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MANAGERIAL MATURITY IN BEEF CATTLE FARMS: AN EXPLORATORY APPLICATION OF THE MANAGEMENT EXCELLENCE MODEL AND ADAPTATION GUIDELINES FOR RURAL ENTERPRISES

MATURIDADE GERENCIAL EM FAZENDAS DE PECUÁRIA DE CORTE: APLICAÇÃO EXPLORATÓRIA DO MODELO DE EXCELÊNCIA DA GESTÃO E DIRETRIZES DE ADAPTAÇÃO ÀS EMPRESAS RURAIS

MADUREZ GERENCIAL EN FINCAS DE GANADERÍA DE CORTE: APLICACIÓN EXPLORATORIA DEL MODELO DE EXCELENCIA EN LA GESTIÓN Y DIRECTRICES DE ADAPTACIÓN PARA EMPRESAS RURALES

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Abstract

This article presents an exploratory application of the Management Excellence Model (MEG), in its simplified version, to assess managerial maturity in three beef cattle farms anonymized as Farm A, Farm B and Farm C. The study, conducted within the research area of Agricultural and Agro-industrial Production Management, adopted a multiple-case design using a qualitative-quantitative approach, structured interviews, on-site visits and verification of managerial evidence. Results indicated intermediate to advanced managerial maturity with overall scores of 70%, 80% and 77%, respectively. The most recurrent gaps were concentrated in Systemic Thinking, Stakeholder Commitment and Transformational Leadership, while Adaptability, Sustainable Development, Process Orientation and Value Generation showed stronger performance. The analysis showed that high operational maturity does not necessarily entail consolidated strategic maturity, a distinction interpreted through the lens of ordinary and dynamic capabilities, the latter read through the perception (sensing) and capture (seizing) of opportunities that remain weakly institutionalized on the farms. Based on the findings, preliminary guidelines are proposed for an interpretive adaptation of MEG to rural enterprises, preserving its scoring architecture and qualifying the reading of its fundamentals, based on evidence specific to beef cattle farming. The study concludes that the simplified MEG can support managerial diagnosis in rural contexts, when interpreted in accordance with the productive, environmental, commercial, and organizational specificities of rural enterprises, and that consolidating strategic maturity depends on ongoing managerial capacity-building initiatives.
Keywords: Rural management. Managerial maturity. Management Excellence Model (MEG). Beef cattle. Sustainability.

Resumo

O artigo apresenta uma aplicação exploratória do Modelo de Excelência da Gestão (MEG), em sua versão simplificada, para avaliar a maturidade gerencial de três fazendas de pecuária de corte, anonimizadas como Fazenda A, Fazenda B e Fazenda C. O estudo, vinculado à linha de pesquisa em Gestão da Produção Agropecuária e Agroindustrial, adotou delineamento multicaso, com abordagem qualitativo-quantitativa, entrevistas estruturadas, visitas *in loco* e verificação de evidências gerenciais. Os resultados indicaram maturidade gerencial intermediária a avançada, com escores globais de 70%, 80% e 77%, respectivamente. As lacunas mais recorrentes concentraram-se em Pensamento Sistêmico, Compromisso com as Partes Interessadas e Liderança Transformadora, enquanto Adaptabilidade, Desenvolvimento Sustentável, Orientação por Processos e Geração de Valor apresentaram desempenho mais robusto. A análise evidenciou que a maturidade operacional elevada nem sempre corresponde a uma maturidade estratégica consolidada, distinção interpretada à luz das capacidades ordinárias e dinâmicas, estas últimas lidas por meio da percepção (*sensing*) e da captura (*seizing*) de oportunidades ainda pouco institucionalizadas nas propriedades. A partir dos achados, propõem-se diretrizes preliminares para uma adaptação interpretativa do MEG às empresas rurais, preservando sua arquitetura de pontuação e qualificando a leitura dos fundamentos, segundo evidências próprias da pecuária de corte. Conclui-se que o MEG simplificado pode apoiar o diagnóstico gerencial no campo, desde que interpretado conforme as especificidades produtivas, ambientais, comerciais e organizacionais dos empreendimentos rurais, e que a consolidação da maturidade estratégica depende de iniciativas de capacitação gerencial continuada.

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Palavras-chave: Gestão rural. Maturidade gerencial. Modelo de Excelência da Gestão (MEG). Pecuária de corte. Sustentabilidade.

Resumen

El artículo presenta una aplicación exploratoria del Modelo de Excelencia en la Gestión (MEG), en su versión simplificada, para evaluar la madurez gerencial de tres fincas de ganadería de corte, anonimizadas como Finca A, Finca B y Finca C. El estudio adoptó un diseño multicaso, con enfoque cualitativo-cuantitativo, entrevistas estructuradas, visitas in situ y verificación de evidencias gerenciales. Los resultados indicaron una madurez gerencial intermedia a avanzada, con puntajes globales de 70%, 80% y 77%, respectivamente. Las brechas más recurrentes se concentraron en Pensamiento Sistémico, Compromiso con las Partes Interesadas y Liderazgo Transformador, mientras que Adaptabilidad, Desarrollo Sostenible, Orientación por Procesos y Generación de Valor presentaron desempeño más robusto. El análisis evidenció que una madurez operativa elevada no siempre corresponde a una madurez estratégica consolidada, distinción interpretada a la luz de las capacidades ordinarias y dinámicas, estas últimas leídas mediante la percepción (*sensing*) y la captura (*seizing*) de oportunidades todavía poco institucionalizadas en las propiedades. A partir de los hallazgos, se proponen directrices preliminares para una adaptación interpretativa del MEG a empresas rurales, conservando su arquitectura de puntuación y calificando la lectura de sus fundamentos según evidencias propias de la ganadería de corte. Se concluye que el MEG simplificado puede apoyar el diagnóstico gerencial en el campo, siempre que se interprete conforme a las especificidades productivas, ambientales, comerciales y organizacionales de las empresas rurales, y que la consolidación de la madurez estratégica depende de iniciativas de capacitación gerencial continua.
Palabras clave: Gestión rural. Madurez gerencial. Modelo de Excelencia en la Gestión. Ganadería de corte. Sostenibilidad.

