COMPETITION IN THE INTERNATIONAL CHERRY MARKET: A COMPETITIVENESS ANALYSIS OF THE DEVELOPING COUNTRY

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Abstract

This research assesses the competitiveness of Chilean cherry exports, with a specific focus on the Chinese market, identifying sectoral challenges and opportunities. Implementing quantitative, descriptive and non-experimental methodologies based on previous studies (Montes Ninaquispe et al., 2023), it utilizes the Herfindahl-Hirschman Index (HHI) for market diversification, the Trade Competitiveness Index (TC), and the Revealed Comparative Advantage Index (RCA) based on previous studies (Arbulú Ballesteros et al., 2024). The analysis reveals a significant concentration of exports to China, representing over 88 percent of Chile's total cherry exports from 2018 to 2022, despite market volatility and a general trend of growth in both volume and value. The HHI indicates a high concentration risk due to dependency on the Chinese market, while the TC and RCA highlight a strong competitive and comparative advantage in this sector. The study concludes the need for market diversification to reduce dependency risks, suggesting the exploration of new markets like Thailand, South Korea, and Ecuador, alongside improvements in marketing strategies. Additionally, it recommends enhancing corporate innovation and operational efficiency via advanced production technologies and optimizing logistics and supply chain management to sustain the competitive advantage of Chilean cherry exports.

Keywords: International, International Relations, International Trade, Cherries, Chile, Competitiveness, Agro-Export Sector, Exported Fruits

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1. INTRODUCTION

The current globalized economy has become complex and dynamic, making competitiveness in exports a crucial and determining factor for the sustainable development and prosperity of nations (Tao, 2022). This competitiveness, understood as a country's ability to offer products and services that meet international standards of price and quality, plays a transcendently important role in global trade (Hassanzadeh & Nasehifar, 2022). Indeed, it not only determines and shapes a country's relative position in this scenario, placing it in a more or less advantageous position against its competitors but also because of the significant effects on its domestic economy and the aftermath of market fluctuations (Idris et al., 2022).

Export competitiveness directly and powerfully influences a country's internal economic growth (Bayar, 2022). This growth is driven by various factors, including income generation from the sale of goods and services in international markets, attraction of foreign investments, and promotion of economic diversification (Matkovski et al., 2022). These factors, in turn, contribute to job creation, improvement of living conditions, and strengthening of the country's productive capacities (Narmadha & Karunakaran, 2022).

Moreover, export competitiveness has a significant impact on stimulating technological innovation (Mehendran et al., 2022). In an increasingly globalized and interconnected world, where technology plays an increasingly important role, the ability to innovate and adapt to new technological trends is essential to maintain and enhance competitiveness (Karabay & Sarıçoban, 2021). Companies and countries capable of adopting and adapting new technologies to their specific context are more likely to improve the quality and efficiency of their products and services, thereby increasing their competitiveness in the international market (Montégu et al., 2022).

Therefore, the ability to compete successfully internationally, as Porter (2008) indicates, has become a key measure and a robust indicator of the strength and performance of an economy. This ability not only reflects a country's current competitiveness in the global market but also provides clues about its potential to adapt and thrive in an increasingly competitive and changing economic environment (Guo et al., 2020). Indeed, greater export competitiveness can serve as a catalyst for a series of positive transformations in a country's economy, including modernizing its production base, promoting economic diversification, and strengthening its innovation capacity (Diyanova et al., 2019).

In the context of research on competitiveness in the international cherry market, significant gaps in the existing literature have been identified that this study aims to address. Although the importance of export competitiveness and its impact on economic growth and technological innovation in countries has been extensively examined (Tao, 2022; Hassanzadeh & Nasehifar, 2022; Idris et al., 2022; Bayar, 2022; Matkovski et al., 2022; Mehendran et al., 2022), there is a scarcity of specific research analyzing the cherry sector within the context of international competitiveness. Moreover, while previous studies have highlighted the relevance of adopting and adapting new technologies to improve competitiveness (Karabay & Sarıçoban, 2021; Montégu et al., 2022), there is a limited understanding of how these technological innovations are applied and specifically contribute to the cherry sector and its positioning in the global market. This analysis of Chile's competitiveness in the international cherry market seeks to fill these gaps, providing a detailed understanding of the factors driving competitiveness in this specific niche and how Chile compares with other global players in this area. The present research aims primarily to unravel Chile's competitive position in the international cherry market. To achieve this end, specific objectives are proposed to analyze competitiveness through key indicators. Primarily, the Trade Competitiveness Index (TC) and the Revealed Comparative Advantage Index (RCA) will be used to assess Chile's strength and specialization in cherry exports. Additionally, the diversification of export markets will be examined through the Herfindahl-Hirschman Index (HHI), in order to identify the degree of concentration and dependence of Chile on specific markets. These specific objectives will allow us not only to understand Chile's current competitive position in the international arena but also to identify potential strategies to strengthen its presence in the global cherry market. The research questions guiding this study are as follows:

