



ROMANIA
MINISTRY OF EDUCATION AND RESEARCH
“1 DECEMBRIE 1918” UNIVERSITY OF
ALBA IULIA
DOCTORAL SCHOOL
DOMAIN ACCOUNTING

PhD THESIS

ABSTRACT

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Alba Iulia,

2026



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*The Impact of Crisis Situations on Financial-
Accounting Indicators at the Level of Commercial
Companies. Analysis in the Context of COVID-19*

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THESIS'S ABSTRACT

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INTRODUCTION

Research General Context

Over the last century, the world has witnessed several severe crises at both global and/or local levels, including natural disasters (such as wildfires and earthquakes). These include the Great Depression of 1923, the swine flu of 2010, the European refugee crisis, the 2008 global financial crisis, the COVID-19 pandemic, and, more recently, the war in Ukraine. According to Tooze (2022), we are most likely in a prolonged period of overlapping crises. In this context, several studies in the economic field have focused on analysing the response of economic entities to external crises (Zhou et al., 2025; Nguyen et al., 2024; Batjargal et al., 2023; Miklian and Hoelscher, 2022; Newman et al., 2022). They concluded that the impact of a specific crisis on economic entities is mixed, with some becoming winners and others losers.

Major external crises can, of course, stimulate creativity (Borowiecki, 2014) and foster innovation (Davidsson, 2015). On the other hand, many economic entities go bankrupt, cease to grow, and/or significantly reduce investments in research and development. The variation in the impact of crises on economic entities can be explained by several factors, including external openness and procedural management, dynamic capabilities, double-loop learning, learning during crises, business model change, and crisis strategies such as pivoting (Klyver, 2023).

Regardless of their origin and nature, health crises (epidemics and pandemics) represent serious threats to human life and health and require considerable efforts to mitigate their severity and control them. The major difficulties in managing such crises stem from the influence of various factors, including unpredictability and the capacity to evolve and adapt. In this context, addressing health crises requires coordinated national and international measures. These are imperative in the contemporary context, characterised by globalisation and the rapid interconnectedness of people and goods.

The coronavirus outbreak began in December 2019, with the first report of a human infection with an unknown virus. Within a few months, the outbreak generated a global health crisis that affected the world both economically and socially. By March 2020, the global health authority recognised that COVID-19 was a pandemic.

The COVID-19 pandemic-triggered health crisis rapidly evolved into an unprecedented global crisis that affected all aspects of socio-economic life. The global

economy faced unprecedented challenges, including public health efforts to eradicate the virus, the need to protect jobs and incomes, and, at the same time, the creation of a new standard for rebuilding a more equitable, inclusive, and resilient social and economic environment.

The immediate lack of a medical response to the virus (vaccines or treatments) led to the imposition of lockdowns and social distancing restrictions (including travel bans), which represented the primary governmental responses aimed at reducing virus transmission. However, such measures severely affected economic activity, triggering an atypical crisis fundamentally different from previous ones. In addition to the temporary shutdown of certain economic activities, movement restrictions were extended, and behavioural rules (social distancing) were imposed to reduce the risk of contagion, which, in the long term, generated significant economic effects and concerning impacts.

The COVID-19 pandemic caused an unprecedented shock to economic entities, with significant effects not only in the short term but also on growth and development prospects. Restrictions on mobility, social distancing, increased transaction costs, exchange rate fluctuations, and other factors affected resource allocation, leading to a decline in aggregate productivity. However, the ability of economic entities to understand the impact of this exogenous shock, the available adjustment mechanisms, and the uncertainty it creates may lead to the identification of reallocation channels to mitigate its impact and ensure resilience.

The health crisis triggered an economic crisis that affected, to varying degrees, all types of economic activity. Economic entities are primarily focused on reducing the risk of bankruptcy and maintaining employment, with innovation and/or entrepreneurial activity in a secondary position. For some of them, the COVID-19 context led to the interruption of activity and exacerbated uncertainty regarding their commercial future and financing opportunities. Moreover, economic entities faced the question of whether the COVID-19 crisis was severe enough to warrant a rethink of their business strategy, or whether it mainly affected how they communicate and justify the value of their product offering.

Despite considerable uncertainty about the long-term economic impact of the COVID-19 pandemic, analysis of previous crises indicates certain effects that are likely to persist well after the pandemic has subsided (Barrero et al., 2020). All economic entities remain vulnerable to persistently low demand and, consequently, to liquidity problems that, over time, may drive them out of the market. A relevant example in this regard is the delay in business reopenings in the United States after the lockdown period, which can be

explained by low expected demand rather than health-related concerns (Balla-Elliott et al., 2020).

The unprecedented level of uncertainty during the COVID-19 pandemic led economic entities to significantly reduce expenditures on innovation and general management consulting, which will most likely affect future productivity growth (Baker et al., 2020). However, the COVID-19 pandemic also caused many economic entities to shut down or reduce operations, leading to significant declines in sales and major adjustments in employment, with substantial heterogeneity in effects across entities.

Thus, the crisis struck economic entities in the most challenging way, with the lack of liquidity and the drastic decline in demand representing the main causes of the subsequent recession. Economic entities that managed to export or were part of multinational groups demonstrated greater resilience than those that could not rely on advanced forms of internationalisation or large-scale exports, even in a context of overall declining revenues. In other words, entities well integrated into international trade and/or production flows exhibited a lower risk of closure and fewer liquidity, demand, and supply-related problems. Moreover, economic entities with a solid structure, highly qualified personnel, greater savings, and intensive use of digital technologies were better prepared to cope with the economic effects generated by the pandemic.

