Journal of Infrastructure, Policy and Development 2024, 8(2), 2872.
https://doi.org/10.24294/jipd.v8i2.2872

Article

Enhancing competitiveness in cocoa associations: An integral project management approach based on Porter's Diamond Model

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CITATION

Ayon Ponce GI, Álvarez Indacochea AA, Salazar Moran AL, et al. (2024). Enhancing competitiveness in cocoa associations: An integral project management approach based on Porter's Diamond Model. Journal of Infrastructure, Policy and Development. 8(2): 2872. https://doi.org/10.24294/jipd.v8i2.2872

ARTICLE INFO

Received: 15 September 2023
Accepted: 13 October 2023
Available online: 2 January 2024

Abstract: This study aims to structure guidelines for an intervention model from the perspective of Integral Project Management to improve the competitiveness level of cacao associations in south region of Colombia. The research followed a mixed-method approach with a non-experimental cross-sectional design and a descriptive scope. The study employed a stage-based analytical framework which included: identifying the factors influencing the competitiveness of the cacao sector; grouping these factors under the six primary determinants of competitiveness with reference to Porter's Diamond Model; and proposing guidelines for an intervention model to enhance the competitiveness of the studied associations through project management. The first stage was conducted via literature review. The second stage involved primary data collected through surveys and interviews with the associations, members, and cacao sector experts in Huila. The third stage entailed grouping the factors within the main determinants that promote and limit the competitiveness of the cacao sector in the context of Porter's Diamond Model. Based on the analysis of the corresponding restrictive and promoting factors, strategic recommendations were formulated for the various sector stakeholders on the measures that can be adopted to address restrictive factors and maintain promoting factors to enhance and sustain the sector's competitiveness.

Keywords: cocoa; competitiveness association; project management; Porter's Diamond

1. Introduction

In the context of developing countries, agriculture has regained significant prominence since the 1980s as a dynamic propeller for economic and social development (Soledispa-Cañarte et al., 2023b). Recognizing its potential to trigger multifaceted growth, the agricultural sector has witnessed escalated interest and investment influx (Soledispa-Cañarte et al., 2023b). Among the wide array of agricultural commodities, cocoa has distinctly emerged as a globally coveted resource. The cultivation, processing, and consumption of cocoa intricately intersect various realms of the contemporary society, encompassing economic, technological, environmental, and sustainability aspects.

The global demand for cocoa, a key ingredient in myriad popular commodities,

continues to rise in tandem with the escalating global population and evolving consumer preferences. Intriguingly, small-scale producers, contributing to 85% of the world's total cocoa supply (Quelal-Vásconez, 2020; Rice and Greenberg, 2000), play a pivotal role in the chocolate industry. Yet, they grapple with an imbalanced market heavily influenced by a limited cadre of large corporate entities. The International Cocoa Organization (ICCO) recognized Latin America as the hub of thirteen out of twenty-three fine flavor cocoa exporting countries in 2016. Indigenous cocoa varieties from this region, such as Peru's 'chuncho' and Ecuador's 'nacional', are highly valued for their exceptional flavor, aroma, and compatibility with traditional shade-grown farming systems (Céspedes-Del Pozo et al., 2017). Such attributes underscore the latent potential of these regions in spearheading specialty chocolate markets that prioritize both fine flavor and sustainable farming practices.

In Colombia, cocoa and its derivatives hold significant cultural and economic importance. Various cocoa-derived products, such as table chocolate and chocolate bars, enjoy wide consumption (Purdue University and the International Center for Tropical Agriculture (CIAT), 2018). Beyond gastronomic relevance, cocoa cultivation forms the livelihood backbone for over 25,000 families, generating millions of labor days annually.

Huila state stands out as a primary contributor to Colombia's national cocoa production. Despite this prominence, a conspicuous gap exists: the competitiveness and market positioning of these producers largely remain suboptimal, with limited literature exploring the unique challenges and potential solutions tailored to the context of western Huila (Ollivier de Leth and Ros-Tonen, 2021; Kumar et al., 2022; Jamaludin, 2021). The implications of this gap are multifaceted. On a local scale, suboptimal competitiveness could hinder economic growth, reduce profitability for small-scale farmers, and potentially exacerbate vulnerabilities in an already volatile global cocoa market (Angélique et al., 2022). Globally, understanding and addressing these challenges is imperative for maintaining a resilient cocoa supply chain (Mc Loughlin et al., 2023), particularly given the pivotal role that regions like western Huila play.

Addressing this lacuna, the present study endeavors to scrutinize the competitiveness of cocoa associations and producers in western Huila. Its primary objective is to establish guidelines for an intervention model that leverages the principles of integrated project management (Sbiti et al., 2021; El Khatib et al., 2020). The goal is to enhance the competitiveness quotient of cocoa production, tailored to address the unique challenges of this Colombian region. This research also aspires to present a globally applicable framework that could potentially influence cocoa production dynamics in similar regional contexts across the world. By filling this critical research void, this study aims to contribute significantly to the sustainable development of cocoa-producing communities (Abdullahi et al., 2022; Lontchi et al., 2022) and fortify the resilience of the global cocoa supply chain (Fountain and Hütz-Adams, 2020).

2. Literature review

2.1. The nature of competitiveness in a globalized world

The global landscape of trade and commerce has seen seismic shifts in its fundamental constructs over the past several decades. At the forefront of this academic and policy discourse stands the concept of competitiveness. Its prominence emerged as a response to the globalization wave, where free trade became the linchpin of economic policies and marketable product strategies rose to the fore (Gittinger, 1984). While initially understood in simpler terms, competitiveness has evolved to be seen as a relative and multidimensional entity. Its adaptability to the constantly morphing global contexts—from economic downturns to technological disruptions—showcases its intricate nature (Ajitabh and Momaya, 2004). Crucially, its assessment isn't monolithic; it varies depending on whether one is analyzing it at the macro (country), meso (industry), or micro (firm) levels. Latruffe's (2010) rendition provides a foundational understanding by positing competitiveness as a marker of resilience and success in the face of competition. Herein, the dual objectives of meeting market demands (ensuring quality, quantity, and price points) and maintaining sustained profitability become apparent. However, as the world entered the 21st century, traditional markers of competitiveness began intertwining with newer, more progressive indices. Abdullahi et al. (2022) underscore this shift, highlighting the growing weightage of sustainability, inclusivity, and technology in determining competitiveness.

