



University of Azuay

Faculty of Legal Sciences

School of International Studies

**Comparative Analysis of the Impact of the
COVID-19 Pandemic on Raw Material Imports
from Brazil and China in the Leather and
Footwear Sector and Contingency Plan in Case of
Catastrophe. Litargmode Case**

Author:

Pedro Josué Campoverde Lituma

Director:

Mg. Adrián Alvarado

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Dedication

This thesis work is dedicated to:

To my grandfather, Benjamin, who, thanks to his effort and hard work, I have been able to enjoy many blessings throughout my life.

To my parents, Pedro and Marlene, for all their love and unconditional support that has allowed me to fulfill one more dream. Thank you for your example of effort and perseverance.

To my brothers, David and Ricardo, who are fundamental pillars in my life and who have given me their unconditional support and affection whenever I have needed it.

Finally, I would like to dedicate this thesis work to all the friends who have been present with me throughout this university journey.

Appreciation

My deepest gratitude to the company Litargmode for trusting me and allowing me to carry out the research process in their facilities.

Likewise, I thank the Universidad del Azuay, the entire Faculty of Legal Sciences, and my professors who have imparted their valuable knowledge to me; thanks to each of you for your patience, understanding, and unconditional support.

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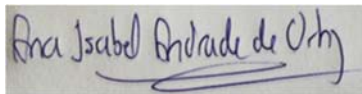
Comparative Analysis of the Impact of the COVID-19 Pandemic on Raw Material Imports from Brazil and China in the Leather and Footwear Sector and Contingency Plan in Case of Catastrophe. Litargmode Case.

Abstract

The COVID-19 pandemic caused one of the most acute economic crises in recent years. As a result, Ecuador and its leather and footwear sector were severely affected. This article aims to analyze the impact of this crisis on the footwear manufacturing and marketing company Litargmode, on its imports of raw materials from China and Brazil, and to develop a contingency plan in case of catastrophe. In addition, this article detailed financial information about Ecuador's international trade with China and Brazil. The Goal, Question, Metric (GQM) methodology was used, which determined that, in 2020, the number of annual imports decreased by 83%, that the Total Value of Imports contracted by 88%, and that the average waiting time for an import to arrive from Brazil and China increased, which confirms that the company was affected by the crisis. In addition, the author presented several expert recommendations for developing a contingency plan in case of a catastrophe.

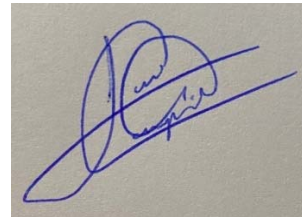
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Ana Isabel Andrade Chacón

Translated by:



Pedro Josué Campoverde Lituma

1. Introduction

The COVID-19 pandemic that hit humanity at the end of 2019 and the beginning of 2020 remains unfinished. With it have come many human losses, cases of compulsory isolation, weeks of quarantine and confinement, and even cases of corruption that have hit society unprecedentedly. More than 500 million cases of COVID were confirmed; consequently, more than 6 million human lives were lost worldwide. Ecuador, for its part, has registered more than 800,000 confirmed cases and more than 35,000 deaths (Ritchie et al., 2020).

In addition to the painful human losses, the economic sector was also affected. For example, the Central Bank of Ecuador (2021) mentions that the total losses suffered in March-December 2020 amounted to 16,381 million USD and that the sectors most affected by the crisis were trade, tourism, and manufacturing.

The Leather and Footwear sector is also one of the most affected industries in the Manufacturing category. In this article, we will analyze the company Litargmode, part of this sector and dedicated to manufacturing and commercializing footwear. Litargmode is a company located in Gualaceo, a canton in Azuay, 30 minutes from the city of Cuenca, and renowned for its handcrafted footwear. Litargmode is fully industrialized and uses raw materials and machinery imported from China and Brazil to differentiate itself from its competitors. (Litargmode, 2022a) This paper will analyze how the COVID-19 pandemic affected Litargmode's raw material imports from Brazil and China and then propose a contingency plan in case of catastrophe. The Goal, Question, Metric (GQM) methodology will be used to make a comparative analysis of the situation in the Pre-Pandemic Period (2019) and Pandemic Period (2020). In addition, the following research question will be answered:

R.Q.: What are the consequences that the COVID-19 pandemic had on the imports of the Litargmode company from Brazil and China?

The following article consists of: "Theoretical Framework," where the current situation and the problems that make it a topic of interest are presented, "Objectives" for the exposition of the proposed objectives, and "Literature Review," where we can find information written by different authors on topics related to this article, "Methodology" explaining how the analysis will be conducted and which variables will be used, and "Results" where the results found are discussed.

2. Objectives

2.1. General Objective:

Comparatively analyze the effects that COVID-19 produced on imports from Brazil and China in the pre-pandemic and pandemic periods, in the company Litargmode

2.2. Specific Objectives:

1. Analyze the supply chain in the pre-pandemic period of the company Litargmode
2. Analyze the supply chain in the Pandemic period of the company Litargmode.
3. Develop a contingency plan in case of catastrophe in the company Litargmode.

3. Theoretical Framework

3.1. Import Basics

It is essential to determine what the article refers to as "import." Importation is "the action of bringing foreign goods into the country in compliance with customs formalities and obligations, depending on the import regime under which they have been declared." (National Customs Service of Ecuador, 2021) Within the import process, several regimes can be used depending on the need. Litargmode uses the import regimes for consumption and bonded warehouses. Article 120 of the Organic Code of Production, Commerce, and Investments (COPCI) explains that the import regime for consumption can be used when the intention is to bring the goods into the country definitively and, once the taxes have been paid, they can circulate freely. Customs warehouses, on the other hand, are a special customs regime where imported goods are stored for a determined period without any cancellation of taxes and surcharges (National Customs Service of Ecuador, 2011).

When imports arrive at the destination port, a customs clearance process occurs. This process begins when the importer contacts a Customs Broker accredited by SENAE. Once the Customs Broker has been contacted, the Customs Import Declaration (DAI) must be sent up to 15 days before the arrival date of the

import and no later than 30 days after the arrival date. Along with the DAI, accompanying documents must be sent, depending on the type of imported merchandise. Therefore, the Customs Agent must carry accompanying documents such as transport documents, commercial invoices, certificate of origin, and the documents required by SENAE. Once the IAD and accompanying documents have been presented, SENAE will send the import customs declaration number and the corresponding gauging channel (National Customs Service of Ecuador, 2021).