However, during the COVID-19 crisis, small and fragile economic entities suffered more than larger ones due to liquidity shortages and a decline in domestic demand across both the industrial and service sectors. At the same time, they faced significant difficulties in planning their crisis response strategies. The pandemic also influenced the financing strategies of economic entities, which resorted to a wide range of instruments to address the liquidity crisis.

The evolution of the crisis also accelerated business digitalisation, facilitating increased investments in cloud technologies, remote work, virtual workstations, collaborative project management software, communication and collaboration platforms, and digital services supporting the core activities of economic entities. At the same time, the number of businesses adopting e-commerce increased.

Research Objectives

The main objectives of the research are as follows:

- O1: Investigating the specialised literature on crises and their management;
- O2: Analysing the context and evolution of the COVID-19 crisis;
- O3: Examining the financial and economic impact of COVID-19 on economic entities.
- O4: Analysing the functioning of economic entities in Romania during the COVID-19 pandemic through the lens of financial-accounting indicators;
- O5: Studying the digital transformation of businesses as a resilience strategy of economic entities in response to the COVID-19 pandemic.

Before the COVID-19 crisis, economic entities lacked a specific response strategy for such a situation. However, the adoption of certain crisis adaptation strategies—such as the reduction of physical operations and the transition to digitally assisted activities, innovation, remote or hybrid work, etc.—if generalized, can provide a clear picture of the evolution of economic entities before and after the crisis, while also offering valuable lessons for building the capacity to counteract the effects of similar events.

To achieve the research objectives and to provide empirical evidence relevant to the study topic, the following six research questions, corresponding to the five stated objectives, are addressed and discussed throughout the paper:

- Q1: *What are the main approaches to crises—specifically the COVID-19 crisis—and to their management strategies in recent specialised literature?*
- Q2: *How did the COVID-19 pandemic manifest, and what are the similarities with previous crises?*
- Q3: *What are the positive and negative consequences generated by the COVID-19 pandemic on economic entities?*
- Q4: *How did economic entities in Romania operate during the COVID-19 pandemic?*
- Q5: *What was the role of financial-accounting indicators in the resilience of economic entities in Romania to the COVID-19 pandemic?*
- Q6: *Was digital transformation one of the main adaptation strategies adopted by economic entities in Romania during the COVID-19 pandemic?*

The results of our research contribute to the economic literature addressing the issues related to the COVID-19 pandemic and add personal perspectives on this crisis and its effects on economic entities. Managers, entrepreneurs, and researchers can use this knowledge in

practical activities, in the business environment, and in the current academic context to understand the COVID-19 pandemic.

Given the research objectives and questions, the following **general hypotheses** were formulated:

H1: *The COVID-19 pandemic was not beneficial for the development of the vast majority of economic entities in Romania.*

H2: *The revenues and profits of most economic entities in Romania declined during the COVID-19 period compared to previous periods.*

H3: *All financial-accounting indicators of economic entities active during the COVID-19 period recorded significant decreases.*

H4: *The determinants of financial performance depend on the field of activity of economic entities in Romania.*

H5: *There is an interdependent relationship between the effectiveness of crisis response and the impact on the results and expectations of economic entities.*

H6: *The main positive effect of the COVID-19 pandemic is digital transformation.*

The stated hypotheses are supported by theoretical analyses and by the results of statistical and econometric analyses based on data on financial-accounting indicators characteristic of certain economic entities in Alba County, Romania. These hypotheses will be tested in stages within the framework of the present research.

Research Methodology

In the context of our research, we used an inductive approach to interpret and transform the raw data from the analysed economic entities into analytical concepts and themes. The inductive research approach contributed to building, based on observations of the analysed economic entities, a pattern for the identified evolutionary trends.

The deductive approach was used to confirm existing theories regarding the impact of the COVID-19 crisis on economic entities. For this purpose, we consulted over 100 articles, reports, analyses, and studies addressing the impact of COVID-19 on the economy in general and on economic entities in particular.

However, for generalisation purposes, this study employed the abductive method, which, unlike the linear reasoning paths of deductive and inductive approaches, provides a nuanced framework for understanding and interpreting complex phenomena. Accordingly, the data are adapted to a previously developed model while allowing flexibility for refining

it. This research does not aim to generate new theories, but rather to identify behavioural patterns of economic entities under the impact of a crisis and to update existing knowledge on this topic.

In general, three types of analytical methods are used in research: qualitative, quantitative, and mixed (Taherdoost, 2022). Each researcher selects the type of analysis based on the data collection method, which may include facts, statistics, ideas, or information. In this study, we opted for a mixed-method approach.

The research we conducted is based on facts and opinions, and we employed qualitative research methods. We adopted a qualitative research approach because several of its characteristics make it suitable for the present study. We collected data regarding economic entities in our country through a survey, based on the theoretical framework of the addressed topic. The qualitative research we conducted enabled us to provide a comprehensive picture of a complex issue: the COVID-19 pandemic. This proved particularly useful in addressing this relatively new subject, which transcends almost every aspect of the economy. Qualitative research includes various data sources (primary and secondary), derived from both the analysis of specialised literature and empirical research.

