

**Impactos da Covid-19 no setor cafeeiro de Manhuaçu-MG,  
Brasil: uma análise econômica**

**Effects of Covid-19 on the coffee sector in Manhuaçu - MG,  
Brazil: an economic analysis**

**Impactos de la Covid-19 en el sector cafetero de Manhuaçu-  
MG, Brasil: un análisis económico**

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**Resumo:** Este estudo investiga o impacto da pandemia de Covid-19 no setor cafeeiro de Manhuaçu - MG. Especificamente, examina-se como a pandemia afetou o processo de plantio, colheita, transporte e comunicação dentro da indústria do café. Por meio de uma abordagem metodológica mista, combinando análise qualitativa e quantitativa, os dados primários foram coletados por meio da aplicação de questionários a trabalhadores e produtores no meio do café. Os resultados indicam que o setor cafeeiro experimentou tanto efeitos adversos quanto alguns resultados positivos, especialmente pela elevação em seus preços, durante a pandemia. Os resultados revelam mudanças no transporte, adoção de tecnologia e desafios financeiros em meio à pandemia. Apesar dos obstáculos logísticos e da redução da mão de obra no campo

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devido às medidas sanitárias, o setor cafeeiro mantém sua importância na economia local. No geral, a pandemia impactou significativamente a economia regional. Este trabalho destaca a importância de entender as dinâmicas econômicas em evolução durante a pandemia e propõe caminhos para futuras pesquisas explorarem tendências no cultivo de café para além do período pandêmico.

**Palavras-chave:** cultivo de café, pandemia de Covid-19, dinâmica econômica.

**Abstract:** This study investigates the impact of the Covid-19 pandemic on the coffee cultivation sector in Manhuaçu - MG, Brazil. Specifically, it examines how the pandemic affected the planting and harvesting processes, transportation, and communication within the coffee industry. Through a mixed-methods approach, combining qualitative and quantitative analysis, data were collected via a survey to coffee workers and producers. The results indicate that the coffee sector experienced both adverse effects and some positive outcomes during the pandemic, particularly due to increases in coffee prices. Shifts in transportation, technology adoption, and financial challenges amidst the pandemic are revealed. Despite logistical hurdles and reduced field labor due to sanitary measures, the coffee sector retains significance in the local economy. Overall, the pandemic significantly impacted the regional economy. The study underscores the importance of understanding evolving economic dynamics amid the pandemic and proposes avenues for future research to explore trends in coffee cultivation beyond the pandemic period.

**Keywords:** coffee cultivation, Covid-19 pandemic, economic dynamics.

**Resumen:** Este estudio investiga el impacto de la pandemia de Covid-19 en el sector cafetero de Manhuaçu - MG, Brasil. Específicamente, se examina cómo la pandemia afectó el proceso de siembra, cosecha, transporte y comunicación dentro de la industria del café. A través de un enfoque metodológico mixto, combinando análisis cualitativos y cuantitativos, los datos primarios fueron recopilados mediante la aplicación de cuestionarios a trabajadores y productores en el ámbito del café. Los resultados indican que el sector cafetero experimentó tanto efectos adversos como algunos resultados positivos, especialmente debido al aumento de sus precios, durante la pandemia. Se revelan cambios en el transporte, la adopción de tecnología y los desafíos financieros en medio de la pandemia. A pesar de los obstáculos logísticos y la reducción de la mano de obra en el campo debido a las medidas sanitarias, el sector cafetero mantiene su importancia en la economía local. En general, la pandemia impactó significativamente la economía regional. Este trabajo destaca la importancia de comprender las dinámicas económicas en evolución durante la pandemia y propone caminos para futuras investigaciones que exploren tendencias en el cultivo de café más allá del período pandémico.

