

7. **Por favor, indíqueme si piensa mantener la actividad de su explotación después de jubilarse.**

   Sí ☐ No ☐

8. **Por favor, indíqueme si está prevista la incorporación de algún familiar a la explotación.**

   No ☐ Sí ☐ Cuántos…. Cuándo……..

9. **Por favor, indíqueme si es socio de alguna/as cooperativa/as y, en tal caso, en que municipio está localizada/s y qué productos comercializa a través de ella/as.**

	MUNICIPIO DE LA COOPERATIVA	PRODUCTOS (cereal, frutas, seguros…)
Ninguna		
1		
2		
3		
4		

10. **Por favor, indíqueme si recibe ayudas de la PAC.**

    ☐ No
    ☐ Sí, sobre cereal
    ☐ Sí, sobre tomate transformado
    ☐ Sí, sobre otros

11. **Por favor, indíqueme si asegura sus cultivos.**

    Sí ☐ Sí, algunos ☐ No☐ razones (precio, no estoy interesado…)
    ……
    ……

CARACTERÍSTICAS DE LA EXPLOTACIÓN

12. **Por favor, rellene el siguiente cuadro en relación a su explotación.**

	PROPIEDAD	ALQUILER
Nº HECTÁREAS O ROBADAS		

13. **Por favor, indíqueme si ha heredado suelo.**

    No ☐ Sí, todo ☐ Sí, una parte☐

14. **Por favor, indíqueme si tiene empleados (asalariados) en su explotación.**

    No ☐ Sí ☐ Cuántos……
    - A tiempo parcial….....
    - A tiempo completo…….

15. **Por favor, indíqueme con una X si algún familiar ayuda en su explotación.**

    No ☐ Sí ☐ Cuántos……

16. Por favor, rellene la siguiente tabla en relación a su producción y consumo.

PRODUCCIÓN	NO	SÍ	HECTÁREAS o ROBADAS	VOL. PRODUCCION (€)
CEREALES				
FRUTAS Y HORTALIZAS				
GANADERÍA (ovino, porcino, vacuno)				
CONSUMO	**NO**	**SÍ**	**VOLUMEN CONSUMIDO (€)**	
SUMINISTROS (abonos, semillas, fito, pienso, gasóleo)				
OTROS (seguros)				

17. Por favor, rellene la siguiente tabla en relación al manejo de su explotación.

	NO	SÍ
ROTACIÓN DE CULTIVOS		
SECANO		
REGADÍO		
DISPUESTO A INVERTIR EN REGADÍO		

18. Por favor, indíqueme si contrata servicios para llevar a cabo su actividad.

- No
- Sí, externos
- Sí, a través de la cooperativa

INVERSIÓN

19. Por favor, indíqueme cuál ha sido su inversión en los últimos 5 años.

	NO		SÍ		
		0-75.000 €	75.001 - 200.000€	200.001- 350.000€	350.001€ ó más
SUELO					
MAQUINARIA					
INSTALACIÓN					

20. En caso de haber invertido en los últimos 5 años, indique el tipo de inversión.

- Particular
- Común/ CUMA

21. Por favor, indíqueme si tiene previsto invertir en los próximos 5 años.

	NO		SÍ		
		0-75.000 €	75.001 - 200.000€	200.001- 350.000€	350.001€ ó más
SUELO					
MAQUINARIA					
INSTALACIÓN					

22. Si tiene pensado invertir en los próximos 5 años, indique el tipo de inversión.

- Particular
- Común/ CUMA

SATISFACCIÓN

23. Por favor, redondee su valoración del sistema cooperativo, siendo 1 nada satisfecho y 5 muy satisfecho

SERVICIOS	**1**	**2**	**3**	**4**	**5**
PRECIO DE LIQUIDACIÓN	**1**	**2**	**3**	**4**	**5**
SEGURIDAD EN LA VENTA DE LA PRODUCCIÓN	**1**	**2**	**3**	**4**	**5**

.

24. Por favor, indíqueme que otros servicios necesitaría de la cooperativa.

……
……
……

25. Por favor, indíqueme si le gustaría que la cooperativa le ayudara en la gestión de su explotación en caso de no poderse hacerse usted cargo en el futuro.

Sí □ No □

Razones……
……
……

LE AGRADECEMOS DE NUEVO SU VALIOSA COLABORACIÓN.