Primary data include the experiences of economic entities regarding the situation, their observations and perspectives on the effects of epidemics and pandemics on their businesses, the challenges they faced, and the processes they used to manage these challenges to maintain growth. This method was chosen to provide reliable data on the repercussions of ongoing crises on economic entities.

As is well known, the difference between qualitative and quantitative research lies in the form of data collection, analysis, and presentation. Unlike qualitative research, which highlights data/information whose meaning is assigned by individuals, quantitative research presents statistical results reflected through numerical data. In quantitative research, data are collected through questionnaires, surveys, and experiments, which are subsequently reviewed and converted into numerical form. In this study, we used a series of financial accounting data reported by the analysed economic entities, which served as the basis for a quantitative research component, namely econometric analysis models. We consider this research to be predictive, given that some of the effects of the COVID-19 pandemic on economic entities have not yet been thoroughly explored. In this paper, reality was interpreted through context and the inclusion of perspectives from representatives of the surveyed economic entities.

Since the purpose of this research is to identify the effects of an event on economic entities, we considered a mixed-methods approach to be the most appropriate. Thus, it was used to highlight the impact of the COVID-19 pandemic on the financial-accounting indicators reported by economic entities in our country. The exploratory research aimed to understand the opinions of key actors directly involved in the organisation and functioning of economic entities during the pandemic crisis, by posing survey questions and evaluating the phenomenon from a broader perspective. The obtained data were sorted and analysed to ensure their relevance to the research objective.

The sample for the survey of economic entities was extracted from the Ministry of Finance database, with access to their contact data available online via the “listafirme.ro” platform. The survey included economic entities with registered headquarters in Alba County, namely 9,688 entities with different fields of activity. The questionnaire was designed to be short, aiming to avoid overly detailed questions or long lists of response options. To facilitate completion, the questionnaire was divided into smaller sections, each addressing different topics.

The survey was conducted via electronic communication, specifically by sending an email to the public addresses of the selected economic entities, with a Google Forms link. Additionally, telephone interviews were conducted when it was observed that a large proportion of the contacted entities did not respond to the request. Data collection took place between June 10 and June 28, 2024. The data collection yielded 357 interviews, yielding a response rate of 3.68%.

The collection of secondary data was based on the evaluation of specialised literature relevant to the research topic. Its purpose was to ensure a fundamental understanding of the subject and to identify potential gaps in the existing approaches. Since our research is grounded in both primary and secondary data, our references focus on the most relevant and credible articles, studies, reports, and other sources addressing the topic. Before their inclusion in the research, several theories were examined in detail, which guided the formulation of the research questions and provided the necessary theoretical support for collecting primary data.

First, we identified relevant keywords for the research topic to gain an overview of the existing literature. Various search engines were used to find relevant articles from the period of the COVID-19 crisis and thereafter, to identify theories developed by different authors. These aspects are further detailed in the scientific mapping of the research topic, presented in subchapter 1.4.

In this paper, although the chronological presentation may differ from that of recent studies in the field, the structure of the approach ensures consistency, detailed explanations, and descriptions strictly focused on the subject under analysis, thereby providing a high level of reliability. Regarding the validity of the research, this is particularly ensured through reflexivity. The database *listafirme.ro* was appropriately filtered. Economic entities in Alba County were identified, and 357 (those who agreed to participate in the research) were surveyed using a systematic approach to data collection and analysis. The validity of the theoretical contributions was ensured by combining multiple theories to understand the conceptual foundation of the selected theoretical framework.

Ethical aspects of the research were also taken into consideration: participation was voluntary and based on informed consent; the confidentiality and anonymity of all participants (economic entities and individuals responding on their behalf) were ensured; no financial data were requested, as these were obtained from financial reports published by the relevant ministry; and all recordings were deleted immediately after the research conclusions were formulated.

THE PRESENTATION OF THE THESIS'S CHAPTERS

The research on the impact of crises on financial accounting indicators at the level of commercial companies was conducted across six chapters, each logically addressing different aspects highlighted by the global COVID-19 pandemic.

The first chapter presents an analysis of the specialised literature and the epistemological positioning of the research in the context of crises affecting the activity of economic entities. It describes the research problem, the study's purpose and objectives, the research questions and hypotheses, and the research methodology.

Starting with various crises that have affected the global economy over time (the 1918–1920 influenza pandemic, the Great Depression of 1929, the 2008 economic crisis, the H1N1 pandemic—“swine flu” of 2009), the main distinctive features of the unpredictable COVID-19 disease are reviewed. This involves reviewing the relevant literature and the corresponding theoretical framework. Subsequently, the challenges of strategic crisis management are described in the context of the scientific mapping of the addressed issue (evolution of the number of publications and citations, countries of origin of interested researchers, most-cited publications and authors, etc.).

The second chapter of the research focuses on the general financial and economic impacts of COVID-19 on economic entities and their response behaviour. The World Health Organisation declared the coronavirus a public health emergency of international concern on January 30, 2020; the global pandemic was declared on March 11, 2020. Countries around the world mobilised to manage the unpredictability of the situation, encouraging their populations to maintain social distancing, wear masks in public spaces, and wash their hands frequently (Naseri, 2021). The challenges faced by nations were severe, including shortages of resources for testing and treatment, a lack of protection for medical personnel against infection, unfamiliar public health practices, and an increase in economic recession (Pfefferbaum and North, 2020). Most travel was restricted, and some countries imposed lockdowns (Lenhard, 2025).