There are different types of gauging for the clearance of goods requiring DAI. According to the National Customs Service of Ecuador (2011), in its Regulation to the Title of Customs Facilitation for Trade, Book V of the Organic Code of Production, Trade, and Investment, automatic gauging is used when the DAI is validated electronically through the SENAE computer system. Non-intrusive gauging, on the other hand, involves validation of the DAI through SENAE's computer system and verification of the origin of the goods without the need to open the cargo. Furthermore, the documentary gauging channel verifies the IAD and its accompanying documents in the SENAE system to determine the correct payment of taxes and compliance with customs regulations. Finally, the physical inspection is the physical recognition of the goods, to verify the product's characteristics. Once this process has been completed, the goods are allowed to leave the country definitively. This process must be done within 30 days following the IAD's acceptance date.

3.2. World Import Context

The increase in exports and imports has caused globalization to continue and international trade to increase its influence on global economies. This influence can be verified using the Trade Map platform where it mentions that, in the year 2021, the total importations value was 21.8 billion USD worldwide. The countries that imported the most were the United States of America with 2.9 billion USD occupying 13.4% of world imports, China with 2.4 billion USD with 11.1%, and Germany with 1.4 billion USD and 6.5% (Trade Map, 2022n).

The data on the countries that import the most at the world level are shown in Table 1.

Table 1

World's largest importing countries, in USD billions

Countries	Value Imported in 2021
Unites States of America	2.9
China	2.4
Germany	1.4
Totals	6.7

Note. Based on data retrieved from Trade Map platform on World's largest importing countries. 2022

In the case of the United States of America, its largest trading partners in imports in 2021 were China, Mexico, and Canada. From China a total of USD 541 547 million was imported, from Mexico USD 388 378 million, and Canada USD 365 737 million (Trade Map, 2022m).

The largest trading partners in China's imports in 2021 were Chinese Taipei (Taiwan), the Republic of Korea, and Japan. A total value of USD 227 184 million was imported from Taiwan, the Republic of Korea USD 193 814 million, and Japan USD 188 424 million (Trade Map, 2022k).

Germany's most important trading partners for imports in 2021 were China, the Netherlands, and the United States of America. China stands out with a total value of USD 167,325 million, the Netherlands for USD 107,786 million, and the United States of America for USD 85,141 million (Trade Map, 2022j).

Table 2 shows the data corresponding to the countries that import under the most frequent tariff headings in the Leather and Footwear sector.

Table 2

Most important countries in imports of different tariff items, in millions of USD.

Countries	Imported value under Tariff Item 64	Imported value under Tariff Item 39	Imported value under Tariff Item 35
United States of America	28	82	3
Germany	13	55	2
France	8		
China		75	4
Totals	49	212	9

Note. Based on data retrieved from Trade Map platform on Most important countries in imports of different tariff items. 2022

In imports for the Leather and Footwear sector, imports under tariff item 64 (Footwear, gaiters and the like, parts of these articles) are frequent. And at Litargmode, tariff item 39 (Plastics and articles thereof) is used for the wide variety of materials for the outside and inside of shoes, and tariff item 35 (Albuminoidal substances; modified starch products; glues; enzymes) is used for the various glues used in manufacturing footwear.

The total import values of tariff item 64 amounted to USD 145,414 million in 2021. The United States of America, Germany, and France are the countries that import this item the most. They reach import values of USD 28,644 million in the case of the United States, USD 13,334 million in Germany, and USD 8,558 million in France. These 3 countries alone reach a combined value of USD 50 536 million (Trade Map, 2022g).

Using tariff item 35, in 2021, the total value of USD 39 155 million was imported. The countries that imported the most were China, the United States of America, and Germany, with total values of USD 4 317 million, USD 3 975 million, and USD 2 907 million, respectively. These values add up to a total import amount of USD 11,199 million (Trade Map, 2022h).

The data presented above determined that countries such as China and the United States of America maintain their status as superpowers in international trade, appearing as the countries that import the most in the world.

Now, if we examine the case of Ecuador, we can see that this trend is maintained. In 2021, Ecuador imported a total value of 25,719 million USD. The four countries from which Ecuador imported the most were: China, the United States of America, Colombia, and Brazil, with values of 6 040 million USD, 5 681 million USD, 1 781 million USD, and 994 million USD, respectively (Trade Map, 2022i). Imports from the Ecuadorian market will be detailed below.

3.3. Imports from China and Brazil

In this article, China and Brazil were chosen to be analyzed. One of the reasons for this decision is that China and Brazil meet Sigüenza's (2015) requirements. The company mentions that these countries have decided to transform themselves, which has allowed them to renew their industry and obtain highly qualified investments to streamline their processes. They are also the countries from which Litargmode imports the raw materials needed to manufacture its footwear. Below, we will analyze the demographics, some relevant financial data, the relationship with footwear, and each country's influence in Latin America and Ecuador.

Demographically, the People's Republic of China is one of the most populous countries, with approximately 1410 million inhabitants (Banco Mundial, 2022). In addition, China is one of the most important countries in the world in economic terms. It is the second most important country in world imports, and in 2021 alone, it imported 2.4 trillion USD, occupying 11.1% of world imports. As mentioned above, its largest import trading partners are Taiwan, the Republic of Korea, and Japan. (Trade Map, 2022k) Its production level is such that it ranks number 1 in exports, with a total export value of 3 billion USD, accounting for 14.1% of world exports (Trade Map, 2022d).

At the end of 2020, China signed the RCEP with 14 other Asia-Pacific countries, including ASEAN countries plus China, Japan, South Korea, Australia, and New Zealand. This RCEP (Regional Comprehensive Economic Partnership) is the largest free trade agreement in the world, representing one-third of the world's economy and one-third of the world's population. The treaty has a cumulative GDP of USD 26.2 trillion and maintains the highest growth, even with the COVID-19 pandemic (Ministry of Foreign Affairs and Human Mobility, 2020).

China exerts its influence worldwide, and Latin America and the Caribbean have been no exception. Imports from China in 2021 reached USD 260,518 million. The products with the highest imported value are under tariff headings 85 (Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles), tariff heading 84 (Machines, mechanical appliances, and apparatus, nuclear reactors, boilers; parts thereof) and heading 87 (Motor vehicles, tractors, velocipedes, and other land vehicles, parts and accessories thereof) (Trade Map, 2022f).

As part of Latin America, Ecuador has seen an increase in its international trade with China. According to the "Embassy of Ecuador in China Magazine" by the Ministry of Foreign Affairs of Ecuador, and according to official figures from the Central Bank, in 2020, Ecuador exported to China the amount of 2,037 million USD and imported 1,925 million USD. These export figures mean that after 20 years, Ecuador has a positive balance in the trade balance with China for the first time, leaving a balance of 111 million USD. The most exported products were: shrimp with 1,280 million USD and 63% of total exports, timber with 282 million USD and 14%, bananas fell to third place with 115 million USD and 6%, and fish with 25 million USD and 1% (Ministry of Foreign Affairs and Human Mobility, 2020).

