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KEY FACTORS IN FAMILY DAIRY AGRIBUSINESS GROWTH

FATORES-CHAVE NO CRESCIMENTO DO AGRONEGÓCIO DE LATICÍNIOS FAMILIARES

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Abstract

This research analyzes combinations of causal conditions leading family dairy agribusinesses in Western Santa Catarina to economic growth, using variables from four theoretical constructs: Resource Management, Institutions, Process Management, and Consumer Relationship. Crisp-set Qualitative Comparative Analysis (csQCA) identified three simplified equations: the "Basic Combination for Growth" highlights the importance of government policies, financial efficiency, and technology; the "Intermediate Combination Directed to Value Addition" focuses on sales strategies and government policies; and the "Complex Combination Directed to Internal Strategies" emphasizes financial efficiency and differentiated strategies without government support.

Keywords: Family Agribusinesses. QCA. Economic Growth. Causal Conditions. Competitiveness.

Resumo

Esta pesquisa analisa combinações de condições causais que levam agronegócios familiares de leite no Oeste de Santa Catarina ao crescimento econômico, utilizando variáveis de quatro construtos teóricos: Gestão de Recursos, Instituições, Gestão de Processos e Relacionamento com o Consumidor. A Análise Qualitativa Comparativa Crisp-set (csQCA) identificou três equações simplificadas: a "Combinação Básica para Crescimento" destaca a importância de políticas governamentais, eficiência financeira e tecnologia; a "Combinação Intermediária para Adição de Valor" foca em estratégias de vendas e políticas governamentais; e a "Combinação Complexa para Estratégias Internas" enfatiza a eficiência financeira e estratégias diferenciadas sem apoio governamental.

Palavras-chave: agroindústrias familiares; QCA; crescimento econômico; condições causais; competitividade.

Introduction

Family dairy agribusinesses are important for the socioeconomic development of rural areas, especially in the Western Santa Catarina Mesoregion, where they significantly contribute to local economies by providing jobs and supporting local supply chains (Mior, 2007; Niederle & Wesz, 2009; Reiter, Mondardo, Ferrari, Mior, & Marcondes, 2019; Zulpo & Carvalho, 2020). However, achieving economic growth in these agribusinesses requires navigating the complex interrelationships between resource management, institutional support, process efficiency, and market dynamics (Mior, 2007; Pindado & Sánchez, 2019).

Barney and Clark (2007) emphasize the importance of identifying factors that cause variations in business performance under different circumstances. Buainain, Alves, Silveira, and Navarro (2014) discuss the complexity and multifactorial nature of development processes in agribusiness. Ragin (2008) highlights the importance of considering different combinations of conditions to understand organizational outcomes. Rihoux and De Meur (2009) underline the contextual analysis and interdependence of conditions in determining outcomes. Pindado and Sánchez (2017) reinforce the relevance of institutions, public policies, and extension services in empowering rural entrepreneurs.

This research aims to explore the different combinations of conditions that lead to economic growth, considering equifinality, which is the idea that different paths can lead to the same result (Buainain et al., 2014). The research gap is identified in the lack of studies analyzing these factors that contribute to the economic growth of family dairy agribusinesses in a combined manner. There is no clear understanding of how these variables interact in a complex and multifactorial way to influence the growth of these agribusinesses, raising the question: What combinations of variables (causal factors) contribute to the economic growth of family dairy agribusinesses in the Western Santa Catarina Mesoregion in the regional market?

To understand the combinations of causal conditions driving the economic growth of family agribusinesses in the region, variables under four main constructs were investigated: Resource Management, Institutions, Process Management, and Consumer Relationship (Kaplan & Beinhocker, 2003; Batalha, Buainain, & Souza Filho, 2005; Alvarez & Barney, 2007; Kotler & Keller, 2012; Taboada, Zapata, Pérez, & Guerra, 2014; Dominic & Theuvsen, 2015; Jansik & Irz, 2015; Pindado, Sánchez, Verstegen, & Lans, 2018). These constructs point to variables that contribute to the economic growth of agribusiness. Economic growth refers to effective financial management that ensures profitability and positive cash flow, with controlled and sustainable business expansion, represented by revenue increases, comparing the result of one year with the next (Barney, 1991).

Based on the understanding of the combinations of causal conditions driving the economic growth of family agribusinesses, this study aims to analyze the sets of combinations of causal conditions that lead family dairy agribusinesses in the Western Santa Catarina Mesoregion to economic growth. Using Qualitative Comparative Analysis (QCA), the research identifies specific factors that contribute to economic growth, referred to as the "outcome" in this study, which means the result being studied or analyzed concerning conditions or independent variables (Dias & Pedrozo, 2015).

In QCA, conditions represent the independent variables with the potential to influence this outcome or result, referring to the variable of interest that is influenced by the conditions or independent variables, i.e., the effects or consequences that one seeks to understand, measure, or predict from the relationships established with the independent variables (Betarelli & Ferreira, 2018). The research was applied to dairy and dairy derivative agribusinesses identified in the project conducted by the Santa Catarina Agricultural Research and Extension Company (Epagri) (Reiter et al., 2019). According to the Epagri report (Reiter et al., 2019), 58 of these agribusinesses are located in the Western Santa Catarina Mesoregion. In this study, 13 agribusinesses were interviewed, and the data collection process from

these agribusinesses was through a structured interview script.

The choice of Crisp-Set Qualitative Comparative Analysis (csQCA) justifies the study by examining multiple trajectories that lead to similar outcomes. Researching the factors of competitiveness, creation, and management of dairy agribusinesses in Santa Catarina, Brazil, addresses economic, social, and environmental issues, contributing to the continuity of family agribusiness (Alvarenga, Gajo, & Aquino, 2020; Schaefer, Etges, & Schaefer, 2023). Analyzing these factors contributes to regional economic development, showing the interconnection between innovation, technology, and sustainability in the agricultural sector. It reinforces the importance of the dairy industry for the local economy, highlighting the need for policies that foster innovation and competitiveness. It also aids in decision-making to generate academic knowledge, promote sustainability, and improve business strategies.

Determinant Factors of Economic Growth in Family Agribusinesses

The performance of family agribusinesses, especially in the context of rural economies, has been a subject of growing academic interest (Viana & Ferras, 2007; Ferenhof, Bonamigo, Cunha, Tezza, & Forcellini, 2019; Pesamosca, 2019). Value addition, combined with entrepreneurial initiatives, is fundamental for the economic advancement of these companies (Barney, 1991). This strategy offers greater value to customers compared to cost leadership, leading to better organizational performance (Kaya, 2015).

Factors such as product innovation, risk-taking, and proactive behavior, along with entering new markets and innovating in terms of organizational processes, positively impact growth, especially in small and medium-sized enterprises (Dimitrakaki, 2015; Kaya, 2015; McGee, 2015; Ferenhof et al., 2019; Jin & Lee, 2020). Regional competitiveness, encompassing aspects such as productivity and innovation, influences entrepreneurial behavior and location decisions of high-tech companies (Prokop, Stejskal, & Hajek, 2018).

In this sense, family agribusinesses operating in this sector need to adopt these entrepreneurial strategies and consider economic factors to enhance their performance and ensure sustainability in a dynamic economic environment (Dimitrakaki, 2015; Machogu & Yegon, 2017). The result of the complex interaction of causal factors, and the analysis through the QCA method, will allow the identification of specific combinations that lead to economic growth (Ragin & Davey, 2017). For this purpose, the main factors influencing this economic growth were selected and grouped into four constructs explored in the following subsections.

Resource Management

Entrepreneurship scholars such as Irungu & Moronge (2018) argue that entrepreneurs are motivated to explore competitive opportunities due to the existence of these opportunities and the possibility of obtaining economic profits. Instead of searching for a clearly defined opportunity, entrepreneurs who create opportunities are involved in an iterative learning process, exploring and experimenting with different paths to discover and capitalize on opportunities (Alvarez & Barney, 2007).