**Palabras clave:** cultivo de café, pandemia de Covid-19, dinámica económica.

## Introduction

The coffee industry holds a significant historical and economic importance in Brazil, particularly in the state of Minas Gerais (MG). Dating back to the 18th century, coffee

production played a pivotal role in driving national development and shaping Brazil's economic landscape (Rodrigues; Dias; Teixeira, 2015). With fertile soils and a conducive climate, Brazil quickly emerged as the world's largest producer and exporter of coffee, leading to substantial profits for landowners and driving rapid economic growth. The state of Minas Gerais, accounting for a significant portion of Brazil's coffee production, particularly stands out as a key contributor to the country's coffee sector (Sugai; Teixeira Filho; Contini, 2004).

The city of Manhuaçu - MG, located in the Zona da Mata region of the Minas Gerais state, has historically been a prominent hub for coffee cultivation, attracting migrations and infrastructure investments that further propelled its coffee industry. Despite facing challenges such as water scarcity and frost, the coffee sector has maintained its prominence, contributing significantly to the region's economy. However, the emergence of the Covid-19 pandemic presented unprecedented challenges to the coffee industry, disrupting supply chains, reducing mobility, and impacting global markets (Council of Coffee Exporters of Brazil – Cecafé, 2022).

The first case of Covid-19 in Brazil was reported in February 2020, leading to a series of lockdowns and mobility restrictions that significantly affected various sectors, including coffee production and trade. The pandemic-induced economic uncertainty, coupled with fluctuations in currency exchange rates, further exacerbated the challenges faced by the coffee sector, as based in what Castro, Teixeira, and Lima (2005) would suppose years before.

Given the importance of the coffee industry in Manhuaçu - MG, and its vulnerability to external shocks such as the Covid-19 pandemic, there is a need to assess the impact of the pandemic on coffee production and trade in the region. This study aims to analyze how the pandemic affected employment, productivity, and prices in the coffee sector in Manhuaçu - MG, between 2019 and 2021. By gathering primary data through a survey and conducting a descriptive analysis, this research seeks to provide information into the resilience and adaptation strategies adopted by coffee producers in response to the pandemic.

## **Historical context of coffee in Brazil, and the pandemic challenges in Minas Gerais**

The cultivation and trade of coffee have long played a pivotal role in shaping the economic landscape of Brazil. Dating back to 1727, with the purported arrival of Sergeant-Major Francisco de Mello Palheta in Belém - Pará (PA) carrying coffee seeds from French Guiana (Martins, 2012), Brazil's fertile soils, conducive climate, and entrenched slave-based labor system facilitated the exponential growth of coffee production and its subsequent export.

As elucidated by Rodrigues, Dias, and Teixeira (2015), coffee emerged as a linchpin of the Brazilian economy during the 18th century, fueling substantial profits for large landowners and driving rapid national development in sync with international market demands.

Quality became a crucial factor, with coffee classified by beverage and type. According to the Brazilian Ministry of Education – MEC (Brazil, 2005), the primary method of evaluating coffee is through sensory analysis by professionals who, upon tasting it, can identify color, flavor, texture, and aroma. The classification is based on a sample, from which the quantity of defective beans and impurities is analyzed. Color is a decisive factor in grading bean quality. The main shades for Arabica coffee are bluish-green, cane green, yellowish, and leaden. For Conilon coffee, classification in terms of color is based on a brown hue (BRAZIL, 2005).

Given the vigorous expansion and quality of coffee in Brazil, the emergence of cities that became major urban centers in the states of São Paulo (SP) and Paraná (PR), as well as in the south of Minas Gerais (MG), was observed on a large scale. All of this led to an increase and variation in infrastructure investments in the country (Rodrigues; Dias; Teixeira, 2015). As Brazil, as a coffee holder and exporter, required the implementation of railways due to the high transportation costs. From these facts, it is possible to perceive the importance of coffee for the national economy. According to Sugai, Teixeira Filho, and Contini (2004), Brazilian coffee held an important position in the international coffee economy, as evidenced over time, given that Brazil is the world's largest producer and exporter of coffee, according to data from the United States Department of Agriculture – USDA (2020).

