



RESEARCH ARTICLE

Changes in the business model for Spanish fresh tomato trade

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Abstract

The business model applied to the fresh tomato trade from Almería is well known in Spain and abroad. The changes in demand are forcing export companies to change their trade strategies to become or remain competitive. The purpose of this paper is to know the business structure and its export dynamics in addition to the changes in trade strategies made by companies in Almería during the 2009-2013 period. The methodology is based on the Herfindahl-Hirshman index and the foreign trade competitiveness index, whereas the congruence analysis is based on Pearson's correlation coefficients and the RV coefficient. We have also applied the dual multiple factor analysis to verify changes made to the trade policy in leading businesses between two periods or scenarios. The research shows that export-driven companies behave as a moderately concentrated structure and there is an increase in the number of exporters. The competitiveness map for Almería reveals the sector's trend with regard to the most important markets. We have verified the changes made to their trade strategy to adjust to changes in foreign trade between the 2008/09 and 2012/13 campaigns. Finally, it can be pointed out that, in the analyzed period, changes in the business model for fresh tomato trade of Almería have not been significant, being its structure of moderate concentration. In addition, the great majority of variations in strategies of companies to adapt to the competitive environment have been made by leading companies.

Additional key words: Almería; business structure; price; competitiveness; trade management; trade strategies.

Abbreviations used: DMFA (dual multiple factor analysis); EU (European Union); FOB (free on board); FTCI (foreign trade competitiveness index); HHI (Herfindahl-Hirshman index).

Authors' contributions: Conceived and designed the experiments: JPV and MGB. Performed the experiments and analyzed the data: JPV, MGB, and VT. Contributed reagents/materials/analysis tools and wrote the paper: JPV, MGB, VT and TG.

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Introduction

This paper consists in a situational analysis related to the tomato sector in Spain, where big data is combined with a set of small data that leads to a better comprehension of the strategies of companies.

Modern demand is characterized by new lifestyles and the growth of the middle class worldwide. This causes a greater tendency to consume healthy food and take more notice of the appearance of the products. With regard to fruit and vegetable, this has an impact on the varieties (Higashide, 2013), pre and post-harvest

technology (Domínguez Pérez *et al.*, 2013), packaging, logistics and marketing (De Pablo & Giacinti, 2012).

For fresh tomatoes in particular (Caiazza & Volpe, 2014), the purchasing factor is mainly focused on meeting nutritional needs, and small and medium businesses show a high tendency to export¹. The problem with these companies is the lack of information on the markets, the high distribution costs and the variable nature of prices. According to the research conducted by The Packer² in the USA, tomatoes are the most consumed vegetable, and the likelihood of

¹ To avoid complicating this explanation, we will use the word "export" for actual exports (shipping to third countries) and EU shipments (intra-Community trade). For the same reason, we will often use the word "country" instead of the most appropriate word "Member State" when referring to countries in the European Union.

² http://www.thepacker.com/fruit-vegetable-consumer-research/vegetables/tomatoes/tomatoes_122159249.html#sthash.NRvn3OtH.pdf

Table 1. Turnover for international fresh tomato trade 2009-2019 (€Mill)

Detail	2009	2010	2011	2012	2013	Yearly growth, %
Global exports, €	5,149.00	6,329.90	6,219.30	6,633.80	6,931.80	5.1
Volume, million kg	6,430.00	6,905.00	6,979.00	6,993.00	7,317.00	2.2
FOB price, €/kg	0.80	0.92	0.89	0.95	0.95	2.9
European imports (Intra&Extra), €	3,515.70	4,087.90	3,897.90	4,344.30	4,555.70	4.7
Volume, million kg	3,821.00	3,689.00	3,949.00	3,935.00	4,229.00	2.2
CIF price, €/kg	0.92	1.11	0.99	1.10	1.08	2.4
Spanish exports, €	816.00	823.60	855.00	855.00	988.50	3.5
Volume, million kg	873.00	740.00	959.00	902.00	1,004.00	3.9
FOB price, €/kg	0.93	1.11	0.89	0.95	0.98	-0.5
Almería exports, €	399.90	429.30	454.80	454.80	508.80	4.4
Volume, million kg	449.00	395.00	511.00	503.00	550.00	5.3
FOB price, €/kg	0.89	1.09	0.89	0.90	0.93	-1.0

Source: prepared by the authors based on data from the International Trade Centre and Spanish Customs (www.camara.es). FOB: free on board. CIF: cost, insurance and freight

them being bought increases with the consumer's age and income. It is also interesting to point out the rise in organic tomatoes. Another European research (Causse *et al.*, 2010) highlights the differences in preferences among consumers from different countries rather than types of consumers within one same market.

Innovation in a food and agriculture system refers to changes related to the agents involved in the food and agriculture value chain, their actions and interactions and the policies regulating the system (Dolan & Humphrey, 2000). This complexity is used to interpret business dynamics subject to the complex adaptive systems (Nuño Solinis, 2004; Bohórquez, 2013). For instance, Zuluaga (2015) points out the complexity faced by exporting wineries as a result of the modern global demand for wine; Brady (2015) analyses multinational businesses and Nguyen *et al.* (2014) focuses on small and medium sized enterprises.