This perspective highlights the importance of entrepreneurs in the context of family dairy agribusinesses, as they identify and explore market opportunities, driven by the pursuit of competitive advantages for their businesses (Grande, 2011; Schaefer et al., 2023). The exploration of opportunities and the pursuit of value addition motivate these entrepreneurs to enter this sector and stand out in a constantly changing competitive landscape (Alvarez & Barney, 2007; Pindado & Sánchez, 2019).

In the context of family dairy agribusinesses, the qualification of the team is an important aspect for effective resource management and opportunity exploration. Entrepreneurial capabilities and management skills are essential to face the inherent challenges of the rural environment and promote economic growth (Grande, 2011; Pindado et al., 2018; Pindado & Sánchez, 2019). The integration

between strategy and human resource management underscores the importance of people for business performance. Although human resource management practices can be imitated, unique systems and routines can offer competitive advantage (Beber, Carpio, Almadani, & Theuvsen, 2019). The innovative behavior of the manager is a key element in the growth of new ventures (Pindado & Sánchez, 2019).

The use of technologies is fundamental to developing competitive advantage through internal resources and capabilities (McGee, 2015). Considering this emphasis on innovation, it is relevant that agricultural enterprises use modern equipment in their operations as an integral part of an entrepreneurial approach seeking to stand out in the market through value addition and efficiency (Machogu & Yegon, 2017). To achieve technological capability, companies must focus on absorbing, adapting, creating, developing, transferring, and disseminating technologies, driven by resources, skills, and learning mechanisms, as well as operational, organizational, and relational knowledge (De Mori, Batalha, & Alfranca, 2016).

Rural business management must consider the resources used, but also be attentive to market changes and demands, incorporating a proactive and future-oriented mindset (Patias, Liszbinski, Gomes, Brizolla, & Baggio, 2021). To maximize the potential of these resources, it is essential that the company has adequate organizational systems and structures and invests in the value addition of its food products, promoting alternative markets and preserving their uniqueness (Santos, 2011; Conterato, Niederle, Triches, Marques, & Schultz, 2013). The pursuit of efficiency in resource use and opportunity exploration contributes to the growth of agribusinesses, and (re)investment in activities is essential for the growth of enterprises in the evolving agricultural scenario (Morris, Henley, & Dowell, 2017; Jin & Lee, 2020).

Considering the literature review on resource management, the factors that favor the economic growth of these agribusinesses are listed and summarized in Table 1.

Table 1 – Synthesis of Causal Conditions in the Resource Management Construct

Causal Factor	Definition of the Causal Factor	Authors
Motives for Permanence - Entrepreneurial Instinct	The Entrepreneurial Instinct refers to the ability of entrepreneurial farmers to identify and exploit market opportunities, innovate, and adapt to changes.	Alvarez & Barney, 2007; Irungu & Moronge, 2018; Pindado & Sánchez, 2019.
Team Qualification	When the team possesses essential skills to face the challenges of their role with maturity and independently, without the need for direct support from the immediate manager.	Grande, 2011; Pindado *et al.*, 2018; Pindado & Sánchez, 2019.
Modern and Updated Equipment	Refers to the use of modern and updated equipment in agricultural operations, including renewing equipment with machinery that allows improving production and adding value to products and processes.	McGee, 2015; Machogu & Yegon, 2017.
Use of Technology for Automation	Involves absorbing, adapting, creating, developing, transferring, and disseminating technologies, driven by resources, skills, and learning mechanisms. Technological innovation and reducing manual processes improve production efficiency.	McGee, 2015; De Mori *et al.*, 2016.
Reinvestment of Profits	(Re)investing resources generated by activities to increase efficiency, explore new opportunities, and ensure business growth. Including investments in research, training, and integration with the production chain, which allow facing external changes and decision-making.	Santos, 2011; Conterato *et al.*, 2013; Morris *et al.*, 2017; Jin & Lee, 2020.

Source: Prepared by the Author from Alvarez & Barney (2007); Grande (2011); Santos (2011); Conterato *et al.* (2013); McGee (2015); De Mori *et al.* (2016); Machogu & Yegon (2017); Morris *et al.* (2017); Irungu & Moronge (2018); Pindado *et al.* (2018); Pindado & Sánchez (2019).

Institutions

The support of governmental and non-governmental institutions can provide the necessary structure for growth, including access to financing, training programs, and regulatory support. As Fitz-Koch, Nordqvist, Carter, and Hunter (2018) highlight, institutional factors influence the agricultural environment, playing a role in stimulating entrepreneurship. These factors include: a) government policies, such as subsidies and tax incentives, impacting entrepreneurship by encouraging growth; b) regulations, including environmental laws, affecting operations and innovations; c) social and cultural norms, influencing entrepreneurial attitudes in the community; d) support networks, such as associations, offering support and opportunities; and e) new technologies, driven by government policies, creating opportunities for entrepreneurs to innovate and meet market demands.

To enable the emergence and growth of these organizations, it is essential to have institutions that expand opportunities in the institutional system (North, 1992). Seeking new information and professional connections outside the agricultural sector and dedicating to training and education can enrich entrepreneurial skills and empower these rural entrepreneurs to face challenges and explore opportunities in the agribusiness market (Pindado & Sánchez, 2019).

Research institutions are essential for agribusiness, providing technical guidance and training, strengthening collaboration with producers (Amam, Jadmiko, & Harsita, 2020). Government training becomes a strategic resource to empower rural entrepreneurs, providing them with the necessary skills and knowledge to face challenges and drive the growth of family agribusinesses (Pindado & Sánchez, 2017).

To achieve competitiveness and growth in a changing environment, companies must strive to expand their capacity for innovative entrepreneurship and improve financing policies (Jin & Lee, 2020). Government financial support can be crucial for the economic growth and sustainability of agribusinesses, enabling them to face challenges and explore opportunities (North, 1992). Financing policies and management support are relevant for small and medium-sized enterprises to increase their capacity for managerial innovation (Jin & Lee, 2020).

Policymakers should consider the impact of rural entrepreneurship on regional development and support initiatives that promote a favorable business environment (Ratten & Dana, 2017). Qualitative factors, such as relationships with other sectors, national policies, support services, and public perceptions, influence the competitiveness of the sector (Jansik & Irz, 2015). Policy and management support create a conducive environment for business development, promoting regional economic growth and the sustainability of agricultural sectors (North, 1992; Santos & Tesser, 2008; Jin & Lee, 2020).

Considering the literature review on institutional issues contributing to the economic growth of agribusinesses, the main factors are summarized in Table 2.

Table 1 – Synthesis of Causal Conditions in the Institutions Construct

Causal Factor	Definition of the Causal Factor	Authors
External Training	Investment in training and skill development programs for employees outside the industrial environment. These training sessions seek new information and professional connections with external organizations, enriching skills and empowering employees to face challenges.	Pindado & Sánchez, 2017; Fitz-Koch *et al.*, 2018; Pindado & Sánchez, 2019; Amam *et al.*, 2020.
Government Financial Support	Involves government financial incentives, subsidies, and public policies aimed at sector development. Additionally, public policies should offer financial incentives and resources, as well as support new agribusiness entrepreneurs to promote agricultural sector growth.	North, 1992; Jin & Lee, 2020.
Access to Favorable	Perception regarding the support of government policies and benefits, provided through regulations, incentives, and government support,	North, 1992; Santos & Tesser, 2008; Jansik & Irz,

Government Policies	creating a conducive environment for regional economic development and growth. Such policies may include subsidies, tax incentives, and technical assistance..	2015; Ratten & Dana, 2017; Jin & Lee, 2020;

Source: Prepared by the Author from North (1992); Santos & Tesser (2008); Jansik & Irz (2015); Pindado & Sánchez, 2017; Ratten & Dana (2017); Fitz-Koch *et al.* (2018); Pindado & Sánchez (2019); Amam *et al.* (2020); Jin & Lee (2020).

