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ORIGINAL

Identification of the determining factors in the permanence of a poultry production system: the case of Mi Pequeña Lulú farm

Identificación de los factores determinantes en la permanencia de un sistema de producción avícola: el caso de la granja Mi Pequeña Lulú

Juan Antonio Perdomo Medina[1], Oscar Santiago Solimán Torres[1]

[1]Universidad de la Amazonia, Florencia, Colombia.

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ABSTRACT

This article is carried out due to the need to characterize the experience of poultry production with sustainable practices, so it is necessary to know how it has lasted over time. For this purpose, the determining factors in the permanence of a poultry production system were identified: The case of the farm mi pequeña Lulú, located in the village of Santo Domingo, Florencia. The data collection instruments were the interview, survey, observation and field visit. The results and discussion were divided into four fundamental aspects: Generalities, marketing strategies, technology and innovations, and limitations. The perception of poultry farming in the form that is based on the farm my little Lulu, presents a model based on their own experiences, both the problems that arose and how they overcame each one of them.

Keywords: Limitations; Marketing Strategies; Sustainable Practices; Technology and Innovations.

RESUMEN

El presente artículo se realiza por la necesidad de caracterizar la experiencia de una producción avícola con prácticas sostenibles, por lo que es necesario conocer cómo ésta ha perdurado en el tiempo. Para ello se hizo la identificación de los factores determinantes en la permanencia de un sistema de producción avícola: El caso de la granja mi pequeña Lulú, ubicada en la vereda Santo Domingo, Florencia. Los instrumentos de recolección de los datos fueron la entrevista, encuesta, observación y recorrido de campo. Los resultados y discusión se dividieron en cuatro aspectos fundamentales: Generalidades, estrategias de comercialización, tecnología e innovaciones y limitaciones. La percepción de avicultura en la forma que se basa la granja mi pequeña Lulú, presenta un modelo base de sus propias experiencias, tanto los problemas que se presentaron y cómo superaron cada uno de ellos.

Palabras clave: Limitaciones; Estrategias de Comercialización; Perdurado; Prácticas Sostenibles; Tecnología e Innovaciones.

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INTRODUCTION

Poultry farming around the world

Compared to other sources of animal protein and with significant growth prospects, chicken meat has an estimated inventory of 103 740 143, representing 34,9 % of global meat consumption. The continent with the most poultry farming systems is America, and the country with the highest production is the United States, the world's largest producer. However, Asia has seen significant growth that could make it the largest producer in a few years. The United States is the leading global producer, accounting for 17 % of total global production of 19 568 042 tons, followed by Brazil, China, the Russian Federation, and India.[1]

The largest producers of poultry eggs are China, followed by the United States and other countries. China (45,2 %), the United States (9,5 %), India (8,2 %), Russia (5,0 %), and Japan (4,9 %).[2] In recent years, the livestock sector has suffered various problems, mainly from increased essential inputs. The findings confirm that intensive production has led to an increase in agricultural prices and a new institutional environment related to rising oil prices, higher wages, and slow technological progress.[3] In addition to this increase due to the aforementioned factors, it is also worth highlighting the impact of the conflict in Ukraine, which is causing input prices to rise.

Poultry farming at the local level

Poultry production has experienced economic and social growth in the municipality of Florencia, as this activity generates employment, promotes rural development, and supplies poultry products to the local market. However, the permanence of poultry production systems for meat and eggs faces several challenges. Factors such as increased input costs, climate change, and market competition, among others, directly impact the sustainability of these productions.

It has various shortcomings when compared to the rest of the country. In the case of the "Mi Pequeña Lulú" farm, it is important to consider the factors that have allowed it to maintain its production over time and in the same way for its customers.

Poultry issues

It is important to consider the increases in the price of feed for poultry production and how climate variability has affected this type of production.

Sustainable animal production is based on principles and practices that ensure producers implement systems promoting animal health and welfare. At the same time, these systems must allow animals to meet fundamental human needs, such as food, economy, energy, and environmental protection.[4]

Feeding hens with bore (22,3 % protein) and matarratón (23,6 % protein), hens are being fed efficiently to produce eggs with the best benefits.

For this reason, it is necessary to learn about the experience of production using sustainable practices that seek to make this production economically, culturally, and environmentally beneficial. It is, therefore, necessary to know how poultry production has endured over time at the Mi Pequeña Lulú farm.