RQ1: What is Chile's competitive position in the international cherry market?

RQ2: What is the value of the TC?

RQ3: What is the value of the RCA?

RQ4: What degree of diversification do Chile's cherry export markets exhibit, according to the HHI?

These questions aim to deepen the understanding of Chile's international competitiveness, identifying areas of strength and opportunities for improvement in its cherry export sector.

The article presents a detailed methodological and analytical structure, distributed across several key sections to facilitate understanding and analysis.

Section 1 introduces the study, establishing the context of the importance of export competitiveness in the globalized economy and its impact on economic growth and technological innovation, highlighting the relevance of the cherry sector within this framework. Section 2, the literature review, delves into previous studies on competitiveness in the fruit sector, global fruit demand, and the role of technological innovation, establishing a theoretical framework for the analysis. Section 3 describes the research methodology used, detailing the quantitative, descriptive, and non-experimental approach, and explaining the use of indices such as the HHI, TC, and RCA to evaluate market diversification and the competitiveness of Chilean cherry exports. Section 4 presents a detailed analysis of Chile's cherry export markets, market concentration, and trade competitiveness, and reveals comparative advantages. Section 5 interprets the results, discussing the dependence on the Chinese market, the need for market diversification, and the solid competitiveness of Chilean cherry exports. Finally, Section 6 synthesizes the main findings, recommending strategies for market diversification and business innovation to sustain Chile's competitive advantage in the cherry sector.

2. LITERATURE REVIEW

The fruit sector, with its diversity of varieties and its importance in nutritional and economic terms, has become a place of intense and growing competition in recent decades (Jaglan et al., 2022). This increase in competitiveness results from a confluence of demand and supply factors that have transformed the landscape of international fruit trade (Shilpa & Sharma, 2021). Regarding demand, global population growth, rising per capita income in emerging countries, and the emergence of a global middle class have contributed to the increase in world fruit demand (Ikegaya et al., 2021). However, perhaps one of the most notable drivers of this increase in demand has been the change in consumer attitudes and behaviours (Henao-Rojas et al., 2019).

Indeed, greater awareness of the importance of healthy and balanced eating, driven by scientific knowledge and promoted by public health campaigns, has led to significant growth in fruit demand (Fruit Today, 2021). Consumers, increasingly informed and aware of the relationship between food and health, have incorporated more fruits into their diet, seeking nutritional benefits, such as the intake of vitamins, minerals, and fibre (Al-Otaibi et al., 2023).

At the same time, trends towards more natural and sustainable eating have contributed to the increase in fruit demand. Consumers are demanding products that are not only healthy but also produced sustainably, environmentally friendly, and fair for workers (Silva et al., 2022). Thus, in this environment of growing demand and competition, fruit-producing countries face the challenge of increasing their production, improving quality, diversifying their offerings, and opening up to new markets, while adapting to consumer demands and increasingly stringent regulations in terms of sustainability and food safety (Mossie et al., 2023). In this context, competition in the fruit sector is no longer just about volume and price, but also about quality, diversity, innovation, and sustainability (Ar-Rozi & Saptana, 2021). The ability to offer fruits that meet these demands and expectations has become a key factor for success and a significant challenge for producing countries (Achten & van Acker, 2016). Therefore, analyzing the competitiveness in the fruit sector, its recent evolution, and future prospects is essential to understand and address the challenges and opportunities that countries face in this important sector of the global economy (Moss & Schmitz, 2019).