Process Management

Strategic management is extremely important for improving the performance of agricultural enterprises through effective resources and practices (Jansik & Irz, 2015; Thiago, Kubo, Pamplona, & Farina, 2020). Adaptable management skills and flexible strategies are necessary to cope with market changes (Dominic & Theuvsen, 2015). The fundamental questions guiding strategic planning in agribusiness are "Where are we?", "Where do we want to go?", and "How do we achieve our goals?". The response requires analyzing the current scenario to define necessary goals, strategies, and actions (Wives & Kühn, 2018).

Investing in innovation, professional training, and planning is essential to overcome the challenges of the agricultural sector (De Mori et al., 2016). Well-structured planning focused on innovation, training, and management is crucial for business competitiveness and preparing agribusiness for future challenges (Fitz-Koch et al., 2018). The management style of Brazilian rural producers is characterized by a strong presence of leadership, decision-making, control, motivation, and technology, with less emphasis on planning and communication aspects (Thiago et al., 2020).

Managing costs efficiently and controlling cash flow are critical aspects for the survival and economic growth of agribusinesses, especially in the face of sector changes and innovation demands (Krasniqi & Desai, 2016; Silva, 2021). The spread of technology in rural areas has brought significant benefits to economic, productive, and environmental aspects, simplifying the management of new agricultural practices. Technology aids in decision-making, cost control, and production, improving planning and execution of activities in family farming, and optimizing the application of concepts in agricultural systems (Serbelo & Santos, 2020).

Moreover, the growth orientation of these enterprises depends on the knowledge, social connections, and opportunity identification by entrepreneurs (Pindado & Sánchez, 2019). Implementing a robust quality control system becomes a vital component for maintaining competitiveness and sustainability of these ventures, allowing them to meet market standards and expectations (Carvalho, 2015; Serbelo & Santos, 2020).

The application of management tools is fundamental for family farmers to explore market opportunities, improve their operational efficiency, make strategic decisions based on relevant information, and access important distribution channels, reducing the competitive advantages of other groups (Batalha et al., 2005; Serbelo & Santos, 2020; Garima, Bhardwaj, Sharma, & Dhingra, 2023). Having an effective distribution channel is a key element for the growth of family agribusinesses, allowing them to reach a broad customer base and strengthen their position in the regional economic scenario (Batalha et al., 2005; Santos & Tesser, 2008; Rendón-Rendón, Núñez Espinoza, Soriano-Robles, Espinosa Ortiz, Chávez Pérez, & Jiménez-Jiménez, 2019).

When agribusiness organizations collaborate, leveraging the synergistic effects of cooperation, they strengthen their competitiveness and create favorable conditions to drive regional development (Santos & Tesser, 2008; Amam et al., 2020). Considering the literature review, the factors related to process management that contribute to the economic growth of family agribusinesses are listed and summarized in Table 3.

Table 2 – Synthesis of Causal Conditions in the Process Management Construct

Causal Factor	Definition of the Causal Factor	Authors
Future Planning	Refers to the existence of strategic planning to face future challenges. This planning is guided by questions such as "Where are we?", "Where do we want to go?", and "How do we achieve our goals?", requiring an analysis of the current scenario to define necessary goals, strategies, and actions.	De Mori *et al.*, 2016; Fitz-Koch *et al.*, 2018; Wives & Kühn, 2018.
Cash Flow Management	Involves efficiently managing production costs, recording expenses in agribusiness processes. Financial management is essential to generate value for the company, improving operational efficiency and strategic decision-making.	Serbelo & Santos, 2020; Krasniqi & Desai, 2016; Silva, 2021.
Quality Control System	Implementation of systems to ensure production meets sanitary standards and market expectations. Application of quality control tools to reduce production quality variation, compliance with current legislation, and adequate technical support..	Carvalho, 2015; Serbelo & Santos, 2020.
Distribution Channels	When distribution channels are effective, they facilitate cooperation and geographic reach, strengthening the regional economic position and promoting synergy. Accessing ways to get the product to the end customer while minimizing logistical and process failures.	Batalha *et al.*, 2005; Santos & Tesser, 2008; Rendón-Rendón *et al.*, 2019.

Source: Prepared by the Author from Batalha *et al.* (2005); Santos & Tesser (2008); Carvalho (2015); De Mori *et al.* (2016); Krasniqi & Desai (2016); Fitz-Koch *et al.* (2018); Wives & Kühn (2018); Rendón-Rendón *et al.* (2019); Serbelo & Santos, 2020; Silva (2021).

Consumer Relationship

In these agribusiness ecosystems, collaboration between companies facilitates better product commercialization, contributing to attracting new customers and expanding business reach (Gardas, Raut, Jagtap, & Narkhede, 2019). By sharing experiences and knowledge, agricultural enterprises can enhance their sales strategies and more efficiently meet market demands, thus promoting greater attractiveness to new customers (Grande, 2011; Krasniqi & Desai, 2016; Fitz-Koch et al., 2018).

When classifying their sales strategies, small producers should seek to enhance their capabilities to reach the end consumer, considering the use of appropriate technologies, so they can offer quality products and stand out in an increasingly competitive and diversified market (Kotler, 2020; Garima et al., 2023). Barney (1991) highlights valuable (V), rare (R), inimitable (I), and non-substitutable (O) resources and capabilities a company possesses. This includes both tangible and intangible assets, such as management skills, organizational processes, routines, and the information and knowledge held by the company – a concept known as VRIO.

Market knowledge also plays an important role, highlighting the need to understand consumer trends, preferences, and needs to succeed in the commercialization of agricultural products (Garima et al., 2023). Prior market research helps identify opportunities, segment the market, and develop marketing strategies, contributing to decision-making in agribusiness (Silva & Pandolfi, 2021; Campos & Marjotta-Maistro, 2022). Through market segmentation, agribusinesses can understand their customers, identifying groups with similar needs and characteristics (Silva & Pandolfi, 2021). Combined with market research, the company can shape its marketing strategies and more efficiently meet customer needs (Taboada et al., 2014; Garima et al., 2023).

Small food producers face challenges regarding the marketing and distribution of their products, as many of them initially rely on modest plans and direct sales, lacking strategies to drive the economic growth of the business (Caiazza & Bigliardi, 2020). It is vital for agribusinesses to work on strategies that turn into opportunities, devising a marketing plan to increase demand and influence consumer behavior (Silva & Pandolfi, 2021). Implementing marketing strategies allows agribusinesses to face market challenges (Caiazza & Bigliardi, 2020), stand out from the competition, and offer products and

services aligned with customer expectations (Kotler & Keller, 2012). Internet marketing is explored as a tool to expand reach and brand visibility, emphasizing the inclusive relevance of agribusiness to drive sales and reach a broader audience (Caiazza & Bigliardi, 2020).

Having a dedicated team and an adequate budget for developing sales strategies is fundamental for the success of family agribusiness (Wives & Kühn, 2018). Having a dedicated team and budget for developing sales strategies requires a planning process to assign responsibilities, define actions, estimate costs, set the product's selling price, identify suppliers, and especially understand demand (Wives & Kühn, 2018; Soares, Silva, Matos, & Ribeiro, 2021).

Product quality influences consumer perception, and entrepreneurs can increase customer satisfaction by offering a variety of options with transparency in product origin and providing personalized shopping experiences (Garima et al., 2023). Changes in consumer tastes require companies to adapt to meet their evolving needs, reflecting a learning process to remain competitive (Caiazza & Bigliardi, 2020). Successful marketing strategies result in greater brand recognition and awareness, which can increase demand and customer loyalty. Focusing on quality and customer satisfaction can be measured by positive feedback and a loyal customer base praising product quality or service (Kotler & Keller, 2012).

