ENHANCING DECISION-MAKING IN LIVESTOCK TRADE USING HIERARCHICAL MODELS FOR PRIORITIZING ECONOMIC STABILITY, LOGISTICS, AND CULTURAL FIT

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ABSTRACT

The globalization of agricultural markets presents both opportunities and challenges for Brazilian livestock producers seeking expansion. International Market Selection (IMS) requires balancing economic prospects, logistical efficiencies, and cultural compatibility while complying with diverse regulatory frameworks, such as those of the European Union and Islamic markets. This study proposes an innovative decision-making approach using the Analytic Hierarchy Process (AHP) to assist Brazilian livestock producers in evaluating potential international markets. A Composite Indicator for International Market Selection ($ICIMS$) was developed by aggregating key performance indicators (KPIs) across three critical dimensions: (1) economic stability & growth, (2) logistics, and (3) culture. The model was applied to five pre-selected markets—Germany, Belgium, France, the United Arab Emirates, and Turkey—using data spanning from 2020 to 2023. The results highlight that economic stability and GDP growth are primary determinants in market selection, with Turkey ranking highest due to its favorable economic indicators. France and Belgium also emerged as viable options, particularly given their cultural alignment with Brazil. Despite strong economic conditions, the United Arab Emirates ranked lowest due to logistical and cultural challenges. The study underscores the importance of considering sustainability, ethical practices, and regulatory compliance alongside economic factors in IMS. Additionally, it demonstrates how AHP provides a transparent, data-driven framework for prioritizing market entry strategies. The findings suggest that Brazilian livestock producers should adopt a diversified market approach, leveraging economic growth potential while mitigating risks through cultural and logistical considerations. Future research may explore integrating machine learning techniques to enhance IMS models and incorporate broader stakeholder perspectives for more comprehensive decision-making.

Keywords: Analytic Hierarchy Process. Decision Support. International Market Selection. Livestock.

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INTRODUCTION

The globalization of agricultural markets introduces both opportunities and complexities for Brazilian livestock producers aiming to expand internationally. The process of International Market Selection (IMS) requires a multidimensional approach, integrating economic potential, logistical feasibility, and cultural compatibility while ensuring compliance with diverse regulatory frameworks, including those of the European Union (EU) and Islamic markets. Moreover, the growing emphasis on environmental sustainability, ethical supply chains, and animal welfare further complicates decision-making in the livestock sector (EU, 2022; Martins, 2021; Pravettoni, 2016). Given these challenges, a structured decision-support tool is imperative for producers to navigate the complexities of IMS and align their market entry strategies with long-term business sustainability (Holland, 2019).

This study proposes the adoption of the Analytic Hierarchy Process (AHP) as a systematic and data-driven methodology for evaluating potential international markets. AHP facilitates the prioritization of multiple weighted criteria, ensuring a rigorous comparative assessment of alternative markets (Saaty, 1977; Saaty & Vargas, 2012). The research introduces a Composite Indicator for International Market Selection ($\boldsymbol{CI_{IMS}}$), integrating key performance indicators (KPIs) across three fundamental dimensions relevant to livestock trade: (i) economic stability and growth, (ii) logistics, and (iii) cultural compatibility. The $\boldsymbol{CI_{IMS}}$ framework is applied to five pre-selected markets—Germany, Belgium, France, the United Arab Emirates, and Turkey, utilizing data spanning from 2020 to 2023.

The findings indicate that economic stability and GDP growth are the primary determinants influencing market selection, with Turkey emerging as the most favorable market due to its economic expansion. France and Belgium also demonstrate strategic viability, particularly in terms of cultural alignment with Brazil. In contrast, despite strong economic fundamentals, the United Arab Emirates ranks lower due to logistical and cultural barriers. The study underscores the value of structured decision-making methodologies in international market selection and highlights the necessity of incorporating sustainability, regulatory compliance, and ethical supply chain considerations alongside traditional economic and logistical criteria. By demonstrating the practical application of the $\boldsymbol{CI_{IMS}}$ framework, this research contributes to the field by offering a robust, multi-criteria decision support tool tailored to the specific needs of Brazilian livestock producers.