Ecuador has made good decisions in the direction of establishing trade connections with China, such as its accession to the already well-known "New Silk Road" or "Belt and Road" in December 2018 and its entry into the "Asian Investment and Infrastructure Bank" in November 2019, thus becoming the first Latin American country to do so (Ministry of Foreign Affairs and Human Mobility, 2020).

If Ecuador approaches the Chinese market, it would mean an opening to a possible exponential growth and a possibility to recover from the economic crisis it is experiencing. Although raw materials and value-added products move very well between Ecuador and China, the new opportunities presented by this treaty propose a high investment in infrastructure and the digital economy (Ministry of Foreign Affairs and Human Mobility, 2020).

Litargmode, for its part, in the years 2019 and 2020, has imported from China a total of USD 95 283. The tariff headings used vary, including those for synthetic materials and electrical machines. These are data that demonstrate the influence that China has had on the company.

Another of Ecuador's and Litargmode's most important trading partners is Brazil. Brazil is one of the most critical countries in the region. Demographically, with a population of 212 million, it is one of the largest countries in the world. Its GDP per capita is USD 7,519, approximately 25% higher than Ecuador's (CEPAL, 2022b). Brazil's economy is one of the 15 world economic powers, occupying 12th place, thanks to its GDP at current prices, which reached 1.44 trillion USD. Contrary to China's situation, Brazil was hit hard after the COVID-19 pandemic. It showed a 4.1% contraction of GDP, the most significant contraction since 1996, and even though in the first months of 2021, the situation seemed to improve, GDP registered a 3.8% drop in the same months of 2020 (Spanish Diplomatic Information Office, 2021). Furthermore, in 2020, it showed the highest unemployment rate since 1992, with 13.51% (CEPAL, 2022a).

Brazil's foreign trade situation is somewhat peculiar. In the information sheet about Brazil, the Spanish Diplomatic Information Office (2021) points out that in 2020 the current account deficit was reduced from USD 50 million in 2019 to a value of USD 24 million in 2020. Despite being one of the essential countries in the region, it keeps its current account deficit data in the red. With a total of USD 219,408 million and 1% of world imports, Brazil ranks 26th among the most important countries in terms of imports. In addition, it has a growth rate of imported values between 2017-2021 of 6% (Trade Map, 2022e). Santander Trade Markets (2022, p.1) states that the main products imported by Brazil are "petroleum, parts, and accessories for tractors and motor vehicles, electronic devices for telephone lines, ships and electronic integrated circuits and microstructures."

Brazil ranks as the 24th most crucial country in exports and occupies 1.3% of world exports, with a total exported value in 2021 of 280,814 million USD. It has an export value growth rate between 2017-2021 of 4%. (Trade Map, 2022c) The main products exported by Brazil are "soybeans, petroleum, iron ore, corn, and cellulose pulp." (Santander Trade Markets, 2022, p.1)

Brazil's influence in its region is significant. In 2021 it managed to export a total value of USD 43.26 billion to Latin America and the Caribbean, with Argentina, Chile, and Mexico as its main trading partners. The most exported products to these countries are motor vehicles, machinery and mechanical appliances, and fuels and minerals (Trade Map, 2022a).

The commercial relationship between Brazil and Ecuador is quite close since Ecuador is one of the Associated States with which MERCOSUR has free trade agreements and which are free to participate in the meetings of MERCOSUR bodies (MERCOSUR, 2022). Ecuador ranks 10th in the list of countries Brazil exports the most, with an export value of US\$895 million (Trade Map, 2022b).

The good trade relationship that Brazil and Ecuador maintain is shown when the value imported by the company Litargmode from Brazil in 2019 and 2020 is 361 061 USD. Most of these values correspond to glues and material for uppers and linings.

3.4. Context of the leather and footwear sector in Ecuador

In this article, the company Litargmode will be studied, and, consequently, the context of the leather and footwear sector in Ecuador is significant.

The Leather and Footwear Sector is an important productive sector in the manufacturing industry. Entire cities are known nationally for their footwear. Provinces such as Tungurahua, Pichincha, Guayas, Azuay and El Oro have a relevant level of footwear. As a sample of this, we take the year 2013, where the total production corresponding to the branch of activity "Manufacture of leather, leather products, and footwear" (021003) was USD 346,324, whose generation of gross value added (GVA) corresponds to USD 136,536. (Andino, 2016) This trend has continued over the years.

Several provinces in Ecuador are characterized by their footwear, but this article will focus on the province of Azuay. Azuay is a province located in the south of Ecuador with more than 881,394 people, and it is the fifth most populated province in the country. With its capital in Cuenca, it is the third most crucial province in administrative, financial, and economic areas, only behind Quito and Guayaquil. In addition, it is the cradle of large companies and exponents in the productive sectors of Ecuador.

One of these sectors is the footwear sector, and the most recognized city for its footwear is Gualaceo, in the province of Azuay. It is located about 30 minutes from the city of Cuenca and has an estimated 42,709 residents. Gualaceo is known for its famous "Footwear Route," where you can find stores of high quality and handcrafted footwear, thanks to the fact that 52% of the inhabitants of Gualaceo are dedicated to the development and marketing of footwear (Illustrious Municipality of Gualaceo, 2022).

In this same canton is Litargmode, a footwear manufacturing company that, unlike the others in Gualaceo, no longer manufactures footwear by hand but is industrialized and manufactures its product in large quantities, supplying large national chains (Litargmode, 2022a). The following is the history of the company and its characteristics.

3.5. Litargmode Company. History and characteristics

Litargmode defines itself as "a proudly Ecuadorian footwear company that designs a proposal for women's fashion, inspired by a neo-traditional style with a classic air and stylistic touches of modernity." (Litargmode, 2022b, p.1) Litargmode is a company based in Gualaceo and from there supplies footwear throughout Ecuador. It specializes in manufacturing and marketing women's footwear such as sandals, heels, boots, booties, sports shoes, magnolias, and mules. It has a main store and an outlet in the city of Gualaceo and markets its footwear from an outlet in Quito. In addition, it has as clients nationally and internationally recognized chains such as Corporación Favorita, Corporación El Rosado, Etafashion, and DePrati. Since these chains also work with imported footwear, that is their main competition. For this reason, Litargmode, to maintain impeccable quality, began to look for suppliers abroad, first in Brazil because of its proximity to Ecuador and then in China because of the variety of products and suppliers and the low prices (Litargmode, 2022a).

The company was founded in 1972, by Benjamín Lituma and his wife, Targelia Argudo. In its beginnings, his workshop was known as Calzado Lituma, but in 1975 it adopted the name Litargmode, a naming that originates from the composition of the surnames Lituma Argudo and the translation of the term "fashion" from the French language. Thus, it was born a family business that Benjamin and his eight children built under the pillars of love, loyalty, and transparency.