From Table 1 the following conclusions can be drawn: (i) worldwide tomato exports are above 6.9 thousands of millions of euros in 2013; (ii) EU is the main area of global trade of fresh tomato, with 57.8% in 2013 (volume in kg) and 65.7% of turnover (volume in €); (iii) Spain is the main supplier, with a 23.78% and 21.7% of the imports of the EU in tonnes and euros respectively; (iv) Almería province represents 54.78% in physical values and 51.47% in monetary values, respectively, of the exports of Spain. This province consists of 10.232 ha of greenhouses meant to fresh tomato crops with a total production of 958.462 ton, which represents 83.2% of the surface and 61% of the total production in Andalusia (Junta de Andalucía, 2013). It holds the first place in the national production with 35% of it followed by Murcia (22.48%). As regards exports, they suppose ~ 50% at national level

and their main markets are located in the EU, especially Germany, France, Netherlands and UK.

According to Figure 1, the farmer has the option to sell the merchandise at the auctions or associative companies (horticultural central). There are two significative differences: sale in origin or in destination and legal system of the company. In the traditional marketing channel they are public limited societies with a downward auction system. Their destination are the wholesalers; in the modern marketing channel they sell directly in destination and their legal system is a cooperative society or agrarian transformation society, and their destination are logistics distribution platforms. There is only one case of a cooperative society that sells in origin (Cooperativa Agraria San Isidro). A recent paper that describes the sector is the one written by Pérez Mesa *et al.* (2015).

Although first commercial category products are mainly traded, in the traditional marketing channel second category products are traded as well, employing the weighted mean of both categories in the value chain. However, the adquired product by organized distribution is usually first category. Thus, in the modern marketing channel, the chain value only refers to this last category (Junta de Andalucía, 2012).

Tomato production is very limited to the municipalities of Almería and Níjar due to the fact that this product needs water with an important amount of salt. Consequently, it is the only vegetable they can raise from the month of September to June.

The main competitors of Almería in the European market during winter months are the Netherlands and specific countries such as France or Morocco. Despite the great competence among EU countries,

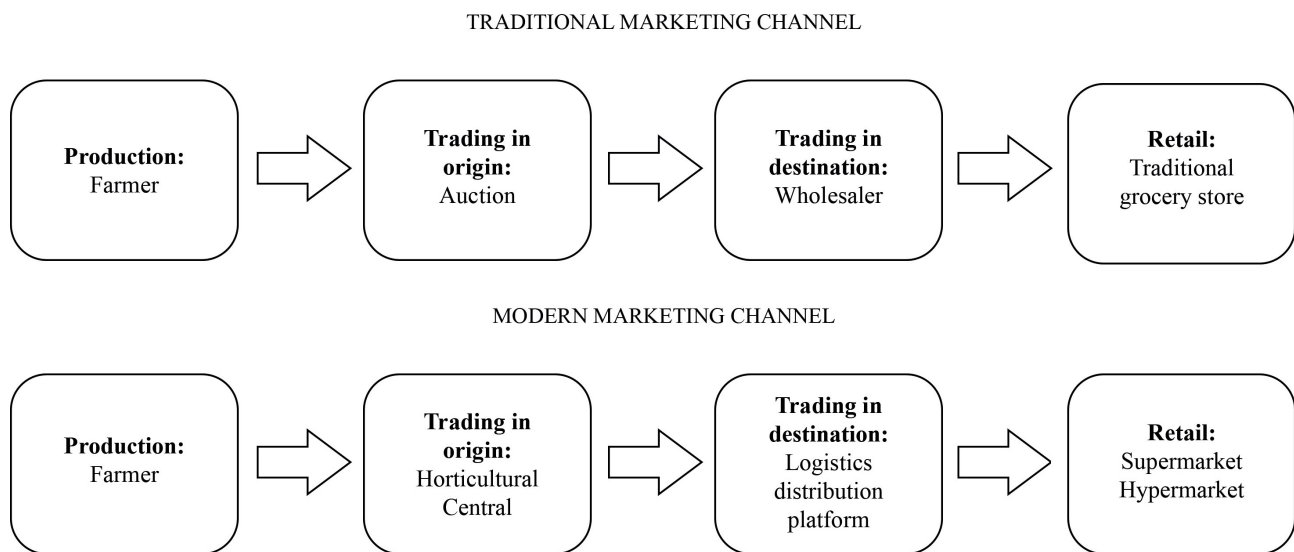


Figure 1. Distribution chain of fresh tomato Almería/Andalusia. Source: Junta de Andalucía (2012).

Almería has increased its exports in the last years due to the rise in its production and not in its prices. This evidences that the comparative advantage of this province is based in its resource endowment instead of the differentiation of its products as regards with competitor countries. The purpose of this research was to identify and analyse changes in the tomato trade from Almería during the 2009 to 2013 period. To do so, we have studied the organizational structure in the sector, foreign trade dynamics and changes in business trade strategies.