Within the fruit sector, cherry exports have emerged as a significant dimension of export competitiveness (Sanderson et al., 2019). Cherries, due to their perishable nature and high demand in high-value markets such as Asia and Europe, represent an exceptional opportunity for value generation and the development of competitive commercial strategies internationally (Zoffoli, 2022). The role of technological innovation is particularly critical in the context of cherry production and export, as it spans many critical stages (Whiting, 2022), from cultivation, harvesting, packaging, transport, and logistics. Therefore, technological innovations can offer significant improvements in efficiency and quality, and thus contribute to increasing the competitiveness of cherry exports (Kondoyanni et al., 2022). Advances in irrigation technologies, pest control, post-harvest handling, packaging, and logistics can not only help producers increase their yield and reduce their costs (Afonso et al., 2023), but also improve the quality of their cherries and extend their shelf life, which is crucial for accessing distant and demanding markets (Boubennec, 2019).

Moreover, in an increasingly globalized and interconnected environment, countries and companies capable of adopting and adapting new technologies to their specific context are more likely to maintain and enhance their competitiveness in the cherry market (Villacrés & Cheein, 2020). This technological adaptation can range from adopting new cherry varieties and cultivation techniques to implementing traceability and certification systems, which meet the growing demands of consumers and regulators for transparency and food safety (Scarpati et al., 2011).

Export diversification plays a critical role in strengthening and sustaining the agricultural sector, offering a range of benefits from improving economic stability to fostering innovation and technological development. In the context of international trade, diversification refers to expanding the range of products and services a country offers to the global market, aiming to reduce its economic dependence on a limited number of sectors or commodities (Ben Jebli et al., 2022; Mora & Olabisi, 2023). Specifically, for the agricultural sector, this strategy involves not only increasing the variety of exported crops but also exploring emerging geographic markets, innovating in production processes, and developing technological and human capacities to maintain international competitiveness. A study by Swathi and Sridharan (2022) indicates that diversification can lead to less volatility in export income and, consequently, greater macroeconomic stability for exporting countries.

Furthermore, diversification in the agricultural sector significantly contributes to economic growth by promoting more robust economic planning and reducing the likelihood of economic crises triggered by external shocks, such as fluctuations in international prices or demand for specific products (Montes Ninaquispe et al., 2023). By diversifying, the agricultural sector becomes more resilient to adverse variations in international markets, simultaneously stimulating innovation and the adoption of new technologies and production processes (Nguyen et al., 2022). This dynamic not only enhances the efficiency and productivity of agricultural export sectors but also generates positive effects on the rest of the economy, fostering sustainable development and overall economic well-being. Thus, export diversification in the agricultural sector emerges as a fundamental pillar for building a more inclusive, resilient, and forward-looking economy, as recent research demonstrates (Brummitt et al., 2020; Siddiqui & Afzal, 2022).

Indeed, greater competitiveness in cherry exports can act as a catalyst for a series of positive transformations in a country's economy, including the modernization of its agricultural sector, promotion of economic diversification, and strengthening of its innovation capacity (Azcarate et al., 2019). This competitiveness, therefore, has

implications beyond the cherry sector and can contribute to the sustainability and resilience of the economy as a whole. Regarding Chile, the country has positioned itself as a significant player in the global fruit export market, known for its ability to produce high-quality fruits off-season in the Northern Hemisphere (Villavicencio et al., 2021). However, despite the progress made, Chile faces challenges in terms of competitiveness, especially in relation to exchange rate fluctuations, production costs, and increasingly demanding standards in terms of quality and sustainability.

In this context, the study aims to analyze the competitiveness of Chile's cherry exports over the period 2012–2022 using competitiveness indicators. This analysis is crucial for understanding current and future trends in global fruit trade and for identifying strategies that can enable Chile to maintain and enhance its competitiveness in cherry exports. Moreover, the findings of this study could be useful for policymakers, producers, and fruit exporters, providing them with a solid foundation for informed decision-making.

3. RESEARCH METHODOLOGY

A quantitative, descriptive, and non-experimental research methodology was employed to examine the competitiveness of Chile's cherry exports, using the harmonized system subheading 0809.29, which corresponds to the harmonized system classification for fresh cherries.