Taking a deep dive into specific industries offers a microcosmic view of these dynamics. The Colombian cocoa industry, a vibrant segment of the global cocoa ecosystem, provides a compelling case study. Spanning the vast continuum from cultivation to the fine art of chocolate production, this industry's competitiveness cannot be understood without Freebairn's (1987) definition. He presents a tripartite framework that encapsulates the international market, domestic product market, and the allocation within a national scarce resources market. What's pivotal in this conceptualization is the understanding of opportunity costs, a term that aligns seamlessly with the principles of agricultural economics (Van Rooyen and Boonzaaier, 2016). Yet, as any dynamic construct, the parameters of competitiveness within the cocoa sector are not static. Newer challenges and opportunities have emerged. With the looming shadow of climate change, ethical labor considerations, and the revolutionary impact of digital transformations in supply chains, the industry is in a state of flux (Soledispa-Cañarte et al., 2023a; 2023b; Borras et al., 2022; Helmold and Terry, 2021). Colombia, with its pivotal role in the cocoa supply chain, stands at the crossroads, making it imperative to revisit, reimagine, and redefine competitiveness in this context.

2.2. Competitiveness in a dynamic landscape

In the annals of business literature, few concepts have incited as much debate as that of competitiveness. Pitts and Lagnevik (1998) touch upon the multifaceted nature of competitiveness, highlighting its role in understanding the intricacies of investment, corporate success, and effective policymaking. Yet, the lack of a unanimous measure for competitiveness is evident, pointing towards its vast applicability spanning firm, industry, and national landscapes, each governed by varied indicators such as profitability, market dynamics, and cost structures (Banse et al., 1999). Siudek and

Zawojska (2014) offer a structured breakdown of this vast domain, categorizing competitiveness across macro, meso, and micro levels. While the methods to gauge competitiveness differ based on the level of scrutiny, Siggel (2006) asserts the robust theoretical grounding of microeconomic indicators, citing their focus on industry-specific characteristics. Meanwhile, Latruffe (2010) delineates the two major schools of thought governing competitiveness: neoclassical and strategic management.

Nestled within this debate is the concept of competitive advantage. Here, the pivotal contribution of Michael Porter cannot be overlooked. His framework, entrenched in seeking out the reasons for international success in specific industries, stands out for its nuanced approach. At its core, the model delves deep into four intrinsic attributes and supplements these with two external determinants, forming a 'diamond' (Rugman and D'cruz, 1993). Olawale and Smit (2010) sheds light on this interwoven matrix, emphasizing the significance of the collective strength of these determinants. However, as with any longstanding framework, Porter's diamond has faced its fair share of critiques. The emergent literature posits a pertinent question about the model's adaptability to today's rapidly digitizing global landscape, emphasizing potential blind spots in addressing contemporary industry nuances (Erboz, 2020; Nag and Mishra, 2023). Yet, Porter's diamond's lasting influence can be attributed to its inherent flexibility (Vlados, 2019). Analyzing Colombia's cocoa industry through this lens reveals the model's continued relevance. With its rich mosaic of local production processes, unique demand dynamics, and specific factor conditions, the diamond framework facilitates a comprehensive examination. When juxtaposed with newer models like Ollivier de Leth and Ros-Tonen (2021) and Mc Loughlin et al. (2023) global value chains, Porter's diamond emerges superior in its holistic analysis of both domestic and international interplays. While no model can claim to capture every facet of an ever-evolving industry landscape, Porter's diamond, with its multifaceted and adaptable approach, remains a cornerstone in understanding the dynamics of competitiveness, especially when contextualized within specific industries or regions (Fernando, 2021).

2.3. Associativity in the modern business landscape

Associativity, as a concept, represents an evolution in collaborative endeavors within the business milieu. Characterized by a conglomerate of independent enterprises that voluntarily amalgamate their efforts while retaining their legal and managerial sovereignty, this mode of operation is driven by collective aspirations (Rosales, 1997). While these objectives can vary in their temporality and focus, from short-term shared acquisitions to long-term research collaborations, the underlying ethos remains consistent: collective endeavor for mutual benefit.

Contemporary scholarship underscores the multifaceted implications of associativity. Naclerio and Trucco (2015), Ceballos et al. (2014), and Vázquez and Portales (2014) converge on the assertion that cooperative organizations, underpinned by associativity principles, are instrumental in local development and socioeconomic upliftment. This perspective finds resonance in Foronda-Robles and Galindo-Pérez-de-Azpillaga's (2012) research, with their emphasis on associativity as a vessel of social capital. Their discourse, echoed by Mejía et al. (2015) and Muñoz et al. (2021),

delves into the intricate relationship between trust, territorial development, and innovation catalyzed by associativity. Moreover, when aligned with the needs and challenges of SMEs, such collaborative endeavors can address deeper socio-economic issues such as inequality, conflict dynamics, and power distribution, augmenting productivity and fostering competitive advantage.

A crucial dimension to this discourse is the harmonization of traditional wisdom with contemporary methodologies, accentuating sustainable rural development. Associativity's potential in safeguarding indigenous knowledge while juxtaposing it with modern techniques, molded by external economic pressures, offers a unique approach to sustainability (Kumar et al., 2022; Burgos-Cañas and Fonseca-Pinto, 2020). In a rapidly evolving global business landscape characterized by shared economies and the shift towards sustainable value creation, associativity stands out as an embodiment of these ideals. It melds the principles of collaboration with sustainable and inclusive growth, aligning with the paradigm shifts in the global economic narrative.

2.4. Strategic management in an age of complexity and uncertainty

The strategic management process, at its core, defines a roadmap that aligns a company's operations with its overarching objectives, guiding it towards long-term success (Teece, 2010; Damert et al., 2017; Rincón-Guio, Quintero et al., 2022). Historically, strategic planning was framed within methodical, structured models, adhering to a linear progression from inception to execution. This structured paradigm, often dubbed 'static', hinges on the assumption of a predictable business environment, where strategic objectives can be identified, planned, and executed in a sequential manner (Bryson et al., 2009; Hersperger et al., 2019). Such models, grounded in the presumption of readily available information, operate under the premise of clear causality: if strategy 'X' is employed, result 'Y' will ensue (Alkhafaji and Nelson, 2013).

Yet, this classical approach has faced criticism, notably from Mintzberg and Waters (1985), who introduced the concept of 'emergent strategies'. They argued for a more fluid, adaptive strategy formation process, wherein predetermined steps can be revised, re-ordered, or replaced based on the changing external environment. This dynamism allows organizations to recalibrate their strategic objectives, making real-time adjustments in response to unforeseen environmental shifts. Such a perspective is not entirely devoid of planning but rather blends deliberate planning with the ability to pivot considering emerging scenarios.