Indeed, the importance of the coffee sector within the economy brings with it a chain effect resulting in economic growth. The state of MG stands out as one of the largest internal coffee producers in Brazil (Santos et al., 2009). Coffee farming in Minas Gerais has a significant influence on job creation and rural employment, surpassing revenue and production factors alone. The Southeast region accounts for 84.5% of total coffee production in Brazil, with MG accounting for 47.0% of the participatory index nationwide, making it the largest coffee-producing state, according to data from the Brazilian Institute of Geography and Statistics – IBGE (Brazil, 2021).

The city of Manhuaçu - MG, located in the Zona da Mata region in MG, has coffee as its main productive sector (Espindula, 2018). There were several migrations to the municipality from the 19th century onwards, along with investments in railroads in cities near its location, to enable the transportation of items, especially coffee (Espindula, 2018). Manhuaçu - MG is close to the border with the state of Espírito Santo (ES). Investment in coffee cultivation made Manhuaçu - MG lands prosperous, leading to an ascent and becoming the subject of power

struggles and land location in 1877 (Santos, 2011). In 2017, according to the Agricultural Census of the IBGE (Brazil, 2019), the amount produced and sold of roasted and ground coffee was five tons.

In 1996, the impact on the induction of the Gross Domestic Product (GDP) from coffee exports throughout the country reached 2.05 billion of Brazilian Reais (R\$) according to Sugai, Teixeira Filho, and Contini (2004). Between January and September 2021, there was a foreign exchange revenue of 4.17 billion of American Dollars (US\$), with the average price per sack being US\$ 140.18, revealing a 10.5% increase in its value compared to the same period in 2020 according to the Council of Coffee Exporters of Brazil – Cecafé (2022). Thus, it is observed that the coffee sector has always stood out over the years. More recently, the water crisis and frosts have concerned the agricultural sector in general and, especially, coffee, which, despite a positive biennial cycle in 2022, still sees this factor as alarming, according to a study by the Institute of Applied Economic Research – Ipea (Garcia; Servo; Souza Junior, 2021).

Moreover, the appreciation of the dollar against the Brazilian Real due to economic uncertainty in internal and external markets, resulting from the effects of the Covid-19<sup>3</sup> pandemic, has led to a decline in the Brazilian economy. The first case of Covid-19, a disease characterized by causing respiratory infections among others (Lima, 2020), occurred in late 2019 in China. In Brazilian territory, the first identified cases date back to February 26, 2020. Overall, infected individuals develop fever and respiratory problems, over a period of five to six days after infection, which can lead to more severe cases, and even death. Diagnosis is made through the collection of materials via airways in specialized laboratories, and thus identified. The increase in disease records resulted in a lockdown at peaks of contamination worldwide, reducing mobility of people and various sectors, such as coffee.

This is compounded by a degree of uncertainty, where there is a low level of international investment in Brazil due to lack of confidence in the Brazilian market under pandemic effects. This new scenario has brought vulnerability to the Brazilian economy, such as the increase in inflation rates that occur due to a depreciation of the exchange rate (Rosa; Souza; Oliveira, 2020). According to Castro, Teixeira, and Lima (2005), the impacts generated by a currency devaluation result in an increase in the competitiveness of the coffee sector internationally, since the product is low in value in the external market, which increases the attraction of Brazilian coffee to other countries.

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<sup>3</sup> The acronym 'Covid' is formed by combining the letters referring to the following words: corona (co), virus (vi), and disease (d), a disease caused by coronavirus. The number 19 refers to the year 2019, when the first cases were publicly reported.

Furthermore, it also affects the price of inputs such as fertilizers, parts, fuels, and herbicides, which are directly linked to the relative value of the dollar and, consequently, in the increase of its production and commercialization cost (Castro; Teixeira; Lima, 2005). When analyzing the Broad Consumer Price Index (IPCA) accumulated over 12 months, for December 2020 and December 2021, by IBGE (Brazil, 2022), a progressive increase in the price of ground coffee is noted, from 7.7% in 2020 to 50.2% in 2021.

In view of these facts, the need for an evaluation of this conjuncture is perceived. Because it is a relatively new topic, the process of diversification of coffee production and resale that came about due to the Covid-19 pandemic becomes important for an analysis of areas that emerged through know-how. Thus, the importance of identifying how coffee producers in Minas Gerais circumvented this fact, especially those in Manhuaçu - MG, is noted.

