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Characterization of innovation competencies in the export performance of fruit exporting companies in Ecuador

Walter Javier Caicedo Leones *
Martín Luis Castillo Veloz *
Mónica Annabelle Caicedo Leones *
Luis Roberto Asencio Cristóbal *

Abstract

Characterizing the innovation competencies in the performance of fruit exporting companies in Ecuador is a relevant topic for the country's fruit export sector. The main objective of this study is to identify and categorize the most significant innovation competencies of Ecuadorian fruit exporting companies and analyze how these competencies relate to each other and contribute to the export performance of these companies. The methodology used in this study is descriptive, based on primary sources and secondary data, which will allow for a detailed understanding of the innovation competencies present in Ecuadorian fruit exporting companies.

Keywords: Innovation competencies; Fruit exporters; Export performance; Effective strategies.

* University of Guayaquil, walter.caicedol@ug.edu.ec
https://orcid.org/0000-0002-1195-266X
* University of Guayaquil, martin.castillov@ug.edu.ec
https://orcid.org/0009-0002-4890-9750
* University of Guayaquil, monica.caicedol@ug.edu.ec
https://orcid.org/0000-0003-1532-203X
* University of Guayaquil, luis.asencioc@ug.edu.ec
https://orcid.org/0000-0003-3059-6389

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Caracterización de las competencias de innovación en el desempeño exportador de empresas frutículas en ecuador

Resumen

La caracterización de las competencias de innovación en el desempeño del exportador de empresas frutícolas en Ecuador es un tema relevante para el sector exportador frutícola del país. El objetivo principal de este estudio es identificar y categorizar las competencias de innovación más significativas que poseen las empresas frutícolas exportadoras de Ecuador, y analizar cómo estas competencias se relacionan entre sí y contribuyen al desempeño exportador de dichas empresas.

Palabras clave: Competencias de innovación; Exportadoras frutícolas; Desempeño exportador; estrategias efectivas.

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INTRODUCTION

According to the study conducted by C.K. Prahalad and Gary Hamel and published in 1990 in the Harvard Business Review entitled "The Core Competence of the Corporation," develops the concept of core competencies within companies, which are defined as the unique skills and technologies that an organization masters and that enable it to offer particular benefits to customers. In the first instance, it is established that, in order to be considered as such, these competencies must be difficult to imitate by competitors and must provide access to a wide variety of markets, influence customer satisfaction in a significant way, be unique and difficult to replicate by competitors (Prahalad & Hamel, 1990).

Accordingly, companies should identify and focus on their core competencies to differentiate themselves from the competition and maintain a sustainable competitive advantage by focusing on strengthening and developing them. Entities should avoid dispersing resources in non-core areas and instead concentrate on areas where they possess or can develop core competencies, for which strategic alliances can be a way to complement and reinforce core competencies.

The way in which companies can develop these competencies is to invest in training and the development of skills that reinforce them. In addition, an organizational culture that appreciates and develops these competencies must be fostered as a crucial factor in their long-term sustainability. Core competencies are fundamental to the long-term success of a corporation, and that strategic decisions must be aligned with the development and exploitation of these competencies.

Prahalad and Hamel closely linked core competencies to competitive advantage, stating that, in the long run, competitiveness derives from the ability to build, at lower cost and faster than competitors. In other words, corporations that focus more on developing core competencies that could be applied broadly were more successful than those that focused resources on developing very specific skills and technologies. The first group was able to take those competencies and innovate in new markets, while the second group was tied more exclusively to the specific products they developed. A contemporary example of this is the Apple company, which has developed a competency in user-centered design that has enabled its expansion beyond the personal computing market into the mobile computing and digital media markets (Dale & Kellam, 2013).

Throughout the exploration of core competencies, there is a clear message that they are fundamental to innovation. These skills constitute core competencies, which should coalesce around individuals whose efforts are not so focused that they cannot recognize opportunities to combine their functional expertise with that of others in new and interesting ways. In this way, the distinction can be made between core competencies and core skills needed to perform a particular task, but without their detailed analysis it can be an obstacle for large corporations. An example of this is those corporations that, despite dedicating resources to identify important technologies , by decision of their top management, continued to act as if they were managing independent business units, making it difficult to focus on core competencies due to decentralization (Prahalad & Hamel, 1990).

Focusing the development of the research, focusing on core competencies, according to the theory of Bueno and Morcillo, it is considered that, in order to achieve them, three key elements must be combined: technological, human and organizational competencies. However, it is considered essential to emphasize the human factor, which deals with the skills and resources incorporated in the competencies, i.e., in terms of human capital they mean personal skills, with respect to technology, it refers to technological resources, and concerning the organizational, it indicates what is related to organizational learning; these skills ultimately represent what the company does or knows how to do (Henao & Londoño, 2012).