Leather was the primary material used to make the shoes, intending to provide comfort and well-being to women. In the beginning, the workers brought materials and shoe tools to make shoes in their homes every Monday, worked throughout the week, and delivered the finished shoes on Sunday. Later, the business grew, and together with 20 women, the first shoe workshop in Gualaceo was formed.

As time went by, the company went from having only one client to acquiring large clients nationwide. As a result, corporations such as La Favorita, El Rosado, Etafashion, RM, and De Prati were attracted by Litargmode's shoes and began a long-term relationship as clients that continues to this day. In this way, a

great leap was made in the national footwear industry. Due to its success, the company is nationally known and has received many awards and recognition.

Unfortunately, its founder passed away in 2015, and the company passed to his children. They form a team of experts in the industry, who reside in Brazil, Italy, and Ecuador, and who have tried to position Litargmode as a brand that has transcended time (Litargmode, 2022a).

3.6. COVID-19 Pandemic Context

It is a fact that the COVID-19 pandemic has caused many losses since its outbreak. According to the web portal Our World in Data, 427 million cases of COVID have been confirmed, and 5 million human lives have been lost (Ritchie et al., 2020). In addition to the human losses, which are the most painful, the economic sector was also severely affected.

As expected, the COVID-19 pandemic affected world foreign trade. Exports fell by 18.3%, while imports fell by 15.8%. The United States, Japan, and the European Union were the most affected among developed economies. Similarly, Latin America and the Caribbean were the most brutal hit by the emerging economies, with a 26.1% decline in exports and 27.4% in imports (Economic Commission for Latin America and the Caribbean, 2020).

The global Leather and Footwear Sector was also affected. Footwear exports fell by 31.1% in the first half of 2020, meaning a loss of US\$17 billion. The most affected countries are China, Italy, and France, with exports declining by 30.4%, 27.1%, and 23.9%, respectively. Imports with a 26.7% drop followed the same pattern compared to 2019. In this case, the most affected countries are the United States of America, Belgium, and France, decreasing 26.7%, 24.3%, and 21.6%, respectively (World Footwear, 2020).

Likewise, the blow was hard for Ecuador. The Central Bank of Ecuador mentions that the total losses suffered in the months of March-December 2020 due to the COVID-19 pandemic amounted to USD 16,381 million, of which 78.1% USD, i.e., 12,790 million belonged to the private sector. The sectors most affected by this crisis were: trade (USD 5,514 million), tourism (USD 1,809 million), and manufacturing (USD 1,716 million) (Banco Central del Ecuador, 2021).

Although there are several studies on supplier analysis in many industries, this one concerning synthetic material from China and Brazil is something innovative and should be studied. For this reason, it is necessary to look at the impact that the pandemic 2020 period has had on imports of footwear manufacturing materials from China and Brazil.

4. Literature review

When analyzing Brazil's and China's exports, Brazil's trade liberalization policies impacted its exports, making them mainly in natural resource-intensive products, while in China, they motivated exports of industrialized products with a higher value-added. For this reason, China has become the most meaningful exporting economy in the world. Silva & Ferreira (2020) explains that the increase in imports can cause an increase in productivity, more investment in research and development, and a better adaptation of the productive sectors. However, if the local industry fails to adapt, it may be affected and be unable to compete with imported products from Brazil and China. The authors conclude that the two countries' economic growth and capital exchange are related to imports.

According to Tudorache (2021), the impact of the COVID-19 pandemic was manifested in the international trade of Romania and Hungary in 2020. The author explained that the impact on exports and imports during 2020 had a negative trend during the first months, followed by a recovery and positive trend in the second part of the year. The two variables evaluated were the number of COVID-19 cases and the number of deaths. The author stated that as more confirmed COVID-19 cases existed, exports and imports increased, while as more COVID-19 deaths occurred, there was a decrease in exports and imports. Although this article used Romania and Hungary as examples, this trend holds for most countries worldwide.

Bağır (2021) investigated the impact of changes in tariff rates on the value and prices of imports at the country-product level due to the COVID-19 pandemic. It showed that although most products suffered from the increase in tariff rates, only 6.5% of total imports were directly affected by that change as many countries were excluded from regulation due to existing bilateral treaties. In summary, the results found in this article determine that the temporary increases in customs tariffs with six different regulations reduced imports in the last quarter of 2020 by only 0.9%.

Bartik et al. (2020) indicated that it is essential to analyze the impact of COVID-19 on small companies and the consequences of this crisis. They took the retail sector as an example and determined that 43% of

the companies were temporarily closed, and unemployment in this sector increased by 40%. Most of these companies had very little liquidity, which forced them to cut costs drastically or take out a loan. They were forced to declare bankruptcy if they did not get a loan. In addition, they conducted a study regarding the impact of the COVID-19 pandemic on small businesses and concluded that economic and public health policies must be well designed. In the tourism, restaurant, and service sectors, it is difficult to maintain a stable business if the crisis lasts for more than four months; therefore, the authors recommended that more economic aid be included.

5. Methodology

5.1. Goal, Question, Metric Methodology

The Goal, Question, Metric (GQM) methodology was developed by Basili and Weiss during the 1980s and improved by Rombach. Initially, it was used to improve software development processes, but the concepts apply to any field of research. One of the most noteworthy differences between this methodology and others is that it is a top-down approach, as opposed to the common bottom-up approach. First, the objectives are defined, the questions posed, and metrics are used to measure goal achievement (Koziolek, 2008).

The advantages of using the GQM methodology are several. Setting objectives before conducting the research allows one to select only the relevant metrics to the article. This advantage reduces the time and effort invested because only the required information is investigated. In addition, the interpretation of the data will become easier because the metrics selected will create a noticeable relationship between the information obtained and the objectives previously set (Koziolek, 2008).

Vidal (2013) used the Goal, Question Metric methodology to identify the main problems with a company's projects and processes that made them slow and costly. He used several questions and then determined specific metrics to meet the goals. This methodology helped projects follow due process, focusing on quality and regularly planning project testing.

Pineda y Jenkins (2006) found that measurement is key to improving the management of the information systems of the Interbank Electronic Trading and Payment System (SINPE) of the Central Bank of Costa Rica (BCCR). To achieve this objective, they used the Goal, Question, Metric methodology implementing new software metrics to meet the defined objectives. The application of this methodology was satisfactory since SINPE coordinators now have the relevant information they need from the projects, resulting in a more efficient administration.

The GQM methodology was implemented in four phases: planning, definition, information gathering, and interpretation.

In the initial planning phase, the purpose of the research was detailed, and the characteristics of the object were chosen. This phase resulted in a project with the product, structure, and activities that were carried out to fulfill the measurement process.