This research contribution to the field by offering a structured decision support tool for Brazilian livestock producers and demonstrating the practical application of the $\boldsymbol{CI_{IMS}}$ in ranking potential international markets. Additionally, it brings to light the relevance of

considering sustainability and ethical practices alongside traditional economic and logistical considerations within the 21st century IMS context.

INTERNATIONAL MARKET SELECTION (IMS)

International Market Selection (IMS) is a fundamental component of global business expansion, requiring firms to systematically identify and evaluate potential markets while aligning strategic goals with viable destinations. Over the decades, various econometrics-based theoretical models, such as the Matrix of International Market Selection, Uppsala, and Born Global, have emerged alongside practical methodologies, including market research, trade shows, and governmental resources (Cahill & Kristi, 1979). These approaches provide essential guidance, yet the complexity of IMS extends beyond pure economic analysis, necessitating an evaluation of cultural compatibility, regulatory landscapes, and demand dynamics.

The European Committee's framework emphasizes a multi-criteria approach to IMS, initially focusing on economic indicators such as GDP growth, market risk, and geographic proximity. This is followed by a deeper assessment of cultural similarity, market appeal, and operational challenges. Based on existing literature, several key recommendations emerge as best practices for firms engaging in IMS. They are enlisted in the next paragraphs.

1. **Prioritizing Sustainability and Responsible Supply Chains** – Modern international trade increasingly demands compliance with environmental and social responsibility standards. Incorporating sustainable supplier selection frameworks (Azadi et al., 2015) ensures alignment with OECD/FAO (2016) objectives, including fair labor conditions, human rights protections, food security, resource conservation, and the adoption of clean technologies.
2. **Addressing Uncertainty and Risk** – International markets are inherently volatile, requiring decision-making approaches that integrate risk assessment methodologies. Techniques such as fuzzy modeling (Aliev et al., 2022; Zhou et al., 2016), grey decision theory (Tseng et al., 2004), and case-based reasoning (Chou, 2008, 2009; Soto & Adey, 2015) enhance market evaluations by incorporating historical data and scenario-based risk analysis.
3. **Assessing Market Potential in the Circular Economy** – A growing emphasis on circular economy principles necessitates IMS frameworks that estimate market potential in sustainable industries. Recent studies suggest that combining clustering analysis with multi-criteria decision-making can improve targeting and expansion opportunities in eco-friendly markets (Wu et al., 2023).

4. **Fostering Strong Networks and Partnerships** – Empirical research highlights the interplay between causal and effectual logic in market entry decisions, influencing firm performance (Chetty, Martín Martín & Bai, 2024). A network-driven IMS approach enhances collaboration, resource sharing, and risk mitigation, offering firms strategic advantages in foreign markets.
5. **Aligning IMS with Firm Size, Entry Modes, and Business Performance** – The internationalization process is deeply influenced by firm size and entry strategy. Whether through direct or indirect export channels, firms must optimize their approach to maximize pricing power, market reach, and diversification (Fernández-Olmos, Ma & Florine, 2024; Westhead, Wright & Ucbasaran, 2002). Tailoring IMS strategies based on firm-specific characteristics is crucial for long-term success.

Therefore, IMS is considered a multi-dimensional process that benefits from structured evaluation frameworks integrating economic legitimacy, regulatory compliance, and market intelligence. Contemporary market expansion strategies should incorporate sustainability principles, data-driven risk assessments, network-based collaboration, and firm-specific strategic planning to enhance global competitiveness and ensure successful internationalization.