The pandemic generated numerous and unexpected challenges for entrepreneurs, in a context in which many business strategies had to be completely reconfigured. Small and medium-sized enterprises (SMEs) contribute significantly to a country's economy. They drive economic development through the production of goods and/or services, the creation of jobs with relatively low capital requirements, and the reduction of income inequality (BJIT, 2020). Despite this, SMEs were among the most affected by the global COVID-19 pandemic. The most impacted businesses included hotels, cafés, restaurants, beauty salons, travel agencies, and sports centres, many of which were on the brink of bankruptcy. Numerous small businesses were forced to shut down, with no operational activity or revenue to help them cope with the challenges caused by the pandemic.

The third chapter of this study focuses solely on economic entities in our country, analysing their operations during the COVID-19 pandemic, particularly in terms of financial performance, entrepreneurial factors, and adaptation strategies to the external environment, with the aim of surviving the crisis. The analysis was based on a dataset collected through a survey. The sample for the survey was extracted from the database of the Ministry of Finance, with access to contact data provided online through the "listafirme.ro" platform.

We highlighted that the pandemic affected economic entities of all sizes and types in an unprecedented manner, manifested through a significant decline in economic activity and disruptions in supply chains. Small and medium-sized enterprises proved to be particularly vulnerable, on the one hand due to limited cash reserves and assets compared to larger businesses, and on the other hand due to lower productivity levels. Many economic entities were forced to shut down completely during the lockdown period. Others opted for remote work, while some production-oriented entities continued to operate, albeit at reduced

capacity. Cash flow represented one of the most immediate challenges. Additionally, many economic entities were forced to lay off part of their workforce.

Unfortunately, the vast majority of economic entities were not prepared for the crisis or had only limited preparedness. Their ability to adapt rapidly and adjust their business models proved to be essential for survival. Digital transformation, as one of the most important adaptation mechanisms and a means of accessing new markets, was of critical importance. As consumer behavior shifted toward digital solutions, many businesses turned to e-commerce and online platforms to retain customers and explore new markets.

The fourth chapter of the thesis addresses digital entrepreneurship and digital technologies that generate transformation and innovation for all economic entities. The emergence of new digital technologies can fundamentally transform entrepreneurship and has most likely enabled many new and existing businesses to avoid bankruptcy during the COVID-19 pandemic. Digital technologies are essential for identifying, evaluating, and exploiting opportunities, enhancing competitiveness, improving efficiency, and fostering innovation, especially in periods of uncertainty. They represent a significant advantage in leveraging organizational transformation, given their disruptive nature and systemic effects on organizations, facilitating the reduction of limitations related to processes and achievable outcomes.

The fifth chapter of the research analyzes the evolution of financial-accounting indicators that characterize financial performance and capital structure within the framework of an econometric model for economic entities in our country during the COVID-19 pandemic. It also highlights the role of these indicators in the financial sustainability of economic entities, as they form the foundation for building resilience strategies.

The crisis generated by the COVID-19 pandemic affected the market and had a significant impact on both the performance of economic entities and their customers. In this context, as previously mentioned, many economic entities faced unprecedented difficulties and, in many cases, were forced to restructure their operations or even exit the market in order to survive. Some economic entities experienced a serious erosion of their competitive position, with economic, financial, and capital-related consequences. In contrast, others adapted rapidly to the crisis through innovation-driven and internationalisation processes. In this context, based on the available financial-accounting data, we analysed the financial and operational sustainability of certain economic entities in Alba County. We aimed to examine how the COVID-19 pandemic influenced performance, namely the economic and financial

results of economic entities, as well as the impact of the crisis on their operational structure and economic and financial sustainability.

The quantitative research was based on a sample of financial-accounting data reported by 20 economic entities from Alba County, covering the period 2010–2024 and operating in different sectors. These data formed the basis for calculating performance indicators, operational (activity) indicators, as well as risk indicators—independent variables that enabled the development of an econometric model designed to assess the financial sustainability of the analyzed economic entities.

The final chapter includes the conclusions, contributions of the study, its limitations, and recommendations for future research. A significant component of this chapter focuses on the entrepreneurial capacity to respond and adapt to crises. Its purpose is to conclude the research with a discussion of the general findings derived from both theoretical analyses and processed empirical data, while ensuring that relevant answers to the research questions have been identified. The chapter also presents, from both theoretical and practical perspectives, several implications of the research, as well as information regarding the limitations encountered throughout the study, offering suggestions for future researchers addressing this topic.

Although the COVID-19 pandemic has ended, it continues to raise numerous questions regarding the survival of economic entities. This research focuses on identifying the factors that influenced the evolution of economic entities during the pandemic and on highlighting both the positive and negative impacts on businesses, as well as the ways in which entrepreneurs acted and reacted to overcome adverse effects. In other words, the study investigates the influence of COVID-19 on economic entities in our country, their resilience, and the measures implemented to cope with the challenges generated by the pandemic.

The theoretical and empirical analyses presented, centered on the effects of the COVID-19 crisis on economic entities and the risks generated by the pandemic for their development prospects, allow for the outline of a general picture of responses to the pandemic crisis, particularly in the case of Romania. The COVID-19 pandemic has often been compared to the major conflicts of the last century, not only in terms of the number of lives lost, but also because it generated shifts in the political and economic equilibria to which we had become accustomed. Therefore, it is essential to understand the determinants of such outcomes, especially given that contemporary crises carry the risk of becoming systemic.