Methodology

The data was sourced from COEXPHAL (Business Association of Fruit and Vegetable Producers in Almería) for the 2008/09 to 2012/103 campaigns. This association accounts for 70% and 65% of fruit and vegetable production and exports in the province of Almería. This information was completed with the statistics published by the International Trade Centre on global trade. The data on the businesses making up COEXPHAL were given under reference numbers without giving any names (Table 2).

The time span 2012/2013 was selected due to the fact that it is the most recent data available. Regarding with 2008/2009, this was highlighted by COEXPHAL in order to analyse if the fresh tomato sector has been affected by the crisis.

To determine the structure of the agricultural sector in Almería we used the Herfindahl-Hirschman Index (HHI). This index HHI, that measures the level of concentration in a given sector, is a well-known and commonly accepted indicator of market competition. On the basis of the EU Commission guidelines and HHI values, the given sector can be characterized

as unconcentrated, moderately concentrated or concentrated (Brezina *et al.*, 2016).

$$HHI = \sum_{i=1}^n \left(\frac{X_i}{X} 100 \right)^2$$

where $\frac{X_i}{X}$ = participation of the *i*-th company in the market; and *n* = number of firms in the sector.

Possible outcomes go from 0 to 10.000, this index reading based on USA regulations is performed according to the following classification: $HHI < 1000$ = low concentration level; $1000 < HHI < 2000$ = moderate concentration level; and $HHI > 2000$ = high concentration level.

The significance of the HHI approach can be appreciated by the number of articles that use it in so different areas such as agribusiness export (Khaksar *et al.*, 2014), retail sales (Hernant *et al.*, 2007), consumer demand (Stablein *et al.*, 2011), internationalisation (Elango, 2011), logistics (Maloni *et al.*, 2009), new product development (Veflen Olsen & Sallis, 2010), location decisions (Zelbst *et al.*, 2010), and branding (Damoiseau *et al.*, 2011), among others.

In spite of the fact that these indexes have some restrictive conditions, these do not affect the research, such as the existence of very large companies or the risks assessment as a result of a function (Kühn, 2001) that make us widen the analysis without dismissing the tool (García Alba, 1994). The normalized version (Baumann, 2009) is an adaptation case used to eliminate the effect of the aggregate number of companies in the index evolution.

$$\frac{\sqrt{HHI} - \left(100 * \sqrt{\frac{1}{n}} \right)}{100 * \left(1 - \sqrt{\frac{1}{n}} \right)}$$

Table 2. Size of companies (C), in euros. Almería (2012/2013).

2012/13	Turnover	2012/13	Turnover	2012/13	Turnover	2012/13	Turnover	2012/13	Turnover
C01	5.153.168	C11	7.877.875	C22	3.074.900	C32	4.799.062	C42	2.777.975
C02	3.877.830	C12	808.139	C23	779.972	C33	61.311	C43	17.268.689
C03	3.210.471	C13	59.650	C24	34.156	C34	693.020	C44	140.192
C04	6.343.801	C14	5.050.625	C25	1.250.787	C35	4.807.103	C45	49.877
C05	9.807.603	C15	2.268.536	C26	122.262	C36	1.087.705	C46	855.872
C06	297.323	C16	9.237.721	C27	87.639	C37	13.074.870	C47	1.421.646
C07	6.735.090	C17	33.807.413	C28	1.370.156	C38	1.109.673	C48	41.912.221
C08	45.189.410	C18	160.672	C29	2.172.671	C39	15.236.626	C49	38.094.157
C09	74.936	C19	356.544	C30	893.394	C40	3.238.287	C50	63.015.398
C10	8.512.684	C20	7.638.460	C31	14.662.177	C41	4.991.495		

Source: COEXPHAL

When talking about the dynamics in changes in foreign trade, we often hear the term competitiveness. The multiplicity of dimensions that involves this concept makes it impossible to establish one only definition of it. Currently, it is only unanimous the economist concept of competitiveness developed by the World Economic Forum and used to elaborate the Global Competitiveness Index. This one allows to compare at country level the aspects that can be considered as necessary conditions (though not enough) for economic growth and, consequently, its skill to provide high prosperity levels to their citizens. The fact that competitiveness is a complex multi-conceptual system (Latruffe, 2010) makes studies about it more difficult because of the number of required resources to analyse it during a research.

From our point of view, the most appropriate description of this within the business arena is the “ability to retain or expand their share in international markets and, from there, simultaneously improve the standard of living for the people linked to the production area” (CIC, 1985).