DEFINITION OF COMPOSITE INDICATORS (CI)

Composite Indicators (CI) serve as aggregated measures that synthesize multiple sub-indicators to facilitate the assessment of complex phenomena (Oliveira, Zanella & Camanho, 2020). They play a crucial role in providing a holistic view of multidimensional issues while preserving essential information. Notable examples of CI include the Human Development Index (Despotis, 2005), the Dow Jones Sustainability Index (RobecoSAM, 2013), and the Corporate Social Responsibility Index (Oliveira, Zanella & Camanho, 2019).

In the context of International Market Selection (IMS), Key Performance Indicators (KPIs) function as fundamental components of CI, enabling the systematic evaluation of market attractiveness and potential advantages. To ensure the validity and reliability of a CI, a rigorous methodological framework must be followed. According to the OECD Handbook on Constructing Composite Indicators (Nardo et al., 2008), the development of a robust CI involves eight essential steps:

1. **Theoretical Framework Development:** Establishing a solid conceptual foundation by reviewing relevant literature, defining selection criteria, and clearly outlining the multidimensional aspects of the phenomenon under assessment. This step also

involves identifying key variables and subgrouping indicators to enhance analytical coherence. Engaging stakeholders is recommended to incorporate diverse perspectives and align the CI with societal and industry priorities.

2. **Data Collection and Preprocessing:** Gathering relevant data from authoritative sources, performing statistical analyses, and addressing potential inconsistencies. Missing data must be carefully managed, with appropriate imputation techniques applied to minimize distortions in the final assessment.
3. **Multivariate Analysis:** Conducting statistical examinations to uncover the underlying structure of the dataset, ensuring methodological robustness and informing subsequent modeling decisions.
4. **Normalization:** Standardizing variables to achieve comparability across indicators. This step must align with the theoretical framework, the dataset's properties, and the specific context of the problem under study, potentially requiring scale adjustments to account for variations in measurement units.
5. **Weighting:** Assigning relative importance to indicators based on their significance in the evaluation framework. Weighting must be guided by theoretical justifications and empirical data properties to ensure meaningful contributions from each sub-indicator.
6. **Aggregation:** Combining weighted indicators to construct the composite measure. This step must account for appropriate indicator correlations while maintaining consistency with the theoretical framework.
7. **Uncertainty and Sensitivity Analysis:** Assessing the robustness of the CI by evaluating the impact of methodological choices, potential data inconsistencies, and varying parameter assumptions on the final results.
8. **Result Communication and Visualization**: Presenting findings in a transparent and accessible manner, ensuring that stakeholders can effectively interpret the outcomes. Visual tools such as dashboards, rankings, and sensitivity plots enhance the clarity and usability of the CI for decision-makers.

By applying these steps, one can enable objective and data-driven assessment of IMS for livestock trade providing valuable insights into market attractiveness and strategic expansion opportunities. This structured approach can support that Brazilian livestock producers, and other stakeholders involved in global market selection, can make informed decisions that align with both economic imperatives and broader sustainability objectives.

METHODOLOGY

The theoretical framework proposed assesses potential countries for international market performance to be assessed. Individual Key Performance Indicators (KPIs) and their associated weights should reflect the relative importance and overall dimensions of the composite, rather than simply relying on available indicators (NARDO et al., 2008). While some economy KPIs are considered consolidated (e.g., GDP growth), newly emerging policy areas may lack robust foundations (e.g., regard to culture aspects).

Therefore, transparency is crucial in developing credible KPIs. Input and output KPIs should be differentiated to ensure accuracy, with a focus on aligning indicators with the intended measurement objectives. The framework specified within this research considers three IMS criteria recommended by specialized organizations and scholars. The sub-criteria are represented by the KPIs, which were developed accordingly to reflect multiple aspects of IMS. Table 1 reports four desirable outputs KPIs (y_r, r = 1, …, r) to me maximized and three undesirable outputs (B_q, q = 1, …, q) to be minimized.