1. Introduction

Brazilian beef cattle farming occupies a strategic position in the national economy and the international food market, both due to the production scale achieved and the capacity to incorporate technological, genetic, sanitary and environmental advances into production systems. The economic relevance of agribusiness and Brazilian participation in the international beef trade reinforce the need to understand the farm not only as a production unit, but as a rural enterprise subjected to increasing demands for efficiency, traceability, sustainability, regulatory compliance and value generation (CEPEA, 2023; BRASIL, 2023).

In this scenario, the competitiveness of rural property depends on the articulation between zootechnical, financial, environmental, commercial and labor decisions. The quality of agricultural production is not restricted to the product, since it involves the ability to organize processes, reduce waste, interpret information, respond to risks, and sustain economic, social and environmental results over time

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(ANJOS *et al.*, 2012; SANTOS; SILVEIRA; PEIXOTO, 2019; ZANIN *et al.*, 2020).

Although beef cattle farming has advanced technically, many rural enterprises still coexist with limitations in the formalization of managerial practices, the integration of indicators and the systematization of learning routines. This characteristic does not mean an absence of management, but a predominance of management often supported by the accumulated experience of leaders and partial controls. The literature on rural management indicates that the professionalization of the field requires simple, understandable instruments that adhere to productive reality, capable of transforming planning, control and decision-making into recurring practices (LOURENZANI, 2006; MUNARETTO; DELLARMELIN; ROSIN, 2019; RODIGHERI; GRZYBOVSKI; SILVA, 2023).

The Management Excellence Model (MEG), developed by the National Quality Foundation (FNQ) and applied by Mato Grosso do Sul Competitive Institute (MS Competitive), constitutes a structured reference for evaluating organizational maturity. The model organizes management based on fundamentals such as systemic thinking, stakeholders, learning, adaptability, leadership, sustainable development, processes and value generation, offering an integrated reading of the organization (FNQ, 2017; 2018). This perspective approaches the notion of the learning organization, in which the understanding of interdependencies and the conversion of experience into shared knowledge are conditions for managerial evolution (SENGE, 2006).

The application of the MEG in rural properties, however, requires sectoral interpretation. The rural enterprise operates under biological cycles, climate dependence, production seasonality, sanitary risks, price fluctuations, diversity of marketing channels and, in many cases, overlap between family, heritage and business. Thus, the simple transposition of a corporate model to the field may reduce its diagnostic capacity, when its fundamentals are not reread considering concrete agricultural practices.

In light of this problem, this article aims to present an exploratory application of the MEG, in its simplified 100-point version, to evaluate the managerial maturity of

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three beef cattle farms, identified anonymously as Farm A, Farm B and Farm C, using the empirical results as a basis for proposing preliminary guidelines for adapting the model to rural enterprises. The study is linked to the research line in Agricultural and Agro-industrial Production Management, treating rural property as a productive, economic and organizational unit, whose competitiveness depends on the integration between processes, people, indicators, sustainability and value generation.

The expected contribution lies at the academic level by bringing the literature on excellence models closer to rural management, and at the applied level by offering guidelines for the use of the MEG as a diagnostic and improvement instrument in rural enterprises.

2. Literature Review

Managerial maturity can be understood as the degree of development, formalization, integration and learning present in an organization's management practices. In rural enterprises, this maturity manifests in the ability to articulate production objectives, economic indicators, operational routines, workforce management, relationship with buyers and commitment to sustainability. This understanding approaches the literature on organizational maturity models, which analyzes the transition from informal and fragmented practices to more structured systems of decision, control and learning (KUCIŃSKA-LANDWÓJTOWICZ, 2019; WOLNIAK, 2019).

Rural management has specificities that hinder the uncritical adoption of organizational models designed for urban, industrial or service companies. Agricultural production is subject to biological cycles, climate seasonality, sanitary risks, environmental restrictions and dependence on natural resources. Furthermore, in many rural enterprises, especially those of family origin, there is an overlap between family, heritage, work and business decisions, which makes leadership, succession, delegation and professionalization sensitive dimensions for business continuity (MOREIRA; SPANEVELLO, 2019; RODIGHERI; GRZYBOVSKI; SILVA, 2023).

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The professionalization of management in the field should not be confused with the simple adoption of sophisticated tools or bureaucratic procedures. Rather, it is about building routines that allow the rural leader to monitor the activity's performance, identify deviations, record lessons learned and make evidence-based decisions. Lourenzani (2006) already pointed out the need for managerial training methodologies adjusted to the conditions of producers; Munaretto, Dellarmelin, and Rosin (2019) highlight the importance of strategic planning in small rural properties; and Favato and Nogueira (2017) reinforce the relevance of cost controls to transform economic records into useful managerial information.

The MEG fits, into this debate, as a framework aimed at the systemic evaluation of management. In the simplified version used, in this study, the instrument is organized into eight fundamentals, twenty-five evaluative items, four maturity levels and a total score of one hundred points (FNQ, 2017; 2018). Its logic assumes that excellence does not result from isolated actions, but from the integration between fundamentals, processes, stakeholders and results. This view dialogues with Senge (2006), for whom organizations capable of learning develop greater competence to perceive relationships, review assumptions, and transform experience into shared knowledge.

The literature, on excellence and maturity models, has indicated that generic instruments need to be interpreted according to the context of application. Kucińska-Landwójtowicz (2019) and Wolniak (2019) highlight the utility of maturity models for classifying stages of organizational development. Studies related to the European Foundation for Quality Management (EFQM) and sectoral quality management proposals reinforce that excellence models can support diagnoses and learning processes, provided they are adapted to the conditions of the evaluated sector (GORENAK, 2015; DELGADO-MENDOZA; ALCÍVAR MARTÍNEZ; CARRANZA-LOOR, 2023; TARAZA; ANASTASIADOU; PAPADEMETRIOU, 2024). While Dubey (2015) adds that part of the limitations of these models stems from the difficulty of adjusting them to specific organizational contexts.