Source: Own elaboration

Table 8: Grupo AN cooperatives selected and rejected from the whole in Navarra and Aragón

nº	Region	Town	Name	Reject reasons	Members
1	Huesca	Ayerbe	Sdad. Coop. del campo Sta. Leticia		295
2	Huesca	Jaca	Soc Coop interprov agr-gan Santa Orosia	cereal	297
3	Huesca	Lupiñen	San Ginés de Lupiñen, S.C.L.	cereal	45
4	Navarra	Ablitas	Bodega Coop. Ntra. Sra. Rosario		256
5	Navarra	Aibar	Bodega Coop. Santo Cristo del Amparo, S. Coop.	without activity	0
6	Navarra	Allo	Cerealista Ezkibel S.Coop.	cereal	339
7	Navarra	Andosilla	Bodega San Sebastian, S. Coop.	vineyard	138
8	Navarra	Añorbe	Sdad. Coop. Nequeas	vineyard	31
9	Navarra	Arantza	Cooperativa Agricola "Bortzak-Bat"	livestock	133
10	Navarra	Arguedas	Sdad Coop Agricola San Esteban		301
11	Navarra	Arizkun	Baztandarra, S. Coop.	provisions	286
12	Navarra	Arroniz	Trujal Mendia, S. Coop. ltda.	olive	5472
13	Navarra	Arroniz	Bodega Coooperativa San Salvador	without activity	0
14	Navarra	Artajona	Bodega Coop. San Fco. Javier	merged	0
15	Navarra	Artajona	Coop. Agricola Caja Rural de Artajona		300
16	Navarra	Azagra	Bodegas San Gregorio, S. Coop.	vineyard	334
17	Navarra	Azcona	Sociedad Cooperativa Yerri	cereal	271
18	Navarra	Barasoain	Sociedad Cooperativa Cerealista Valdorba		118
19	Navarra	Berbinzana	Sdad. Coop. Agricola de Berbinzana		79
20	Navarra	Buñuel	Agricola La Noria, S. Coop.		42
21	Navarra	Cabanillas	Sdad. Coop. del campo San Isidro		161
22	Navarra	Cadreita	Agricola San Isidro de Cadreita		93
23	Navarra	Cadreita	Nuestra Señora de Belén S. Coop.		137
24	Navarra	Caparroso	Agricola Santo Cristo S. Coop.		216
25	Navarra	Carcar	Agrupacion Horticola de Carcar, S. Coop.		139
26	Navarra	Carcastillo	Agricola San Isidro en Carcastillo S.Coop.		339
27	Navarra	Cascante	Bodegas Ntra. Sra. del Romero, S.C.	vineyard and cereal	191
28	Navarra	Caseda	Cerealista de Caseda, S. Coop.		275
29	Navarra	Castejon	Riberega S. Coop.	cooperative 2nd degree	5
30	Navarra	Cintruenigo	Bodega Cirbonera, S. Coop.	vineyard and cereal	250
31	Navarra	Cortes	Agricola de Cortes, S. Coop.		330
32	Navarra	Eslava	Bodega Coop de Eslava	vineyard	17
33	Navarra	Etxalar	Sdad. Soop. Agricola Usoa	provisions	135
34	Navarra	Falces	Sdad. Coop. Agricola Falces		103
35	Navarra	Figarol	Coop. Agricola San Francisco Javier		51
36	Navarra	Fitero	Trujal Coop. Nuestra Sra. de la Barda	merged	0
37	Navarra	Fitero	Sdad. Coop. San Raimundo Abad		125
38	Navarra	Funes	Sdad. Coop. Santiago Apostol		97
39	Navarra	Fustiñana	Coop. Agricola San Isidro		65
40	Navarra	Fustiñana	Agricola Tamariz, S. Coop.		69
41	Navarra	Igantzi	Sdad. Coop. San Juanxar	livestock	84
42	Navarra	Iza	Cooperativa Vacuno de Navarra, S. Coop.	livestock	504
43	Navarra	Larraga	Sdad. Coop. Trujal San Miguel de Larraga	olive	254
44	Navarra	Larraga	Cooperativa Agricola San Isidro		261
45	Navarra	Lerga	Sdad. Ltda. Bodega Cooperativa San Martin	without activity	0
46	Navarra	Lerin	Camino San Lázaro S. Coop		121