With this, the question arises: how did the pandemic impact the production and commercialization of coffee in Manhuaçu - MG? Were there any adaptations made by the coffee sector in this locality?

The general objective of this research is to analyze employment in the coffee sector and to identify how producers managed, if at all, to overcome the challenges and adapt to the new circumstances between 2019 and 2021. The aim is to conduct an analysis of the coffee market during the pandemic scenario. This process involves gathering primary data through a survey. Additionally, it seeks to investigate how employment, worker income, productivity, and coffee prices were affected during this period.

Specifically, this research aims to provide a descriptive analysis of the coffee market in Manhuaçu - MG during the Covid-19 pandemic. To do so, we based on primary data collected through a survey. This study focuses on investigating how coffee producers and consumers in the region of Manhuaçu - MG were affected by the Covid-19 pandemic in terms of production and consumption. After all, they witnessed an increase in coffee prices due to a rise in the dollar amidst the pandemic scenario. It is also expected that there will be an intensification of communication channels for coffee commercialization. Furthermore, it is hypothesized in this paper that coffee harvesting may have been affected due to reduced traffic with barriers imposed during peak Covid-19 infection periods. Therefore, it is expected that there has been a reduction in workers in these fields, especially in the year 2020, in order to avoid further mass contamination.

Thus, being a relatively new topic, this research will contribute to further analysis and observations in the field, as there is still a lack of clear specification on such matters. To enable this hypothesis, research aiming to explore the affected areas in coffee cultivation in Manhuaçu



- MG through a survey will be conducted.

Therefore, in the section that follows, the methods used in this study will be presented. In the third section, the results of the primary data collected through the survey will be described and analyzed. And the final remarks, and the references are presented at the end of this paper.

## **Database and methods**

In this section, the focus is on presenting the methods used for the descriptive and regional analysis suggested in this study. Thus, the method is characterized by typology and general description of the data, in which the discussion is conducted on how descriptive analyses are performed. After that, the database is discussed.

## **Typology and general description**

This study employed two types of research: qualitative and quantitative. Through the use of these two research types, specific and objective data are investigated. Qualitative research is characterized by the descriptive nature in some of our methods. Thus, the environment studied and the one describing it are considered prominently, as the analysis of qualitative research data depends on the researcher's analytical approach (Gil, 1999). It seeks to measure the events examined without using statistical instruments in data analysis. Therefore, it encompasses the exploration of descriptive data about interactive processes through direct contact between the researcher and the analyzed situation.

Additionally, qualitative research aims to expose and clarify concepts and ideas for future approaches, aiming to provide the researcher with a deeper understanding of the subject matter, enabling the formulation of more precise questions (Gil, 1999). In this study, data were measured and quantified through a survey, as presented in the Appendix. Such an analysis deserves attention, as a different questioning approach, different from the usual in terms of the perception of the respondents, may lead them to divergent understanding of the matter (Simões, Pereira, 2007). Thus, by paying attention to this fact, it becomes possible to obtain a real reproduction of the scenario described by the participants.

## Database

The Covid-19 pandemic issue remains relatively new, with certain gaps in the databases. The aim of using such methods is to quantify the extent of the impact the pandemic has had on the coffee sector in Manhuaçu - MG. Through the methodological construction, we hope that it will be possible to identify the environment in question, with the intention of highlighting and analyzing the coffee sector structure.

The database consists of primary data obtained through a survey. The questionnaire was administered to farmers, producers, and traders to collect primary data. According to the survey construction methodology, the application and resolution of a question require some thought tasks such as interpreting, searching memory for information, formatting, and editing the response (Simões; Pereira, 2007). Thus, the questionnaire addressed issues aimed at resolving uncertainties, such as the preventive measures taken in the coffee production system, as well as attempting to understand whether the Covid-19 pandemic affected worker transportation in the years analyzed within the pandemic scenario. Another aspect addressed is how infection peaks affected coffee harvesting, work routine, and team communication.