The theory of dynamic capabilities also contributes to understanding the

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relevance of the MEG in the context of beef cattle farming. Teece, Pisano, and Shuen (1997) define dynamic capabilities as organizational skills to perceive changes, seize opportunities and reconfigure resources in unstable environments.

The discussion on dynamic capabilities advanced, following Teece, Pisano, and Shuen (1997), toward a more operational decomposition of the concept. Teece (2007) disaggregates dynamic capabilities into three complementary dimensions: the capacity to perceive and interpret changes in the environment (sensing); the capacity to capture opportunities through appropriate decisions and business models (seizing); and the capacity to reconfigure resources, competencies and processes to sustain competitive advantage (reconfiguring). This triad helps differentiate, within the organization itself, routines aimed at daily execution from those aimed at change and strategic adaptation.

Winter (2003) reinforces this distinction by differentiating ordinary capabilities, which allow the organization to sustain its operation in the short term through consolidated routines, from dynamic capabilities proper, responsible for extending, modifying or recreating these ordinary capabilities in the face of environmental changes.

In family agribusiness contexts, Morgan, Okon, and Amadi (2021) show that the articulation between sensing, seizing and succession planning is directly related to the survival and growth of family businesses, which brings the theoretical discussion closer to the reality of beef cattle farms, typically managed on a family basis. Studies applied to animal production also identify the seizing capacity as a determining factor in the performance of rural enterprises in the face of market fluctuations (HOUESSOU; AOUDJI; BIAOU, 2023), which supports the decomposition of the dynamic capabilities of the simplified MEG in these terms throughout the empirical analysis.

Sunder, Ganesh and Marathe (2019) reinforce this perspective by discussing the relevance of these capabilities for organizations subjected to complex and changing environments. In cattle farming, this approach helps interpret the adaptability of farms in the face of fluctuations in the price of the arroba (R$/15 kg),

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climate events, input costs, sanitary requirements, and market changes.

Sustainability constitutes another indispensable axis for the analysis of managerial maturity. Recent studies on sustainability in agricultural systems highlight that sustainable performance depends on the articulation between economic efficiency, environmental responsibility and organizational coordination capacity (ZANIN *et al.*, 2020; CASAGRANDA; WIŚNIEWSKA-PALUSZAK; PALUSZAK, 2023; SOUZA *et al.*, 2023). In the simplified MEG, this dimension appears in the Sustainable Development fundamental, but also crosses Process Orientation, Value Generation, Transformational Leadership, and Stakeholder Commitment.

In the context of this study, it is assumed that the MEG constitutes an adequate reference for evaluating managerial maturity in beef cattle farms, provided its application is accompanied by sectoral interpretation. Pereira (2026) proposed the adaptation of the MEG to the rural context by relating its fundamentals to criteria such as strategies and plans; customers and market; information and knowledge; leadership and succession; sustainability; production processes and results. The empirical application presented here starts from this premise to examine three properties and propose preliminary guidelines for a reading of the MEG that is more adherent to rural enterprises.

3. Methodology

The research is characterized as an applied study, exploratory and descriptive in nature, conducted through a qualitative-quantitative approach. The applied character stems from the use of the MEG as a managerial diagnostic instrument in real rural enterprises. The exploratory nature is justified by the application of the simplified MEG in beef cattle farms, with the purpose of examining its adherence to the agricultural context and its possibilities for interpretive adaptation to rural enterprises.

The design adopted was the multi-case study, considering three rural enterprises dedicated to beef cattle farming, identified as Farm A, Farm B and Farm C. The properties were selected by convenience and adherence to the research

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objective, considering their performance in beef cattle farming, and the existence of a productive and administrative structure compatible with the application of the instrument. For ethical reasons, the location was generalized, and the article does not mention municipalities, names of owners, leaders or collaborators. The research was approved by the Research Ethics Committee, under Opinion no. 7,796,482/2025.

The instrument used was the simplified version of the MEG, structured into eight fundamentals, twenty-five evaluative items, four maturity levels and a total score of one hundred points (FNQ, 2017; 2018), utilized in this study with the exclusive permission of MS Competitive, the owner of the simplified version model, internally designated as Simplified Management Assessment *(Avaliação Simplificada da Gestão - ASG)* (Table 1). The evaluated fundamentals were Systemic Thinking, Stakeholder Commitment, Organizational Learning and Innovation, Adaptability, Transformational Leadership, Sustainable Development, Process Orientation and Value Generation. The instrument allows for the evaluation of strategic, relational, operational and results dimensions in an integrated manner with differentiated weights among the fundamentals.

Table 1. Foundations, evaluation items, and maximum score of the ASG

Foundation (Maximum Score)	**Evaluated Items**	**Purpose of the Process**
Systemic Thinking (8)	Strategic indicators; decision-making	Assess the success of strategies and decide on the organization's direction based on information
Commitment to Stakeholders (28)	Customer needs; requests and complaints; disclosure of services/ products; customer satisfaction; workforce activities; workforce development; workforce satisfaction	Align products/ processes with customer needs; ensure proper handling of complaints; enable people for high performance
Organizational Learning and Innovation (4)	Improvements to key processes	Promote process improvement for greater efficiency and effectiveness
Adaptability (4)	Review of processes or products	Adapt processes/ products by anticipating changes in customer behavior or in the business context

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Foundation (Maximum Score)	**Evaluated Items**	**Purpose of the Process**
Transformational Leadership (16)	Mission, values and vision for the future; legal requirements and ethical conduct standards; strategies; strategic action plans	Guide organizational behavior; ensure legal and ethical compliance; define and disseminate strategies and action plans
Sustainable Development (12)	Cash flow; environmental requirements; social actions and projects	Ensure financial sustainability; address environmental impacts; carry out monitored social actions
Process Orientation (12)	Core business processes; control of core processes; development of products/services	Structure and standardize activities; verify compliance with standards; develop products that meet customer needs
Value Generation (16)	Financial results; customer-related results; workforce-related results; core process results	Demonstrate economic-financial performance results, customer and workforce satisfaction, and compliance with process requirements

Source: Adapted from MS Competitive (FNQ, 2017; 2018). ASG – Simplified Management Assessment, version V.04.