The capacity for innovation is an increasingly growing value for companies, which are joining a paradigm shift to better respond to the needs that society demands. The professional world has turned upside down and requires sustainable companies through innovation. To achieve this, the company needs a quick response from its personnel, who will contribute to this change with the right

attitude. This new paradigm determines that no innovation is possible if there is no real perception of innovation. It is essential that there is adequate development of skills, of essential competences for individual development and competitiveness, as indicated by the European Qualifications Framework for lifelong learning (Aznar et al., 2015).

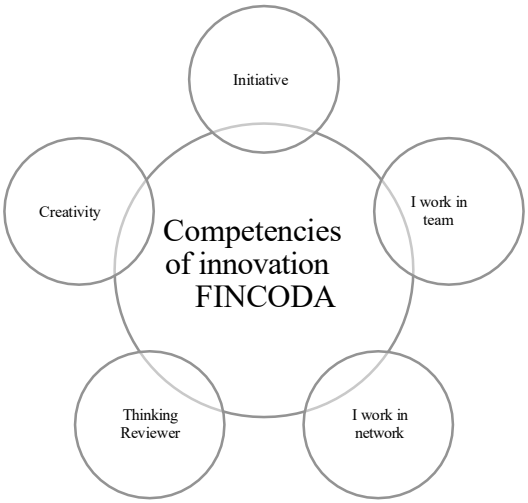
In order to determine the dimensions of innovation, the FINCODA Project (Framework for Innovation Competencies Development and Assessment) is taken into consideration, which stems from the INCODE project, starting in January 2015 and lasted until December 2017. This project focuses on two of the priorities of the strategic framework for European cooperation in the field of education and training: strategic objective number 2 (improving the quality and effectiveness of education and training) and strategic objective number 4 (increasing creativity and innovation, including entrepreneurship, at all levels of education and training). FINCODA's main objectives are: to identify innovative behaviors, knowledge and skills in business and relate them to those of our students, to observe innovative behaviors, knowledge and skills in both university teaching and business through a common assessment tool, the INCODE Barometer, at both national and international levels. It is vital that university and business work in parallel to be able to measure the results that are being pursued.

Five European universities are participating in the FINCODA project: TUAS (Turku University of Applied Sciences) from Finland; HAW (Hamburg University of Applied Sciences) from Germany; HU (Utrecht University of Applied Sciences) from the Netherlands; MMU (Manchester Metropolitan University) from the United Kingdom and UPV (Universitat Politécnica de València) from Spain. All universities participating in the FINCODA project belong to the CARPE (Consortium on Applied Research and Professional Education) network. These universities provide expertise, among

other areas, in international project management on university education, behavioral assessment methodology and psychometric analysis, among others. However, what makes the FINCODA project particularly original is the participation, in addition to these universities, of nine European companies that develop and implement innovation and work with innovative personnel.

Each university leads a work package related to its research profile; the management of the project is done from the university, and the participating companies focus together with the research personnel of the academic institutions on the content of the work packages. In this model, the following dimensions of innovation are considered:

Figure 1. Innovation competencies of the FINCODA model



METHODOLOGY

Through the application of the methodology used in this study, which is descriptive in nature, based on primary sources and secondary data, it will be possible to obtain a detailed

understanding of the innovation competencies present in Ecuadorian exporting fruit companies. The compilation and analysis of data from secondary sources, such as books, academic articles and industry reports, will make it possible to describe and categorize the most relevant innovation competencies, as well as to examine their relationship with export performance, using the FINCODA innovation competencies model as a parameter for validation.

RESULTS

According to a report by ECLAC (2016) in its analysis on the Internationalization of SMEs: innovation for exporting, it is mentioned that there is a close relationship between internationalization and innovation, because exporting companies require the development of distinctive characteristics that allow them to enter new markets, as well as the improvement of their internal processes, with the aim that the human resources they have are in line with the needs of knowledge and experience to assume the responsibilities of such changes.

Evaluating the level of innovation, according to the World Intellectual Property Organization (WIPO), part of the United Nations in its World Innovation Index for the period 2020-2021, Ecuador ranked 91st, improving its results from 2020, in which it ranked 99th.

Figure 2. Ecuador's ranking in the Global Innovation Index 2021

However, focusing on human capital, Ecuador decreased its ranking to 97th place, which differs by 6 places from the 2020 position, which was 91st place.

Figure 3. Ecuador's ranking in the 2021 Global Innovation Index according to human capital

Menéndez & Cobeña (2022) evaluating the critical factors of quality management of Ecuadorian pitahaya for export, presents as a result, on continuous improvement, new product development and innovation, that the programs for the improvement process were rated as good; while product development considering customer expectations and the capacity to introduce innovations to the products, as well as to the production processes, were rated as very good.