We consider that there are at least three decisive factors in resilience to the crises shaping this century: (1) the capacity to utilize data generated by modern technologies (including artificial intelligence) at low cost and in large volumes; (2) the flexibility of production systems and internationalization; and (3) the reduction of individualism through collective or community-based responses.

Regarding economic entities, the pandemic also caused significant disruption: supply chains were disrupted, businesses were forced to close, lockdowns were imposed, and so on. The pandemic was devastating for many economic entities; however, for others it created new opportunities, including the acceleration of digitalization.

A significant presence of resilient economic entities can be identified, characterised by dynamism and openness to markets, which achieved better financial results and stronger development prospects than entities focused strictly on the domestic market. Furthermore, economic entities that had previously encouraged performance responded more effectively to the crisis, being motivated to maintain their competitive position and sustain growth. These entities adopted dynamic strategies and business models driven by innovation, process optimisation, internationalisation, and digitalisation.

COVID-19 did not initiate the technological revolution, but it undoubtedly accelerated it more than any other recent event. The process of digital transformation gained unprecedented momentum, reshaping the world of work and society through flexible and/or remote work, e-commerce platforms, and the automation of production entities.

CONCLUSIONS, PERSONAL CONTRIBUTIONS AND RESEARCH LIMITATIONS

General Conclusions. Answers to the Research Questions

The main objectives of the conducted research were as follows:

- O1: Investigating the specialized literature on crises and their management;
- O2: Analyzing the context and evolution of the COVID-19 crisis;
- O3: Examining the financial and economic impact of COVID-19 on economic entities;
- O4: Analyzing the functioning of economic entities in Romania during the COVID-19 pandemic through the lens of financial-accounting indicators;
- O5: Studying the digital transformation of businesses as a resilience strategy of economic entities in response to the COVID-19 pandemic.

To achieve the established objectives, five research questions were developed and will be further elaborated.

Q1: What are the main approaches to crisis situations—specifically the COVID-19 crisis—and to their management strategies in recent specialized literature?

The latest global public health crisis was caused by COVID-19, the coronavirus, or the SARS-CoV-2 virus. It can be considered a “black swan” event, as it was unpredictable but had a significant impact (Winston, 2020). Due to the particular characteristics of this situation, the initial governmental and/or collective response may have been inadequate, which led to an increase in the number of infections and deaths at the beginning of the pandemic, a context that required countries to enter lockdown.

Even so, given the rare nature of the pandemic, it can be approached as an opportunity to understand the mechanisms and responses of economic entities, which may be much better prepared to face similar situations in the future. It represents an opportunity to learn from best practices and to understand the mistakes made by economic entities both at the beginning and throughout the crisis. The crisis generated by the spread of the coronavirus (the COVID-19 pandemic) represents a distinctive type of event that has produced considerable economic and social repercussions.

The analysis of the specialized literature highlights the existence of a positive impact of the COVID-19 pandemic on certain categories of economic entities. These include healthcare service providers (as the crisis generated severe health-related issues) and e-commerce platforms (as lockdowns facilitated online shopping).

However, the vast majority of economic entities were negatively affected by the pandemic, being forced to cope with a financial crisis, shortages of human resources, the closure/bankruptcy of certain activities or operations, as well as a drastic decline in the number of customers.

Researchers in the field have examined ways to address the crisis, focusing in this regard on crisis management and resilience theory, which explore business models and survival strategies for economic entities affected by negative shocks such as the COVID-19 pandemic.

Q2: How did the COVID-19 pandemic manifest, and what are the similarities with previous crises?

Despite the universal nature of these global crises, their impact has varied considerably across economies of different sizes. For example, during the 2008 global financial crisis, large economies such as the United States and China benefited from vast domestic markets, substantial fiscal space, and monetary autonomy, enabling them to implement strong countercyclical policies and thus mitigate external shocks. In contrast, small and open economies, which rely heavily on foreign capital and international trade, experienced more intense capital outflows and exchange rate volatility, leading to significant delays in recovery.

The COVID-19 crisis was a global, sudden, unpredictable event, unforeseen by many economic entities, with heterogeneous outcomes (Bartik et al., 2020). In many respects, these outcomes depended on the ability of economic entities to cope and respond strategically, transforming crisis-induced changes into opportunities rather than threats (Kraus et al., 2020). It is evident that, to reap benefits, action is required (Davidsson et al., 2020, p. 314).
Q3: What are the positive and negative consequences generated by the COVID-19 pandemic on economic entities?

The COVID-19 crisis represented a unique type of crisis in that it simultaneously shocked economic entities through multiple channels: a supply shock (reduction in labor supply as employees stayed at home, unavailability of production factors, disruption of supply chains, etc.); a demand shock (decline in consumer demand, precautionary savings, investor caution); uncertainty (the inability to rely on future revenue streams to justify replacing employees and/or equipment, etc.); and the unavailability or insufficiency of financing. All these factors interacted, generating a downward spiral in the activity of economic entities.

Thus, COVID-19 negatively affected the majority of economic entities, with many industries being unable to operate (Kreiner and Ram, 2021). The tourism industry, for example, was far more severely affected than others. Numerous trips were canceled, leading to economic difficulties worldwide, with tourism being more exposed to risks compared to other industries. This was largely the result of public health policies aimed at minimizing health risks, which caused a drastic decline in tourism activity.