The evaluation scale was organized into four levels. Level 1 corresponded to the non-existence of the practice or ignorance of the activity, Level 2 indicated recognition of the need for the practice, even if informally, Level 3 represented the existence of the practice, but without full institutionalization, and Level 4 characterized the structured practice, understood and disseminated among leaders and the team. This logic allowed for the evaluation not only of the presence of managerial practices, but also their degree of formalization, integration and incorporation into the property's routines.

For scoring purposes, each evaluative item was rated using the same four-level ordinal scale described above, with each level corresponding directly to the number of points assigned to the item (Level 1 = 1 point; Level 2 = 2 points; Level 3 = 3 points; Level 4 = 4 points). The maximum score for each fundamental is determined by multiplying four points by the number of evaluative items it comprises, thereby accounting for the differentiated weights presented in Table 1. For example, Systemic Thinking**,** comprising two items, has a maximum score of eight points,

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whereas Stakeholder Commitment**,** comprising seven items, has a maximum score of twenty-eight points. The sum of the maximum scores across the twenty-five evaluative items (25 × 4) yields a total of one hundred points for the instrument. The score for each fundamental is calculated as the sum of the points obtained across its respective items, while each farm's overall score is calculated as the sum of the scores for the eight fundamentals and expressed as a percentage of the instrument's maximum score of one hundred points.

As an illustrative example, for the Systemic Thinking fundamental (with a maximum score of eight points across two items — strategic indicators and decision-making), Farm C received a Level 2 rating for both items, yielding a total score of 4 points (2 + 2) out of a maximum of 8, corresponding to 50%**.**

The level assigned to each item was determined through a two-stage procedure. First, a representative from each farm completed a structured self-assessment, indicating the level perceived for each item and providing evidence supporting that assessment. Second, the two evaluators, both authors of this study, cross-checked the self-assessment against the evidence collected during the interviews and on-site visits and jointly validated a single final level for each item. Thus, the scores reported in this study are based on the validated levels rather than on the self-assessments alone. Any discrepancies between the evaluators' initial assessments were resolved through joint discussion of the available evidence until consensus was reached. The minimum evidence required to assign each level was consistent with the definitions presented above: Level 2 required at least a verbal or informal reference to the practice by the interviewee, even in the absence of documentation; Level 3 required documented or observable evidence that the practice was being implemented, although not yet fully institutionalized; and Level 4 required documented evidence that the practice was structured, disseminated among the team, and subject to periodic monitoring.

Data collection combined structured interviews with leaders and managers, on-site visits, and verification of evidence associated with the evaluated practices. The interviews characterized the management processes, monitoring of indicators,

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organization of processes, handling of demands from customers and workers and the monitoring of results. The visits allowed for the confrontation of declared information with observable evidence, strengthening the reliability of the diagnosis.

The data were organized in electronic spreadsheets, used to record the item scores, consolidate the relative results by fundamental and calculate the maturity percentages of each farm. The analysis was descriptive and comparative, considering the global score, performance by fundamental and common patterns among the cases. Radar chart representation was used to visualize the relative position of the farms in relation to the excellence frontier (Figure 1).

Complementary to the descriptive and comparative analysis of the scores, the discussion of the results incorporated two additional interpretive perspectives. The first distinguishes, in the performance of each farm, what has been termed operational maturity — the ability to sustain already consolidated productive and administrative routines — from strategic maturity, understood as the ability to reconfigure objectives, resources and processes in the face of changes in the competitive environment. This distinction follows the differentiation between ordinary capabilities and dynamic capabilities proposed by Winter (2003) and detailed by Teece (2007). The second perspective qualified the fundamentals of Adaptability and Organizational Learning and Innovation in light of the triad sensing, seizing and reconfiguring (TEECE, 2007), examining to what extent each property demonstrates the capacity to perceive changes in the productive and commercial environment, capture the identified opportunities and reconfigure resources and routines in response to them. Both perspectives were applied qualitatively, based on the evidence gathered in the interviews and on-site visits, without altering the scoring architecture of the simplified MEG.

The preliminary proposal for adapting the MEG to rural enterprises was built through an interpretive strategy, rather than the creation of a new scoring scale. The eight fundamentals, twenty-five items, four maturity levels and the total score of one hundred points were preserved. The adaptation fell on the way of interpreting the fundamentals, incorporating evidence specific to beef cattle farming, such as

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integration between zootechnical and economic indicators, structured listening by marketing channel, recording of lessons learned by production cycle, contingency plans, succession, rational use of resources, mapping of critical processes and specific activity indicators (PEREIRA, 2026).

The application presented in this study should be regarded as preliminary, exploratory, and illustrative. The three cases do not authorize statistical generalization for the set of beef cattle rural enterprises, but they offer sufficient evidence to examine the instrument's ability to discriminate maturity levels, identify recurring gaps and guide a reading more adherent to the rural reality.

4. Results and Discussion

4.1 Exploratory application of the simplified MEG

The analysis of managerial maturity through the simplified MEG requires, primarily, an understanding of the operational and strategic nature of the evaluated production units. Farm A is characterized by a rearing and fattening model with high animal turnover, operating in distinct marketing channels that include slaughterhouses and auctions. Farm B, in turn, adopts the complete cycle (breeding, rearing and fattening) with a strict focus on genetic improvement and commercialization of Purebred Origin (PO) breeders, serving even the export market. Farm C, meanwhile, presents a productive diversification model, operating in beef cattle breeding and rearing with a focus on premium meat, integrated with milk and dairy production, notably specialty cheeses.