The objectives were described in the definition phase. For this, the available information about the product was analyzed. Next, specific questions were adopted to make the objectives more concrete. Then, metrics for each question were posed.

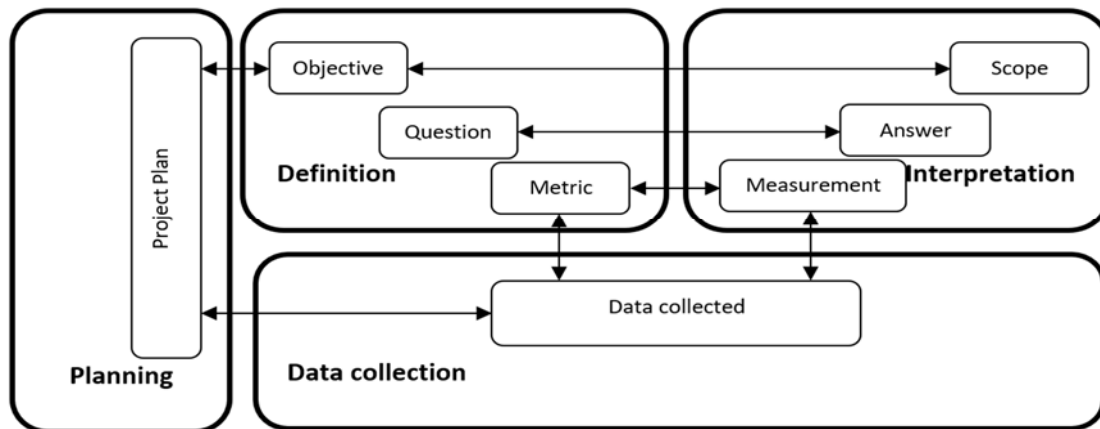
The data collection phase was based on the documents provided by Litargmode. The data sources to be used were: Financial Statements, Financial Reports, and invoices corresponding to the company's imports during the years 2018-2022, Financial Data from the Central Bank of Ecuador, Trade Map, and CELAC. All information was taken from reliable sources and was reviewed before being included in this scientific article. The measurement system used was matrices and data tables.

The information obtained was interpreted according to the metrics established in the second phase of the research. The metrics results were used to evaluate whether or not the objectives were met. (Koziolek, 2008)

Figure 1 below shows the 4 phases of the Goal, Question, and Metric methodology.

Figure 1

The four phases of the Goal, Question, Metric Methodology



Note: Adapted from Koziolk. 2008. p.40

5.2. Definition of metrics using GQM

5.2.1.Planning Stage

The impact of the COVID-19 pandemic on raw material imports from Brazil and China was measured using the Goal, Question, Metric (GQM) methodology. This paper aims to analyze the impact of the COVID-19 pandemic on Litargmode's raw material imports from Brazil and China and to develop a Disaster Contingency Plan. The research question of this scientific article is: "What are the consequences of the COVID-19 pandemic on the imports of Litargmode Company from Brazil and China?"

Therefore, the objectives of this article are the following:

1. To analyze the supply chain in the Pre-Pandemic period (2019) of the Litargmode company
2. To analyze the supply chain in the Pandemic period (2020)
3. To develop a contingency plan in case of catastrophe

5.2.2.Definition Stage

The objectives, the questions to be answered, and the established metrics are detailed below. The metrics are obtained from the matrix developed by the author.

Objective 1

To analyze the supply chain in the Pre-Pandemic period (2019) of the company Litargmode.

Question

How many imports were made in 2019?

Metric

- Number of annual imports from China in 2019
- Number of annual imports from Brazil in 2019

Question

- What were the import values of raw materials in the year 2019?

Metric

- Annual FOB value from China and Brazil in the year 2019
- Annual Insurance + Freight value from China and Brazil in the year 2019
- Annual Nationalization Value from China and Brazil in the year 2019
- Total Import Value from China and Brazil in the year 2019

Question

What was the estimated average arrival time of imports in the year 2019?

Metric

- The average elapsed time from the date of shipment to arrive at Litargmode in 2019.

- The average elapsed time from the date of shipment to arrive at a port of destination, from Brazil and China in 2019.
- The average elapsed time from the arrival of goods at the port of destination to receipt at Litargmode, from Brazil and China in the year 2019

Objective 2

To analyze the supply chain in the pandemic period (2020) of the Litargmode company.

Question

How many imports were made in the year 2020?

Metric

- Number of annual imports from China in 2020
- Number of annual imports from Brazil in 2020

Question

What were the import values of the raw material in the year 2020?

Metric

- Annual FOB value from China and Brazil in the year 2020
- Annual Insurance + Freight value from China and Brazil in the year 2020
- Annual Nationalization Value from China and Brazil in the year 2020
- Total Import Value from China and Brazil in the year 2020

Question

What was the estimated average arrival time of imports in the year 2020?

Metric

- The average elapsed time from the date of shipment to arrive at Litargmode in the year 2020
- The average elapsed time from the date of shipment to arrive at a port of destination from Brazil and China in 2020.
- The average elapsed time from the arrival of goods at the port of destination to receipt at Litargmode, from Brazil and China in 2020.

Objective 3

Develop the contingency plan in case of catastrophe for Litargmode.

Question

What can be determined from the results obtained from the previous objectives?

Metric

- Interviews with Litargmode General Manager and FCC Export Commercial Manager.

Semi-structured interviews were conducted in order to meet objective 3. A planning exercise resulted in a script of questions that determined the information to be obtained from the interviewee (Murillo, 2006). The interviews were conducted with the General Manager of the company, Litargmode (Ing. Lino Anguisaca), and the Export Commercial Manager of the company FCC of Brazil (Mba. Catia Muller). The interview was scheduled for the week of June 6-10, 2022. The objective of these two interviews was to get a more personal perspective on how the pandemic affected the international trade sector and the domestic market and to be able to make a contingency plan in case of catastrophe.

The interview questions proposed for the General Manager of Litargmode and the Export Manager of FCC Industria e Comercio were:

- How was the company affected by the Covid-19 pandemic?
- What lessons have they learned from the pandemic in the international logistics sector?
- In your view, is it possible to be prepared for a catastrophe such as the Covid-19 pandemic?
- If yes, what recommendations would you give, from your experience, to avoid affecting the supply chain in the event of another pandemic or similar catastrophe?

5.2.3.Data Collection Stage

It was analyzed an Excel database with more than 40 000 available data on Litargmode imports from the year 2018 to the year 2022. From this extensive data set, the following variables were used: import type, import category, country of origin, supplier name, FOB value, freight value, container value, customs clearance value, tariff subheading, date of shipment, date of arrival at the destination port, date of departure from port/airport and date of arrival at Litargmode.