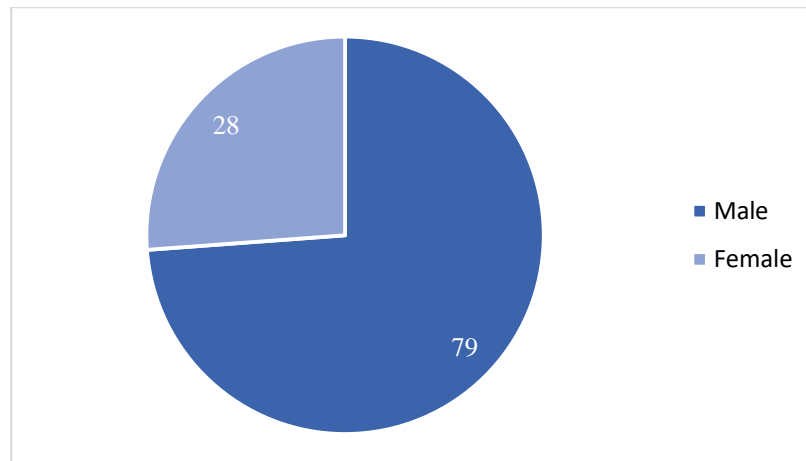
## Results

In this section, we present the findings derived from the primary data collected via a survey with various stakeholders in the coffee sector. The analysis encompasses responses from a total of 107 participants, allowing for a comprehensive understanding of prevailing trends and patterns within the sector.

The gender distribution among the respondents is depicted in Figure 1. This figure provides an overview of the demographic composition of the surveyed individuals.

In Figure 1, it is evident that the majority of respondents, comprising 73.8%, identify as male, while the remaining 26.2% identify as female. This gender distribution sheds light on the demographic characteristics of the participants involved in the study.





Source: own elaboration based on survey data.

**Figure 1 – Gender of questionnaire respondents.**

The cross-analysis of economic impacts by gender reveals notable distinctions: male respondents more frequently reported difficulties in client communication, whereas female respondents expressed heightened concern over income stability during the pandemic. This trend may suggest gender-specific financial responsibilities within the coffee sector workforce.

Moving forward, we delve into a detailed examination of the age distribution among the respondents. The age range of the participants is categorized into three distinct age groups, as outlined in Table 1 below.

**Table 1 – Age of questionnaire respondents, by gender**

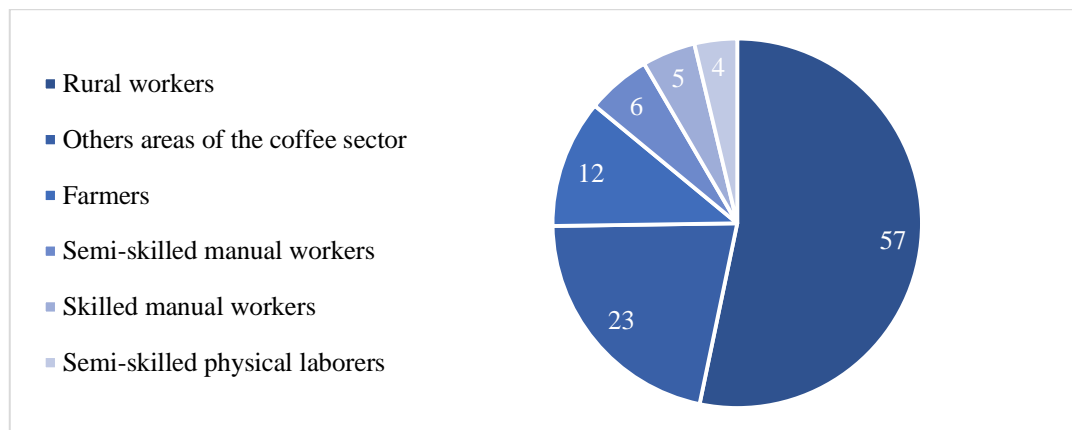
Gender	18 to 30 years	31 to 44 years	Above 45 years	Total
Female	14	10	4	28
Male	17	26	36	79
Total	31	36	40	107

Source: own elaboration based on survey data.