To analyze the diversification of export markets, the HHI was used. This index applied to analyze market, company, and commodity concentration, is calculated by summing the squares of each participant's percentage share in relation to the total, with the equation $HHI = \sum_{i=1}^{N} s_i^2$, where "$s$" represents the share or percentage of participation, and "N" is the total number of participants. To interpret the values, the criteria proposed by the Antitrust Division of the United States Department of Justice (2024) were considered, which suggests that an HHI between 1,500 and 2,500 points indicates moderate concentration and an HHI above 2,500 points indicates high concentration.

The following indicators were used to measure competitiveness:

Trade Competitiveness Index (TC): Defined as the ratio of a nation's total net exports of certain sectors or goods to its total volume of imports and exports. Its primary function is to determine whether goods from a particular sector of a nation or region have a competitive advantage compared to the same goods from other countries or regions, as documented in the research by Jiang and Lin (2019) and Kang et al. (2023). The mathematical formulation of the TC index is described in Eq. (1), where X_i represents the value of exports of good i, and M_i symbolizes the value of imports of good i:

$$TC = (X_i - M_i)/(X_i + M_i) \quad (1)$$

The interpretation of TC is classified within a range of [–1, 1). A TC > 0 suggests high international competitiveness and values close to 1 indicate even greater competitiveness. Conversely, a TC < 0 indicates limited international competitiveness, with proximity to –1 indicating lower competitiveness. A TC = 0 implies that competitiveness aligns with the global average. The TC index scale is categorized into six distinct levels:

- 0.6 ≤ TC < 1: Robust competitive advantage.
- 0.3 ≤ TC < 0.6: Intermediate competitive advantage.
- 0 ≤ TC < 0.3: Marginal competitive advantage.
- –0.3 ≤ TC < 0: Marginal competitive disadvantage.
- –0.6 ≤ TC < –0.3: Intermediate competitive disadvantage.
- –1 ≤ TC < –0.6: Robust competitive disadvantage.

Revealed Comparative Advantage Index (RCA): Allows the study of a country's comparative advantage in relation to other countries, even compared to groups of nations or the entire world (Balassa, 1965). This method is used to assess whether countries have competitiveness based on their export structure (Gnoleba, 2023; Tajekeev & Stephens, 2023). In turn, this indicator helps determine whether a specific product or category has specialization (Baseedy, 2023; Guliev & Mehari, 2023). The formula is:

$$RCA(X_{ij}) = \frac{(X_{ij}/X_i)}{(W_j/W_w)} x\ 100 \quad (2)$$

where:

- RCA(X_{ij}) represents the revealed comparative advantage of product i in country j.
- X_i denotes the total value of exports of country i.
- X_{ij} symbolizes the total value of exports of product j from country i.
- W_w indicates the total value of worldwide exports.
- W_j reflects the total value of exports of product j worldwide.

Following Balassa's (1965) perspective, the RCA is scaled in a non-negative range, presenting various interpretative criteria:

- RCA ≥ 2.5 suggests a strong comparative advantage.
- ≤ RCA < 2.5 denotes a relatively strong comparative advantage.
- 0.8 ≤ RCA < indicates a general comparative advantage.
- RCA < 0.8 signals the absence of a comparative advantage.

4. RESULTS

As shown in Table 1, over the past five years, there have been five key zones in the Asian continent (China, South Korea, Taipei, Hong Kong, and Thailand) where a significant region of cherry exports from Chile has been concentrated. Then, we identify the United States, Europe, the United Kingdom and the Netherlands. In South America, Brazil and Ecuador are among the top 10 importers. It is also important to note that China accounts for most exports between 2018 and 2022 (84.71%); specifically, in the last year, it has gathered 89.61% of cherry shipments. The markets following China in importance are the American market (3.91% between 2018 and 2022) and Taipei (2.08% in the last five years).

Table 1. Chilean cherry exports by market destination (thousands, USD)

Importers/Year	*2018*	*2019*	*2020*	*2021*	*2022*
China	692,947	947,268	1,128,217	1,600,646	1,906,775
United States	22,530	23,073	21,638	35,267	63,901
South Korea	16,294	15,212	12,555	25,342	33,190
Taiwan	12,273	4,057	2,759	4,043	11,947
United Kingdom	20,629	30,874	22,270	39,681	37,934
Brazil	9,687	12,217	10,537	8,494	10,463
Hong Kong	7,978	11,460	8,986	15,433	11,361
Thailand	4,572	7,049	7,296	7,126	8,016
Ecuador	2,255	2,904	2,268	4,485	7,951
Netherlands	4,799	4,202	3,701	4,689	4,768
Otros Países	12,457	14,893	14,905	22,633	31,598
Total	806,421	1,073,209	1,235,132	1,767,839	2,127,904

Note: Data sourced from records of Chile's Customs Directorate, Thomson Reuters Chile, and UN Comtrade; processed and published on the Trade Map platform of the International Trade Centre.