This information was requested from Litargmode's Foreign Trade Department. Because Litargmode agreed to deliver any documents needed for this article, the information was delivered in a timely and organized manner. First, the information received was synthesized into a matrix made by the author of this article using only the variables defined above. Then, once the matrix was completed, pivot tables were prepared to organize the data and respond to each objective.

5.2.4. Interpretation Stage

The necessary data could be observed and contrasted with the information organized in matrices and pivot tables. The findings were presented under the subheading "Results." This section indicates the resolution of each objective using their respective metrics. For better reading comprehension tables were added.

6. Results and Discussion

6.1. Analysis of Litargmode imports in 2019

The first objective set for this scientific paper is to analyze the supply chain in the pre-pandemic period (2019) of the company Litargmode. Therefore, the three research questions were answered in the order already established: quantity of imports, costs of imports, and average time of arrival at Litargmode.

Table 3 shows the number of imports from Brazil and China in 2019.

Table 3

The number of imports from Brazil and China of the company Litargmode in 2019.

Type of import	Brazil	China
By Air	18	0
Maritime	17	7
Totals	35	7

Note. Litargmode company financial data. 2022

Data collection showed that, in 2019, Litargmode made 42 imports. It was imported from Brazil 35 times, on the other hand, from China only seven times.

Imports by sea were the most used with a total of 24 imports, while airfreight ended up with 18 imports. Due to Ecuador's proximity to Brazil, it is possible to import by air and obtain the necessary raw materials almost immediately. Because of this reason, air imports from Brazil totaled 18 imports and 17 maritime imports. On the other hand, air imports from China are financially unsustainable, which explains why the seven times that imports from the Asian country were made by sea.

Table 4 below shows the FOB, insurance + freight, and total import values for 2019.

Table 4

Total FOB value, Total value of Insurance + Freight, Total value of Nationalization, and Total value of imports from Brazil and China of the company Litargmode in 2019, in thousands of USD.

Country	Total FOB Value	Total Insurance + Freight value	Total Nationalization Value	Total Imports Value
Brazil	348 838	22 682	77 311	448 832
China	64 098	2 906	25 164	92 168
Totals	412 936	25 588	102 475	541 000

Note. Litargmode company financial data. 2022

The total FOB value of imports was USD 412 936. This value is divided into 348 838 USD imported from Brazil and 64 098 USD from China. These values indicate that Brazil has 84% of the total imports of Litargmode in 2019, while China only has 16%. These values are due to Ecuador's proximity to Brazil and the reduced portfolio of suppliers that Litargmode has in China.

Once the merchandise arrives at the port of destination, different values have to be paid to withdraw the merchandise from the port; one of these is the Insurance and Freight. The sum of the Insurance Value

+ Freight Value that Litargmode paid in 2019 is 25 588 USD, an increase of 6% compared to the FOB Value. This value is divided into 22 682 USD for Brazil and 2 906 USD for China. The sum of FOB Value + Insurance Value + Freight Value results in the CIF Value or Customs Value.

Each import has its respective freight. The total value that Litargmode paid in 2019 in air and sea freight was 23 968 USD, 6% of the total value of imports. Of this value, Brazil is responsible for USD 21 277, while China is for USD 2 691.

The Nationalization Value is the sum of the total taxes payable, adjustments, and internal transport and storage value. In 2019, the Nationalization Value paid was 102 475 USD, divided into 77 311 USD from Brazil and 25 164 USD from China.

The Sum of CIF Value + Nationalization Value results in the Total Import Value. In 2019, the Total Import Value was 541 000 USD, of which 448 832 USD were imported from Brazil, while 92 168 USD were from China.

Litargmode imports its products and sorts them into seven categories. These categories are upper and lining material, glues, last, machinery, spare parts, hardware, and yarns. In 2019, the most imported categories were: "Material for uppers and linings" with a total of 22 imports, "Spare parts" with 7, and "Glues" with 6. It is essential to highlight that, from Brazil, Litargmode imported under the category of "Material for uppers and linings" a total of 17 imports, equivalent to 77% of the total imports of 2019 in that category. Similarly, China showed superiority in the "Machinery" category, responsible for 100% of the imports made in 2019.

The "Upper and lining material" and "Glues" categories were the most imported in 2019, with total values of USD 173 402 and USD 141 996, respectively.

Litargmode's most necessary suppliers in 2019 are FCC Industria e Comercio Ltda. And Wenzhou How High International. FCC, a Brazilian company, is Litargmode's oldest and the only supplier of glues, and in 2019, a value of 120 080 USD was imported. Wenzhou How High International is a supplier of "Upper and lining material" and is China's most important trading partner, with an imported value of USD 29 079 in 2019.

The most used tariff item was 3921.13.00.00 under the name "Other plates, sheets, film, foil, and the strip of plastics - of polyurethanes" Using this item, synthetic materials for shoe uppers are imported. They were imported 13 times in 2019 with a total value of 70 900 USD, with its largest supplier being China Wenzhou How High International.

Table 5 shows the average number of days an import takes to arrive at Litargmode's facilities in 2019.

Table 5

The average number of days an import took to arrive at Litargmode's facility in 2019.

Type of Import	The average number of days it took for an import from Brazil to arrive at Litargmode	The average number of days it took for an import from China to arrive at Litargmode
By Air	4	-
Maritime	24	42

Note. Litargmode company financial data. 2022

Each time an import is made, there are several days between the port of shipment or airport and the port of destination in Guayaquil or Quito. For example, when the import is by sea, and the port of shipment is in Brazil, Litargmode averaged 25 days for the goods to arrive at the company's facilities. Of these, 21 is the average number of days those goods leaving the port of shipment in Brazil take to reach the Port of Destination, which is the Sea Port of Guayaquil, and four days is the average number of days it takes for the goods to leave the port of destination in Guayaquil and arrive at Litargmode's facilities in the city of Gualaceo, Azuay.

In the case of imports by air, it took an average of 4 days to arrive from the airport in Brazil to Litargmode's facilities. Of these four days, one day was taken to arrive from the different airports used in Brazil to the Mariscal Sucre International Airport in Quito, and three days was the average number of days the goods took to arrive from the airport to the company's facilities.

The average number of days increases when the goods are imported by sea from China. In this case, it took 42 days for the goods to arrive from the port of shipment in the city of Ningbo in China to Litargmode's facilities. It takes 33 days to get from the port of shipment in China to the seaport of Guayaquil, and it takes nine days for the goods to leave the port and go to the company's facilities.

6.2. Analysis of Litargmode imports in 2020

The second objective set for this scientific paper is to analyze the supply chain in the pandemic period (2020) of the Litargmode company. The response order is the same as in the Analysis of imports in 2019.