Considering the literature review, the main factors related to consumer relationships that contribute to economic growth are summarized in Table 4.

Table 3 – Synthesis of Causal Conditions in the Consumer Relationship Construct

Causal Factor	Definition of the Causal Factor	Authors
Attracting New Customers	Strategies and actions to capture the interest of potential customers, encouraging them to purchase products. Including marketing campaigns, promotions, participation in events, or activities that increase brand visibility. Involves using effective communication to explore opportunities, reach, and retain customers.	Grande, 2011; Krasniqi & Desai, 2016; Fitz-Koch *et al.*, 2018; Gardas *et al.*, 2019.
Classification of Sales Strategies - Value Addition	Value addition involves strategies aimed at manufacturing and selling products that are (V)aluable, (R)are, difficult to (I)mitate, and the company must be able to (O)rganize and effectively exploit them to obtain strategic benefits. Emphasizing quality, innovation, and personalized service to meet unique customer needs.	Barney, 1991; Kotler, 2020; Garima *et al.*, 2023.
Market Analysis	Process of evaluating a market to understand its characteristics and trends and define strategies that guide planning. The objective is to obtain data that help in decision-making for positioning, product development, marketing, defining customer profiles, and types of approaches.	Silva & Pandolfi, 2021; Campos & Marjotta-Maistro, 2022; Garima *et al.*, 2023.
Marketing Plan	A plan that details the actions and approaches to be adopted to promote a product, aiming to achieve objectives. Includes market analysis, target audience definition, setting marketing goals, positioning strategies, budget, and metrics to evaluate the effectiveness of implemented actions.	Kotler & Keller, 2012; Caiazza & Bigliardi, 2020; Silva & Pandolfi, 2021.
Marketing Budget and Team	Investment related to training professionals working in agribusiness marketing, who have experience in the field and are dedicated to incorporating innovative campaigns that can boost sales.	Wives & Kühn, 2018; Soares *et al.*, 2021.
Customer Feedback	Information provided by consumers about their experiences. This feedback can be positive or negative and is essential for understanding customer satisfaction, identifying areas for improvement, and service quality. Feedback can be collected through surveys, online reviews, social media comments, emails, and direct conversations.	Kotler & Keller, 2012; Caiazza & Bigliardi, 2020; Garima *et al.*, 2023.

Source: Prepared by the Author from Barney (1991); Grande (2011); Kotler & Keller (2012); Krasniqi & Desai (2016); Fitz-Koch *et al.* (2018); Wives & Kühn (2018); Gardas *et al.* (2019); Caiazza & Bigliardi (2020); Silva & Pandolfi (2021); Soares *et*

al. (2021); Campos & Marjotta-Maistro (2022); Garima *et al.* (2023).

Economic Growth

Competitiveness factors and the innovative spirit of entrepreneurs in the field significantly impact their performance (Daneluz, Canever, Lima, Bermudes, & Menezes, 2022). Family farming can increase its regional competitiveness and international position by adopting collaborative, social, and sustainable entrepreneurial strategies (Ratten & Dana, 2017). Entrepreneurial orientation, which includes dimensions such as innovation, proactivity, and risk-taking, has been identified as a positive factor for growth (Diaz & Sensini, 2020).

Moreover, business model innovation, entrepreneurial leadership, and the pursuit of competitive advantage are also important elements contributing to the growth of startups (Phangestu, Kountur, & Prameswari, 2020). This competitiveness, in turn, directly impacts economic growth, exports, imports, and employment rates, reinforcing the need for government policies that stimulate entrepreneurship and overall economic performance (Khyareh & Rostami, 2018).

Additionally, entrepreneurial orientation has been identified as a positive factor for the growth of the dairy agribusiness, where elements such as innovation, proactivity, and risk-taking are indispensable (Ratten & Dana, 2017). Incorporating these principles into family dairy product agribusinesses can boost performance, enabling them to face competitiveness challenges and ensure sustainable economic growth in the ever-changing agribusiness scenario (Buainain et al., 2014).

The result of the complex interaction of causal factors, and the analysis through the QCA method, will allow the identification of specific combinations that lead to economic growth (Ragin & Davey, 2017). For this study, "outcome" for rural family agribusinesses is considered to be the measurable results of Economic Growth, where effective financial management ensures solid financial health, consistent profitability, and positive cash flow (Barney, 1991), represented by consistent revenue increases when comparing the results of one year with the next.

Methodology

This study adopts Qualitative Comparative Analysis (QCA) to explore the combinations of factors that contribute to economic growth in family dairy agribusinesses in the Western Santa Catarina Mesoregion. QCA is a robust technique for analyzing complex causal relationships in configurations where multiple factors interact (Ragin, 2008; Rihoux & De Meur, 2009; Betarelli & Ferreira, 2018).

Characteristics of Qualitative Comparative Analysis

At its core, QCA is qualitative. It focuses on understanding the complexity of the studied cases, taking into account the specificities and context of each case. QCA begins with a detailed analysis, looking for patterns, causal relationships, and underlying mechanisms (Ragin, 2008). This is typical of qualitative research, where the focus is on deep understanding and interpretation (Gil, 2008). However, what makes QCA unique is its incorporation of quantitative techniques to analyze these qualitative data. For example, it uses algorithms to identify combinations of causal conditions associated with a given outcome. This quantitative approach helps to synthesize and compare information from various cases, allowing researchers to generalize results in a systematic and replicable manner.

Methodological Procedures

QCA can be framed as a methodological approach that combines elements of both deductive and inductive methods. It benefits from deduction in forming assumptions about causal conditions based

on existing theories (Schneider & Wagemann, 2012) and induction in discovering new causal configurations from case data (Ragin, 2008; Betarelli & Ferreira, 2018). It is recommended when seeking to understand how different combinations of elements lead to an outcome, allowing the examination of multiple factors influencing an outcome (Schneider & Wagemann, 2012).

QCA stands out as a technique designed for small and medium-sized samples (Ragin, 2008; Dias & Braga, 2020). It is useful in scenarios with an intermediate number of cases, about 10 to 15 cases, as its techniques and applications were designed to handle a limited number of observations (small-N) and offer a macro-comparative approach (Betarelli & Ferreira, 2018). It is important to mention that there is a detailed manual for all stages of the QCA method and its mathematical foundations, including guidance for using the supporting software fsQCA 4.1, which was used for data analysis in this article by Ragin and Davey (2017). The analysis process comprises several stages highlighted below:

a) Case selection: the researcher defines the research objective and selects the cases to be studied (Rihoux & De Meur, 2009; Schneider & Wagemann, 2012);

b) Identification of causal conditions and outcome: the researcher identifies potential key factors that might influence the outcome and delineates the outcome to be investigated (Rihoux & De Meur, 2009; Schneider & Wagemann, 2012; Dias & Braga, 2022);

c) Data table compilation: represents the various possible combinations and can be used to compile information from various sources, such as interviews, questionnaires, and documents (Woodside, 2013; Simón-Moya & Revuelto-Taboada, 2016);

d) Truth table: represents all possible combinations of conditions and their outcomes, with each row indicating whether the outcome is possible given the corresponding configuration (Rihoux & De Meur, 2009; Orlandi, Zardini, & Rossignoli, 2021). The Truth Table in this research used the default configuration of the fsQCA 4.1 software (at least 1 case and consistency of 0.80);

e) Necessity analysis: a strategy to focus on cases where the outcome is present (Schneider & Wagemann, 2012; Porfírio, Felício, & Carrilho, 2020);

f) Consistency analysis: aims to verify whether the observed combinations and outcomes align with the logical laws of theory, i.e., it measures the importance of each causal condition in the outcome configuration (Ragin, 2008);

g) Coverage analysis: assesses whether the chosen sample is adequate for analysis (Rihoux & De Meur, 2009; Schneider & Wagemann, 2012), indicating the empirical relevance of a consistent configuration (Ragin, 2008; Dias & Braga, 2022);

h) Combinations analysis: at this stage, the researcher uses statistical methods to identify combinations of conditions that lead to an outcome, with Boolean analysis being the most frequent method (Rihoux & De Meur, 2009; Schneider & Wagemann, 2012).