The study aims to identify the factors that influence the permanence of a poultry system, focusing on the case of the Mi Pequeña Lulú farm, located in the village of Santo Domingo, Florencia. Through a detailed analysis of the productive, economic, technological, and management aspects, we seek to understand the dynamics that have allowed this production to continue in the face of environmental challenges.

METHOD

Location

The system was identified on the Mi Pequeña Lulú farm in the village of Santo Domingo, a district on the outskirts of Florencia-Caquetá via Morelia. The village is located in the south of the country at 1°35'37"N 75°39' 26" W, at an altitude of approximately 330 meters (figure 1).

Figure 1. Location

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Population and sample

The study linked the experience of the poultry farming system to Mi Pequeña Lulú. In this way, or as a selection criterion, the person who had been in this system the longest was linked to it, which was an important factor in identifying the determinants of permanence.

Methodological approach

A historical hermeneutic research design was used, with a qualitative approach due to the methods employed.[5] A descriptive-qualitative type of research was used because it seeks and collects information and data on different aspects such as characteristics, agents, properties, aspects, factors, etc.[6]

Method

Analysis of family participation in the dynamics of the experience

An interview was conducted with the person involved in the experience for the most extended period.

Understanding how the experience works in terms of research and technology

In addition to observations by the interviewer and visits to the experience, an interview was used, engaging in dialogue with the interviewee to complement the information provided.

Characterization of market access

Market access was characterized through a survey that helped respondents vary the terms used to define their access to markets.[7]

RESULTS

General

This section highlights the word huevar, which refers to the main product of the poultry farm Mi Pequeña Lulú. Everything emphasizes eggs, and a large part of the Mi Pequeña Lulú farm is dedicated to caring, feeding, and housing chickens, although various problems have arisen over time. All of this was recounted by Mr. Oscar, who took the time to share his experience briefly but precisely (figure 2).

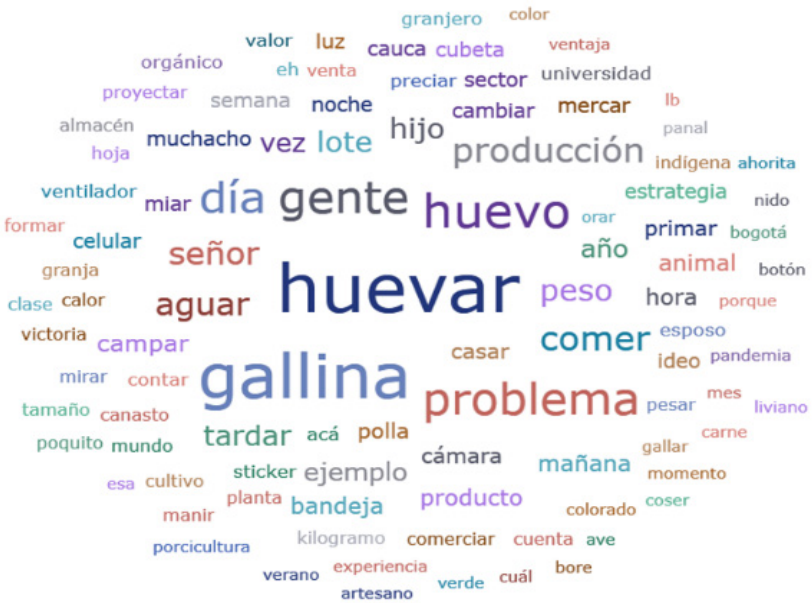

Figure 2. General information on poultry production at the Mi Pequeña Lulú

Marketing strategies

The market is an important factor to consider in establishing profitable production. This is in line with [4] who states that niche markets focused on small-scale markets are preferred by consumers over traditional products, helping to create opportunities for producers to market their products.

The market for this poultry production, as highlighted in figure 3, is eggs, specifically Creole eggs. Significant production of this product has been achieved due to the breed used, the Araucana hen. According to the [8] the taste and color of blue egg yolks depend directly on the birds' diet since these eggs are produced organically and come from birds fed a healthy and natural diet, resulting in a higher vitamin A content and, therefore, carotene, which gives the yolks a more intense golden yellow color than usual and a different flavor from industrial eggs, although very similar to that of free-range eggs. In addition, the carotenoids present in these eggs help protect the body against degenerative diseases such as cancer, diabetes, cataracts, and cardiovascular diseases.