As the 21st century unfolds, the business ecosystem, buffeted by technological revolutions, geopolitical shifts, and even global health crises, demands a reassessment of entrenched strategic models. The static, linear approach seems increasingly anachronistic in an era where change is not just constant but often unpredictable. Frame (2022) amplify this sentiment, emphasizing the inadequacy of static models in navigating the labyrinthine complexities of today's business world. In this context, strategic agility becomes paramount. The synthesis of detailed environmental analyses, transparent communication channels, and iterative feedback loops becomes the cornerstone of contemporary strategic management. As the linearity of traditional

models gives way to the adaptability of emergent strategies, businesses are not only equipped to respond to challenges but can also preemptively harness opportunities in a volatile environment.

2.5. Strategizing in the modern consumer goods industry

Strategy formulation, at its core, serves as a compass, charting the long-term trajectory and boundaries of a company. In industries as dynamic and volatile as the consumer goods sector, a strategically sound roadmap not only paves the way for enhanced sales and productivity but also strengthens financial health and fosters cultural synergy (Steve Smith, 2009). It's a critical process, necessitating vigilance to identify and rectify any executional bottlenecks (Neilson et al., 2008).

Historically, the emphasis has been on a structured, formal approach to strategy formulation, valorizing clarity and discipline as its linchpins (Morris and Jamieson, 2005). This modus operandi, while robust, often vested the responsibility of strategic ideation solely with the upper echelons of corporate leadership, occasionally leading to strategies disconnected from ground realities (Parnell, 2003). Such top-down exclusivity potentially overlooks insights from mid-tier managers and frontline staff, who engage with day-to-day operational challenges and hold a wealth of experiential knowledge. Modern strategy formulation paradigms champion inclusivity. It's increasingly recognized that senior executives, while equipped with a holistic view of corporate goals, must actively solicit contributions from experts embedded deeper within organizational structures (Parnell, 2003). Such a bottom-up integration not only enriches the strategy with granular insights but also enhances its acceptance and implementation at all levels.

In the intricate web of the consumer goods industry, this integrative approach becomes even more salient. The industry, characterized by myriad product categories and diverse functional units, necessitates alignment across its breadth to carve out region-specific strategies that dovetail into the overarching corporate vision (Steve Smith, 2009). An added layer of sophistication involves weaving key business operations—spanning financial planning, risk assessments, performance metrics, and more—into the strategic tapestry, ensuring that the strategy isn't an abstract document but is intrinsically linked to tangible business processes (Helmold and Terry, 2021; Steve Smith, 2009). As the consumer goods industry continues its evolution in a complex global marketplace, the guidelines for strategy formulation must adapt. The call of the hour is for a strategy that's not just devised at the top but is co-created, blending the vision of senior leadership with the experiential wisdom of those on the front lines.

3. Methodology

The research followed a sequential mixed approach with a descriptive scope, addressing the issue of understanding the current state of the cocoa farmers' organization, identifying its strengths, weaknesses, opportunities, and threats that affect competitiveness. The goal was to compare it with other successful organizational models, implement benchmarking actions, and present a model that allows for a higher level of competitiveness by applying project management concepts

and tools (Rincón-Guio and Castaño, 2017; Baque-Cantos et al., 2023; Rincón-Guio, Hernández-Ramírez et al., 2023). The qualitative aspect of the study was approached using a multiple case study design (Yin, 2018), and the quantitative aspect with a cross-sectional design.

3.1. Stages of the research process

The study utilized a stage-by-stage analytical framework, where each stage informs the subsequent ones to reach logical and well-argued conclusions (Angala, 2015). These steps included identifying the factors influencing the competitiveness of the sector, grouping these factors under the six main determinants of competitiveness with reference to Porter's Diamond Model (Erboz, 2020), and proposing guidelines for an intervention model to increase the competitiveness of the study associations.

3.2. Sample

The Huila state, located in Colombia, is characterized by a tropical climate that makes it one of the nation's primary cocoa-growing regions. Cocoa farming has deep historical and cultural significance in this region and plays a crucial role in its socio-economic fabric. The western region of Huila is specifically known for its unique cocoa varieties, which are sought after both nationally and internationally. Over the years, associations have become pivotal entities in promoting sustainable cocoa farming, ensuring fair trade, and integrating small-scale farmers into larger, more competitive markets (Löhr et al., 2021). Selecting the western region of Huila as the study context wasn't merely a coincidence. Recent trends have shown a surge in cocoa demand worldwide, with an emphasis on sustainable and ethically sourced cocoa (Núñez et al., 2023). As a result, there's an impending need to understand the operational dynamics, challenges, and opportunities faced by cocoa associations, particularly in renowned cocoa-producing regions like Huila. This understanding becomes paramount as these associations bridge the gap between individual cocoa farmers and larger market players, impacting both economic growth and social upliftment in the region (Delabie et al., 2021).

For the study, four units of analysis were chosen in line with the proposed objectives. The study included four cocoa associations that are active and legally operating in the western region of the Huila state, all of which met inclusion criteria such as formality, current business registration, and active operations and economic activity. The study included all 185 cocoa associations from the western region of Huila linked to the associations. Twelve experts were consulted, who met inclusion criteria such as high-level academic training, experience in competitiveness or economic development, relation to the cocoa sector, and association with an influential academic, public, or productive entity. The inclusion of twelve experts, drawn from diverse backgrounds, was intended to provide a multifaceted understanding of the region's cocoa sector. Their insights hold the potential to guide policy formulation, strategic investments, and innovative solutions tailored to this specific industry and context.

3.3. Techniques and instruments

The primary tool for our business diagnosis and a detailed characterization of the associative groups was a meticulously designed structured questionnaire. The foundation of this questionnaire was based on Porter's five determinants of competitiveness (Erboz, 2020; Vlados, 2019; Porter, 1990). Recognizing the unique nature of our study and the distinctiveness of our sample groups, the questionnaire underwent significant adaptations to ensure its relevance (Small, 2011; Johnson and Turner, 2003). Alongside, a separate survey was formulated to derive a holistic profile of the associates, capturing myriad dimensions from socio-demographic data to intricate details about cocoa cultivation and financial aspects.