In this article, the Crisp-Set Qualitative Comparative Analysis (csQCA) technique was employed as part of the analysis methodology. By transforming variables into binary sets and identifying combinations of conditions that lead to specific outcomes, QCA analysis allowed for the identification of complex causal configurations and understanding the interactions between the factors under study (Rihoux & De Meur, 2009). The interpretation of the results is the presentation and analysis of the data itself (section 5).

Definition of Cases, Causal Conditions, and Outcome

For this research, the set of enterprises categorized as "dairy and derivative agribusinesses" was

considered. These were identified in the project conducted by the Center for Socioeconomics and Agricultural Planning of the Santa Catarina Agricultural Research and Rural Extension Company (Cepa/Epagri) (Reiter et al., 2019), in which Epagri identified 136 rural dairy and derivative agribusinesses in the State of Santa Catarina. Methodologically, dividing the State of Santa Catarina into territories called Technical Management Units (UGTs), which correspond to 10 macro-regions. Of the rural dairy and derivative agribusinesses in the State of Santa Catarina, 58 of them (the universe of this research) are in the Western Santa Catarina Mesoregion, which includes UGTs 01 (West), 02 (Midwest), 09 (Extreme West), and 10 (Upper Peixe River Valley) (Waquil, Gazolla, Niederle, Blume, Bastian, Santos, & Concha, 2013).

Among the 58 available cases, 13 agribusinesses were interviewed. Convenience sampling was used for sample selection, allowing the researcher to select available elements, assuming they may represent the study population (Gil, 2008). These agribusinesses were identified through contact with regional coordinators of UGTs 1, 2, 9, and 10 of Epagri (from the state of Santa Catarina).

This research addresses family agribusinesses that meet the following criteria: a) located in rural areas as defined by Law No. 11,326 of 2006 (BRASIL, 2006); b) classified as Microenterprise or Small Business – with revenue up to R$ 4.8 million and up to 19 employees – according to the criteria established by Law 123/2006 (BRASIL, 2006), considering the classification by number of employees according to the Brazilian Micro and Small Business Support Service (SEBRAE, 2013) and the Brazilian Institute of Geography and Statistics (IBGE, 2017); c) rural family agribusinesses that perform processing activities with a capacity of up to 500,000 liters of milk per month and comply with sanitary standards with inspection seals; d) producing milk or derivatives such as cheese, butter, cream cheese (Waquil et al., 2013), among others (Reiter et al., 2019).

The interviews followed a structured interview script, with a sequence of predefined questions on an ordinal scale, allowing comparison of responses from different interviewees and offering equal opportunity for all (Gil, 2008). For result analysis, the response options were adapted to transform the variables for use in csQCA. Originally, the responses were based on a five-point scale, ranging from 1 to 5 for each question. The responses were regrouped into a new category called absence (0) or presence (1) to enable analysis through the csQCA technique. This decision was made due to the number of responses obtained that met the selection criteria and to facilitate the application of the csQCA technique. Tables 5, 6, 7, and 8 summarize the causal factors, define their meanings, and show how responses were regrouped on a scale from 1 to 5. In the last column (acronym), the first letter of each acronym corresponds to the construct the causal factor belongs to, respectively:

- "R": Resource Management;
- "I": Institutions;
- "P": Process Management;
- "C": Consumer Relationship.

Table 4 – Causal conditions related to Resource Management used in the research

Causal Factor	Presence (Score 1) Perception of Interviewed Partner	Abbreviation
Motives for Permanence - Entrepreneurial Instinct	When the owner-partner, among the determining reasons for remaining in the activities with their agribusiness, is more associated with acting as an entrepreneur, identifying market niches that can still be explored, constantly seeking opportunities. [Options 4 or 5]	RMIE
Team Qualification	When, in the interpretation of the owner-partner, the team is mature, and at most 10% of employees still need some training to develop the necessary skills to perform their respective functions.	RQP

	[Options 4 (Partially High) or 5 (High)]	
Modern and Updated Equipment	The level of modernization is high, that is, in the evaluation of the owner-partner, they constantly invest in improvements, use mostly modern equipment, and at least 45% of the equipment has been replaced in the last three years, ensuring production efficiency. [Options 4 (Partially High) or 5 (High)]	RQE
Use of Technology for Automation	The level of automation is high, meaning that, in the evaluation of the owner-partner, they consider that at least half (50%) of the production processes are automated and do not rely on manual intervention. [Options 4 (Partially High) or 5 (High)]	RTEC
Reinvestment of Profits	The level of reinvestment is high, indicating that, in the evaluation of the owner-partner, they reinvest at least 45% of the profits back into the business, especially in process modernization, employee training, or new ventures. [Options 4 (Partially High) or 5 (High)]	RRL

The Table 5 illustrates relevant causal factors for resource management in family agribusinesses. These include entrepreneurial instinct (RMIE), team qualification (RQP), investments in modern and updated equipment (RQE), use of technology for automation (RTEC), and finally, profit reinvestment (RRL). These factors will be examined along with the other constructs mentioned in Tables 6, 7, and 8.

Table 5 – Causal conditions related to Institutions used in the research

Causal Factor	**Presence (Score 1) Perception of Interviewed Partner**	**Abbreviation**
External Training	Assuming the value for the occurrence of the phenomenon is: if in the last 3 years, at least one external training session for team development (or part of it) has been conducted.	ITRE
Government Financial Support	Assuming the value for the occurrence of the phenomenon is: if in the last 3 years, at least one type of government support has been received, be it in seeking financing.	IIFG
Access to Favorable Government Policies	When the owner-partner perceives that there is access to government policies that encourage the growth of agribusinesses, such as specific credit lines, training, specialized technical assistance, certifications and quality seals, subsidies, and tax incentives, creating a conducive environment for agribusiness development despite any arising obstacles. [Options 3, 4, or 5]	IPG

The Table 6 highlights three causal factors related to institutions that influence the growth of family agribusinesses. The first is external training (ITRE), the second is government support in financing (IIFG), and the third factor is access to favorable government policies (IPG). These factors will also be tested to determine if their presence creates a favorable environment for the development and competitiveness of family agribusinesses.

Table 6 – Causal conditions related to Process Management used in the research

Causal Factor	**Presence (Score 1) Perception of Interviewed Partner**	**Abbreviation**
Future Planning	When the owner-partner indicated the presence of at least a basic business model structured for the agribusiness, even if some strategic future actions are still to be defined. [Options 3, 4, or 5]	PPF
Cash Flow Management	When the owner-partner points to the cost management of the establishment, demonstrating that costs are efficiently monitored at least in some stages of the agribusiness processes. [Options 4 (Partially High) or 5 (High)]	PFC

Quality Control System	When the owner-partner pointed to the existence of high-quality control, with structured, documented, and integrated production processes. [Options 4 (Partially High) or 5 (High)]	PCQ
Distribution Channels	When, in the owner's interpretation, they see that there is an efficient distribution channel, allowing products to easily reach end consumers across the entire geographic market area without failures. [Options 4 (Partially High) or 5 (High)]	PCD

The Table 7 highlights relevant causal factors for process management in family agribusinesses. These include future planning (PPF), cash flow management (PFC), quality control system (PCQ), and distribution channels (PCD). These factors, along with the others, also form part of the set of variables tested in the csQCA.