Table 1 reveals that among the questionnaire respondents, 40 (37.4%) belong to the age group above 45 years, 36 (33.6%) fall within the age range of 31 to 44 years, and 31 (29.0%) are between 18 and 30 years old. It is notable from Table 1 that the majority of respondents are male and are aged above 45 years.

Age was found to influence the adoption of technological adaptations, with respondents over 45 years reporting lower engagement with digital tools compared to younger groups (18-30 years). This suggests a generational factor in adapting to economic disruptions during the pandemic period.

Additionally, we identify the specific areas of engagement where these coffee workers are prevalent. Figure 2 shows these results.



Source: own elaboration based on survey data.

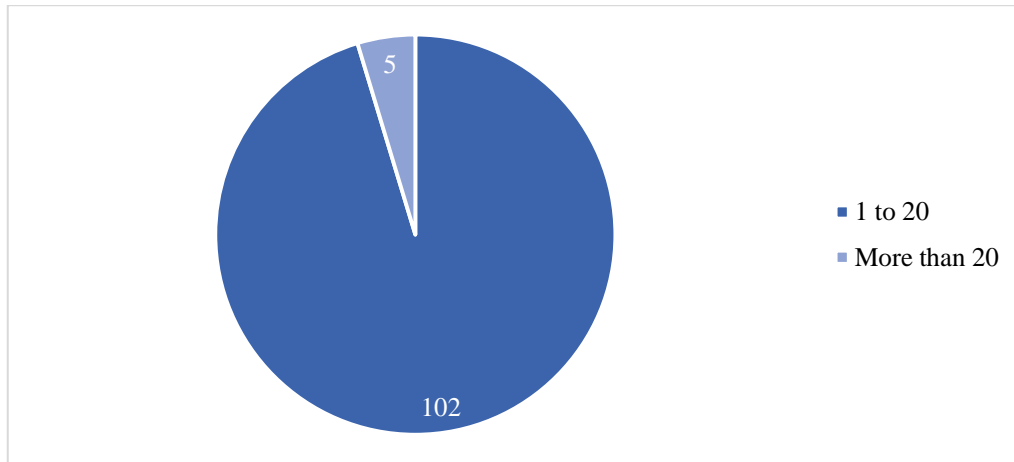
**Figure 2 – Distribution of occupations among questionnaire respondents, coffee sector.**

Figure 2 illustrates that 57 of the respondents (53.3%) are rural workers, while 23 (21.5%) are engaged in other areas within the coffee industry, such as commerce. Additionally, 12 (11.2%) are farmers, 6 (5.6%) are semi-skilled manual workers, 5 (4.7%) are skilled manual workers, and finally, 4 (3.7%) are semi-skilled physical laborers. This breakdown provides valuable information into the occupational distribution within the surveyed population.

An examination of the data across different phases of the pandemic reveals notable shifts in respondents' experiences and perceptions of economic impact. Initially, concerns about income stability and disruptions in coffee distribution networks were paramount. Over time, however, these concerns evolved as respondents adapted to ongoing challenges. By mid-pandemic, a growing number of participants reported adjustments in their work practices, such as flexible work arrangements and altered transport logistics.

Moving forward, we examine the average number of workers engaged in these activities alongside the questionnaire respondents. The number of people at the same team of work of the respondents was split into two categories (see Figure 3).

Among those surveyed, 102 respondents (95.3%) reported that between 1 to 20 individuals work with or for them, with only 5 (4.7%) indicating that they work with more than 20 people. Of these, 69 (64.5%) stated that the Covid-19 pandemic affected the harvesting process, while 77 (72%) believed there were changes in the transportation methods used to ferry these workers to the fields, due to sanitary barriers imposed by authorities, especially in 2020.



Source: own elaboration based on survey data.