47	Navarra	Lerin	Sociedad Cooperativa Agricola "El Saso"	cereal	531
48	Navarra	Lesaca	Lesakarren Elkartea, S. Coop.	provisions	110
49	Navarra	Liedena	Soc. Coop. Vinicola San Francisco Javier	provisions	17
50	Navarra	Lodosa	Cooperativa Del Campo S. Coop. De Lodosa		173
51	Navarra	Los Arcos	Sdad. Coop. Cerealista Odron	cereal	205
52	Navarra	Lumbier	Bodega Coop. San Isidro	without activity	0
53	Navarra	Lumbier	Sdad. Coop. Cerealista Sierra De Leire	cereal	143
54	Navarra	Mañeru	Bodega Coop. La Cruz	vineyard	100
55	Navarra	Marcilla	Sdad Coop Del Campo	cereal	154
56	Navarra	Melida	An Avicola Melida Sl	slaughterhouse	2
57	Navarra	Mendavia	Agrupacion Agricola Mendaviesa, S.C.L.	merged	0
58	Navarra	Mendavia	Sdad. Coop. Agricola San Isidro		189
59	Navarra	Mendigorria	Soc. Coop. Cer. L. "El Arga"		137
60	Navarra	Milagro	Hermandad De Labradores, Sdad. Coop.		37
61	Navarra	Miranda de Arga	Valdevilloco, S. Coop.		138
62	Navarra	Murchante	Bodegas Campos De Enanzo S.Coop.	vineyard	366
63	Navarra	Murieta	S. Coop. Loquiz		274
64	Navarra	Murillo el Fruto	Cooperativa Agricola San Isidro		54
65	Navarra	Olite	Bodega Cosecheros Reunidos, S. Coop.	vineyard	0
66	Navarra	Olite	Bodegas Piedemonte, S. Coop.	vineyard	42
67	Navarra	Olite	Bodegas Vega Del Castillo S Coop	vineyard	105
68	Navarra	Oskotz	Cooperativa Agropecuaria S. Miguel Aralar	provisions	9
69	Navarra	Oteiza de la Solana	Sdad. Coop. Litxarra	cereal	431
70	Navarra	Peralta	Sdad. Coop. San Isidro De Peralta		276
71	Navarra	Pitillas	Granero De Pitillas, S. Coop.		134
72	Navarra	Puente la Reina	Cooperativa Agricola "San Isidro"		54
73	Navarra	Ribaforada	Agricola San Blas De Ribaforada, Sdad. Coop.		364
74	Navarra	Sada	Bodega San Francisco Javier, S. Coop.	vineyard	47
75	Navarra	San Martin Unx	Bodega Coop. San Martin	vineyard	105
76	Navarra	Sanguesa	Bodega San Sebastian, S. Coop.	vineyard	0
77	Navarra	Sanguesa	Sdad. Coop. Cerealista De Sanguesa	cereal	76
78	Navarra	Santacara	Coop. Agricola San Isidro		225
79	Navarra	Sesma	Sociedad Cooperativa Los Remedios		172
80	Navarra	Tafalla	Sdad. Coop. Agropecuaria La Sarda		296
81	Navarra	Tajonar	Sdad. Coop. Urederra	porcine	8
82	Navarra	Tajonar	An Energeticos Sl	petrol station	2
83	Navarra	Tajonar	Sdad. Coop. Rizana	poultry	69
84	Navarra	Tudela	Centex Agricola Ganadera S Coop		95
85	Navarra	Tudela	Asociacion De Labradores, S. Coop.		84
86	Navarra	Urroz Villa	Sdad. Coop. Cerealista De Urroz Villa	cereal	210
87	Navarra	Valtierra	S.Coop. Agricola La Esperanza		160
88	Navarra	Viana	Bodegas Santa M. Magdalena, S. Coop	vineyard	0
89	Navarra	Villafranca	Cooperativa Agricola San Isidro		15
90	Zaragoza	Novallas	Cooperativa Ntra. Sra. Del Pilar		62
			Total members (Aragón and Navarra)		18430

Source: Own elaboration

Table 11: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.564
Bartlett's Test of Spheracity	Approx. Chi Square	721.659
	Df	465
	Sig.	0.000

Source: Own elaboration

Table 13: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.105	16.468	16.468	5.105	16.468	16.468	3.574	11.528	11.528
2	3.047	9.829	26.297	3.047	9.829	26.297	2.863	9.236	20.764
3	2.470	7.967	34.264	2.470	7.967	34.264	2.796	9.021	29.784
4	2.171	7..002	41.266	2.171	7..002	41.266	2.505	8.081	37.865
5	1.910	6.160	47.427	1.910	6.160	47.427	2.505	8.080	45.945
6	1.673	5.396	52.822	1.673	5.396	52.822	2.132	6.877	52.822
7	1.478	4.768	57.590						

Source: Own elaboration

Table 14: Significance between years and components

		YEARS < 40	YEARS 40 - 58	YEARS > 58
COMPONENTS	1	0,987	(+)0,015	(-)0,006
	2	0,811	0,670	0,759
	3	(-)0,000	0,124	(+)0,000
	4	(+)0,000	(-)0,001	0,496
	5	0,379	(+)0,055	0,132
	6	(-)0,008	0,479	0,284

Source: Own elaboration