The word "investment" appears in the producer's account, essential for any food production project. However, as is well known and as the producer was well aware, this is accompanied by losses common in commerce. However, how these losses are recovered

gives us an idea of what can be achieved and, in this case, what has been achieved with Granja Mi Pequeña Lulú, thanks to innovative marketing strategies such as creating an image and implementing new-technologies include partnering with local merchants, such as indigenous people and artisans, and, as Bunch[14] states, using locally existing resources that are easily accessible and available to producers.

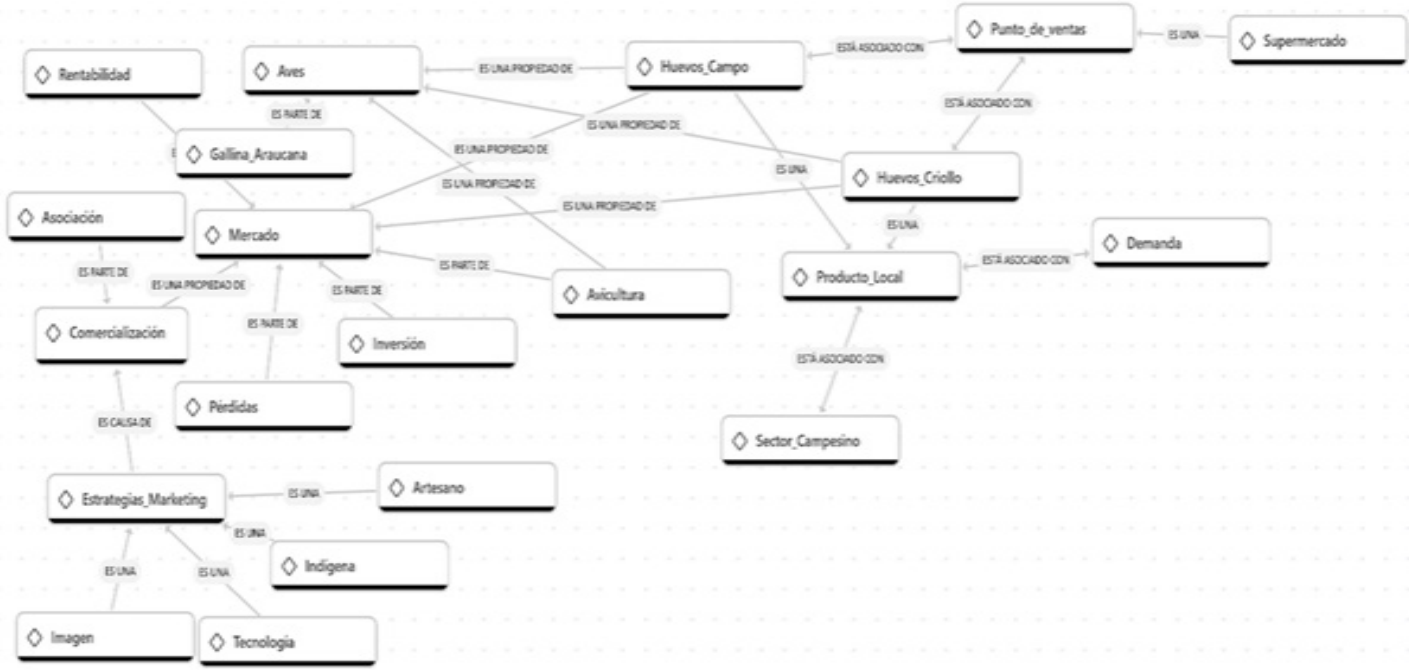

Figure 3. Marketing of poultry production

What Mi Pequeña Lulú farm egg production achieved was to create a movement where city consumers consider that local products have more benefits than others. This is being achieved thanks to the partnership and support of the Super Mio and El Primo supermarkets for the sale of these regional products (figure 4).