Table 1– KPIs Framework

CRITERIA	KPIS INDICES
C1. Economic stability & growth (Euromoney, 2023; World Bank, 2020a, 2023)	GDP Growth (y_1) The Doing Business (y_2) Country Risk (b_1)
C2. Logistics (Nardo et al., 2008; World Bank, 2023)	Geographic Proximity (b_2) Operational Difficulties(b_3)
C3. Culture (EC, 2021; Geva; Hanson, 1999)	Cultural Similarity (y_3) The Market Appeal (y_4)

All KPIs must be unit invariant indexes so that they can be aggregated into one single measure of performance to support decisions on international market selection. To cope with this rationale, desirable outputs (y_r) must be normalized this paper adopt the following expression: $y_{rj} = \frac{y_{rj}}{y_{rmax}}$. Regarding ^{y}ri the undesirable outputs (b_{qj}), the normalization procedure adopted is the following: $y_{qj} = \frac{b_{qj}}{b_{q\,max}} + 0.1$. In both cases, procedures are based on recommendations of Nardo et al., 2008 to ensure that preventing KPIs with scores equal zero. The final results are scales range from 0.1 to 1, reflecting respectively higher scores for better performances in each KPI.

COMPOSITE INDICATOR OF INTERNATIONAL MARKET SELECTION (CI_{IMS}) BASED ON AHP

The aggregation method adopted to estimate the composite indicators for IMS is the Analytical Hierarchical Process (AHP). This method enables de formulation of a problem considering criteria, sub-criteria, and attributes to ranking alternatives.

There is a large body of literature on the performance of assessment-based AHP in a range of fields or instances, eco-efficiency of smart cities (ZHU; LI; FENG, 2019); Estimation of EPI (DEDEKE, 2013), Sustainability of higher education institutions (ADENLE et al., 2021), assessment involving Rivers Morphology (GHOSH; MAITI,0 2021) and the Location problems of Field Hospitals during the Covid-19 Pandemic (OLIVEIRA; SAMPAIO, 2021). Recent research also include AHP in the context of Energy efficiency Assessment(De Jesus et al. 2025), Industry hardware selection (Machado et al. 2024), artificial intelligence ranking (Machado et al. 2025), and Green Mobility (Da Motta et al. 2024).

AHP estimates a system of weights used to aggregate the KPIs in the IMS framework. This method is recommended by the “Handbook on Constructing Composite Indicators” of The Organization for Economic Cooperation and Development (OECD) (NARDO et al., 2008). During the application of AHP decision-maker conduces pair-wise comparisons (PWC). The fundamental scale (1-9) to determine their specific priorities is represented by ratio scales (SAATY; VARGAS, 2012). This fundamental scale enables accommodating a certain level of indifference and inconsistency as well. The Consistency Index (σ), i.e., $\sigma = \frac{\lambda max - n}{n-1}$. is calculated to verify the reliability of the AHP system of weights. CI considers de maximal eigen normalized value (λ_{max}) and the number of criteria involved in the problem (n). Finally, the consistency ratio (ϕ) is calculate to assess the feasibility of σ. The consistency ratio is given by $\phi = \frac{\sigma}{RI}$. If, $\phi \leq 0.10$ the Hierarchical Radom Index (RI) problem is considered relatively consistent and the set of weights are acceptable.

Once the system of weights is considered feasible, the scores of the composite indicator for international market selection (CI_{IMS}) are calculated and the market are ranked according to their performance.

APPLICATION

THE DECISION PROBLEM

To illustrate the applicability of the proposed methodology, this section presents an International Market Selection (IMS) exercise for Brazilian livestock producers using the Composite Indicator specifically designed for this purpose. Suppose a decision-maker (DM) is a large-scale livestock producer based in the state of Mato Grosso (MT), within the Brazilian Pantanal region. This producer seeks to expand their business into both European and Asian markets while ensuring compliance with the regulatory frameworks of the European Union and Islamic countries regarding breeding, slaughtering, and transportation practices.