According to the Ministry of Agriculture and Livestock, cocoa is the main fruit crop in the country, with an average area of 610 thousand hectares nationwide. It is followed in cultivated area by African palm, banana and other relevant fruit products.

Figure 4. Classification of planted area by hectares. Year 2023

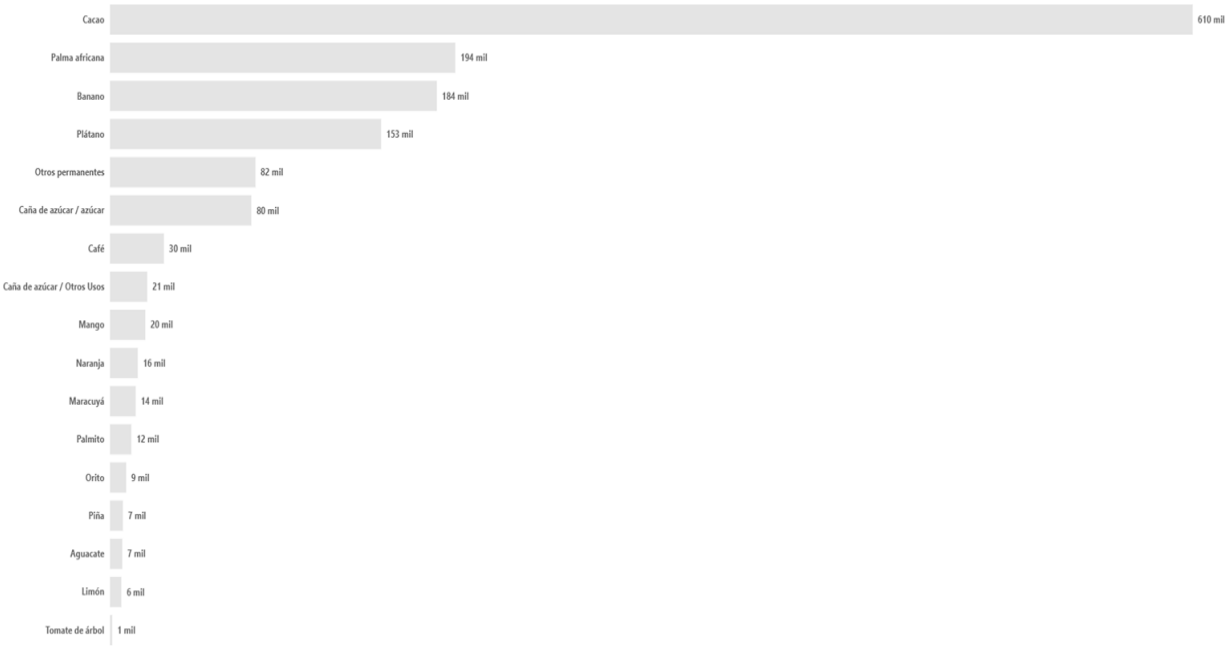
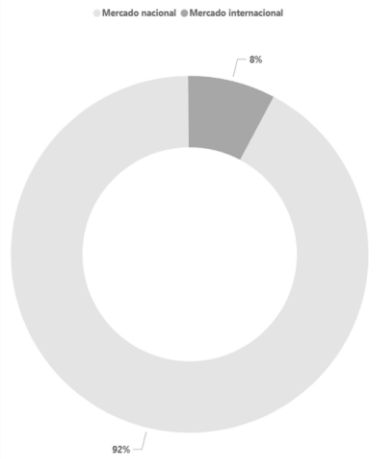


Figure 5. Classification of fruit products by production and sales. Year 2023

Despite the high level of production in the fruit sector, only 8% of total production is destined for the international market, which is a fundamental indicator of the level of internationalization of the sector and establishes that there are shortcomings that prevent an increase in the exportable level of such production.

Figure 6. Distribution of Ecuador's fruit production by destination market. Year 2023



Considering a public approach, the Ministry of Agriculture and Livestock established the National Project for Participatory Technological Innovation and Agricultural Productivity (PITPPA), which aims to promote the reactivation of agriculture through the optimization of technical assistance and extension processes, complemented with innovative technology, infrastructure and state-of-the-art technological equipment in order to improve the traditional productive capacities of small and medium-sized producers in the agricultural sector, so that the beneficiary population can improve their quality of life, with a view to exporting. The project is aimed at raising national productivity in bananas, rice, plantains, potatoes, hard corn, wheat, barley,

soybeans, soft corn, corn, fruit trees, coffee, cocoa, vegetables, among others, on small and medium-sized producers' farms, as well as recovering integrated systems or internal linkages; that is, the relationship between agricultural and livestock production in the management and recycling of waste (Rosero, 2021).