Table 7 – Causal conditions related to Consumer Relationship used in the research

Causal Factor	Presence (Score 1) Perception of Interviewed Partner	Abbreviation
Attracting New Customers	When, in the interpretation of the owner-partner, the attraction of new customers is high, that is, the agribusiness has an effective interaction and collaboration strategy with customers and between companies, contributing to attracting new customers and expanding the business's reach, allowing for better product commercialization. [Options 4 (Partially High) or 5 (High)]	CNC
Classification of Sales Strategies - Value Addition	When the owner-partner, among the classifications of sales strategies for their agribusiness, pointed to those related to "Focus on Value Addition," that is: strategies aimed at differentiating their products, with an emphasis on quality, innovation, and personalized service. [Options 4 or 5]	CEVA
Market Analysis	When the owner-partner indicated that before launching a new product, they conduct some research or analysis for future launches, even if this is done “word of mouth”. [Options 3, 4, or 5]	CAM
Marketing Plan	When the owner-partner points to the existence of a marketing plan, that is, there are sales strategies with a marketing plan focused on meeting sales objectives, targeting the customer profiles they intend to reach, and reaching the end customer. [Options 4 (Partially High) or 5 (High)]	CMKT
Marketing Budget and Team	When the owner-partner indicated that the company has, at a minimum, a marketing team, even with small budgets, but with updated content to develop sales strategies and allow campaign dissemination. [Options 3, 4, or 5]	COMK
Customer Feedback	When the owner-partner signals a high volume of feedback, meaning customers recognize the brand and respond positively to the quality of products or services, sometimes complaining, but mostly praising, and contributing to the agribusiness's efforts to correct flaws and implement actions to improve customer experience. [Options 4 (Partially High) or 5 (High)]	CFC

Finally, Table 8 details relevant causal factors for consumer relationship in family agribusinesses. These include attracting new customers (CNC), classifying sales strategies with a focus on value addition (CEVA), market analysis (CAM), existence of a marketing plan (CMKT), presence of a marketing team

(COMK), and finally, customer feedback (CFC). These factors, along with those presented in Tables 5, 6, and 7, will be part of the csQCA evaluation.

For this study, the measurable outcomes of Economic Growth for rural family agribusinesses are being tested:

Economic Growth: CRE

Economic growth refers to effective financial management that ensures solid financial health, consistent profitability, and positive cash flow (Barney, 1991), represented by revenue increases when

comparing one year to the next. Continuous economic growth over the past three years, increasing production and revenue, was considered in the evaluation.

To ensure the validity of the structured interview script and its effectiveness in measuring the targeted constructs, the instrument was validated in two stages. Initially, a consultation with an Epagri coordinator was conducted, followed by the implementation of two pre-tests, which allowed the incorporation of pertinent modifications to the research instrument. The importance of construct validity in scientific research is indisputable, reflecting the study's capability, through the research instrument used, to measure what it intends to evaluate, as discussed by Hoppen, Lapoint, and Moreau (1996).

Identification of Combinations of Causal Conditions

Due to the large number of conditions analyzed, which limits the use of csQCA, before applying QCA, the MSDO/MDSO analysis (most different cases with the same results and most similar cases with different results) was conducted to identify the main causal conditions explaining the different outcomes between two groups of cases (De Meur & Beumier, 2015; Dias & Dias, 2022).

With the implementation of this preliminary phase (MSDO), the explanatory results of the identified causal conditions were then analyzed using the Crisp-Set Comparative Qualitative Analysis (csQCA) variant. This analysis was performed with the help of fsQCA 4.1, a free comparative analysis tool (Ragin & Davey, 2017).

The results generated by fsQCA 4.1, indicating more elementary solutions, are presented in section 5, Table 3. From these results, the researcher's interpretation is guided by the formulas found, according to the theories used.

Presentation of Results

This section addresses the explanatory factors responsible for economic growth in rural dairy agribusinesses, based on MSDO/MDSO analysis and the combinations of drivers identified by the csQCA technique.

Explanatory Factors of Economic Growth

This topic presents the results provided by the MSDO/MDSO software. All causal conditions (Tables 5, 6, 7, and 8) were tested concerning the outcome Economic Growth. From the results obtained by MSDO/MDSO, pairs located in Zone 1, which compare cases with the same result, specifically the comparison between cases that obtained result 1 (presence), and pairs from Zone 3, which represent the comparison between cases with result 1 (presence) and cases with result 0 (absence) (Dias & Dias, 2022). This approach allowed the comparison of pairs and the identification of causal conditions that could explain the performance differences between cases with the expected result (successful) and those not achieving the expected result (unsuccessful). Table 9 summarizes the causal conditions by construct identified by the MSDO analysis.

Table 8 – Causal conditions by construct resulting from MSDO analysis

Constructs	Causal Factor	Zone 1	Zone 3
Resource Management	RTEC		X
Institutions	IPG		X
	IIFG	X	
Process Management	PFC	X	
Consumer Relationship	COMK		X
	CEVA	X	

	CFC	X	

As a partial conclusion from the results obtained through MSDO/MDSO, it can be stated that the causal conditions listed in Table 9 are those that most explain the economic performance differences of rural agribusinesses concerning the outcome Economic Growth (CRE). For this reason, these seven causal conditions were used in the combinatorial analysis, the results of which are presented in the following subsection.

Combinations Generating Economic Growth

In this study, Boolean notation was used to represent causal conditions and their combinations. From the implementation of the preliminary phase (MSDO), the data were analyzed according to the csQCA variant provided by the fsQCA 4.1 software. This software uses the following logical operators: "and" is represented by the symbol "*", and the operator "or" by the symbol "+". The symbol "~" denotes the logical operator "absence" or "opposite", which was used to represent the lack of a certain causal condition. The logical implication operator is represented by the symbol "→". This notation allows the analysis of causal conditions and their combinations, as well as the identification of logical patterns in the relationship between these conditions and the investigated outcome (Rihoux & De Meur, 2009).

For a more complete analysis of the combinations, the intermediate solution generated was examined, discussing the implications of the present and absent factors. Then, the minimizations (or reductions) derived from the generated intermediate solution were constructed. Table 10 displays the six combinations of causal factors capable of favoring Economic Growth in rural family agribusinesses producing dairy products.

Table 9 – Intermediate Solution Generated

Intermediate Solution	Raw Coverage	Unique Coverage	Consistency
~IIFG*IPG*CEVA*~COMK*CFC*~RTEC	0.2	0.2	1
~IPG*PFC*CEVA*~COMK*~CFC*RTEC	0.2	0.2	1
~IIFG*IPG*PFC*~COMK*CFC*RTEC	0.1	0.1	1
IIFG*~IPG*PFC*CEVA*COMK*CFC	0.2	0.2	1
~IIFG*IPG*PFC*CEVA*CFC*RTEC	0.1	0.1	1
IIFG*IPG*PFC*CEVA*~COMK*~CFC*~RTEC	0.1	0.1	1
Solution coverage:	0.9		
Solution consistency:	1		

These six configurations can be grouped into three through the simplification of the intermediate solution, combining common terms and eliminating redundancies.

1) Basic Combination for Growth

~IIFG * IPG * PFC * CFC * RTEC * (~COMK + CEVA) → CRE

2) Intermediate Combination Directed to Value Addition

IPG * CEVA * ~COMK * ~RTEC * ((~IIFG * CFC) + (IIFG * PFC * ~CFC)) → CRE

3) Complex Combination Directed to Internal Strategies

PFC * CEVA * ~IPG * ((~COMK * ~CFC * RTEC) + (IIFG * COMK * CFC)) → CRE

These three configurations are named according to their composition and are described as follows:

These combinations provide a detailed view of how different sets of factors can lead to the desired outcome. The total coverage of 0.9 indicates that 90% of the cases in the dataset are covered by the identified combinations of conditions. The total consistency of 1 means that all identified combinations of conditions are perfectly consistent; that is, in all cases where these combinations are present, the desired outcome is also present.