On the other hand, the COVID-19 pandemic contributed to the survival and/or development of other industries (Bertoni, 2022). This primarily refers to e-commerce, namely online shopping, which recorded positive results and generated successful businesses (e.g., Amazon, Target, and Wal-Mart). While many economic entities struggled

to survive, industries such as agriculture, private medical services, and e-commerce were those that ensured a relative economic optimum during the crisis (Hadi and Supardi, 2020).

On the other hand, the coronavirus generated an economic crisis. Consequently, numerous economic entities and various types of businesses faced negative effects. These materialized in a profound impact on consumer purchasing behavior, both financially and psychologically, both being important and mutually reinforcing factors (Mogaji, 2020).

Financial difficulties during the pandemic affected production, which led to a significant reduction in the supply of services. The decrease in demand and the disruption of supply flows resulted in atypical fluctuations in unemployment. The limited financial resources of economic entities had various direct consequences, such as reduced investment capacity, insufficient growth, inadequate development, and the restriction of survival opportunities.

Q4: How did economic entities in Romania operate during the COVID-19 pandemic?

In Romania, the impact of the COVID-19 pandemic on the dynamics of the national economy is highlighted, for a range of indicators, by sectoral-level assessments (SQS sector – companies). The impact on industrial production was particularly felt in branches characterized by a significant share of exports.

As a result of the measures adopted in response to COVID-19, all surveyed economic entities were forced to face significant challenges related to cash flow, reduced demand and supply, and disruptions in value chains.

During the pandemic, only 6.44% of the 357 surveyed economic entities operated as before the pandemic, 67.23% functioned with reduced staff and/or reduced or remote working hours, while 26.33% temporarily suspended their activities.

Nearly a quarter (24.37%) of the surveyed economic entities faced challenges caused by decreased demand and sales, while 22.13% reported revenue losses and 27.45% encountered liquidity problems.

If the COVID-19 pandemic had continued, 57.98% of the surveyed economic entities would not have been able to pay employee wages for more than three months. Moreover, more than half of these entities (31%) would have been able to cover salaries for only one month or less.

More than half of the economic entities (40.06%) anticipated that they could operate for a maximum of three months if the situation generated by the COVID-19 pandemic had persisted. Over a quarter (36.13%) did not know whether they would have remained operational, reflecting the high level of uncertainty prevalent among economic entities. Only

23.81% of the entities indicated that they could have continued operating for more than three months.

Reduced demand and/or sales (24.37%) and liquidity problems (27.45%) were reported as the main obstacles to continuing operations for the analyzed economic entities. More than one-third of the surveyed economic entities (38.66%) were at least confident that they would withstand the crisis and resume profitable activity after its conclusion, while 29.41% were uncertain about their resilience and economic stability. However, only 25% of the surveyed entities reported that they had developed crisis or business continuity plans in response to the situation.

Only 15.41% of the surveyed economic entities used web platforms, of which 29.1% were entities with more than 100 employees. Furthermore, 42% of the analysed economic entities did not use e-commerce or online platforms during the pandemic.

The economic entities that responded to the questionnaire adopted measures to ensure business continuity in only 30% of cases. Among those that implemented such measures, the largest shares were represented by entities that resorted to renegotiating payment terms (27%) and negotiating with creditors (25%). Smaller shares were attributed to the adoption of new business models (17%), the introduction of e-commerce (16%), and the launch of new products (15%).

A proportion of 78.15% of the surveyed economic entities distributed protective equipment, namely hand sanitizers, masks, and gloves for employees, while 75.63% provided COVID-19 tests. Approximately 16% of the entities did not take any measures, 54.39% of these being entities with a small number of employees (1–5 employees).

Economic entities considered that, in order to more easily overcome the crisis generated by the COVID-19 pandemic, the most appropriate support would have been direct financial assistance (97.76%) and wage subsidies (87.96%).

A relatively high proportion of the surveyed economic entities also expressed a preference for policies aimed at reducing production and operating costs (55.18%), easier access to credit (53.22%), supply chain coordination policies (47.06%), and preferential fiscal policies (40.62%). Other important measures proposed by respondents include technical assistance for e-commerce implementation (32.21%), followed by social security policies to support employment (29.41%).

Q5: What was the role of financial-accounting indicators in the resilience of economic entities in Romania to the COVID-19 pandemic?

Thus, the order of influence of the independent variables (financial-accounting indicators) on the resilience indicator is as follows:

- (1) activity indicators – negative influence;
- (2) risk/liquidity and performance indicators – positive influence.

The performance of the economic entity and its resilience influence each other, without a doubt. To achieve a high level of resilience, economic entities must efficiently manage their resources and increase productive investment, thereby ensuring the sustainable development of production activity.

Based on the conducted research, we observed a positive relationship between the integration of resilience measures and data on the performance of economic entities. This relationship is reflected in the adoption of ethical behaviours and appropriate performance levels, as evidenced by efficiency, profitability, and profit indicators.

Theoretical Contributions and Practical Implications

We consider the present research particularly important for both entrepreneurs and managers of economic entities, as it focuses on the highly recent topic of the impact of the COVID-19 pandemic on the economy, specifically on financial-accounting indicators characterising the financial and operational performance of economic entities.