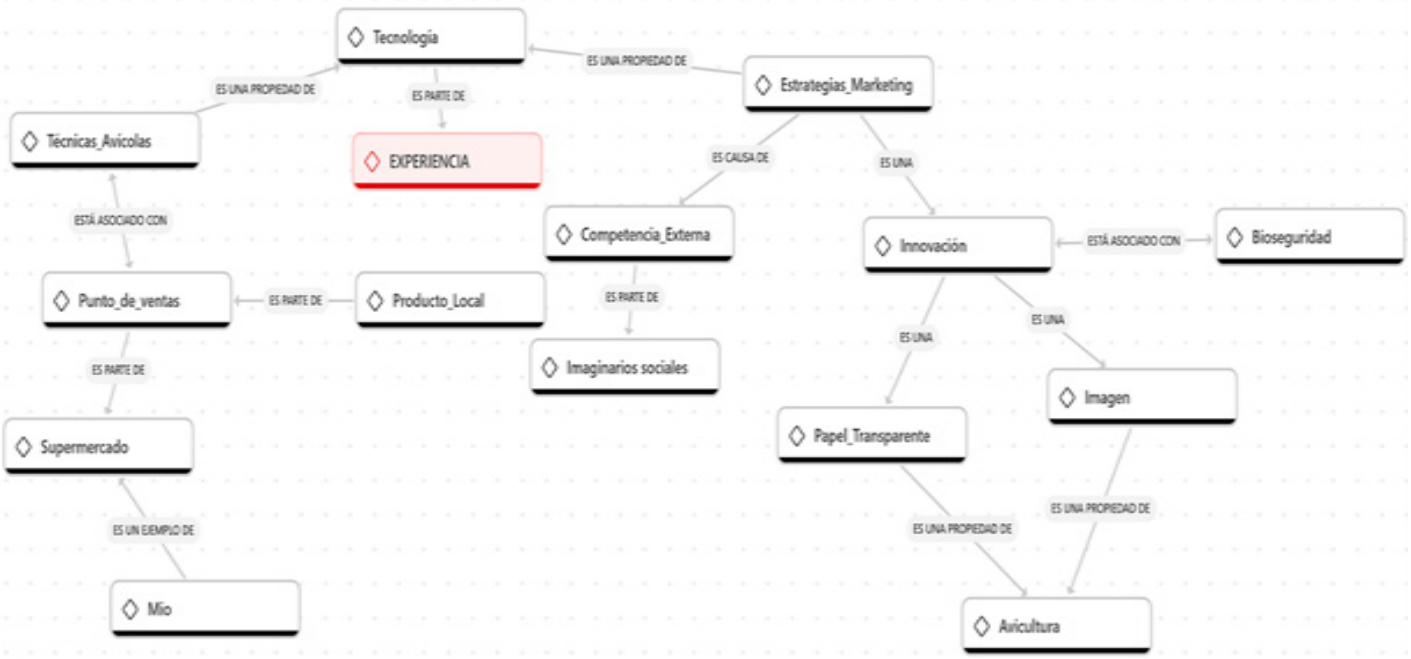

Figure 4. Marketing of poultry production

Technologies and innovations

According to the poultry farmer, the implementation of technologies and different innovative practices has allowed his production to endure over time; sustainable poultry farming techniques, such as the use of organic feed to reduce the purchase of concentrate, the creation of a new market based on production waste such as chicken manure and poultry manure, and excellent biosecurity based, of course, on vegetables, which makes us recognize the technological advances that have been made on the farm to achieve

sustainability. In the words of Rogers[9] information generation is present in designing technologies that can meet the audience's expectations, such as people who adopt new methods and needs consistent with their resources. As Shane[10] points out, introducing a new generation of technological innovations in the industry will mitigate the negative impacts of the activity on the environment and animal welfare.

Limitations

The interviewee acknowledges that he has encountered difficulties and problems throughout his career as a poultry farmer and with his experience at the Lulú farm. There have been losses due to transportation failures, debts, and product devaluation, in addition to the impact of the pandemic and its adverse effects on trade.[11] comments that the closure of borders due to COVID-19 and trade between cities has made transporting products to points of sale difficult, leading to overproduction and the deterioration of some foods, forcing producers to sell them at very low prices. This closure has also increased raw material prices, compounding the problem.

A case in point is the marketing of poultry products, which have fallen victim to impersonation or social stereotypes, resulting in their image being used by another entity. Strategies have, therefore, been implemented to differentiate them, such as using transparent packaging for eggs.

According to Kuczynski[12] poultry farming is an example of this negative association. Poultry are susceptible to heat stress, as they cannot dissipate heat through sweat.[13,15,16] Therefore, they rely solely on convection and respiration to regulate their body temperature.[17,18,19,20] Genetic selection in broiler chickens, aimed at improving their growth and meat quality, has reduced the range of their thermal comfort zone, increasing their susceptibility to heat stress.[21,22,23,24]

While climate change is affecting poultry production in various ways, generating impacts that jeopardize both the efficiency of the system and the welfare of the birds in Florence, one of the main effects is heat stress caused by rising temperatures, which causes the birds to eat less and reduces their weight gain and egg production. In addition, heat stress can cause a general deterioration in the birds' health, affecting their ability to produce efficiently.[25,26,27]

A limiting factor for food production in these times is climate change, which is mainly affecting the feeding and care of chickens, says the producer.[28,39,30,31] In response, the product has always had an important factor in its favor: his family, wife, daughters, grandchildren, etc.; they have supported counteracting the limitations (figure 5).