Given that the core challenge lies in identifying international markets that best align with the producer's strategic interests, an initial market pre-selection process was conducted. During an unstructured interview, the DM identified five potential target countries, simultaneously validating the proposed framework as a relevant and practical decision-support tool. Following this step, a Key Performance Indicator (KPI) data collection process was carried out, focusing on gathering essential market information for the selected countries: Germany, Belgium, France, the United Arab Emirates, and Turkey.

To refine the decision-making process, a pairwise comparison (PWC) was conducted, assessing the framework criteria and corresponding KPIs. This evaluation was carried out through a digital survey involving the DM, enabling a structured assessment of each market's relative attractiveness. The results of these procedures are presented in the subsequent subsections.

DATA COLLECTION

The collection of data for calculating the KPIs composting the International Market Selection (IMS) Composite indicator of Brazilian livestock used as a source the World Bank Open Data and the period spanned from 2020 to 2023. Also, the dataset preparation involved a comprehensive review of the methodologies involving the third part verification and data treatment approaches applied in the data by the manual of WORLD Bank (2020b, 2024), including government reports, market research reports, and trade associations, to ensure validation from third parties and adherence to recommended criteria in the literature (CULTURE, 2021; EUROMONEY, 2023; INDEX, 2021; INSIGHTS, 2021; PROXIMITYONE, 2021; UNIT, 2021). Table 2 reports the normalized Indices calculated using the data collected. Note that the undesirable outputs are rescaled.

Table 2- Normalized KPIs

MARKETS	Y_1	Y_2	Y_3	Y_4	YY_5	YY_6	YY_5
GERMANY	0.724	0.950	0.645	00.284	00.732	00.680	00.960
BELGIUM	0.828	0.890	0.537	00.356	00.343	00.900	00.910
FRANCE	0.851	0.930	0.537	00.380	00.343	00.850	00.950
UNITED ARAB EMIRATES	0.2644	1	00.1	00.1	00.732	1	1
TURKEY	1	0.930	00.334	00.252	00.01	00.9	1

Table 2 reports the normalized Indices calculated using the data collected. The undesirable outputs are rescaled. Taking KPI Geographic Proximity (b_2) as an illustrative example, the methodological procedures performed are as follows to ensure comparability. The origin point is Santos Port in the Brazilian state of Sao Paulo and the destination are the nearest port in the destination market for all shipments. Hamburg (Germany: 10200 km), La Havre (France: 9000km), Antwerp (Belgium: 9300) Jebel Ali (UAE: 12500km), and Istanbul (turkey: 10600km). For instance, the geographic distance index from Brazil to the Belgium was calculated as follows: $Y_{4-Belgium} = 1 - \left(\frac{9300}{12500}\right) + 0.1 = 0.343.$

SURVEY WITH LIVESTOCK PRODUCERS TO ESTIMATE THE SET OF WEIGHTS

The set of weights obtained is derived from the decision-maker's (DM) preferences collected via PWC. This procedure was conducted in steps Introduced by Thomas Saaty (SAATY, 2006). After three interactions with the producer, a consistent set of weights was estimated. They are reported in Table 3.

Table 3 - Consistent set of weights from the survey

CRITERIA (pc)	SUB-CRITERIA (wr
C1. ECONOMIC STABILITY & GROWTH ($p1$ =47,9%)	GDP Growth (w_1 = 55%) The Doing Business Index (w_2 = 21%) Country Risk score (w_3 = 24%)
C2. LOGISTICS ($p2$ =45.8%)	Geographic Proximity (w_5 = 16.7%) Operational Difficulties (w_6 = 83.3%)
C3. CULTURE ($p3$ =6.3%)	Cultural Similarity (w_7 = 66,7%) The Market Appeal (w_8 = 33.3%)

At the first level of the hierarchical problem, a consistency Index ϕ = 0.2% was obtained during the estimation of the weights p_c. The Consistency Index for the weights within the "logistics" sub-criteria were ϕ = 1.9%. the PWC of sub-criteria of "Economic Stability & growth" and "culture" have Index ϕ = 0 by definition.