The main contributions to the development of knowledge in the addressed field can be summarised as follows:

(1) An analysis of the specialised literature and the epistemological positioning of the research was conducted in the context of crises affecting the activity of economic entities. The relevant studies were examined in depth to provide an overall perspective on the field and identify applied and/or applicable trends. For this purpose, over 200 bibliographic sources were consulted.

(2) A scientific mapping of the addressed issue was carried out, as the easing of pandemic-related pressure led to increased interest among researchers in identifying the causes that transformed the health crisis into an economic crisis. Their concerns also focused on resilience strategies, crisis management, the positive and negative effects of the pandemic on economic entities, and the impact of the crisis on the evolution of financial accounting indicators.

(3) The original contribution regarding the theoretical approach to the research topic also derives from the filtering and selection of the results of the analysed studies, as well as from the flexible application of the knowledge thus acquired.

(4) The factors that influenced the survival of economic entities in Romania, Alba County, during the COVID-19 pandemic were investigated. Survival in a humanitarian disaster such as the COVID-19 pandemic represents a major challenge for economic entities across all industries. Many of these entities managed to survive the pandemic's effects by implementing new business models that generated additional value amid a hostile environment and by strategically addressing crises through business model adaptation.

(5) An empirical investigation was conducted on how entrepreneurial economic entities in Alba County developed resilience during the COVID-19 crisis. To explore this complex process, data collected through a questionnaire were used. By relying on respondents' perspectives, it was possible to identify, among other aspects, the specific challenges faced by economic entities during the COVID-19 crisis, how they responded to these challenges, what they learned during the pandemic, and how they perceive their future.

As a result of the measures adopted in response to COVID-19, all surveyed economic entities faced significant challenges related to cash flow, reduced demand and supply, and disruptions to value chains.

During the pandemic, only 6.44% of the 357 surveyed economic entities operated as they had before, 67.23% operated with reduced staff and/or reduced or remote working hours, and 26.33% temporarily suspended their activities.

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More than half of the economic entities (40.06%) anticipated they could operate for a maximum of 3 months if the situation caused by the COVID-19 pandemic had persisted. Over a quarter (36.13%) were uncertain whether they would have remained operational, reflecting the high level of uncertainty among economic entities. Only 23.81% indicated that they could have continued operating for more than three months.

Reduced demand and/or sales (24.37%) and liquidity problems (27.45%) were reported as the main obstacles to continuing operations for the analysed economic entities.

More than one-third of the surveyed economic entities (38.66%) were at least confident that they would withstand the crisis and resume profitable operations after its conclusion. In comparison, 29.41% were uncertain about their resilience and economic stability. However, only 25% of the surveyed entities reported having developed crisis or business continuity plans in response to the situation.

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(6) An econometric model was developed based on the main indicators characterising the dynamics of operational activity, as well as on risk indicators. The latter can threaten the continuity of operations at any time due to inefficient resource management, a situation that may disrupt the entire economic and financial balance of the entity.

The sample consists of 20 economic entities operating in various sectors of activity, the common element that unites them being the location of their registered headquarters, namely in Alba County. To analyse the impact of the COVID-19 crisis, we measured operational results, the dynamics of revenues and expenses (using performance indicators), cash flow, and related aspects. It should be noted that the indicators developed also serve as a managerial tool for measuring and evaluating how economic entities utilise available resources.

As previously mentioned, we used economic and financial data from 20 entities operating in different fields within Alba County to develop the econometric model. These data were collected from annual reports, particularly the balance sheet, profit and loss account, statement of changes in equity, and cash flow statement. These variables were constructed to quantify, in a dynamic manner, the financial evolution of economic entities, from which average intervals can be determined.

Research Limitations

Although this research intended to maintain integrity throughout the entire process and to provide high-quality information, it is necessary to acknowledge certain limitations, including those related to the methodology.

First, no articles or other documents in the specialised literature were identified that address the impact of the COVID-19 pandemic on financial accounting indicators. Additionally, no theoretical connection with accounting was found.

Another limitation was the time-consuming nature of the questionnaires distributed to economic entities, as it was sometimes necessary to explain the questions to obtain accurate responses. Some economic entities refused to answer our questions, while others, due to internal policy constraints, were unable to respond for confidentiality reasons. These entities held sensitive information that could not be shared.

Finally, due to the interpretive research paradigm, the results cannot be fully objective. Personal nuances and the author's subjective interpretation could not be eliminated during the analysis of the studied bibliography, interviews, and models. Moreover, the influence of personal experiences on the context of this academic thesis cannot be excluded. Nevertheless, we consider that the chosen research method is appropriate and suitable for this study.