Discussion of Results

This section will discuss the three sets of configurations grouped and presented in the previous section. Each configuration is named – "Basic Combination for Growth", "Intermediate Combination Directed to Value Addition" and "Complex Combination Directed to Internal Strategies" – and all will be discussed in the following subsections.

Basic Combination for Growth

~IIFG * IPG * PFC * CFC * RTEC * (~COMK + CEVA) → CRE

This equation points to the presence of favorable government policies (IPG), efficient cash flow management (PFC), customer feedback (CFC), the use of automation technology (RTEC), and sales strategies focused on adding value to products (CEVA). It suggests that the absence of a marketing budget and team (~COMK) and government financial investments (~IIFG) can be offset by these factors.

From this interpretation, it is possible to conclude that the presence of favorable government policies (IPG) and customer feedback (CFC) are essential components of both parts of the equation. Building strong relationships with consumers through continuous feedback boosts demand, and consumer confidence is crucial for loyalty and market expansion. It is important to put the consumer at the center of attention and establish a sincere and loyal dialogue, where sales are the natural consequence of the established relationship (Caiazza & Bigliardi, 2020).

Moreover, favorable government policies (IPG) are vital for establishing a competitive business environment and reducing dependence on informal networks and corrupt practices (Krasniqi & Desai, 2016). They create a conducive environment for development, corroborating the account of one of the interviewed co-owners, who highlighted government support, such as municipal responsibility for water and cheese analyses and technical support from Epagri for certification, as important. In the interviewee's view, this action substantially contributes to ensuring quality and compliance, emphasizing the value of local government commitment to family agribusinesses (Köene, Ribeiro, Dortzbach, Bernett, Cruz, & Loss, 2022). Government assistance, which reduces initial costs and provides valuable regulatory guidance, demonstrates that a strategic partnership between government and agribusiness in promoting safe and high-quality food production practices is relevant (Roldan, Ambrosini, Bremm, & Kroeff, 2021).

Efficient cash flow management (PFC) and the use of automation technology (RTEC) are also critical components. These factors indicate that operational efficiency and technological innovation are vital for the viability and growth of agribusinesses. Although one of the co-owners of another interviewed agribusiness highlighted that due to specialization in producing artisanal cheeses, the company does not seek excessive industrialization. Market knowledge is emphasized by Daneluz et al. (2022), recognizing that it can influence planning and family management strategies, especially when considering market demand changes and opportunities.

The equation also allows for two other alternative conditions. The absence of a marketing budget and team (~COMK) indicates that, in some cases, agribusinesses can achieve economic growth even without a robust marketing budget, as long as other critical factors are present. The presence of sales strategies focused on adding value to products (CEVA) suggests that this condition can alternatively compensate for the lack of a marketing budget, indicating that how products are sold and positioned in the market is crucial.

Intermediate Combination Directed to Value Addition

IPG * CEVA * ~COMK * ~RTEC * ((~IIFG * CFC) + (IIFG * PFC * ~CFC)) → CRE

The equation points to the presence of favorable government policies (IPG), sales strategies focused on value addition (CEVA), customer feedback (CFC), government financial investments (IIFG), and efficient cash flow management (PFC). However, it also indicates the absence of a marketing budget and team (~COMK) and the absence of technology use for process automation (~RTEC). Additionally, in alternative solutions, it points to the absence of government financial investments (~IIFG) and the absence of customer feedback (~CFC), presenting these conditions as present or absent in alternative combinations.

The common factors in the two alternative paths are government policy support (IPG) and value addition sales strategies (CEVA), along with the absences of (~COMK and ~RTEC). Therefore, it is possible to conclude that favorable government policies (IPG) and sales strategies (CEVA) are critical and common components for agribusiness economic growth. If the agribusiness does not receive government investments (~IIFG), positive customer feedback (CFC) is mandatory for growth. However, if there are government investments (IIFG), efficient cash flow management (PFC) can compensate for the absence of customer feedback (~CFC).

The alternative conditions complement and indicate the two possible paths for economic growth: one suggests that the presence of customer feedback (CFC) compensates for the absence of government financial investments (~IIFG), and the other suggests that the presence of favorable government investments (IIFG) combined with efficient cash flow management (PFC) compensates for the absence of customer feedback (~CFC).

The observations of the interviewed partners from two companies are pertinent to mention. One indicated maintaining strict financial control, and the other highlighted receiving technical support, corroborating this analysis. The first partner reported his practice of maintaining comprehensive cash control, being responsible for issuing invoices, and having a parallel control for minor expenses. On the other hand, the other partner indicated that their agribusiness uses monitoring and cash management spreadsheets developed in collaboration with the research institution Epagri.

It is also noteworthy that the interviewed partner reported the interaction with customers as evidenced by the constant flow of suggestions for new products. This dynamic demonstrates a receptive attitude towards innovation and the appreciation of consumer contributions to business development. However, the absence of formal satisfaction surveys represents a missed opportunity for this company to obtain important feedback on customer experiences.

It is essential to highlight the relevance of customer opinion as a strategic tool for agribusinesses. As emphasized by Kotler & Keller (2012), satisfaction surveys provide a deep understanding of the quality of products, services, and experiences offered, as well as identify strengths and opportunities for improvement.

In this solution, agribusinesses should focus on obtaining and utilizing favorable government policies

and developing effective sales strategies. Agribusinesses can choose between two distinct paths: compensating for the lack of government investments by frequently gathering customer feedback or using government investments and efficient cash flow management to compensate for the absence of customer feedback.

Complex Combination Directed to Internal Strategies

PFC * CEVA * ~IPG * ((~COMK * ~CFC * RTEC) + (IIFG * COMK * CFC)) → CRE

The common factors in all conditions of the equation are the presence of efficient cash flow management (PFC) and value-added sales strategies (CEVA). Here, the absence of favorable government policies (~IPG) is noted. The alternative conditions (within parentheses) point to the presence of automation technology (RTEC) and the absence of a marketing budget and team (~COMK) and customer feedback (~CFC). The other alternative condition suggests the presence of government financial investments (IIFG), a marketing budget and team (COMK), and customer feedback (CFC).

Interpreting the combinations, efficient cash flow management (PFC) is critical for the outcome, ensuring that financial resources are used effectively, aligned with value-added sales strategies (CEVA), suggesting that how products are sold and positioned in the market is a determinant factor for economic growth. This scenario somewhat dispenses with favorable government policies (~IPG), implying that agribusinesses are not benefiting from government regulations or incentives. Regarding developing entrepreneurial capacities and new competencies, including management skills, McElwee (2008) argues that it is an essential skill for farmers to compete and deal with their problems.

The absence of a marketing budget (~COMK) and customer feedback (~CFC) is compensated by the use of automation technology (RTEC). This suggests that, in the absence of a marketing budget and team and customer feedback, technology can be a substitute factor to achieve the necessary efficiency and innovation. The innovative behavior of the manager is fundamental for enterprise growth (Pindado & Sánchez, 2019).

In another path, the presence of government financial investments (IIFG), a marketing budget and team (COMK), and customer feedback (CFC) can create a robust structure that compensates for the absence of favorable government policies. Emphasis on market knowledge aligns with the importance of entrepreneurs in identifying and exploiting opportunities (Alvarez & Barney, 2007; Grande, 2011). To ensure competitiveness in the agribusiness chain, the application of product, process, and management technologies is fundamental (Batalha et al., 2005).