Table 6 shows the number of imports from Brazil and China in 2020.

Table 6

Number of imports from Brazil and China by Litargmode in 2020

Type of Import	Brazil	China
By Air	4	0
Maritime	0	3
Totals	4	3

Note. Litargmode company financial data. 2022

Data collection showed that in the year 2020, due to the pandemic, Litargmode made only seven imports. From Brazil, it is imported four times and from China only three times.

Since import times doubled during the pandemic, only air imports were made from Brazil and only sea imports from China. It explains why imports by air were the most used with a total of 4 imports, while imports by sea ended up with a total of 3 imports.

Table 7 below shows the FOB, insurance + freight, and total import values for 2020.

Table 7

Total FOB value, Total value of Insurance + Freight, Total value of Nationalization, and Total value of imports from Brazil and China of the company Litargmode in 2020, in thousands of USD

Country	Total FOB Value	Total Insurance + Freight value	Total Nationalization Value	Total Imports Value
Brazil	12 223	1 744	3 715	17 683
China	31 185	669	14 767	46 622
Totals	43 408	2 413	18 483	64 305

Note. Litargmode company financial data. 2022

The total FOB value of imports was USD 43 408. This value is divided into 12 223 USD imported from Brazil and 31 185 USD from China. These values indicate that China had 72% of Litargmode's total imports in 2020, while Brazil had only 28% of total imports in 2020.

The sum of the Insurance Value + Freight Value that Litargmode paid in 2020 is 2 413 USD, which is an increase of 6% compared to the FOB Value. This Insurance Value + Freight Value is divided into 1 744 USD for Brazil and 669 USD for China. The sum of the FOB Value + Insurance Value + Freight Sum results in the CIF Value or Customs Value.

Each import has its respective freight. The total value that Litargmode paid in 2020 was USD 2,165, 5% of the total value of imports. Of this value, Brazil was responsible for USD 1,660, while China was responsible for only USD 505.

In 2020, the Nationalization Value paid was 18,483 USD, divided into 3,715 USD from Brazil and 14,767 USD from China. The CIF value is added to the Nationalization Value, and the Total Import Value is obtained.

In 2020, the Total Import Value was 64 305 USD, of which 17 683 USD came from Brazil, while 46 622 USD were imported from China.

In 2020, the most imported category continued to be "Upper and lining material," with a total of 5 imports. It is important to note that, from Brazil, Litargmode imported under this category a total of 2

imports, which is equivalent to 40% of total 2020 imports in that category, while, from China 3 imports were made with an equivalent of 60%. A total of 39,584 USD was imported from China and Brazil.

Litargmode's most essential suppliers in 2020 are Caimi Liaison from Brazil and Wenzhou How High International from China. Caimi Liaison imported USD 7 211, while Wenzhou How High International imported a value of USD 24 485. Both companies import under the category "upper and lining material."

The most used tariff item was 3921.13.00.00 under the name "Other plates, sheets, film, foil, and strip of plastics - of polyurethanes" Imports of the mentioned item reached an amount of USD 33 862 and 18 imports in 2019.

Table 8, is shown the average number of days an import took to reach Litargmode's facilities in 2020.

Table 8

The average number of days it took for an import to arrive at Litargmode's facilities in 2020

Type of Import	The average number of days it took for an import from Brazil to arrive at Litargmode	The average number of days it took for an import from China to arrive at Litargmode
By Air	13	-
Maritime	-	69

Note. Litargmode company financial data.

In 2020, when the import was coming from Brazil, it was done only by air, and it took an average of 13 days for the goods to arrive at Litargmode's facilities. Of these, 2 is the average number of days from the time the goods leave the designated airport in Brazil until they arrive at the Mariscal Sucre International Airport in Quito, and 11 days is the average time it takes for the goods to leave the port of destination in Quito and arrive at Litargmode's facilities in the city of Gualaceo, Azuay.

In the case of imports from China, imports were carried out only by sea and took an average of 69 days to arrive from the port of shipment in China to Litargmode's facilities. Of these 69 days, it took 66 days to get from the different ports used in China to the Guayaquil seaport in Ecuador, and three days was the average number of days the goods took to get from the port to the company's facilities.

6.3. Comparative Analysis of Litargmode imports in the years 2019 and 2020

After an exhaustive analysis of all the variables, it was possible to obtain the results of the imports of Litargmode from the countries of China and Brazil in the pre-pandemic (2019) and pandemic (2020) periods. Thanks to this analysis, we can have a clearer idea of how the COVID-19 pandemic impacted the imports and production of the Litargmode company.

Table 9 shows the contrast between the number of imports from Brazil and China in 2019 and 2020.

Table 9

The number of Litargmode company imports from Brazil and China in 2019 and 2020.

Type of Import	Brazil		China	
	2019	2020	2019	2020
By Air	18	4	0	0
Maritime	17	0	7	3
Totals	35	4	7	3

Note. Litargmode company financial data. 2022

The number of imports from Brazil and China was drastically affected. From 42 annual imports in 2019, this amount went to the value of 7 in 2020. This data means a decrease of 83% compared to 2019.

The preference for importing by air when importing from Brazil intensified in 2020 due to the pandemic. The high freight costs and the increase in the number of waiting days suffered by maritime imports due to the COVID-19 pandemic are reasons that explain why in 2019, there were 18 air and 17 maritime imports, while, in 2020, there were only four air imports and no maritime imports from Brazil. This resulted in a 78% reduction in the annual amount of air imports and a 100% reduction in the maritime imports for 2019.

The case of maritime imports from China is similar. Although Litargmode did not import by air in any of the years 2019 and 2020, imports by sea fell similarly. In 2019, 7 imports were made from the Asian country, while, in 2020, only three imports were made. This confirmed a 57% drop in maritime imports from China.

Table 10 below shows the contrast between the import values in 2019 and 2020.

Table 10

Total FOB value, Total value Insurance + Freight, Total value of Nationalization and Total value of imports from Brazil and China of the company Litargmode in 2019 and 2020, in thousands of USD.

Values	Brazil		China	
	2019	2020	2019	2020
Total FOB Value	348 838	12 223	64 098	31 185
Total Insurance + Freight value	22 682	1 744	2 906	669
Total Nationalization Value	77 311	3 715	25 164	14 767
Total Imports Value	448 832	17 683	92 168	46 622

Note. Litargmode company financial data. 2022

The second variable analyzed was the set of annual FOB, CIF, and total import values from Brazil and China of the Litargmode company in 2019 and 2020. Imports in 2019, the year before the COVID-19 pandemic, followed the trend of previous years in the Litargmode company. The above is ratified when an annual FOB value of USD 412 936 was extracted in 2019, divided into USD 348 838 in imports from Brazil and USD 64 098 in imports from China. Meanwhile, in 2020, the annual FOB value reaches only USD 43 408, with USD 12 223 from Brazil and USD 31 185 from China. These values express a decrease of 89% compared to those of 2019.