The robustness of any research instrument lies in its validation. Our questionnaire was subjected to rigorous validation through expert judgment (Creswell and Miller, 2000). Experts meticulously evaluated its redaction, content relevance, clarity, sufficiency, and pertinence to the study's objectives (Cho and Trent, 2006). Only upon their consensus was the questionnaire considered fit for deployment. Once validated, the questionnaire was personally administered by the researchers (Robinson, 2014). Appointments were pre-scheduled with each association to ensure a conducive environment for genuine responses. This direct interaction also provided an added layer of qualitative depth, as nuances could be observed firsthand.

For more nuanced insights, we deployed a semi-structured questionnaire designed specifically to harness the Delphi technique. The Delphi method is revered for its capability to harness collective expert opinion and converge it towards a consensus (Vernon, 2009). This iterative method allows multiple rounds of questioning, where experts are given feedback from previous rounds, enabling them to refine their responses. This iterative process ensures that the collective intelligence of a panel of experts is harnessed to its fullest. The choice of the Delphi technique was anchored in its congruence with the study's objectives. The study aimed to delve deep into the subject matter, and who better than a panel of experts to provide insights? Moreover, the stability of the expert panel stood out, as reflected in the minimal variability in their responses across iterations (Drumm et al., 2022).

3.4. Data analysis

The responses obtained from the questionnaires were manually input into a spreadsheet using Microsoft Excel, and subsequently, data were analyzed with the Statistical Package for the Social Sciences (SPSS). Descriptive statistical analysis was applied using frequency tables, calculating measures of central tendency and variance. The data were statistically analyzed to identify highly correlated or redundant factors and non-correlated factors from the statements relating to the six main determinants of Porter's Diamond Model. Additionally, the information obtained was analyzed using a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis, which allowed for the design of strategies to achieve the objectives. An internal diagnosis was made by MEFI. External Diagnosis. An identification and assessment of external factors were carried out based on the opportunities and threats by studying those that make up the environment (Figueroa-Mata et al., 2018). To assess opportunities and threats for the associative groups, the External Factors Evaluation (EFE) matrix was

prepared.

4. Findings

4.1. Organizational diagnosis of cacao associations in Western Huila

The organizational diagnosis of the cacao associations yielded the **Table 1**. The organizations appear to be in a danger zone, scoring below 25 points. In the areas of innovation, associativity, and impact, the results were zero for each surveyed association. As for operational and administrative aspects, these scored moderately, considering the expected weights of 20% and 5%, respectively. Regarding market aspects, only two of the four associations reported actions; even so, the reported actions were below the expected 50%. Regarding financing sources, all associations reported achieving 5% relative to the assigned 15%. The internal and external analysis performed according to the obtained and previously described results are presented below.

Table 1. Organizational diagnosis of cocoa associations in Western Huila.

Factors	Cocoa association 1	Cocoa association 2	Cocoa association 3	Cocoa association 4
Administrative aspects (5%)	2%	2%	2%	2%
Operational aspects (20%)	8.3%	6.8%	7.8%	6.8%
Market aspects (20%)	8%	3%	0%	0%
Accounting and financial aspects (10%)	2%	0%	1.5%	0%
Financing sources (15%)	5%	5%	5%	5%
Innovation (10%)	0%	0%	0%	0%
Partnership (15%)	0%	0%	0%	0%
Impact (5%)	0%	0%	0%	0%
Total	25.3	16.8	16.3	13.8

The Internal Factor Evaluation Matrix (IFEM) was used on the four associations to summarize and evaluate the most important strengths and weaknesses, as well as the relationship between them. The associations achieved an average total of 2.65, indicating that they are in suitable conditions; however, the number of weaknesses is larger than the strengths, leaving them in a state of vulnerability. The key internal factors were identified in **Table 2**:

According to the analysis performed and the obtained EFE matrix, grouped threats were found in market aspects, the main threat is the instability of input prices as well as grain prices; likewise, there is a high intermediation due to the high demand for requirements to trade more directly. In governmental aspects, price regulation, as well as the lack of opportunities to access state resources due to non-compliance with requirements, considerably affects the operation of organizations. Environmental factors and current climate changes favor the spread of pests and diseases. As for opportunities, the current price increase allows producers to obtain better incomes. On the other hand, the current government has established projects and programs for the development of the sector such as the Cocoa Chain and its Agroindustry Competitiveness Agreement 2009–2022, which proposes 4 strategic actions:

production and transfer, research and innovation, market development and institutional matters, in addition there is the National Cocoa Development Plan 2012–2021, which is in the process of updating and approval; the Huila Regional Competitiveness Plan. The recognition of Colombia by the International Cocoa Organization (ICCO) seeks to achieve a more sustainable global cocoa economy through the collaboration of exporting and importing countries; another opportunity has to do with strategic alliances between producer organizations to strengthen marketing. The associations present an external competitive position characterized by being more influenced by opportunities than threats, obtaining a weighted 2.72 which considers that the associations can face the environment appropriately, using the opportunities to face the threats. The cacao sector associations should design strategies to defend themselves and stay current in the market.

Table 2. Internal factors of cocoa associations.

Factors	Weaknesses	Strengths
Administrative aspects	Weakness in administrative management skills related to operational planning, administrative capabilities especially in the use of ICT. Inadequate management of records and certifications.	Legal recognition for more than 10 years, with current Boards of Directors in place.
Operational aspects	Inadequate process flows, product standardization and operational capacity. Low technification of processes. High dependence on local suppliers, since their income is not sufficient to finance their raw materials; therefore, they turn to these suppliers who provide them with credit at high interest costs. Deficiency in the implementation of certification standards.	The associates are people with experience in cocoa production, trained in the technical processes of the crop. Initiative and openness to technification.
Market aspects	Lack of added value to their products. Lack of customer awareness. Impossibility of developing alliances or productive linkages.	The associations are commercializing through the productive chain, taking advantage of government programs.
Accounting and financial aspects	Low financial analysis for decision making.	-
Financing sources	Lack of plans that would allow them to envision and present attractive proposals to attract resources either from the state or private organizations.	-
Innovation	Access to resources from other sources is very limited since there is no project management.	-
Partnership	The components of the value proposition are not specified.	-
Impact	There is a lack of sense of belonging, since the reasons for grouping together are due to the need to attract resources offered by some government entities or organizations, but without a clear objective to improve productivity and competitiveness.	-

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4.1.1. SWOT analysis

The associations have similar internal and external factors that affect the productive and competitive development of the Cacao sector, the **Figure 1** presents those common elements.