SELECTIVE BIBLIOGRAPHY

- Barro, R.J., Urúa, J. F., & Weng, J. (2020). The coronavirus and the great influenza pandemic: Lessons from the “Spanish flu” for the coronavirus’s potential effects on mortality and economic activity, <https://www.nber.org/papers/w26866>
- Bartik, A.W., Bertrand, M., Cullen, Z., Glaeser, E.L., Luca, M., Stanton, C. (2020). The impact of COVID-19 on small business outcomes and expectations. *Proc. Natl. Acad. Sci. Unit. States Am.* 117, pp. 17656–17666. <https://doi.org/10.1073/pnas.2006991117>
- Batjargal, B., Jack, S., Mickiewicz, T., Stam, E., Stam, W., Wennberg, K. (2023). Crises, COVID-19, and entrepreneurship. *Entrep. Theory Pract.* 47 (3), pp. 651–661. <https://doi.org/10.1177/10422587221145676>
- Bertoni, M., et.al. (2022). Remote Working and Mental Health During the First Wave of the COVID-19 Pandemic. <http://dx.doi.org/10.2139/ssrn.4111999>
- BJIT (2020). Challenges of SMEs in this COVID-19 Global Pandemic. [online] <https://bjit.medium.com/challenges-of-smes-in-this-covid-19-global-pandemic-9d5ad80521ac>
- Borowiecki, K.J. (2014). Artistic creativity and extreme events: the heterogeneous impact of war on composers’ production. *Poetics* 47, pp. 83–105. <https://doi.org/10.1016/j.poetic.2014.10.005>
- Bouncken, R.B., Fredrich, V., Kraus, S. (2020). Configurations of firm-level value capture in coopetition. *Long Range Plan.* 53 (1). <https://doi.org/10.1016/j.lrp.2019.02.002>
- Davidsson, P. (2015). Entrepreneurial opportunities and the entrepreneurship nexus: a re-conceptualization. *J. Bus. Ventur.* 30 (5), pp. 674–695. <https://doi.org/10.1016/j.jbusvent.2015.01.002>
- Davidsson, P., Recker, J., von Briel, F. (2020). External enablement of new venture creation: a framework. *Acad. Manag. Perspect.* 34, pp. 311–332. <https://doi.org/10.5465/amp.2017.0163>
- Hadi, S., Supardi, S. (2020). Revitalization strategy for small and medium enterprises after Coronavirus disease pandemic (covid-19). *Journal of Xi an University of Architecture & Technology* 12(4): 4068-4076. <http://dx.doi.org/10.37896/JXAT12.04/1149>

- Klyver, K., Steffensb, P., Nielsena, S.L. (2023). Crisis response efficacy: Perceived ability to respond entrepreneurially to crises. *Journal of Business Venturing Insights*. 20. <https://doi.org/10.1016/j.jbvi.2023.e00429>
- Kraus, S., Clauss, T., Breier, M., Gast, J., Zardini, A., Tiberius, V. (2020). The economics of COVID-19: initial empirical evidence on how family firms in five European countries cope with the corona crisis. *International Journal of Entrepreneurial Behavior & Research* 26, pp.1067–1092. <https://doi.org/10.1108/IJEBR-04-2020-0214>
- Kreiner, N. C., & Ram, Y. (2021). National tourism strategies during the Covid-19 pandemic. *Annals of tourism research*, 89(103076). <https://doi.org/10.1016/j.annals.2020.103076>
- Lenhard, F., et.al. (2025). Remote mental healthcare before and during the COVID-19 Pandemic: A retrospective observational study using routine outcome measurements, *Journal of Psychiatric Research*, 189, pp. 26-32. <https://doi.org/10.1016/j.jpsychires.2025.05.074>
- Miklian, J., Hoelscher, K. (2022). SMEs and exogenous shocks: a conceptual literature review and forward research agenda. *Int. Small Bus. J.* 40 (2), pp. 178–204. <https://doi.org/10.1177/02662426211050796>
- Mogaji, E. (2020). Financial Vulnerability During a Pandemic: Insights for Coronavirus Disease (COVID-19). *Research Agenda Working Papers*. Vol. 2020, No. 5, pp. 57-63. <http://dx.doi.org/10.2139/ssrn.3564702>
- Naseri R.N.N., et. al. (2021). Issues and Challenges of Online Shoppingactivities on the Impact of Corona Pandemic: A Study on Malaysia Retail Industry, *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 12(10), pp. 7682–7686. <https://doi.org/10.17762/turcomat.v12i10.5680>
- Newman, A., Obschonka, M., Block, J. (2022). Small businesses and entrepreneurship in times of crises: the renaissance of entrepreneur-focused micro perspectives. *Int. Small Bus. J.* 40 (2), pp.119–129. <https://doi.org/10.1177/02662426211063390>
- Nguyen, T.B.C., Nguyen, Q.N. (2024). Strategic resilience: Exploring diversification's impact on R&D investment during economic crises. <https://doi.org/10.1016/j.heliyon.2024.e40582>
- Pfefferbaum, B., North, C.S. (2020). Mental health and the covid-19 pandemic, *N. Engl. J. Med.*, 383(6), pp. 510-512. <https://doi.org/10.1056/NEJMp2008017>

- Taherdoost, H.(2022). What are Different Research Approaches? Comprehensive Review of Qualitative, Quantitative, and Mixed Method Research, Their Applications, Types, and Limitations. *Journal of Management Science & Engineering Research*, 5 (1), pp.53-63. <https://doi.org/10.30564/jmsr.v5i1.4538.hal-03741840>
- Tooze, A. (2022). Welcome to the World of the Polycrisis. *Financial Times*, Oct 29. Withdrawn Dec 19 2022: <https://www.ft.com/content/498398e7-11b1-494b-9cd3-6d669dc3de33>
- Winston, A. (2020). ‘Is the COVID-19 Outbreak a Black Swan or the New Normal?’MIT Sloan Management Review. <https://sloanreview.mit.edu/article/the-top-mit-smr-articles-of-2020/>
- Zhou, C., Huang, Y., Liu, R. (2025). Antecedent configurations of organizational resilience in a major crisis: A strategic fit perspective, *Journal of Business Research*, Volume 200, 115646, <https://doi.org/10.1016/j.jbusres.2025.115646>