The Annual Value of Insurance + Freight in 2019 was 25 588 USD; in 2020, it was 2 413 USD. A decrease of 91% compared to 2019. Of the total value, 22 682 USD were imports from Brazil and 2 906 USD from China. In 2020, these values changed, and imports from Brazil counted with a value of 1 744 USD and from China with 669 USD.

The Annual Nationalization Value in 2019 was 102 475 USD. This value is divided into 77 311 USD for Brazil and 25 164 USD for China. A sharp contrast with 2020, the year where this value decreased by 82%, reaching a value of 18 483 USD. This year, the values are divided into USD 3 715 for Brazil and USD 14 767 for China.

The Total Import Value shows a difference of 88% between 2019 and 2020. The Total Import Value in 2019 was 541 000 USD, and in 2020 it was only 64 305 USD.

Table 11 expresses the average number of days an import takes to reach Litargmode's facilities in 2019 and 2020.

Table 11

The average number of days an import took to arrive at Litargmode's facilities in 2019 and 2020.

Type of Import	The average number of days it took for an import from Brazil to arrive at Litargmode		The average number of days it took for an import from China to arrive at Litargmode	
	2019	2020	2019	2020
By Air	4	13	-	-
Maritime	24	-	42	69

Note: Litargmode company financial data. 2022

An early quarantine in the cities where the main ports are located, and inadequate ship supply in Brazil and China caused lead times to change drastically. Evidence of this can be found when analyzing Litargmode imports for 2019 and 2020.

In 2019, the average number of days it took for an import from Brazil to reach Litargmode's facilities was four days when using the air route and 24 days when the sea route is used. However, when the import is made from China using the sea route, the average number of days that has to pass increases to 42 days, 18 days more than when the import is made from Brazil.

On the other hand, in 2020, due to all the complications caused by the pandemic, the average number of days that had to pass for an import from Brazil and by air increased by nine days, reaching the final destination in 13 days. Maritime imports were the most affected. If in 2019, imports from China took 42 days to reach Litargmode's facilities, in 2020, they took an average of 69 days.

6.4. Contingency plan in case of catastrophe

Although no company can anticipate a catastrophe, specific measures can be taken so that, in the worst-case scenario, the consequences can be counteracted more efficiently, and the crisis can be overcome more quickly. This set of measures will be called the Disaster Contingency Plan. Interviews with experts in the field are used to develop a helpful Contingency Plan. Interviews were conducted with the General Manager of the company Litargmode (Ecuador) and the Export Commercial Manager of the company FCC Industria e Comercio Ltda. (Brazil). Although both interviewees work in different countries and have different experiences, their answers apply to all companies regardless of location or size.

The interviewees' responses are presented below in the form of a matrix in Table 12.

Table 12

Contingency plan in case of catastrophe

Interviewee	Catastrophe contingency plan recommendations
Ing. Lino Anguisaca (Litargmode CEO)	• Recognize which problems are in the company's hands and outside. • Seek a good working environment in the company. If there is no good working environment in the company, the company will suffer without the need for a catastrophe. • Acquire catastrophe insurance for the company. • Good employee training. Better customer service can be provided by being more prepared to activate equipment quickly and efficiently. • Set aside an amount of money to be able to purchase the required volumes of materials on time. • Recommend designing a contingency plan to act quickly in the event of a catastrophe.
Mba. Catia Muller (FCC Industria e Comercio Export Commercial Manager)	• Do not depend on a single supplier. Instead, have at least a portfolio of 2 or 3 extra suppliers so that production can be reactivated as soon as possible in case of a catastrophe. Recommends looking for suppliers regularly. • Recommend a good working environment in the company, as this will prepare each team to adapt better to changes. • Design a contingency plan.

Note: Interview with experts in the area conducted by the author of this article. 2022

According to those interviewed, specific measures can be taken to control and counteract a catastrophe's effects on a company. For example, deciding to look for alternative suppliers, taking out catastrophe insurance, and maintaining a good working environment that makes the team ready for the changes that a catastrophe will provoke are vital measures to be able to cope with any circumstance.

7. Conclusion

The evidence presented above confirms that the crisis caused by COVID-19 affected the Leather and Footwear Sector. Therefore, a comparative analysis was carried out using the quantity, costs, and average time of imports of the Litargmode company in the Pre-Pandemic Period (2019) and Pandemic (2020) to ratify those mentioned above.

The number of annual imports was reduced by 83% in 2020, with only seven operations, in stark contrast to the 42 in 2019. It was stated that the main reasons for the year 2020 to stop importing from Brazil by sea and that the number of imports from China was reduced by 57% was the increase in freight costs and waiting time. This same reason forced the company to prefer to use exclusively airfreight when doing business with Brazil.

As the annual imports decreased, the analysis showed that the monetary values also decreased. The Total Value, (the sum of FOB Value + Insurance + Freight + Nationalization), went from USD 541 000 in 2019, to USD 64 305 in 2020, revealing a decrease of 88%. The Annual Value of Insurance + Freight was 25 588 USD in 2019 and experienced a 91% decrease, reaching 2 413 USD. Following this trend, the 2019 Annual Nationalization Value of 102 475 USD had a contraction of 82% with 18 483 USD.

Waiting times increased dramatically due to an early quarantine in the cities where the main ports are located and vessel shortages in Brazil and China. Maritime imports from China were the most affected, suffering an additional 27 days of waiting time, going from 42 days to 69. On the other hand, from Brazil, the average time was postponed 18 days longer than usual.

As can be seen, surviving this health emergency shows that Litargmode is a stable company that knew how to make the right decisions to survive a global quarantine without the need to affect the lives of its employees negatively and without going to the extreme of closing the company. Despite this, Litargmode is still trying to recover from the crisis fully and maintains its goal of improving the quality of life of its employees and supplying the Ecuadorian market with high-quality footwear.

In addition, interviews with experts on the subject suggest that although it is impossible to predict when the next Pandemic or global catastrophe will occur, it is possible to develop a contingency plan to counteract the adverse effects of a crisis on a company's supply chain and to live through the crisis more quickly. Measures such as not depending on a single supplier and taking out Catastrophe Insurance can make the difference between withstanding a tough season or being forced to close the company.

Finally, it can be determined that unexpected catastrophes can cause major crises locally, regionally, and globally, thus changing the course of many companies. The COVID-19 outbreak is a clear example of this, and its crisis led many companies to bankruptcy. However, the Litargmode case proves that it is possible to survive a global crisis when the right decisions are made at the right time.

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