In Table 2, the HHI for Chilean cherry exports to all destination countries is presented, showing high market concentration values for the period 2018–2022, all significantly exceeding the threshold. This indicates a high concentration of exports in a few countries during these years. It suggests that the diversification of destinations for Chilean cherry exports is low, and the export market is highly concentrated, which could present risks associated with dependencies on the Chinese market. However, it might also reflect a strategy oriented towards this specific market, which is particularly lucrative or strategic for Chilean exporters.

Table 2. Herfindahl-Hirschman Index of destination countries

Indicator/Year	*2018*	*2019*	*2020*	*2021*	*2022*
HHI	7408	7809	8353	8210	8046

Note: Data sourced from records of Chile's Customs Directorate, Thomson Reuters Chile, and UN Comtrade; processed and published on the Trade Map platform of the International Trade Centre.

In Table 3, the export destinations for cherries encompass around 50 countries, as detailed in Table 5. In 2021, there was a greater variety of export markets. Despite a reduction in the number of destinations in 2022 (from 52 to 45), this did not limit the increase in cherry shipments abroad (from 671,094 tons to 793,069 tons). This demonstrates a healthy growing trend in the trade, both in quantity and value.

Table 3. Chilean cherry exports

Year	*Countries*	*Weight (t)*	*Value (thousands, USD)*
2018	48	369,469	806,421
2019	48	440,388	1,073,209
2020	48	464,302	1,235,132
2021	52	671,094	1,767,839
2022	45	793,069	2,127,904

Note: Data sourced from records of Chile's Customs Directorate, Thomson Reuters Chile, and UN Comtrade; processed and published on the Trade Map platform of the International Trade Centre.

Regarding the results of the calculation of the TC (Table 4), it was found that this indicator was one in the first six years of analysis, indicating only exports and zero imports. From 2019 and up to the last year of the study, the index decreased to a minimum of 0.9994 in 2020 and then increased again to 0.9998 in 2022. It is observed that, in these lower years of TC, imports were no longer zero.

Table 4. Trade Competitiveness Index of Chilean cherry exports

Year	X_i	M_i	$X_i - M_i$ (1)	$X_i + M_i$ (2)	TC (1 ÷ 2)
2012	374,196,000	–	374,196,000	374,196,000	1.0000
2013	391,334,000	–	391,334,000	391,334,000	1.0000
2014	593,501,000	–	593,501,000	593,501,000	1.0000
2015	393,731,000	–	393,731,000	393,731,000	1.0000
2016	544,554,000	–	544,554,000	544,554,000	1.0000
2017	358,736,000	–	358,736,000	358,736,000	1.0000
2018	806,423,000	–	806,423,000	806,423,000	1.0000
2019	1,073,208,000	287,000	1,072,921,000	1,073,495,000	0.9995
2020	1,235,131,000	377,000	1,234,754,000	1,235,508,000	0.9994
2021	1,767,839,000	333,000	1,767,506,000	1,768,172,000	0.9996
2022	2,127,906,000	188,000	2,127,718,000	2,128,094,000	0.9998

Note: Data sourced from records of Chile's Customs Directorate, Thomson Reuters Chile, and UN Comtrade; processed and published on the Trade Map platform of the International Trade Centre.

Upon obtaining the RCA indices for cherry exports from Chile, Table 5 shows a fluctuation of the indicator between 2012 and 2017, with the highest peak in 2014 (80.46) and the lowest in 2017 (47.62). Subsequently, the index did nothing but grow, reaching its highest point in 2022 with 112.16 points.