Internal factors of the company	**External factors of the company**
Weaknesses	**Threats**
Insufficient administrative management, planning and strategic direction skills. Poor training of associates in associative aspects and administrative management. Lack of knowledge of the organoleptic characteristics of the product. Difficulties in the collection of raw materials. Shortcomings in the grain commercialization processes. Production processes are not standardized. Low grain production yield per hectare. No marketing plan for successful sales. Lack of knowledge of the existence of production chains for grain marketing. Little differential value added compared to the competition. Deficiency in accounting records and basic financial statements. Insufficient knowledge of costs, expenses and inventories. The crop is understood as a means of family subsistence. Individualistic practices in some of its members.	High intermediation in the commercialization of grain Below-market price payments No regulation of input and grain prices. Climate changes that affect the spread of pests and diseases in crops.
Strengths	**Opportunities**
Have an organizational structure Have a mission and vision They have legal recognition Its associates have technical knowledge in production processes. The associates have facilities They have their own sources of financing Associative character of the group High motivation for change	Increase in grain prices. New agricultural policies in the sector. Support from the national and departmental governments. Recognition of Colombia's high motivation for change before the ICOC as a member country. Good agro-ecological conditions for planting. Possibility of associating with other groups in the region to strengthen marketing. Incursion of large commercial houses such as Casa Luker and Colcoa in the area. Articulation and cooperation with institutions such as fedecacao and the huila government. Development of cocoa production chains. Knowledge transfer through AGROSAVIA, SENA and FEDECACAO to improve competitiveness. Growing demand from the international market. Technological development of agroindustrial processes associated with coffee.

Figure 1. Organizational diagnostic of cocoa associations in western Huila.

4.1.2. Competitiveness analysis

A Porter's Diamond analysis was carried out in the western Huila cacao sector with a focus on associative organizations, which are summarized in **Table 3**. It is identified that the quantity and quality of the grain depend on climatic conditions and the time of year with most of the production occurring in 2 seasons.

Table 3. Competitiveness factors of the associative groups in the western part of the Huila state.

Factors	Indicators	Description
Factor conditions	Labor Location Climate Skills and knowledge	Most of it comes from associates. Adequate conditions for planting. Production of grain crops according to the seasons. Production vocation, ancestral production traditions. Associative form of organization.
Demand conditions	Demand study	Knowledge of consumer needs. Existence of strategic productive alliances with commercial houses and government agencies.
Related and supporting industry	Organizations and government	Governmental and institutional support FEDECACAO, which encourage and promote sustainable and sustainable production and marketing.
Company strategy structure and rivalry	Strategic planning	They have basic planning elements. Business strategies known by partners reach marketing with small traders or directly with large products such as Casa Luker or COLCOCOA. Setting medium- and short-term objectives. The process of grain production is not technified or business strategies known by the partners reach commercialization with small traders. Follow-up and evaluation of the technical management of the product.
	Value chain	Supplier identification. Know the production capacity and production process. Artisanal beneficiation processes. Existence of successful individual production processes. Quality control is carried out by intermediaries. Commercialization through intermediaries and large trading houses.
	Local and national market	Knowledge of direct and indirect competition. Pricing according to market variations and product qualities.
	Accounting and Finance	Very basic accounting aspects, subordinated to an external advisor. No financial planning. Lack of knowledge of production and financial costs. Lack of knowledge of profit margins. Scarce quantification of assets.
	Work climate and environment	Board of directors has natural leaders. Administration and management with basic skills. Little training in associativity and entrepreneurship. Informal collective communication. Promotion of environmental protection.
	Information systems	Little use of ICT tools. Information contributes little to decision making.

4.2. Characterization of cacao farming associates

Farmers revealed their involvement in diversified agricultural activities, with a significant 53% participating in both cacao farming and livestock. The collective land ownership of the associates extends to 1660 hectares. Intriguingly, a mere 29% of this vast expanse is allocated for cacao cultivation. It underscores the potential underutilization of available resources for optimized cacao production. The entire cacao yield from the associations finds its way to intermediaries without undergoing any processing. A concerning insight was that only half of the associates were well-versed with market dynamics, which are pivotal for pricing decisions. This reveals a potential knowledge gap that could be affecting their revenue streams. Although a majority (90%) abstain from chemical utilization, pesticide application was a unanimous practice. This poses questions on sustainable farming and the potential health implications for consumers. Despite the widespread utilization of shading and nearly universal access to technical advice, a staggering 90% of associates felt that the guidance was inadequate. This highlights the pressing need for more specialized and targeted technical interventions.

Dwelling deeper into the socioeconomic canvas, a predominant theme was the subpar living conditions of the associates and their families. Most of them inhabited homes with basic amenities, but lacked efficient wastewater management systems, which raises environmental and health concerns. Labor dependency on an aging

population, with younger generations migrating, signals sustainability issues in the future. Central to the research findings is the reaffirmation of the challenges curtailing the cacao sector. Factors like unsuitable farming practices, outdated infrastructure, and suboptimal marketing strategies compound the industry's issues. An alarming revelation was the environmental negligence in wastewater management, potentially jeopardizing the industry's quest for coveted certifications. Conversely, the absolute land ownership provides an empowering platform for these producers to dictate their agricultural pursuits. Yet, the prevalent practice of unsorted grain sales, disregarding quality, severely limits their market leverage and pricing power. The cacao associations, grounded in the noble mission of enhancing productivity and the well-being of members, face systemic challenges. Despite decades of existence, many associations grapple with the absence of strategic direction. This can be attributed to a cocktail of factors: unfamiliarity with competition, lack of marketing acumen, and inadequate training spanning various domains.

4.3. Key factors for management and organization of cacao associations

Based on the results obtained from expert consultation through the Delphi method, we were able to identify factors fostering the management and organization of cacao associations.

4.3.1. Factors related to productivity, competitiveness, and business opportunity

Experts consulted indicated that the factors of utmost importance were efficiency in production, brand consolidation, new product lines, strategic alliances, relevant infrastructure, product commercialization, control and follow-up, planted areas, technical and technological training, and economic resources. Factors deemed less important included artisanal process, educational level, and socio-economic level. The importance obtained from the expert consultation is evidenced in the results, **Figure 2**.