**Figure 3 – Number of employees working for or with questionnaire respondents.**

Additionally, Table 2 presents the number of responses obtained for each question posed to the questionnaire respondents. In this case, all questions are rated on a scale ranging from 1 to 10, where responses from 1 to 5 indicate that the effects questioned were considered to be of little significance, while responses from 6 to 10 indicate that the effects were deemed to be significant.

**Table 2 – Questions raised, questionnaire, coffee sector workers**

On a scale of 1 to 10, ... between 2020 and 2022?	1 to 5	6 to 10
... how intense were the changes in transportation...	65	42
... how significant were the difficulties in communicating with customers...	58	49
... how effective was the use of technology in improving processes...	14	93

Source: own elaboration based on survey data.

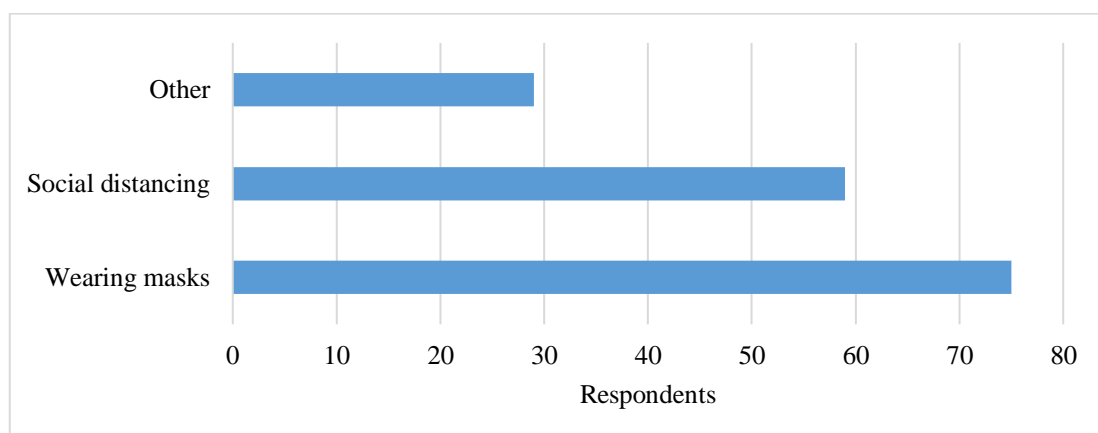
As evident from Table 2, although the majority of respondents believe that there was a change in transportation, 65 (60.8%) of them reported that these changes were not very intense. Furthermore, just about half of the respondents – 49 (45.8%) – stated that difficulties in communicating with clients were significant, while 93 (87.0%) of producers and other representatives in this sector identified that technology aided work during the pandemic scenario. These observations are supported by responses provided in the questionnaire, such as: ‘negotiations, payments, and the banking facilities to expedite and reduce the need for producers to visit banks to receive payment for coffee’, ‘telecommunications were expanded and maintained’, ‘I believe that in 2020 there were many difficulties due to the pandemic, but over time, many of them improved, such as transportation and communication ease’, ‘with the decrease in labor force, we had to invest in more machinery’, ‘work as a coffee picker and

transportation was affected by the pandemic; now it's back to normal', and 'it made transportation difficult, high fuel prices, labor shortages, and high food prices'.

Moreover, there were some reports regarding the perception of high prices, especially concerning coffee pricing, such as: 'agricultural product prices increased', 'coffee prices have improved a lot, they valued rural workers more, there was plenty of coffee, thanks to God', and 'coffee prices have improved a lot'. However, there were negative understandings regarding the remuneration paid to coffee workers, such as: 'work became more intense, and the values paid remain the same'. Furthermore, 83 (77.6%) of the respondents engage in more manual tasks, while 24 (22.4%) participate in more intellectual tasks.

Technological adaptation increased progressively throughout the pandemic. Early in the pandemic, technology adoption was limited; however, by later stages, many respondents had incorporated digital tools into their operations to counteract mobility restrictions and maintain productivity. This trend indicates an adaptive response that became more prevalent as the pandemic's economic effects persisted. This temporal analysis underscores how economic responses within the coffee sector evolved from immediate economic concerns toward more structured, strategic adaptations over time.