Table 5. Revealed Comparative Advantage Index of Chilean cherry exports

Year	X_{ij}	X_i	W_j	W_w	$X_{ij} \div X_i$ (1)	$W_j \div W_w$ (2)	RCA (1 ÷ 2)
2012	374,196,000	78,283,508,000	1,567,853,000	18,399,916,743,000	0.00478	0.00009	56.10
2013	391,334,000	77,069,413,000	1,541,955,000	18,858,694,469,000	0.00508	0.00008	62.10
2014	593,501,000	75,343,199,000	1,846,740,000	18,862,720,756,000	0.00788	0.00010	80.46
2015	393,731,000	62,042,350,000	1,612,492,000	16,416,919,480,000	0.00635	0.00010	64.61
2016	544,554,000	57,737,906,000	2,059,401,000	15,923,091,279,000	0.00943	0.00013	72.92
2017	358,736,000	66,552,208,000	1,987,935,000	17,562,644,182,000	0.00539	0.00011	47.62
2018	806,423,000	75,826,997,000	2,758,716,000	19,327,913,341,000	0.01064	0.00014	74.51
2019	1,073,208,000	72,779,576,000	3,089,613,000	18,748,620,037,000	0.01475	0.00016	89.48
2020	1,235,131,000	69,964,786,000	3,447,871,000	17,499,876,321,000	0.01765	0.00020	89.60
2021	1,767,839,000	92,887,987,000	4,217,079,000	22,138,761,100,000	0.01903	0.00019	99.91
2022	2,127,906,000	102,625,791,000	4,527,002,000	24,487,201,641,000	0.02073	0.00018	112.16

Note: Data sourced from records of Chile's Customs Directorate, Thomson Reuters Chile, and UN Comtrade; processed and published on the Trade Map platform of the International Trade Centre.

5. DISCUSSION

The decrease in Chile's cherry exports in 2022, compared to the previous year, reflects common fluctuations in international agricultural markets, where factors such as climate, pests, and global economic conditions can affect production and demand (Fassio, 2018). However, the downward trend observed in several key markets, particularly Hong Kong and the United Kingdom (fluctuating), represents specific challenges in those destinations.

Regarding the high dependence on the Chinese market, it is relevant to note that several studies (Jaffee, 2023; Maertens & Swinnen, 2009) have shown that market diversification can help mitigate risks associated with over-dependence on a single market.

Analyzing the TC indices associated with Chile's cherry shipments (Table 4), it is found that this is an extremely competitive product, achieving a value of one between 2012 and 2018, denoting not only a robust competitive advantage but an absolute one. This indicator was slightly reduced in the last four years of the analysis period, as imports of the product under harmonized system code 0809.29 began; unlike previous years, where there had been no imports. However, the fact that Chile began to import cherries in 2019 has not been a limitation for the competitiveness of this product's exports, as the TC has always been greater than 0.999 and the advantage remains robust.

Analyzing the RCA, found in Table 5, the comparative advantage of Chile's exports between 2012 and 2022 is strong. However, it is important to highlight its fluctuation between 2014 and 2017 and the growth it experienced between 2018 and 2022; these are phases that deserve to be understood.

Between 2012 and 2014, the trend of the competitiveness of Chile's cherry exports was towards growth. This can be substantiated by the fact that cherries, as a Chilean export product, occupy a proportion relative to all the goods this country sends; and this proportion grew in these years. This also explains the decrease in the RCA in 2015, a year in which cherry shipments decreased compared to the previous year (USD 393,731,000 versus USD 593,501,000).

In 2016, a peculiar scenario occurred, where exports of all Chilean goods contracted (USD 57,737,906,000 versus USD 62,042,350,000 in 2015); however, cherry shipments increased (USD 544,554,000), which ultimately favoured its revealed competitiveness (72.92 points). However, this circumstance did not continue and underwent a drastic change, as in 2017 the exports of the entire product universe increased to USD 66,552,208,000, but the opposite occurred with cherries, which decreased to USD 358,736,000. This contributed to the lowest ratio (47.62) within the analysis timeframe. It is worth mentioning that global exports were not greatly relevant to this indicator's decline, as these rather reduced their participation during 2016 (0.013% compared to 0.010% in 2015).

What happened between 2018 and 2022 is favourable in terms of the competitiveness of Chilean cherries. In 2018, Chilean cherry shipments became USD 806,423,000, which means an increase of almost USD 450,000,000 (more than double) compared to the previous year. In 2019 and 2020, in addition to finding growth in cherries (USD 1,073,208,000 and USD 1,235,131,000), reductions were identified in the total tariff item shipments (USD 72,779,576,000 in 2019 and USD 69,964,786,000 in 2020), which increases the participation of this product within the universe and, with it, its comparative advantage.