These distinct profiles exert a direct influence on the interpretation of the obtained scores (70%, 80% and 77%, respectively). Farm B's score of 80% reflects a more rigid and standardized process structure, required by the genetics and export market, where traceability and technical rigor are determining factors. In Farm A (70%), the high turnover and exposure to volatile markets (auctions) may hinder the consolidation of long-term processes, resulting in slightly lower maturity, yet highly functional for capital turnover. In Farm C (77%), the complexity of managing two distinct production chains (beef and dairy) demands a coordination effort that raises

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operational maturity, although the strategic integration between production processes still presents opportunities for improvement (Table 2).

Table 2. Profiles of Production Units and Managerial Maturity Scores

Farm	Size / Cycle	Main Market	MEG Score	Interpretation
A	Rearing and Fattening	Slaughterhouses and Auctions	70%	Functional Maturity / High Turnover
B	Complete Cycle / Genetics	Breeders and Export	80%	Normative Maturity / Technical Rigor
C	Breeding and Rearing / Diversified	Premium Meat and Dairy	77%	Multiprocessing Maturity / Complexity

Source: prepared by the authors (2026).

Figure 1 and Table 3 synthesize the distribution of percentages by fundamental, and reading the figure reveals three patterns. The first refers to Stakeholder Commitment, which presented performance below 70% in all three farms: 64% in Farm A, 68% in Farm B, and 54% in Farm C. This result suggests that the relationship with buyers, workers, suppliers and other relevant stakeholders still occurs in a more relational than systematized manner, with low formalization of listening, recording, response, and evaluation mechanisms.

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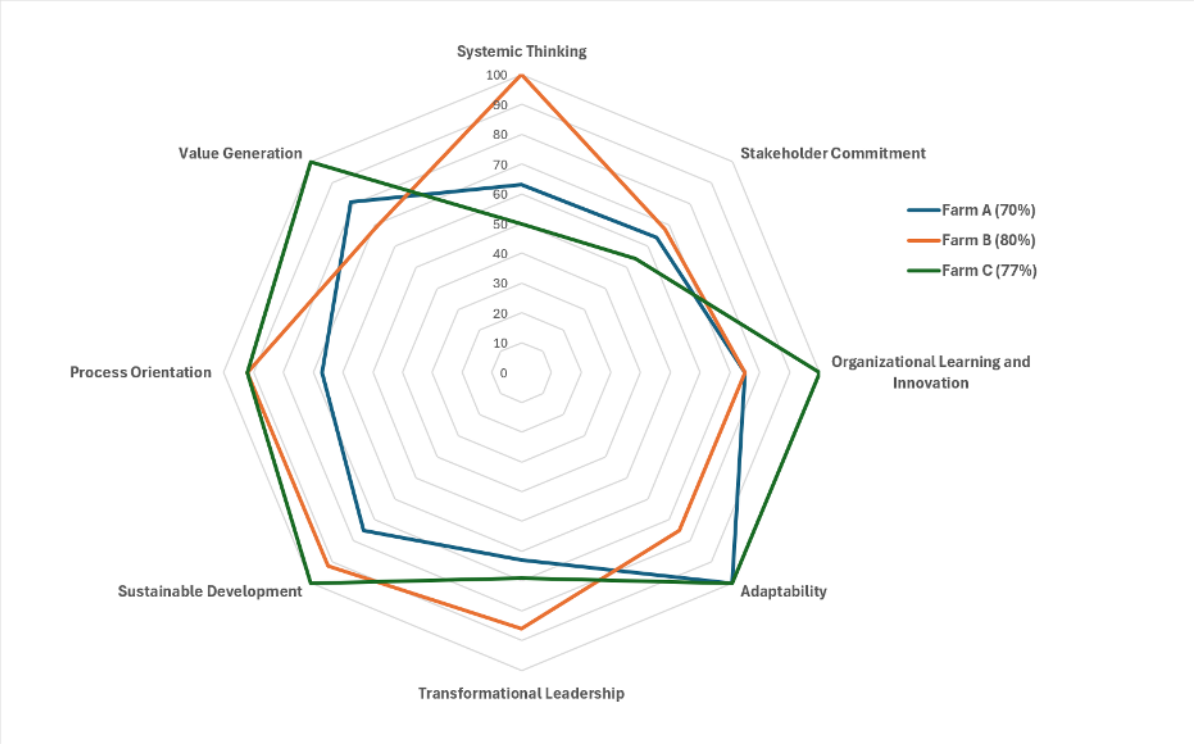
Figure 1. Simplified MEG fundamentals and percentages obtained by the evaluated farms



Source: Prepared by the authors, based on research data (2026).

Table 3 – Percentage Scores of the Simplified MEG Fundamentals by Farm

MEG Fundamental	Farm A	Farm B	Farm C
Systemic Thinking	63%	100%	50%
Stakeholder Commitment	64%	68%	54%
Organizational Learning and Innovation	75%	75%	100%
Adaptability	100%	75%	100%
Transformational Leadership	63%	86%	69%
Sustainable Development	75%	92%	100%
Process Orientation	67%	92%	92%
Value Generation	81%	69%	100%
Global Score	70%	80%	77%

Source: prepared by the authors, based on research data (2026).

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The second pattern appears in Systemic Thinking. Farm B reached 100%, while Farm A obtained 63% and Farm C 50%. The difference demonstrates the discriminating capacity of the instrument and indicates that, in the properties with lower performance, productive, economic, and environmental decisions are not yet fully articulated in an integrated architecture of indicators. This finding reinforces the relevance of the systemic reading proposed by the MEG and by the organizational learning literature (SENGE, 2006; FNQ, 2018).

The third pattern refers to the highest performing fundamentals. Adaptability, Sustainable Development, Process Orientation and Value Generation presented robust results in at least two of the three farms. Farm C reached 100% in Organizational Learning and Innovation, Adaptability, Sustainable Development and Value Generation, but recorded lower percentages in Systemic Thinking, Stakeholder Commitment and Transformational Leadership. This indicates that high operational maturity does not necessarily imply fully consolidated strategic maturity.