There are numerous competitiveness indexes, such as the Competitive Advantages Index (Balassa), the Comparative Advantage Export Index, the Revealed Comparative Advantage Index (Balassa, 1965) or the methodology of Constant Market Shares (CMS). However, it cannot be stated that one substitutes others, instead they are complemented. For this reason we use the Foreign Trade Competitiveness Index (FTCI), where the numerator is the “market share” in the relevant countries importing a specific product and the denominator is the country’s or region’s “share in world trade” for that same product:

$$FTCI = \left(M_{kij} / M_{kj} \right) / \left(X_{ki} / X_{kw}^0 \right)$$

where: M_{kij} = import of product “k” from country “i” by country “j”; M_{kj} = total import of product “k” by country

“j”; X_{ki} = export of product “k” from country “i”; and X_{kw} = worldwide export (w) of product “k”.

The data used correspond to the monetary turnover rather than the volume, considering that this is a more relevant indicator as it incorporates the aggregate value of the product analysed into the research. If the share in an international market is higher than the share in world trade, this would point to higher competitiveness because the market share exceeds the share in world trade, and vice versa if it is lower. By combining the FTCI and the trend of the market share we obtain the global competitiveness map for a product and learn the trend in changes in major markets. This helps us understand the dynamics in the changes made in worldwide trade by an exporting country or a producing region (De Pablo *et al.*, 2014; De Pablo & Giacinti, 2014).

In order to analyse the trademanagement we used a data matrix for the years 2008/2009 and 2012/2013, containing as rows the 20 main export companies of the sector and as columns the following variables: Free on board (FOB) prices obtained for the main destination countries, export volumes to each one of these countries, total export volume, prices obtained in the Spanish market, total traded volume in the Spanish market and total turnover in the domestic market.

The congruence of the matrixes makes it possible to analyse the consistence in the companies’ behaviour during the same periods, which becomes a measure to assess the trade management at companies level. Several approaches allow us to analyse the congruence of the companies’ behaviour at different times. One of these approaches is the Pearson correlation of the elements outside the diagonal of a correlation matrix for 2008/2009 and 2012/13. Another approach is the Rayleigh or vectorial correlation coefficient (RV coefficient) that measures the similarity between symmetric square matrices.

The range of possible values for each coefficient suggested ranges from -1 to +1. Based on the resulting patterns, we performed permutations based on simulations to estimate the likelihood of these happening at random. The probability obtained after 10,000 simulations was below 0.0001. Therefore, we rejected the hypothesis that the patterns obtained could be random, which points to a common underlying structure.

To supplement the coefficients described, we applied the Dual Multiple Factor Analysis (DMFA) where we took into account the grouped structure of the data, balancing their influence on the global results (Lê & Pagès, 2010). For this paper, we compared two different time spans with the same variables on companies or individuals and this accompanies other recent research on the treatment of data of this kind (Abascal *et al.*, 2013).

A cluster analysis is elaborated by employing the agglomerative method UPGMA (Unweighted Pair Group Method with Arithmetic Mean) with the same information used in the Dual Multiple Factor Analysis (DMFA) in order to detect common groups in each one of the considered years.

Results

We will lay out our findings under three different angles: first the sector's organizational structure, then the dynamics of foreign trade in Almería and lastly, the changes in trade policy made by leading companies.

Sector's organizational structure

This sector shows a moderate business concentration in general terms (HHI: 1183 points), in exports (HHI:

1257 points) and in domestic trade (HHI: 1876 points). The sector's trend heads towards a lower concentration according to the yearly growth data for the HHI (Table 3).

The increase in companies devoted to exports (+3.7%) and a normalized HHI with a positive rate of 0.8% would explain the HHI's negative value (-0.5%/year) linked to business growth rather than changes in their share. On the other hand, domestic trade shows a stable concentration of -0.1%, where the higher number of companies (1.2%) is more significant than the changes experienced in their trade structure (normalized HHI of 0.3%).

Taken into account the structural analysis of foreign markets in Almería, we observed a significant asymmetry (Table 4): (i) Russia shows the highest concentration level (8,080 points) whereas Germany (1,701), the Netherlands (1,141), Italy (1,174), France (1,413) and UK (1,301) show moderate concentration; (ii) UK, Denmark, Germany and the Netherlands tend to increase their economic concentration in imports from Almería as opposed to the decrease in the Czech Republic, Poland, Portugal, France and Italy.

If the market is more concentrated, a minor number of companies will be able to access because of the higher barriers. On the other hand, if there is a low concentration there will be more possibilities to access.

Foreign trade dynamics in Almería

In the past years, trade has grown 4.4% in turnover and 5.3% in volume on a yearly basis (linked to the increase in the number of exporting companies). This has helped increase its share in the Spanish export volume from 51.4% to 54.8% between 2009 and 2013 (Table 1). It also registered a slight rise in its market

Table 3. Trend of the fresh tomato trade structure in Almería

Detail	2008/09	2009/10	2010/11	2011/12	2012/13	Yearly growth, %
Sector						
Companies	45	46	43	47	49	2.0
HHI	1,511	1,513	1,381	1,349	1,381	-5.8
Normalized HHI, %	24.60	24.79	22.52	22.76	20.72	-4.2
Exports						
Companies	40	40	37	43	46	3.7
HHI	1,320	1,385	1,451	1,436	1,257	-0.5
Normalized HHI, %	21.10	21.99	22.24	23.25	21.32	0.8
Domestic trade						
Companies	41	44	40	41	45	1.2
HHI	1,753	2,246	1,961	1,973	1,876	-0.1
Normalized HHI, %	26.90	33.01	29.13	29.46	29.08	0.3

Source: Prepared by the authors based on data from COEXPHAL. HHI: Herfindahl-Hirshman Index.