The priorities of the decision-maker producer participating in this study indicates that "Economic Stability & Growth" was evaluated of the utmost importance criterion (47,9%).

Within this criterion, “GDP Growth” emerged as a high priority, accounting for 55% of the overall weight. “Doing Business” and “Country Risk” were assigned medium priorities, with weights of 21% and 24% respectively. In terms of “Logistics”, which held a weight of 45.8%, “Operational Difficulties” were identified as a high priority (83.3%), whereas “Geographic Proximity” was considered of low priority (16.7%). “Cultural factors”, representing the criterion of Culture (6.3%), demonstrated that Cultural Similarity was accorded a medium priority (66.7%), while “Market Appeal” was given a lower priority (33.3%).

ASSESSING AND RANKING ALTERNATIVES

Table 4 reports the aggregation of scores and the ranking of alternatives derived from this research. The Composite indicator for international market selection (CI_{IMS}) is obtained by aggregating the KPIs and their respective sub criteria weights (w) at a first stage of aggregation. After that the sub criteria scores are aggregated using their respective criteria weights (p). The IC_{IMS} scores for this decision problem are calculated According to the following expression: $CI_{IMS} = \boldsymbol{p1}[(w_1 \times Y_1) + (w_2 \times Y_2) + (w_3 \times Y_3)] + \boldsymbol{p2}[(w_4 \times Y_4) + (w5 \times Y_5)] + \boldsymbol{p3}[(w_6 \times Y_6) + (w7 \times Y_7)] \Leftrightarrow CIIMS = \mathbf{0.479}[(0.55 \times Y1) + (0.21 \times Y2) + (0.24 \times Y3)] + \mathbf{0.458}\ [(0.167 \times Y4) + (0.167 \times Y5)] + \mathbf{0.063}\ [(0.667 \times Y6) + \times (0.333\ Y7)]$.

Taking as an example, the assessment of United Arab Taking as an example the assessment of United Arab Emirates: $CI_{IMS} = \mathbf{0.479}[(0.55 \times 0.2644) + (0.21 \times 1.00) + (0.24 \times 0.1)] + \mathbf{0.458}\ [(0.167 \times 0.10) + (0.167 \times 0.732)] + \mathbf{0.063}\ [(0.667) + \times (0.333 \times 1)] = 0.2429461$.

Table 4- Results and Ranking

RANKING	C1	C2	C3	***ICIMS***
GERMANY (4)	0.75260829	0.20226	0.77036	0.50166733
BELGIUM (3)	0.7709589	0.188338	0.9006	0.51228614
FRANCE (2)	0.79200258	0.192346	0.88045	0.52293228
UAE (5)	0.3578023	0.0191	0.997	0.2429461
TURKEY (1)	0.82553784	0.122322	0.9303	0.51006493

Based on Table 4, country ranking for the international market selection is the following. Turkey (#1) is the top-ranked country, primarily due to its strong performance in the Economic Stability & Growth criterion (C1). This trending expansion of economy suggests favorable economic conditions for livestock cattle market expansion. France (#2) also demonstrating balance of economic factors and strong cultural similarity (C3) with

Brazil. Belgium (#3) follows closely to positions #1 and #2, also exhibiting cultural compatibility and moderate expansion of economy. Germany (#4) holds leading logistical advantages (C2), its overall performance is slightly lower compared to the top three countries and the economy is considered stable as the expansion and is considered stability is moderate to high. The United Arab Emirates (#5), UAE, ranks last, suggesting that despite the economic strengths, logistical and business cultural aspects might pose challenges for the Brazilian livestock cattle market.