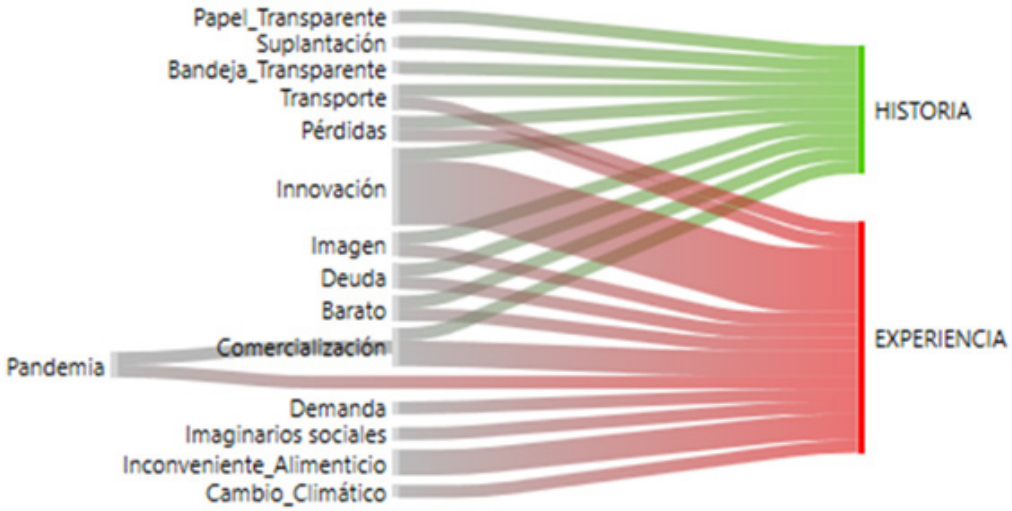

Figure 5. Limitations on the permanence of a poultry production system

CONCLUSIONS

The perception of poultry farming as practiced by the Mi Pequeña Lulú farm presents a basic model based on their own experiences, including the problems they encountered and how they overcame each one, both financial problems and problems that came from outside, such as the COVID-19 lockdown and climate change. The producer's influence in supporting indigenous handicrafts and opening doors to other poultry producers in well-known supermarkets in the city, such as El Primo and Supermio.

They have also implemented sustainable practices for feeding their chickens, such as bore, matarratón, etc., and have adapted a hydroponic corn crop to provide better nutritional food for their chickens and consumers.

Family support is a fundamental factor in production, thanks to the support of all family members, including his wife, daughters, grandchildren, and sons-in-law. It can, therefore, be concluded that the poultry work at Granja mi pequeña Lulú has been well managed by Mr. Oscar, who has received and provided assistance in the poultry sector, both by encouraging companies in the chain to trust local producers and by receiving support from his family in the production and sale of eggs. For example, his son-in-law helps him with identification in supermarkets as "Los huevos del sticker Verde" (the eggs with the green sticker), and his daughter is on hand when a hen dies to find out the cause of death and deduce why it died.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

AUTHOR CONTRIBUTION

Conceptualization: Juan Antonio Perdomo Medina, Oscar Santiago Solimán Torres.
Data curation: Juan Antonio Perdomo Medina, Oscar Santiago Solimán Torres.
Formal analysis: Juan Antonio Perdomo Medina, Oscar Santiago Solimán Torres.
Research: Juan Antonio Perdomo Medina, Oscar Santiago Solimán Torres.
Methodology: Juan Antonio Perdomo Medina, Oscar Santiago Solimán Torres.
Project management: Juan Antonio Perdomo Medina, Oscar Santiago Solimán Torres.
Resources: Juan Antonio Perdomo Medina, Oscar Santiago Solimán Torres.
Software: Juan Antonio Perdomo Medina, Oscar Santiago Solimán Torres.
Supervision: Juan Antonio Perdomo Medina, Oscar Santiago Solimán Torres.
Validation: Juan Antonio Perdomo Medina, Oscar Santiago Solimán Torres.
Visualization: Juan Antonio Perdomo Medina, Oscar Santiago Solimán Torres.
Writing – original draft: Juan Antonio Perdomo Medina, Oscar Santiago Solimán Torres.
Writing – review and editing: Juan Antonio Perdomo Medina, Oscar Santiago Solimán Torres.