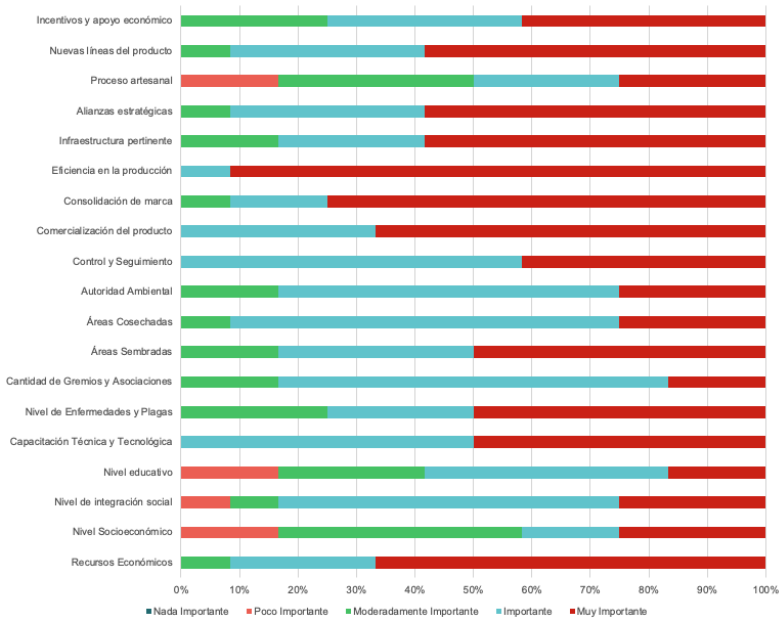

Figure 2. Factors related to low productivity, competitiveness, and business opportunity of the organizations.

The most critical factor is production efficiency, as low levels of grain production do not exceed 450 kilos per hectare. The need to strengthen the region's association to increase its capacity and strengthening is highlighted. It's crucial to involve national and regional environmental organizations to verify and control the production applying good practices and legal commercialization of cacao grain. Likewise, it's necessary to develop marketing strategies supported by public and private sector promoting bodies that strengthen and increase the level of commercialization by the western associative groups. It's vital for associative groups to develop strategic marketing and governmental support strategies that allow for the consolidation of a recognized regional and national brand. Additionally, the improvement of basic conditions in technical aspects to enhance production and public services in the area where these productive projects are developed is needed; along with designing a portfolio of different products to be more competitive.

4.3.2. Importance of stakeholders related to productivity, competitiveness, and business opportunity

For this category, consulted experts indicated that the most important stakeholders are research and development centers, cacao associations, technical training and learning institutions, collection and storage centers, certification entities, cacao producers, and regional government. Stakeholders considered less important included media, Huila Chamber of Commerce, and outlaw groups. The importance obtained from the expert consultation is evidenced in the results, **Figure 3**.

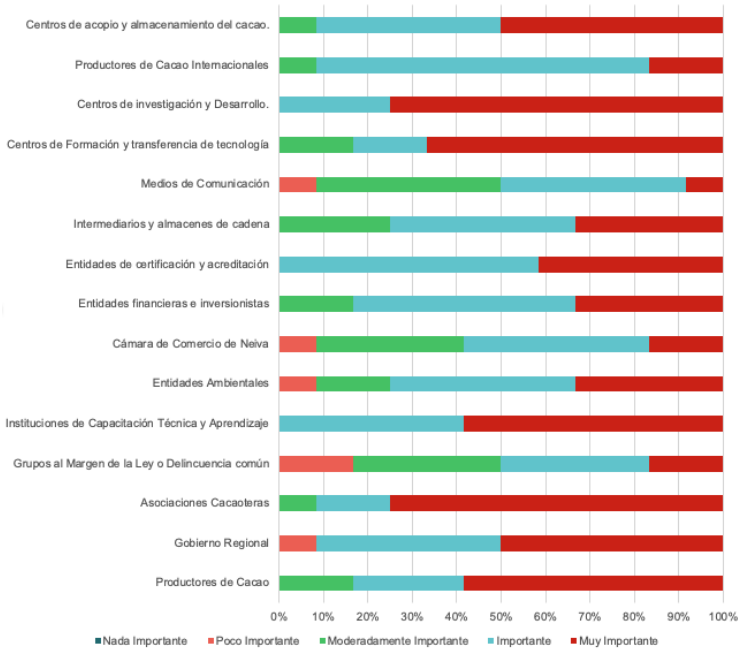

Figure 3. Importance of stakeholders related to low productivity, competitiveness, and business opportunity of the organizations.

Undoubtedly, the role of cacao producers is crucial. This requires a high commitment both in production and the associative participation of its members and relatives. Similarly, the regional government should promote spaces for increasing the productivity and competitiveness of associative groups. These groups provide a clear

direction that the best strategy for achieving competitiveness is through the association of its members and integration among them. It is acknowledged that research centers and teaching centers unite efforts and have clear roles each body develops, achieving a greater impact for the solidarity organization's development. The need to have products with certifications in different areas ranging from origin certification to quality grain certification becomes increasingly evident and mandatory to occupy a position in the market.

4.3.3. Basic conditions related to productivity, competitiveness, and business opportunity

As previously evaluated, the need to develop ongoing and quality training that meets the associates' needs is underscored. The role of entities exerting environmental control plays a vital role in preventing the commercialization without respect to the regulation of grain-derived products in Colombia. The demand for financial support to leverage productive projects is imperative. Similarly, the support of the government and support bodies to the cacao sector is required. Rural security is necessary to guarantee safety conditions for the associates and their organizations. Conventions and alliances for distribution and sale must be attended to in favor of developing strategic alliances that benefit the stakeholders involved in the commercialization chain, allowing a win-win for everyone. Likewise, strengthening the solidarity economy will facilitate the processes of formation and development of a solidarity culture in these organizations as an organizational model that allows strengthening the cacao sector. In **Figure 4**, the results of the importance obtained from the expert consultation are observed.