The only thing that exports did in the last two years of analysis (2021 and 2022) was to increase, having in 2021 the value of USD 1,767,839,000 and in 2022 the highest peak, which is USD 2,127,906,000. This, accompanied by a reduction in the participation of cherries in global exports, favoured Chile's comparative advantage.

6. CONCLUSION

Chile's cherry exports between 2018 and 2022 showed a marked concentration in the Chinese market, which evidences a significant dependence on this market. This situation entails both potential risks and strategic opportunities for exporters, based on the dynamics and stabilities of this specific market. In terms of the TC, a fluctuation of the indicator between 0.9994 and 1 was observed during the period from 2012 to 2022, remaining between 0.9994 and 0.9998 in the last four years analyzed. This decrease in the index can be attributed to the emergence of imports, a previously non-existent phenomenon. However, the reduction is not considered significant since the indicator remains close to its previous value (1), suggesting a robust competitive advantage for Chile in cherry exports. This analysis underscores the need to carefully evaluate the factors contributing to the competitiveness of Chilean cherry exports and the importance of adopting strategies that mitigate the risks associated with dependence on a single market, while simultaneously seizing opportunities arising from global market dynamics.

Regarding the RCA, fluctuations were observed between 2012 and 2017, reaching its lowest point in 2017 (47.62) and the highest in 2022 (112.16). During the period of 2018 to 2022, Chile's cherry exports experienced a steady increase, contributing to a higher value of the indicator. It is important to note that, in all the years analyzed, a solid comparative advantage was maintained, although the intensity of this advantage varied annually. Given the dependence on the Chinese market, diversification of export destinations is advised. In this context, emerging markets, or those with growing demand for cherries, such as Thailand, South Korea, and Ecuador, should be explored. Likewise, redesigning marketing strategies in existing markets to increase market share in territories like Hong Kong, Brazil, and the United States is advisable, as these significant destinations are experiencing a decline in demand. This strategic approach would not only reduce the risks associated with dependence on a single market but also allow for capitalizing on opportunities in markets with growth potential, thus ensuring a more balanced and sustainable competitive position for Chile's cherry exports.

Given the significant concentration of Chilean cherry exports to China, representing more than 88% of the total, Chile is strongly advised to develop strategies to diversify its export markets. This diversification is crucial to mitigate the risks associated with dependence on a single market. While it is essential to maintain and strengthen the commercial relationship with China, due to its predominant share, it is strategically sensible to direct efforts towards identifying and developing other potential markets. Exploring new markets could include activities such as participating in international food fairs, investing in market studies, and exploring trade agreements with countries showing a growing demand for fresh fruits. Moreover, implementing marketing strategies focused on other Asian, European, or North American countries could facilitate entry into new markets, thus distributing risks and opportunities more equitably in Chile's export landscape. At the corporate and competitive level, the importance of innovation and operational efficiency is underscored. Companies could benefit from the implementation of advanced production technologies, improving logistics and supply chain processes, and investing in the training and development of their employees. These measures would not only strengthen Chile's position in the global cherry market but also promote sustainability and long-term growth in the sector.

It should be emphasized that, although the research provides a detailed understanding of the dependence on the Chinese market and competitive dynamics in the period 2018–2022, there are inherent limitations to this study that must be recognized. For example, projecting future trends based on historical data might not fully capture emerging dynamics or unforeseen changes in the global market. Additionally, while the recommendation to diversify export markets is strategically sound, it requires a deeper analysis of specific factors that could influence the effectiveness of such diversification, including economic, political, and social variables in potential markets.

Also, the adaptability of Chilean exporters to new markets and the possibility of facing trade or regulatory barriers should be considered. Therefore, for future research, it is crucial to further investigate how fluctuations in the TC and RCA affect long-term market strategies and the economic stability of the cherry export sector in Chile. Moreover, examining the resilience of this sector to global market volatilities and assessing the viability of proposed diversification strategies is advisable. This critical perspective will not only provide a stronger basis for strategic decision-making but also contribute significantly to the knowledge corpus in the field of export economics and risk management independent markets.

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