4.2 Recurring gaps managerial maturity

The identified gaps in the fundamentals of Systemic Thinking and Stakeholder Commitment manifest in heterogeneous forms according to the production profile. In Farm A, the lack of systemic thinking is evidenced by the disconnection between the purchase strategy at auctions and the slaughter scheduling at slaughterhouses, resulting in logistical bottlenecks. For this property, the gap implies cash flow risks. In Farm B, stakeholder commitment is focused on the technical client (genetics buyer), but sometimes neglects integration with critical input suppliers, which may compromise the final cost of the breeder (SANTOS; SILVEIRA; PEIXOTO, 2019).

Transformational Leadership emerges as a common challenge, but with specific practical implications. In Farm B, leadership is strongly technical and centralized in the owner/ geneticist, which limits the autonomy of the field team. In Farm A, leadership is reactive to market fluctuations, lacking a future vision that transcends the current fattening cycle. These deficiencies corroborate the thesis that

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rural management is still strongly based on the figure of the "owner," hindering succession and institutional perpetuity (PEREIRA, 2026).

Farm C deserves special attention regarding the need for systemic integration. The coexistence of beef cattle farming with specialty cheese production requires that systemic thinking encompass everything from pasture management (which affects milk and meat quality) to the logistics of distributing perishable products. The gap identified in this farm suggests that the activities are managed as isolated units, losing the operational and financial synergies that diversification should provide.

4.3 High performance fundamentals and operational maturity

The full performance (100%) in the Adaptability fundamental in Farms A and C demonstrates a resilience intrinsic to the Brazilian rural producer. In Farm A, this capacity is exercised in the agile transition between the slaughterhouse and auction markets, adjusting the animal stock according to the price window. In Farm C, adaptability is tested in the management of multiple production cycles and the differentiated seasonality of beef and milk, allowing the property to maintain stable revenue even during off-season periods of one of the activities.

Regarding Sustainable Development, the robust results in Farms B and C reflect distinct legitimation strategies. Farm B anchors its sustainability in genetic excellence and technical reputation, essential elements for the export market that demands rigorous socio-environmental compliance. Farm C focuses on integrated sustainability, where animal welfare and milk quality are pillars for the acceptance of its premium products and artisanal cheeses by the end consumer. Such evidence aligns with the theory of dynamic capabilities, which defines the firm's ability to integrate, build and reconfigure internal and external competencies to deal with rapidly changing environments (TEECE; PISANO; SHUEN, 1997).

It is important to note that Farm B, despite presenting a lower score in Value Generation (69%) compared to Farm C, has a theoretically more robust business model. It is presumed that this occurs because the value generated by genetics is

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cumulative and patrimonial, while in Farm C the value is transactional and dependent on the immediate acceptance of the final product. Operational maturity, therefore, should be read considering the capacity for resource reconfiguration: Farm B reconfigures its herd to generate high-value biological assets, while Farms A and C reconfigure their processes to capture market margins (SUNDER; GANESH; MARATHE, 2019).

Table 4. Traceability across Evidence, MEG Fundamentals and Managerial Interpretations by Farm

Farm	Observed Evidence	MEG Fundamental	Managerial Interpretation	Improvement Opportunity
A	Disconnection between the purchase strategy at auctions and slaughter scheduling at slaughterhouses	Systemic Thinking	Commercial and operational decisions are not yet integrated, generating cash flow risk	Align the auction purchase calendar with slaughter scheduling through a shared planning routine
A	Leadership reactive to market fluctuations, without a vision beyond the current fattening cycle	Transformational Leadership	Leadership operates tactically, addressing immediate demands rather than long-term direction	Establish a formal strategic planning horizon extending beyond the current production cycle
A	Agile transition between slaughterhouse and auction markets, adjusting stock to the price window	Adaptability	Strong adaptive capacity, but exercised informally and dependent on the owner's judgment	Document this practice as a formal protocol, reducing dependency on individual perception
B	Stakeholder engagement concentrated on the technical client (genetics buyer), with less integration of input suppliers	Stakeholder Commitment	Relational asymmetry between customer-facing and supplier-facing engagement, risking input costs	Formalize a supplier relationship management routine, mirroring the rigor applied to clients
B	Leadership strongly technical and centralized in the owner/geneticist, limiting field team autonomy	Transformational Leadership	High technical competence, but low delegation and limited succession readiness	Structure a technical succession and delegation plan to reduce dependency on a single figure
B	Value Generation score (68.8%) lower than Farm C, despite a theoretically more robust, patrimonial value model based on genetics	Value Generation	The quantitative score may underrepresent strategic value when that value is cumulative rather than transactional	Complement the score with qualitative indicators capturing the patrimonial value of genetic assets
C	Beef cattle and specialty cheese	Systemic Thinking	Diversification has not yet been	Create a cross-activity coordination

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Farm	Observed Evidence	MEG Fundamental	Managerial Interpretation	Improvement Opportunity
	production managed as isolated units, without shared coordination		translated into strategic integration between activities	routine with shared indicators for pasture, herd and dairy management
C	Adaptability tested through managing differentiated seasonality between beef and milk while sustaining stable revenue	Adaptability	Strong adaptive capacity across two production cycles, contributing to the fundamental's full score	Formalize the seasonal reconfiguration criteria currently applied informally by the owner
C	Value generation dependent on brand management for premium meat and dairy products	Value Generation	Value is transactional and tied to immediate market acceptance of the final product	Develop brand equity indicators that track value beyond the immediate transaction

Source: prepared by the authors (2026).

4.4 Preliminary guidelines for adapting the MEG to rural enterprises

The development of recommendations for applying the MEG in the rural sector should not be approached in a one-size-fits-all manner. The heterogeneity of production models requires that excellence indicators be calibrated according to the strategic orientation of the farm. In the evaluated farms, this adapted reading manifested in distinct ways — for example, in Farm A through the computerization of weighing control, in Farm B through genetics applied to selection, and in Farm C through brand management for premium meat and dairy products.