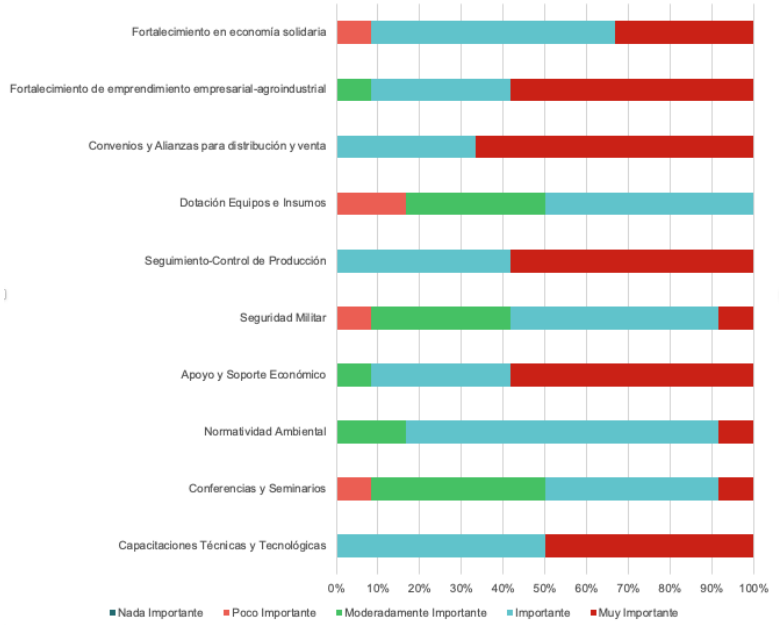

Figure 4. Activities to increase the productivity, competitiveness, and business opportunity of the organizations.

4.3.4. Strategies to improve productivity, competitiveness, and business opportunity

The strategies mentioned by the experts were:

- Seek support in quality-certified companies for the continuous improvement of the process in training, technification, and technology. The support of accredited organizations providing training processes and grain certification is evidenced, thus allowing the positioning and increase in the grain's price value.
- Seek strategic alliances for the distribution, sale, and consumption of the product. This requires the development of innovative marketing strategies to achieve a better grain price, increasing productivity and competitiveness levels.
- Establish agreements with cacao importing countries to leverage international markets. This requires the development of a clear policy that allows support agreements development to improve quality and increase the quantity of grain produced by the region.
- Investigate and develop highly advanced products for efficient pest and disease control.
- Train and strengthen the business, agro-industrial, and commercial sector of cacao producers. This suggests the need for the development of continuous and specialized training actions that range from production systems, through agro-industrial processes to grain commercialization.
- Seek strategic alliances for the distribution, sale, and consumption of the product. The development of alliances that allow effective commercialization is again emphasized.
- Strengthen the infrastructure in the cacao production processes to generate productivity and competitiveness. This requires developing short and medium-term actions in significant equipment investments that guarantee obtaining quality cacao products.
- Innovate the cacao production processes, generating quality and fine and aroma cacao characteristics. The above acknowledges that research and technological development are significant bases for achieving products with the highest quality standards.
- Create associations, unions, or corporations to facilitate the commercialization of cacao production. Association levels should escalate; this includes participation in 2nd and 3rd level bodies, such as associations and federations.

4.4. Guidelines for building a model to improve the competitiveness level of associations

From the analysis conducted in previous sections, arising from case studies, expert consultations, member surveys, and literature review, we present guidelines to be considered in constructing a model to enhance the competitiveness level of associations. **Table 4** shows the guidelines to consider for the implementation of strategies to improve competitiveness.

Table 4. Guidelines for the design of a model to improve the level of competitiveness of small cocoa producers in western Huila.

Table 4. Guidelines for the design of a model to improve the level of competitiveness of small cocoa producers in western Huila.

Porter's determinants	Competitiveness constraint factor	Strategic proposals
Production factors	Labor considerations	Promote the active participation of small producers in the transfer of technical and strategic knowledge with institutional support from technical, technological and professional education institutions.
		Design formal and non-formal education curricula aimed at the cocoa sector.
	Road infrastructure	Negotiate with municipal, departmental and national authorities for the development and maintenance of tertiary roads in cocoa production areas.
	Means of transportation	Management of trade associations and transport routes to facilitate the collection and marketing of cocoa production.
	Production financing	Promote a guarantee fund specifically for the cocoa sector that facilitates quick and timely access to small cocoa producers to meet their temporary leverage needs.
		Manage, with the support of the guild, the creation of input supply centers with easy access to credit lines and with the support of the Ministry of Agriculture and the cooperative sector.
	Production processes	Articulate academia with the sector to promote applied research aimed at generating innovation processes in the production chain.
		Innovation processes in the cocoa production chain.
		Promote the involvement of SENA for training in quality standards and knowledge of customer requirements and good agricultural practices.
Demand and market conditions	Adaptability to new products	Initiate a process to prepare young people for generational renewal in a crop with great market potential.
	Expanding access to markets, especially at the international level	Strengthen infrastructure in cocoa processing with the participation of associations to conquer new markets and improve the income of small producers.
Company strategy, structure and rivalry	Improved management information flow between industry stakeholders	Encourage the certification of cocoa production and processing processes to improve the associations' negotiating conditions.
		Manage the creation of local quality laboratories for the evaluation and continuous improvement of production processes.
		Establish strategic alliances with regional and local higher education institutions to analyze trends and competitiveness of the cocoa sector.
	Flow of information from customers	Create product awareness through generic advertising campaigns and demonstrations. Both nationally and internationally.
-	Associative integration	Based on research results and innovation proposals, identify new target markets for cocoa products.
Opportunity factors	Coping with price and exchange rate fluctuations	Manage from the organizations and with institutional support, an improvement in the management of the value chain that incorporates project structuring, permanent communications with strategic allies; sessions of national and foreign trade missions.
		Create with the cocoa guild and associations a database related to the cocoa production chain, as a support for decision making and competitiveness analysis.
Government policy and support	Presence of private initiative in research institutions	Strengthen strategic alliances of the associations with input suppliers and traders to carry out joint actions aimed at creating a cocoa cluster within the agro-industrial policy of the Development Plan.
	Basic public services	Better segment the cocoa market and characterize each segment, considering market size, needs, expectations, quality requirements, level of satisfaction, and interest in new products.
	Development of processing capacity	Develop a plan to strengthen the associations to recover old members, attract new members and scale them up to achieve the consolidation of II and III level bodies.
	Financial and credit policy	Promote alliances with other producer associations in the country and take joint actions to improve their level of productivity, competitiveness and negotiation capacity in marketing processes.

4.5. Guidelines for improving competitiveness through integral project management

Project management in business organizations is increasingly necessary. In recent years, researchers have grown more interested in the factors that can influence project management effectiveness. Previous studies in this field have explored different ways to organize project management. Critical success and failure factors in project management point out the need for empirical studies on how project management tools and methods could be used to improve their quality. Below, we establish guidelines for action from integral project management, consolidated from previous results:

4.5.1. Identification and analysis of needs

Associations should undertake activities that allow for the continuous, timely, and relevant identification of problems and needs, both internal and external, to establish action routes through project formulation. Associations have weaknesses in labor, transportation, suppliers, raw material costs, transformation, and commercialization. These difficulties are opportunities to generate proposals that leverage resources to compete with the national market and the international market. These activities must be carried out hand in hand with support institutions and organizations such as universities, research centers, Huila Chamber of Commerce, Huila Government, AGROSAVIA, FEDECACAO, and SENA. Coordinated work, disposition, and diligence will allow for exponential growth of competitiveness through the solution to needs.