Following the second alternative path pointed out in the reduced equation, the combination of government investments (IIFG), a marketing budget and team (COMK), and customer feedback (CFC) can create a solid structure for economic growth, even without favorable government policies. The absence of favorable government policies (~IPG) is not an absolute impediment to growth, as long as other combinations of factors are present to compensate.

Reflecting on the importance of government policies as fundamental catalysts for business development, supporting research emphasizing a conducive institutional environment as a critical factor for economic growth (Silva & Gazolla, 2021; Gazolla, Demetrio, Fantin, & Borelli, 2022) is put into question. The presence of government financial support (IIFG) is not a common determining factor in all solutions; when present in this combination, it suggests the absence of access to favorable government policies (~IPG).

The results indicate that agribusinesses with economic growth share characteristics such as value

addition to products, strong sales strategies, and efficient cash flow management. The presence or absence of government financial support and favorable government policies, as well as the marketing budget and team, vary between solutions, suggesting that these factors can influence but are not the sole determinants of economic growth.

Farmers with a deep understanding of the agricultural sector, production practices, market demands, and relationships with customers and suppliers can significantly benefit even without formal financial management training (Garima et al., 2023). The ability to stay ahead by adopting innovative practices and technologies becomes indispensable in a dynamic and competitive business environment (Schaefer et al., 2023).

Conclusion

The general objective of this research was to analyze the combinations of causal conditions that lead family-owned dairy product agribusinesses in the Western Santa Catarina Mesoregion to economic growth. The results identified seven explanatory factors of performance differences, which directly influence the economic growth of these agribusinesses (Table 9). These factors suggest specific characteristics that impact these family businesses in a rural context. When analyzing collectively, they produced six combinations capable of driving economic growth – an innovative contribution to existing literature.

From these combinations, derived from the intermediate equation generated by the sfQCA 4.1 software, three minimized equations were formed: the "Basic Combination for Growth," the "Intermediate Combination Directed at Value Addition," and the "Complex Combination Directed at Internal Strategies". Each equation corresponds to distinct levels of maturity in agribusinesses, ranging from initial operations to advanced integrated strategies. This adaptability supports the theory of equifinality, suggesting multiple pathways to economic growth. This implies that, even with varied resources, agribusinesses can achieve economic growth by adapting according to their needs and market opportunities.

The first reduced equation, termed the "Basic Combination for Growth," shows that agribusinesses can compensate for the absence of certain resources, such as a marketing budget or government financing, by investing in efficient cash flow management, automation technologies, favorable government policies, and customer feedback. This basic pathway appears to align more with the initial needs of agribusinesses, where reliance on institutional support, efficient business management, and proximity to customers are crucial.

The consistent presence of customer feedback and technology highlights the importance of maintaining innovation and strong customer relationships to remain competitive in the market. Government policy support (IPG) also appears in both possible combinations, indicating that a regulatory and supportive environment is an important differentiator for agribusinesses. Thus, if agribusinesses prioritize efficient cash flow management, the use of technology, customer engagement, and seek favorable government policies, the absence of a marketing budget can be offset by adding value to products, offering relevant strategic flexibility.

The second reduced equation, called the "Intermediate Combination Directed at Value Addition," represents a more advanced stage of maturity, where agribusinesses take a new step toward development. The business begins to rely less on certain basic factors and to focus more on value creation for the customer and effective sales strategies. This stage emphasizes the importance of investments and feedback but allows the agribusiness to choose between government support or rigorous control over cash flow, demonstrating flexibility in adapting its strategy to available resources.

Agribusiness growth can be achieved through favorable government policies and effective sales

strategies directed toward value addition in products, without the direct need for a robust marketing budget or high demand for technology. Two alternatives exist: focus on customer feedback without relying on government investment or focus on cash flow management with government support, even without customer feedback. The basic attributes are still present, but the direction of the agribusiness seems to shift. The need for financial investments begins to emerge but is combined with the management of elements that had already appeared in the basic combination.

Finally, the third reduced equation, called the "Complex Combination Directed at Internal Strategies," represents a stage of greater autonomy, in which the presence of an efficient cash flow control system and value addition strategies become essential, even when government support is unavailable. At this stage, agribusinesses can replace the need for a marketing budget with intensive use of technology or, alternatively, rely on a robust marketing structure and customer feedback. This combination of resources demonstrates that mature family businesses tend to adopt internal development strategies, prioritizing operational efficiency and long-term customer relationships.

Focusing on financial efficiency through efficient cash flow management is fundamental, as it appears as a common and necessary factor in both economic growth combinations. Leveraging alternative resources, given the absence of certain resources (such as favorable government policies), adaptation and efficient use of other resources (such as technology, government financial investments, marketing budget, and customer feedback) are critical. The family agribusiness can opt to use technology to compensate for the lack of a marketing budget and customer feedback, or they may rely on a combination of government financial investments, marketing budget, and customer feedback to achieve their goals, depending on their specific contexts and available resources.

While common factors persist across all combinations, this third strategy indicates an evolution toward more sophisticated approaches. Beyond fundamental aspects such as efficient management and customer focus, this combination emphasizes the importance of developing actions that attract and engage new customers, indicating a more proactive market stance. This equation incorporates elements from the four dimensions addressed in the study – resource management, process management, institutional support, and customer relationships – reflecting the complexity and strategic direction necessary for the evolution of family agribusinesses.

Finally, it is important to note that these three equations represent different levels of maturity that family-owned dairy product agribusiness may go through. From the initial phase to consolidated economic growth, each stage brings specific demands and development tools, encompassing multiple aspects. Therefore, it can be concluded that various dimensions influence the economic development of these agribusinesses, and each may require different conditions according to their stage of growth.

Thus, this study not only contributes to the understanding of family-owned dairy product agribusinesses but also serves as a starting point for broader investigations aimed at catalyzing discussions, informing managerial practices, and encouraging research. Promoting the application and continuous development of the QCA method in different contexts offers practical and theoretical contributions to understanding competitiveness factors and economic growth in the agribusiness sector. The research suggests that to promote the growth of these family agribusinesses, policymakers should prioritize creating technical training programs, external training, and tax incentives aimed at innovation and the use of accessible technologies. This allows agribusiness to improve operational efficiency and competitiveness in the regional market. These incentives should be flexible, enabling businesses to adapt their strategies based on resources and market conditions, promoting a supportive growth environment.

While this study concentrated on the Western Santa Catarina Mesoregion, the model has potential for application in other regions and agribusiness sectors, enabling result validation across diverse contexts. Future studies could expand the application of the QCA method to other regions and types of family

agribusinesses, which would contribute to a more heterogeneous understanding of the factors of economic growth in this sector. Additionally, it is recommended to include additional variables that could broaden the understanding of success factors, such as the impact of sustainable practices and the adoption of new technologies.

It is important to emphasize that, although the QCA method has enabled the identification of complex causal patterns, limitations exist in generalizing the results due to the study's qualitative nature. Complementary methods, such as in-depth case studies in different agribusinesses contexts, would help validate the findings and enrich the analysis.

In conclusion, this study demonstrates that the economic growth of family agribusinesses is a multifaceted process that requires specific combinations of resources and strategies at each stage of development. From inception to economic maturity, agribusinesses demonstrate a unique ability to adapt to internal and external conditions, which is essential for ensuring sustainability and competitiveness in a dynamic sector. The diverse combinations underscore the inherent flexibility of family agribusinesses, aligning with the theory of equifinality, where multiple pathways can lead to the same successful outcome. This reinforces the concept that economic growth is attainable despite varying resource conditions. This study thus contributes not only to understanding family-owned dairy product but also lays the groundwork for ongoing research, encouraging the continued application and refinement of the QCA method across varied agribusiness contexts.

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