Based on the empirical results, preliminary guidelines are proposed for an interpretive adaptation of the MEG to rural enterprises. The adaptation does not alter the architecture of the simplified model: it preserves the eight fundamentals, the twenty-five evaluative items, the four maturity levels, and the total score of one hundred points. The proposed change concerns the interpretation of the fundamentals, whereby each dimension is interpreted considering the practices, evidence, and decisions specific to the rural enterprise, as detailed in Table 5 below.

The first guideline consists of reinterpreting Systemic Thinking as integration between productive, economic, environmental and commercial goals. The second

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translates Stakeholder Commitment to the effectively relevant stakeholders of the rural enterprise, such as buyers, workers, suppliers, technical assistance, regulatory agencies, and the community. The third rereads Organizational Learning and Innovation as the recording and use of lessons learned by production cycle, batch, harvest, breeding season or critical event.

The fourth guideline interprets Adaptability as the capacity for structured response to climate, market, health, inputs and regulation. The fifth expands Transformational Leadership to incorporate succession, delegation and professionalization. The sixth addresses Sustainable Development as integration between cash flow, environmental requirements, rational use of resources, animal welfare and territorial responsibility. Seventh adapts Process Orientation to the critical processes of beef cattle farming. The eighth rereads Value Generation through economic, zootechnical, environmental, commercial and human indicators.

Table 5. Preliminary guidelines for interpretive adaptation of the MEG to rural enterprises

MEG Fundamental	Reading Adapted to the Rural Enterprise	Recommended Evidence
Systemic Thinking	Integration between productive, economic, environmental and commercial goals	Objective map; integrated zootechnical, financial and environmental indicators
Stakeholder Commitment	Structured relationship with buyers, workers, suppliers and institutions	Satisfaction survey; demand records; repurchase rate; organizational climate
Organizational Learning and Innovation	Recording and use of lessons learned by production cycle	Reports by batch, harvest or cycle; learning meetings; documented improvements
Adaptability	Structured response to climate, market, health, inputs and regulation	Contingency plans; decision triggers; alternative scenarios
Transformational Leadership	Succession, delegation, communication of guidelines and professionalization	Mission and values; defined roles; successor preparation; follow-up meetings
Sustainable Development	Integration between cash flow, environmental requirements and territorial responsibility	Budget; environmental compliance; animal welfare; social actions; soil and water management
Process Orientation	Standardization of critical processes in beef cattle farming	Mapping of management, health, nutrition, reproduction, purchasing, sales and traceability
Value Generation	Integrated measurement of economic, zootechnical, environmental, commercial and human results	Margin per arroba; unit cost; productivity; repurchase; safety; satisfaction; compliance

Source: Prepared by the authors, based on research data (2026).

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These guidelines demonstrate that the adaptation of the MEG to rural enterprises should occur through interpretive translation, not methodological rupture. The original fundamentals remain valid but need to be read through concrete field practices. The exploratory application showed that the simplified MEG can discriminate maturity levels, while the comparative analysis indicated which fundamentals require greater contextualization to produce actionable diagnosis in beef cattle farming.

4.5. Operational maturity versus strategic maturity: implications for managerial training models

One of the most significant findings of this study is the realization that high operational maturity does not necessarily imply consolidated strategic maturity. This distinction finds support in the literature on organizational capabilities, which differentiates ordinary capabilities — responsible for sustaining daily operations — from dynamic capabilities, which reconfigure resources and routines in the face of changes in the competitive environment (WINTER, 2003; TEECE, 2007). The evaluated farms demonstrate mastery over the "how to do" (technical execution, here read as ordinary capability), but present weaknesses in the "why to do" (strategic direction, here read as dynamic capability).

For the purposes of this study, strategic maturity is operationally defined as the extent to which a farm's decisions and routines demonstrate long-term planning, the integration of strategic indicators into decision-making, the delegation of authority beyond the owner, structured succession planning, and market responsiveness institutionalized through documented processes rather than dependent on the owner's individual judgment. By contrast, operational maturity refers to the consolidation of routines that support the farm's day-to-day production and administrative activities, regardless of whether the objectives, indicators, or leadership structures underlying these routines have themselves been institutionalized. This operational definition follows directly from the evidence presented in Sections 4.2 and 4.3. In this study, the fundamentals of Systemic

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Thinking (integration of strategic indicators) and Transformational Leadership (delegation and succession) are interpreted as the primary indicators of strategic maturity, whereas Process Orientation and Adaptability, when practiced without formal institutionalization, are interpreted as indicators of operational maturity that has not yet evolved into strategic maturity.

Individualized analysis reinforces this thesis. Farm A exhibits notable operational strength in batch control and turnover, but its strategy is fragmented between two markets that compete for the same resources. Farm B presents the greatest balance as genetics acts as the integrating axis between operation and market strategy. In Farm C, process maturity is observed: the operation is strong in both beef and milk, but the strategy lacks a unified vision that leverages the property's brand.

For managerial training programs, such as those offered by SENAR or SEBRAE, these results indicate that it is not enough to train the producer in management techniques or management software. Initiatives of this nature have already demonstrated the capacity to qualify rural management, when they combine continuous technical and managerial assistance with regional production specificities, as demonstrated by the Technical and Managerial Assistance (ATeG) Program of the National Rural Learning Service (SENAR), which provided assistance to more than 40,000 rural properties nationwide through a network of over 1,200 field technicians in 2019 (PEIXOTO, 2020). It is necessary, however, that these initiatives advance beyond punctual technical training to foster systemic vision and transformational leadership, shifting the leader's role from a great operator to a strategist capable of communicating an integrated vision to the team.