Below, through the graph in Figure 4, one can observe the preventive measures against Covid-19 that they undertook. This graphical representation shows the strategies implemented by coffee sector workers to mitigate the spread of the virus and ensure workplace safety during the pandemic.



Source: own elaboration based on survey data.

**Figure 4 – Preventive measures adopted, coffee sector workers, 2019-2022.**

The data presented in Figure 4 illustrate the preventive measures adopted by coffee sector workers between 2019 and 2022. It reveals that the majority of respondents utilized masks (70.1%), followed by distancing measures (55.1%), and other forms of prevention (27.1%). These findings underscore the proactive approach taken by workers to mitigate the

risk of Covid-19 transmission in their workplace. These results extend beyond the 107 survey responses, as respondents were allowed to select multiple options for this question.

Furthermore, 67 (62.6%) believe that the use of individual equipment increased over the years in question, while 40 (37.4%) do not share this belief. Additionally, respondents were asked about their financial situation between 2019 and 2022, with 75 (70.8%) reporting financial complications, while 31 (29.2%) did not experience such issues.

In summary, the results obtained from the survey provide valuable information into the experiences and adaptations of coffee sector workers amidst the Covid-19 pandemic. From gender distribution to employment dynamics and preventive measures, the data shed light on the multifaceted impacts of the pandemic on the industry. These findings not only contribute to the existing literature on the subject but also have practical implications for policymakers and stakeholders involved in the coffee sector.

## **Conclusion**

This study aimed to analyze the coffee cultivation sector, identifying certain trends that traverse the economic and pandemic scenario in the city of Manhuaçu - MG, Brazil. Thus, understanding the dynamics of how economic activities are distributed becomes crucial for perceiving regional economic development more easily. Data was collected through a survey administered to coffee workers and producers in the city.

The municipality, like the rest of the world, was undergoing changes in both social and economic behavior due to the pandemic. Respondents reported changes in transportation and the use of technology during the pandemic period for coffee cultivation. The importance of the coffee sector in the city was evident, where despite the adversities of Covid-19, such as logistical challenges and reduced field professionals for coffee picking due to imposed sanitary protocols, its relevance was notable. It is also noteworthy that more than half of the questionnaire respondents reported experiencing financial complications due to the pandemic.

According to the reports of coffee workers, in addition to the financial impact resulting from the pandemic, certain changes in transportation were observed due to sanitary barriers imposed during the pandemic, especially in 2020. This mode of transportation, through the roads, is the primary access to input sources and markets, and then factors such as rising fuel prices and logistical uncertainties negatively impacted the coffee market.

Therefore, this study aims to catalyze future work and analyses on the subject, as the results presented are preliminary. Through the database on formal employment in the

agricultural and coffee cultivation sectors, along with monitoring of coffee productivity and pricing, future studies with a longer temporal scope will be possible for analysis beyond the pandemic period.

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7 - Did the Covid-19 pandemic affect the harvesting process?

Yes

No

8 - Were there changes in workers transportation due to health barriers at the time?

Yes

No

9 - If so, were these changes in transportation significant? On a scale of 1 to 10, how would you rate them? Remembering that 1 means “few changes” and 10 “many changes”.

1      2      3      4      5      6      7      8      9      10

Few changes

Many changes

10 - Have work equipment increased due to individual use?

Yes

No

11 - Did you face financial difficulties between 2020 and 2022?

Yes

No

12 - Did you experience challenges in communicating and contacting clients? On a scale of 1 to 10, how severe were they? Remembering that 1 indicates “little difficulty” and 10 “much difficulty”.

1      2      3      4      5      6      7      8      9      10

Little difficulty

Much difficulty

13 - Did technology aid your work from 2020 to 2022? How would you rate it? Remembering that 1 denotes “little” and 10 “much” (in this section, please explain that technology encompasses: new means of communication, increased ease of online payments, and other advancements).

1      2      3      4      5      6      7      8      9      10

Little

Much

14 - What do you believe has changed from 2020 to the present in the production process you participate in?