EXPANDED ABSTRACT

Digital transformation in the Spanish agri-food cooperative sector: situation and prospects

Context

Nowadays it is an irrefutable fact that economy digitalisation is changing the traditional methods and balances of the current economic and social organisation model. In this context, the incorporation of new digital technologies in the company plays an undeniable competitive role in its strategic business policy. Agri-food cooperatives cannot ignore this opportunity and must face the digital transformation process not only to survive, but mainly to grow in a particularly changing and competitive market.

Objectives

The aim of this research is to contribute to the analysis of the digital transformation of the economy, paying special attention to Social Economy and, in particular, to the agri-food cooperative sector in Spain as a strategic sector of the country's productive model. Specifically, our main objective is to present an exploratory study on the use that agri-food cooperatives make of new information and communication technologies in two different aspects: Internet presence and web services offered. In light of the results obtained, an inter-territorial and inter-sectorial comparative study is posed as a complementary objective that allows: i) to characterize the degree of maturity of the digitalisation process of the cooperatives under study; ii) to determine their relative positioning within the Spanish business sector; and iii) to identify any conditioning factors that can exert a greater influence on the degree of digital transformation of agri-food cooperative.

Methodology

The main method used is the analytical empirical method through frequencies and correlations analysis.

The population considered is constituted by the agri-food cooperatives operating in Spain having more than ten partners / employees, whose data date after the year 2000 according to the Orbis database. Out of 6,431 registered cooperatives, there is a population of 506 entities meeting these criteria.

For the selection of the sample under study, we used stratified random sampling proportionate to the Autonomous Community. The study focuses on cooperative companies with more than 10 partners / employees, the main reasons being summarized in two. On the one hand, since it is based on

the hypothesis that agri-food cooperatives present a degree of activity digitalisation below other business legal forms, and therefore focusing on larger ones will help us to position ourselves in the best-case scenario in order to be able to make a more critical analysis. On the other hand, to be able to compare the study with the one presented by the Spanish Statistics Institute (INE), which makes this same differentiation by size.

For a confidence level of 95% and an error of 7.9%, a sample of 119 cooperatives is obtained. Thus, as Analucia is the community that has the most cooperatives in this sector, it is also the most represented with 20 cooperatives within the sample.

The search and data collection were carried out during the month of May 2018 through direct analysis of the contents and design of the Web pages corresponding to each of the 119 food cooperatives making up the sample under study. In particular, 11 variables total have been verified.

Three hypotheses will be established to respond to the objectives set:
- Hypothesis 1 (H1): The degree of digitalisation of agri-food cooperatives in Spain is below that of the business sector as a whole.
- Hypothesis 2 (H2): The size of the cooperative exerts a significant influence on its degree of digital transformation.
- Hypothesis 3 (H3): The activity sub-sector determines the level of digitalisation of the agri-food cooperative

Results

As for the results obtained, the analysis shows that only 55.46% of the agri-food cooperatives under study have a corporate website. Therese results, when compared with all companies -whose percentage rises to 77.69%-, evidences the existence of some delay in the agri-food cooperative sector in terms of internet presence compared with the average result achieved by the Spanish business sector. Note the existence of a differential greater than 22 percentage points.

The most significant point is to verify that the average in the digitalisation level is 2.3 out of 11, being this the maximum reachable value. That is, it would not pass on a scale from 0 to 10. In fact, no cooperative has the highest score possible, being 8 the highest value obtained. We can intuit thanks to the media that there is still much to be done regarding the level of digital transformation.

On another note, the variables that have a higher level of correlation with the variables measuring the level of digital transformation are: operating revenue, partners / number of employees and total assets. Therefore, the three variables established to measure the size of the cooperative influence the level of digital transformation, measured by the 11 items.

To contrast the third working hypothesis, the sample has been divided into the proposed sub-sectors following the Spanish Classification of Economic Activities (CNAE-2009). In this case, the outstanding role of the "dairy products" sub-sector, whose cooperatives obtain an average value of 4.67 at the digitalisation level, is verified. On the other hand, 100% of the cooperatives that operate in this sub-sector have a website.

Other sub-sectors that do not go unnoticed are "olive oil" and "animal feed products". In both cases, cooperative companies operating in this activity field that have a website represent a significant percentage of 82% and 71% respectively. In particular, if we compare these figures with the average of all companies in Spain, we can say that only the "dairy products" and "olive oil" sub-sectors have a percentage of companies with a website that is above the national average.

On the other hand, the activity sub-sectors that reach a higher score in the posed digitalisation index are, in descending order, "dairy products" (4.67 points), "olive oil" (3.25 points), "meat industry" (2.92 points) and "winemaking" (2.89 points). Although all these sub-sectors present a score higher than the average of the agri-food cooperatives analysed, this rating is far from being considered optimal, which indicates the need to promote measures that intensify the process of digital transformation of the agri-food cooperative sector.

Practical conclusions and original value

Regarding conclusions, after contrasting the formulated hypotheses, it is verified that the digitalisation degree of the agri-food cooperatives is relatively far, in general terms, from the average digitalisation level observed in all Spanish companies, presenting some "delay" in the digital transformation process. Nevertheless, this deficit position does not appear homogeneous in all sub-sectors that make up the agri-food sector. On the contrary, it is verified that both the activity sub-sector and the organisational dimension are determining factors in the digital transformation process of agri-food cooperatives.

Thus, the results obtained reveal that cooperatives with a greater dimension are characterised by presenting a greater digitalisation degree in terms of website development, internet presence, e-commerce and web services offered. Likewise, the dairy, olive oil, wine and meat industries present a global level of digitalisation greater than the rest of the agri-food sub-sectors. Finally, it has not been identified that the territory where the cooperatives carry out their activity exerts any influence on a greater or lesser degree of business digitalisation.

KEYWORDS: Agroindustrial, Agricultural Cooperative, Technology Adoption, Technology and Competitiveness, Information and communication technology, IT Management, Digital Transformation, Social Economy Enterprises, Agri-food Cooperatives.