Table 4. Structural analysis by markets in Almería (2012/13)

Main markets	HHI	Yearly growth, %	Companies
Russia	8,080	1.1	13
Denmark	3,999	3.2	10
Czech Rep.	2,252	-15.3	21
Poland	2,171	-11.2	23
Germany	1,701	2.9	36
Portugal	1,566	-17.2	15
France	1,413	-2.1	36
United Kingdom	1,301	12.6	30
Italy	1,174	-10.9	22
Netherlands	1,141	1.6	33

Source: Prepared by the authors based on data from COEXPHAL.

share as supplier for Europe. During that same period, the volume increased from 11.75% to 13% and the monetary value remained flat at 11%, which involves a price adjustment to sustain the growth experienced in the volume traded. Almería kept its share in world trade at 7.21% in monetary terms, and rose from 6.98% to 7.52% in terms of volume.

The competitiveness map for Almería (Figure 2) shows significant growth in its market share in countries such as Russia, Denmark, United Kingdom, Sweden, Czech Republic, Italy, Poland and even Germany (its most important export destination). Its share only drops in the Netherlands market as it tries to trade directly instead of working through this country's re-exporters. From the economic point of view, France is the second largest market followed by the Netherlands. The FTCI reveals that Almería has the highest competitiveness index in countries such as Portugal, Poland, the

Netherlands, Italy, France, Belgium and Germany with regard to its average share in world trade. This means that its market share in Portugal is 6.3 times higher than its share in world trade (48.78%), whereas in Poland and the Netherlands it is 3.62 and 2.8 times higher, respectively, but it is only 1.74 times higher in Germany (-13.52% of the imports market). Therefore, these results show that Almería has experienced changes in the foreign trade during the period analysed.

Trade strategy changes in leading companies

The third and most statistically important aspect is the analysis of the changes in trade strategy in the 25 leading companies between the 2008/09 and 2012/13 campaigns. The congruence of the considered information matrixes for these time spans have been assessed by both the Pearson correlation coefficient

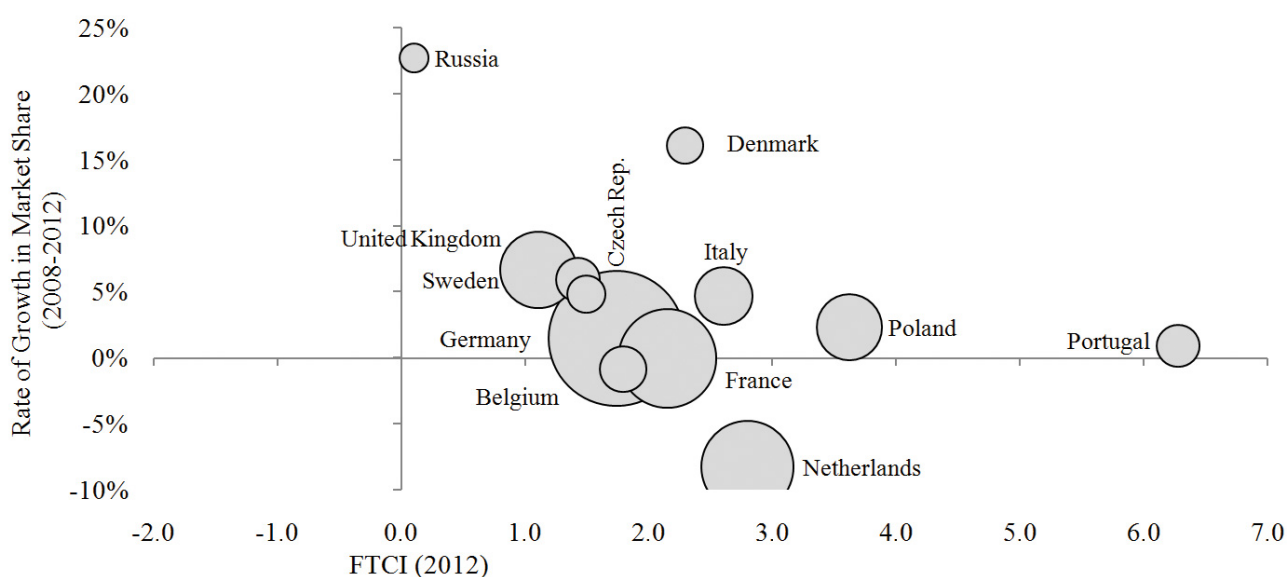


Figure 2. Competitiveness map for tomato exports in Almería. Circle size indicates value of exports in 2012. FTCI: foreign trade competitiveness index.