4.5.2. Project formulation

The formulation of projects arising from the previous section will allow for obtaining those resources needed to carry them out. This formulation should be through a supportive and pedagogical process, enabling them to obtain resources and learn and appropriate the relevant methodologies to continue these tasks independently. It is common for associations to get resources with external organizations' support, but when they need to execute them or try to get other funds, they cannot achieve this due to dependence on external entities' knowledge and experience.

4.5.3. Project planning and execution

Once the projects are obtained, the planning processes should be meticulous and rigorous, accompanied by methodologies inherent to the sector and its activities, and aware of the current capabilities. The success of projects should be continuous in all stages and formulating them correctly should lead to successful execution.

4.5.4. Project monitoring and closure

Projects should always be subject to study and monitoring. Being able to observe them for timely intervention will prevent situations leading to failure. Associations should adopt project management methodologies that allow them to successfully complete all the initiatives they undertake. Similarly, learning from experiences and carrying out prospecting activities will contribute to the achievement of competitiveness strengthening.

5. Discussion

Our data intimates that Western Huila's cacao associations tread on thin ice, mirroring sentiments from Sharafi et al. (2021) regarding the challenges faced by many agricultural associations in developing nations. This precarious position stems from an underdeveloped administrative framework and a notable lack of innovation. Such an observation is consistent with Núñez et al. (2023) and Fuglie et al. (2019) perspective on Colombian agricultural associations' lagging innovation, largely attributed to limited resources and training avenues. Notably, market-related challenges, especially the unpredictable nature of input prices, have been identified as global agricultural concerns by Benedek et al. (2022). Likewise, the dependency on intermediaries, resulting from daunting direct trade prerequisites (Abdullahi et al., 2022; Ollivier de Leth and Ros-Tonen, 2021). Nevertheless, our study spotlights available opportunities, like government initiatives, that hold potential transformative power for these associations. ICCO's national recognition and potential strategic partnerships, as discussed in our research, optimistic views on Colombia's capacity to foster a sustainable cocoa industry (Mc Loughlin et al., 2023; Angélique et al., 2022).

Patterns like the inefficient land utilization for cacao cultivation and a heavy reliance on intermediaries, as revealed in our study, find parallels in Cascant-Sempere et al. (2023) observations across South American agriculture. Additionally, a discernible knowledge gap about market intricacies, which our study reveals, is identified as a predominant challenge for small-scale farmers in developing nations (Poças Ribeiro et al., 2021). The emphasis on production efficiency, a recurrent theme in our study (Abdullahi et al., 2022).

Experts' strategies in our study, emphasizing innovation, continuous improvement, and training, align with the broader agricultural literature (Strong et al., 2022; Kaur et al., 2019). Furthermore, the potential benefits of forging strategic alliances, a significant point in our study (Rodríguez et al., 2023). Our strategic guidelines, grounded in Porter's determinants, find resonance in studies across diverse sectors, from coffee to winemaking, which similarly leverage Porter's framework. This universal applicability of Porter's determinants, as seen in our research and studies like those by Erboz (2020) and Vlados (2019), accentuates their profound significance in shaping competitive landscapes.

Our emphasis on all-encompassing project management, as a tool to drive competitiveness, is mirrored in other studies. For example, Fathalizadeh et al. (2021) suggest that robust project management is quintessential for industries targeting global competitiveness. Our recommendations for active collaboration with support institutions resonate with Delabie et al. (2021) observations on the transformative power of such partnerships for small-scale agricultural producers. Our push for dedicated educational frameworks for the cocoa sector aligns with the benefits reaped by other agricultural sectors, as seen in Rodríguez et al. (2023) study on Colombia's coffee industry.

6. Conclusion

This study reveals the current state of cacao associative organizations in Huila, Colombia, highlighting their lack of innovation, associativity, impact, marketing, and

financing processes. The competitiveness of this sector is not influenced by a single dominant factor, but a set of conditions related to demand, rival industries, and exchange rate fluctuations. Key factors identified to improve the sector's competitiveness include production efficiency, brand consolidation, new product lines, strategic alliances, relevant infrastructure, product marketing, control and monitoring, planted areas, technical and technological training, and economic resources. Additionally, coping with cacao price volatility, environmental threats, and improving access to markets were considered crucial.

Guidelines were established, based on Porter's Diamond, focusing on labor considerations, infrastructure, financing, adaptability to new products, market access, and information flow among stakeholders. The study underscores the value of integral project management in enhancing the competitiveness of cacao associations, provided the necessary training and resources are made available.

This research has implications for policy, practice, and future studies. It calls for a stronger support system for cacao producers, especially small-scale ones, and underlines the need for capacity building from both private and public sectors. Future research could further explore the impact of alliances, the application of integral project management in diverse contexts, the effect of policies and programs against price and exchange rate fluctuations and environmental threats, and the effective utilization of cacao producers' know-how. The aim of these endeavors should be to enhance the sustainability and competitiveness of cacao associations in Huila and Colombia more broadly, benefiting individuals and communities involved in this sector.

Author contributions: Conceptualization, GIAP, AAAI, ALSM, ERBS, JHR and CRG; methodology, ALSM, ERBS, JHR, JEAP and ELCO; software, ELCO, JECT, JTQ and CRG; validation, GIAP, AAAI, ALSM, and JHR; formal analysis, GIAP, AAAI, ALSM, ERBS, and CRG; investigation, ALSM, ERBS, JHR, JEAP, ELCO and JECT; resources, GIAP, AAAI, ALSM and CRG; data curation, ALSM, ERBS, JHR, JEAP and ELCO; writing—original draft preparation, GIAP, AAAI, ALSM, ERBS, JHR and CRG; writing—review and editing, GIAP, AAAI, ALSM, ERBS, JHR, JEAP, ELCO, JECT, JTQ and CRG; visualization, GIAP, AAAI, ALSM, and CRG; supervision, JEAP and JTQ; project administration, CRG; funding acquisition, ALSM, ERBS, JHR, JEAP, JTQ and JECT. All authors have read and agreed to the published version of the manuscript.

Conflict of interest: The authors declare no conflict of interest.

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