4.6. Dynamic capabilities in rural contexts: perception of changes and reconfiguration of resources

It should be clarified that sensing, seizing, and reconfiguring were not measured using a standalone scale within the simplified MEG instrument**.** As detailed in the Methodology, these dimensions were treated as a qualitative interpretive lens

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applied by the evaluators following the scoring process, based on the evidence collected through interviews and on-site visits, as well as on the specific business profile of each farm. This interpretive lens was used to qualify the assessment of Adaptability and Organizational Learning and Innovation fundamentals. Dynamic capabilities, conceptualized by Teece (2007) in terms of the dimensions of sensing opportunities (sensing), seizing opportunities (seizing), and reconfiguring resources (reconfiguring), provide a particularly relevant framework for analysis in the livestock sector. Brazilian studies have applied this same triadic framework to examine innovation capabilities in other productive sectors (FROEHLICH; BITENCOURT, 2019), while research focusing on animal production has shown that seizing capability is associated with the performance of rural enterprises in response to market fluctuations (HOUESSOU; AOUDJI; BIAOU, 2023). Accordingly, in this study, the MEG fundamentals of Adaptability and Organizational Learning and Innovation were interpreted as proxies through which these capabilities can be observed, rather than as direct measures of sensing, seizing or reconfiguring.

Based on this interpretive lens, the evaluators identified distinct manifestations of these capabilities across the three farms. In Farm A, the evidence — daily monitoring of cattle prices and auction demand, combined with rapid adjustments to herd levels — was interpreted as an expression of sensing and seizing. In Farm B, the evidence — anticipation of genetic trends driven by export-market demand — was interpreted as sensing applied over a longer strategic horizon. In Farm C, the evidence — reallocation of productive resources between beef and dairy cattle in response to seasonality and demand for premium products — was interpreted as an expression of reconfiguring, reflecting greater organizational agility.

This interpretation, however, requires an important qualification: a rapid and effective response to market conditions does not necessarily indicate an institutionalized organizational capability. In all three farms, these responses remain largely concentrated in the owner's individual judgment, which may reflect individual adaptive competence or episodic adaptation rather than a capability embedded in the organization's routines and processes. This distinction — between the manager's

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adaptive capacity and the organization's institutionalized dynamic capabilities — is one of the study's most relevant implications. A farm may exhibit a high degree of individual responsiveness without having transformed that responsiveness into an organizational capability capable of enduring leadership changes.

The MEG framework promotes the institutionalization of these capabilities through processes and indicators. By formalizing market sensing and resource reconfiguration, the rural enterprise becomes less dependent on the manager's individual judgment and moves toward a more resilient organizational structure, capable of sustaining competitive advantages even under sectoral or climatic crises and through periods of leadership succession.

5. Conclusions

This article presented an exploratory application of the simplified MEG to evaluate the managerial maturity of three beef cattle farms and based on the results, propose preliminary guidelines for adapting the model to rural enterprises. The overall scores of 70%, 80% and 77% indicated intermediate to advanced maturity, with already widespread managerial practices, operational controls in place, and relevant capacity for adaptation to productive and market demands.

The most recurrent gaps were concentrated in Systemic Thinking, Stakeholder Commitment and Transformational Leadership. These results indicate that the challenges of rural management are not restricted to the technical execution of productive activities, but involve integration between objectives, indicators, processes, people, buyers and strategies. The analysis also showed that high operational performance can coexist with strategic weaknesses: the evaluated farms master the ordinary capabilities that sustain their daily operations, but do not always consolidate the dynamic capabilities responsible for reconfiguring objectives, resources and processes, in the face of changes in the productive and commercial environment (WINTER, 2003; TEECE, 2007). This dissociation between operational maturity and strategic maturity suggests that the sensing and seizing of opportunities

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occur, in the three farms, in an organic manner dependent on the intellectual capital of the owner, still lacking systemic formalization in processes and indicators.

The main contribution of the study lies in the proposition of an interpretive adaptation of the MEG to rural enterprises, associated with the identification that managerial maturity in the field is expressed in two distinct planes — operational and strategic — whose dissociation carries implications for both diagnosis and managerial training. This adaptation preserves the architecture of the simplified model, but qualifies the reading of the fundamentals through evidence specific to beef cattle farming, such as zootechnical and economic indicators, listening by marketing channel, learning records, contingency plans, succession, critical processes and specific value generation metrics. Thus, the article contributes to bring to the literature on excellence and organizational maturity models, as well as on dynamic capabilities, closer to Agricultural and Agro-industrial Production Management.

As limitations, the reduced number of cases, the cross-sectional design and the convenience selection are acknowledged, which prevents statistical generalizations. It is also acknowledged that the scores, although supported by interviews, on-site visits, and evidence verification, may contain subjective elements inherent to managerial evaluations. Furthermore, the evaluated farms have a minimally organized productive and administrative structure, which limits immediate extrapolation to small family properties or units with a lower degree of formalization.

The academic implications lie in broadening the debate on managerial maturity in rural enterprises and in demonstrating that consolidated models can be applied to agribusiness, when interpreted in a context-sensitive manner. The business implications reside in the possibility of using the simplified MEG as an instrument for diagnosis, prioritization of improvements, and monitoring of the managerial evolution of rural properties without imposing excessive complexity on the producer.

As a future agenda, it is recommended to expand the application of the model to a larger number of properties, covering different sizes, regions, production systems and technological levels. Longitudinal studies can monitor the evolution of farms after the implementation of improvement plans derived from the diagnosis. It is also

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suggested to correlate maturity scores with zootechnical, economic, environmental and commercial indicators, and also test the adaptation in small family properties, cooperatives, rural agro-industries, integrated production systems, and investigate the mechanisms of institutionalization of sensing and seizing capabilities in rural properties, evaluating the effect of continuous managerial training programs on the consolidation of strategic maturity.

It is concluded that the simplified MEG has the potential to support the diagnosis of managerial maturity in beef cattle farms, provided its fundamentals are interpreted considering the concrete conditions of the rural enterprise. The proposed approach offers a promising methodological path: to preserve the robustness and comparability of the MEG, but to bring its language, evidence and indicators closer to the productive, economic, social, and environmental reality of beef cattle farming.

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