(0.62) and the RV coefficient (0.76), that are within the set parameters.

The DMFA reveals that 58.88% of the changes are explained by the two largest components of the multivariate analysis (Fig. 3), which highlights that most companies showing significant changes between the time spans are, precisely, among the top companies in the ranking. In this figure, it is shown the place in the trade relevance ranking. On the other hand, the multivariate analysis for the companies analysed (Fig. 4) helps observe the turnover and price gradients as the axis with greatest variability explained. Globally, the DMFA (Fig. 5) reveals that the changes made in the 2008/09 campaign compared to the 2012/13 campaign were barely significant at a macro or global level, but at a micro level, all companies showed changes.

Additionally, the cluster analysis is displayed on the tree diagram (Fig. 6) as a multivariate technique to group companies so as to gain maximum homogeneity within each group yet the greatest difference between groups. It shows the following facts: a) Six clusters were checked, where the companies showing the greatest differences in their trade strategy are company C50 during the 2012/13 period and C12 that same year, as well as C49 in the 2008/09 period; b) the most similar companies are number 5 and 10 for both periods; c) most companies analysed showed changes but there were similarities between C4 and C35 in the 2008/09 period, and in that same period, C17 and C16 also showed similarities. This is also true in C32 (2008/09) and C41 (2012/13); as well as C32 in 2008/09 with C4 in 2012/13.

The tree diagram strengthens the idea that the most important changes occurred in the largest trade companies and, on the other hand, many companies have marginally significant changes at a micro level that overlap with each other in the central cluster on the tree diagram.

Discussion

The results from recent research on international trade show a moderate to low concentration in major countries in global fruit and vegetable exports. This is the case of bananas in Equator (FAO, 2014), asparagus in Peru (De Pablo *et al.*, 2014) and fresh fruit in Chile (Giacinti, 2014). The tomato trade (domestic and exports) from Almería also shows a moderate concentration with a downward trend. This leads us to believe that, at present, the longed-for recipe of economic concentration to solve economic problems in production (improve prices to the farmer) seems a false paradigm. Profitability in international trade would be linked to a horizontal rather than a vertical organizational chart, negotiation power, swift recognition of changes in trade scenarios and strategic business management. This requires a constructive discussion on the key to a forward-looking productive economic management.

A strategic matter for which there is no one single answer is the production specialization. The current concentration models, such as Anecoop or The Greenery, trade product baskets rather than a single product. This is why it is important to discuss specialization in

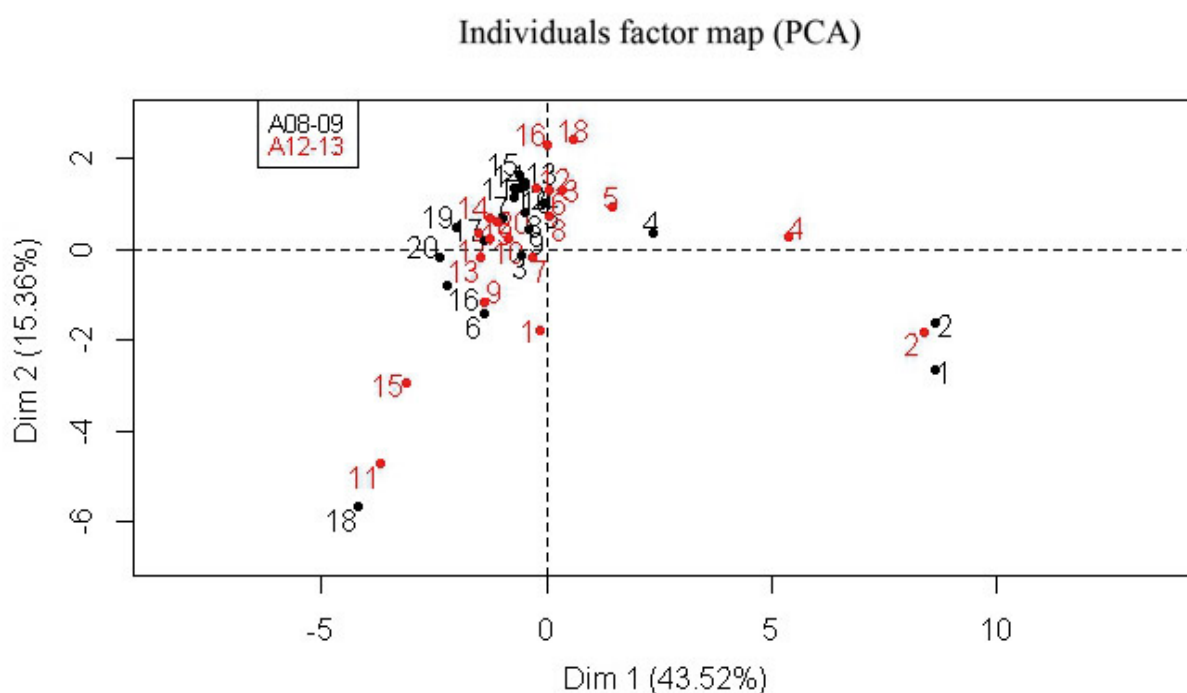


Figure 3. Projection with dual multiple factor analysis (DMFA) of company ranking. In red: 2012/13; black: 2008/09.