Regarding additional insights that can be extracted from the data reported in Table 4. For the DM, the criterion Economic Stability & Growth (C1) appears to be the most import criterion, significantly influencing the ranking results. Also, countries with higher cultural similarity and market appeal (e.g., France and Belgium) demonstrate the value of cultural fit in international market selection. From another standing point, despites logistical efficiency is considered a highly important feature in the international business field, this particular DM assessed this criterion as less pronounced compared to economic and cultural factors in this analysis conducted.

RECOMMENDATION FOR THE DM

The IC_{IMS} analysis suggests that Turkey should be a strong contender for market expansion within the Brazilian livestock cattle producer from Mato Grosso do Sul , Pantanal. This is primarily due to its favorable economic growth prospects. However, to ensure long-term success, it is recommended to balance economic potential with cultural considerations to foster long-term trade relationship. France and Belgium exhibit greater cultural similarity with Brazil, potentially facilitating smoother market entry and business operations. Additionally, a diversified investment strategy across several ranked countries can mitigate risks associated with single-market dependency. This diversification should weigh economic, logistical, and cultural factors for optimal results.

Importantly, the CI rankings are derived from the specific weights and assumptions within the model. Engaging in discussions with relevant decision-makers is vital to ensure the alignment of these findings with the broader strategic priorities of the producers. Therefore, a sensitivity analysis is recommended to explore further decision scenarios.

CONCLUSIONS

This study examined the international market expansion for agribusiness producers from the decision science perspective. It emphasizes the complexity of the decision-making process. The criteria considered include economic stability, logistics efficiency, and cultural

compatibility to enhance de process of market selection. By employing the Analytic Hierarchy Process (AHP) for prioritizing these factors, ensuring that the chosen markets align with the producer's strategic objectives.

The results highlighted that economic stability and GDP growth play a critical role in determining the attractiveness of international markets for Brazilian livestock producers. The strong influence of these economic indicators suggests that producers prioritize resilience and long-term growth potential when expanding abroad. Markets with favorable economic trends and robust trade environments emerge as key investment destinations, reinforcing the importance of financial and macroeconomic considerations in strategic decision-making.

Despite the prominence of economic factors, the study also recognized the significant role of cultural alignment in facilitating successful market entry. Countries such as France and Belgium, which exhibit closer cultural ties to Brazil, present strategic advantages by enabling smoother business interactions, reducing operational friction, and improving stakeholder relations. These findings highlights that, beyond macroeconomic stability, soft factors—such as cultural affinity, business etiquette, and regulatory familiarity—can substantially influence long-term success in foreign markets.

A nuanced approach to market selection is essential for mitigating risks associated with over-reliance on a single country. While Turkey stands out as an economically promising market, the study advocates for a diversified expansion strategy. This approach involves balancing economic attractiveness with logistical feasibility and cultural alignment to enhance market sustainability. By diversifying international presence across multiple regions, agribusiness producers can hedge against economic volatility, geopolitical instability, and unforeseen disruptions in trade relations.

Furthermore, the study emphasizes the importance of stakeholder engagement in refining market selection strategies. Incorporating perspectives from industry experts, government agencies, and trade organizations can enhance the robustness of decision-making frameworks. Additionally, conducting sensitivity analyses allows for scenario-based adjustments, ensuring that market selection remains adaptable to evolving economic and geopolitical conditions.

Future research should explore advanced decision-support methodologies to enhance the precision of international market selection. In particular, integrating group decision-making models or machine learning techniques could improve preference modeling, allowing for a more granular and dynamic evaluation of market opportunities.

These approaches could account for a broader range of decision-makers' perspectives, leading to more comprehensive and data-driven internationalization strategies.

By advancing methodological rigor and incorporating a multidimensional evaluation of international markets, this study contributes to the strategic discourse on agribusiness expansion. A balanced, data-driven approach coupled with stakeholder engagement and adaptive modeling can significantly enhance decision-making processes, ensuring sustainable and strategically aligned global market entry.

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