On the other hand, the Ministry of Production, Foreign Trade, Investment and Fisheries encourages the participation of the fruit sector to promote its exports, with the participation of 50 Ecuadorian companies in the 14th edition of Fruit Attraction 2022 in Spain, a world fair to promote products of the fruit and vegetable sector, which brought together about 90,000 customers and buyers from around the world. The event, which takes place from October 4 to 6, 2022, has the largest presence of the Ecuadorian fruit sector, with more than 50 participating companies, becoming the largest stand in the enclosure. Ecuador's presence at the fair is part of the joint work between the Ministry of Production, Foreign Trade, Investment and Fisheries (MPCEIP); the Association of Banana Exporters of Ecuador (AEBE); the Association of Marketing and Export of Bananas (ACORBANEC); the Export and Investment Promotion Corporation (CORPEI) and the Prefecture of Guayas. The event allows to explore the multiple possibilities of exotic fruits of our country, such as pitahaya, uvilla, passion fruit, sweet cucumber, hass avocado, passion fruit, tree tomato, among others. In this edition, Ecuadorian bananas and plantains are the star products of the exhibition, as there is an opportunity to open new markets and recover sales that have decreased as a result of the conflict between Russia and Ukraine (Ministry of Production, Foreign Trade, Investment and Fisheries, 2022).

In addition to this, the National Institute of Agricultural Research (2023) established its Fruit Growing Program, which was divided

into two major stages, under different conditions and approaches, the first during the period 1982 - 1998 in which there was significant economic and technical support from the Swiss Government and research on deciduous fruit trees, technology transfer and gender approach was privileged; The second stage began in 2000-present, when economic resources were obtained through the presentation of projects to national and international competitive funds, with emphasis on research on native and export fruit trees in the Ecuadorian Sierra, Coast and Amazon.

In the first stage, research was conducted on deciduous species and varieties such as apples, peaches, plums and grapes to improve the profitability of producers in traditional areas (central-southern part of the country) and incorporate new areas such as the inter-Andean valleys and certain coastal areas. To this end, management technologies were developed and/or improved and high-yielding materials, fruit quality and different harvesting seasons were selected to increase supply and maintain stable prices. During this period, nine apple, five peach, three plum and four grapevine varieties were promoted.

The technology generated was disseminated through the Technology Transfer Network, which was made up of groups that covered producers in the provinces of Carchi, Imbabura, Pichincha, Cotopaxi, Tungurahua, Chimborazo, Azuay, Manabí and Guayas. Based on an initial diagnosis, the Technology Transfer Groups (GTT) determined that in 1993, 20% of the producers were applying the new techniques; 1996 evaluations determined that around 60% were using the new techniques. The technological improvement of the orchards had an important influence on the increase in orchard production, for example, in Anna apple, in the subtropical valleys of Pichincha, from 14 t/ha in 1993 to 21.5 t/ha in 1996. Avocado yields increased from 9 t/ha to 11.5 t/ha in 1996.

During the second stage, the following fruit trees were prioritized: avocado, blackberry, custard apple, tree tomato, naranjilla, uvilla, vasconcellas (highlands and transition zones); guava, soursop, pineapple, mango, passion fruit (coast); borojó, copuazú, arazá (Amazon). Currently, work is also being done on guava, grape, peach, claudia and other deciduous (highlands and transition zones), citrus (coast) and naranjilla, pitajaya, papaya, passion fruit and citrus (Amazon). At this stage, emphasis is being given to research on genetic improvement of native species as an important alternative for integrated pest management and the generation of innovative technologies for export fruit trees and others of interest, and the chain approach has also been incorporated (National Agricultural Research Institute, 2023).

CONCLUSIONS

From the documentary review, it can be concluded that the development of innovation competencies in the fruit exporting sector has not been performed correctly, especially if approached from the human competence, because the projects focused on their development are based on the improvement of processes or production in general and not focused on the preparation of the personnel involved in the sector, considering the dimensions of initiative, teamwork, networking, critical thinking and creativity.

This means that export development is not carried out correctly, which means that only 8% of total production is positioned outside the national context. This delays the internationalization processes of fruit production companies and, therefore, reduces the number of exporting companies.

Therefore, it is considered necessary to promote projects aimed at improving the ability of fruit companies to adapt quickly to changes in the business environment, so that they can capture new opportunities and meet the changing demands of international customers. New projects should focus on fostering business networking and creativity as relevant to innovation competencies.

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