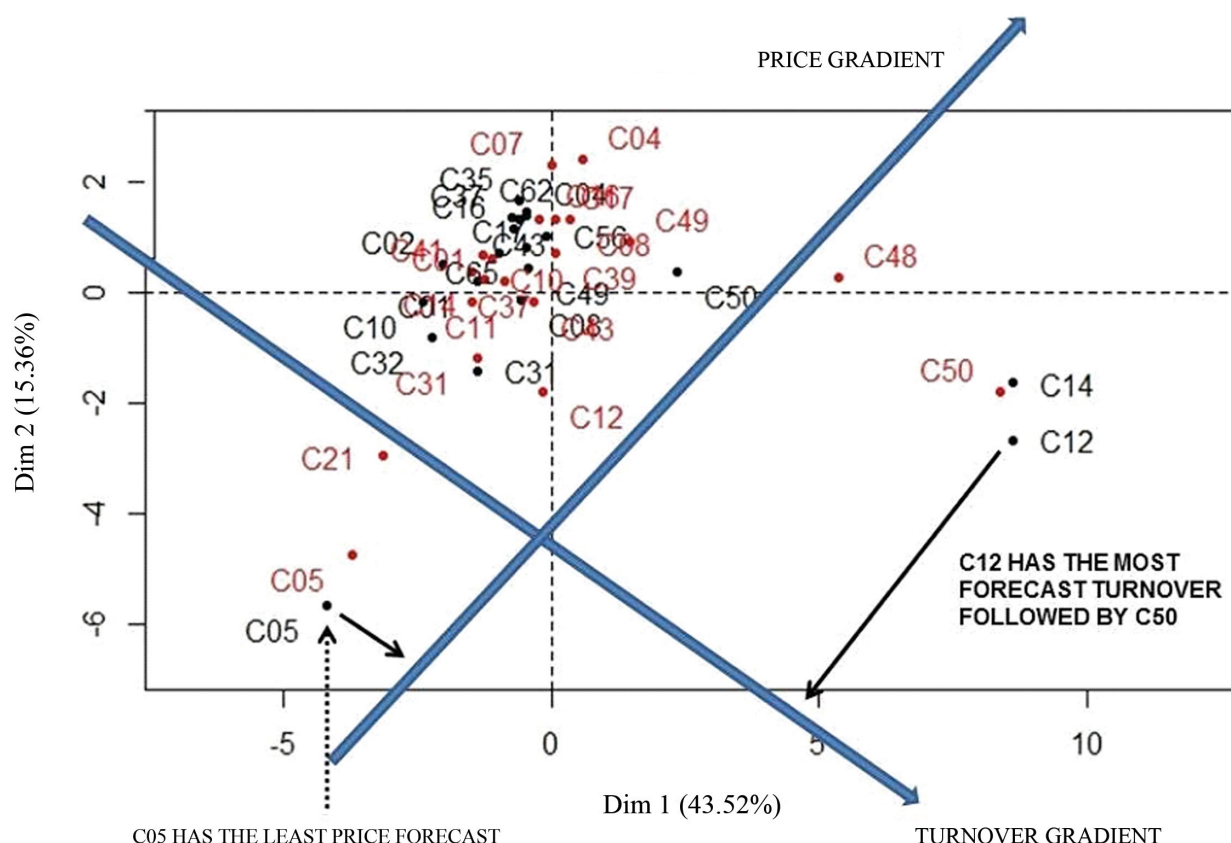


Figure 4. Trade projection with DMFA of companies. In red: 2012/13; black: 2008/09.

addition to horizontal alliances for logistics, taking into account that large distributors (Carrefour, Mercadona, etc.) now tend to buy specific products from private companies.

It is worth pointing out that the expansion of the Internet has provided the purchasing departments (especially supermarket chains) with direct access to exporters and all parties can now check the current situation of the business (Freund & Weinhold, 2000; Clarke & Wallsten, 2006).

The competitiveness map shows how the market share has increased in most countries except for the Netherlands. This is most likely due to exporters seeking to trade directly and bypass the middle men who buy and re-distribute the products from Almería. The trade policies of the companies analysed reveal that the greatest changes were in leading companies and the rest experienced lesser changes that overlapped with each other.

On the other hand, by observing the companies who sell tomatoes from Almería we can see that most of them are adjusting to the changes in trade but to a different extent in each case, as shown in the tree diagram. The statistically relevant elements are certainly important in a sector analysis, but we must also take into account all other variations to understand the sector's trend

in a difficult environment. The international supplier must adapt to the changing environment in order to remain competitive, which brings us to the theory of complex adaptive systems, where trade management and logistics, technological innovation and consumer preferences are the keys to this process.

The trade dynamics of the Almería cluster in fresh tomato exports, with a growth rate above the average rate in Spain in terms of volume and turnover, has boosted its share in the national market. The strategic management based on adapting to changes and comparative advantages in the region determine that the sector is competitive worldwide, keeping its market share in a growing market in terms of volume but not

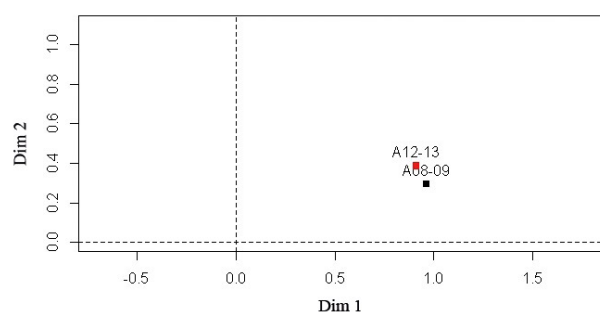


Figure 5. Projection with DMFA of changes in companies (2008/09-2012/13).

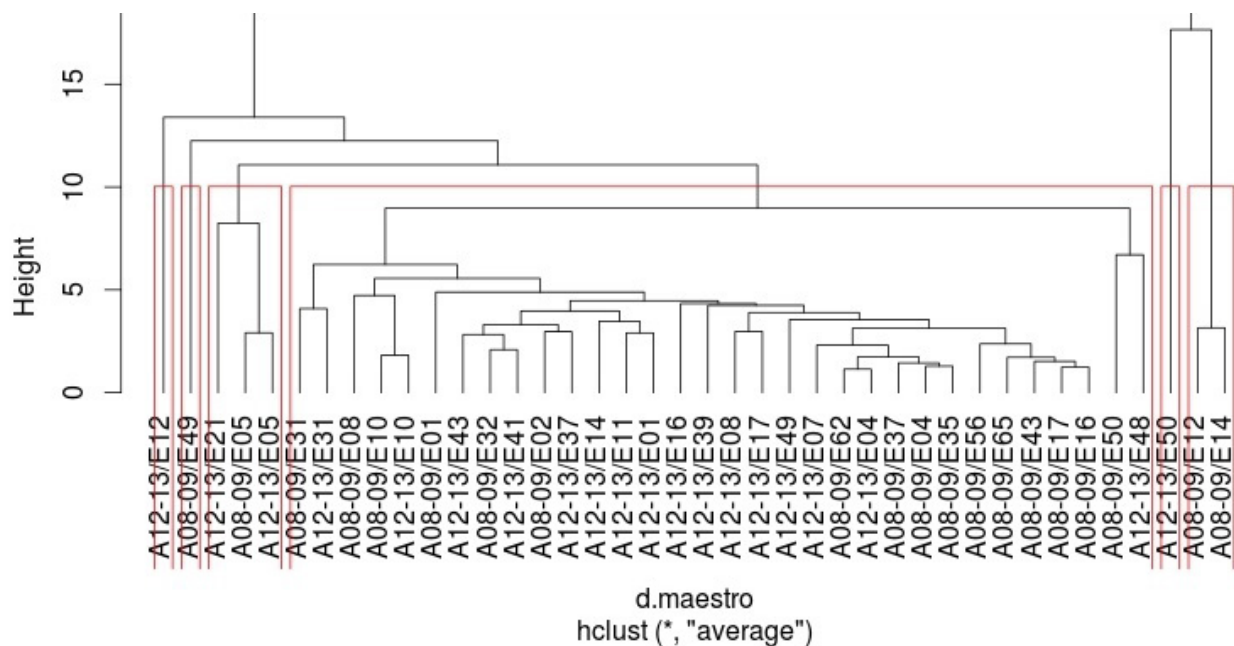


Figure 6. Tree diagram comparing the company trade policies. Source: prepared by the authors

value. This means that prices were adjusted during the period analysed as part of a strategy to increase sales volume in a more competitive environment.

The structure of the business network in Almería is moderately concentrated but edges towards a lower concentration. The normalized HHI index highlights the trend towards a lower concentration because of the larger number of businesses.

The FTCI reveals that Almería has the highest competitiveness index in countries such as Portugal, Poland, the Netherlands, Italy, France, Belgium and Germany with regard to its average share in world trade.

Globally, the Dual Multiple Factor Analysis or DMFA, allows us to confirm the presence of changes in the past years in practically all companies when comparing the 2008/09 period with the 2012/13 campaign, but these are not relevant at a macro level. At an individual or micro level, the change was relevant in leading companies. All other companies analysed revealed small changes that overlap with each other and this explains why the variation was so insignificant at a global level. In the majority of companies are seen variations in their destination market strategies and price strategies, specially in the large ones.

Finally, it can be pointed out that, in the analyzed period, changes in the business model for fresh tomato trade of Almería have not been significant, being its structure of moderate concentration. In addition, the great majority of variations in strategies of companies to adapt to the competitive environment have been made by leading companies. However, the future is full of uncertainty because of a more intense competence in a more liberalized environment.

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