

**UNIVERSITY OF MEDICINE, PHARMACY, SCIENCE
AND TECHNOLOGY**

**"GEORGE EMIL PALADE" OF TÂRGU MUREŞ
DOCTORAL SCHOOL OF LETTERS, HUMANITIES
AND APPLIED SCIENCES**

DOCTORAL THESIS SUMMARY

**RESEARCH AND CONTRIBUTIONS ON
SUPPLY CHAINS AND THEIR ASSOCIATED RISKS**

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The notion of risk is ubiquitous in all walks of life and risk management is something we all need to do, whether we are managers of a major company or simply doing something mundane. In the business world, we hear of financial risk, commercial risk, information security risk, workplace risk, health and environmental risk, etc., all based on the likelihood of an uncertain event occurring and impacting the business.

The supply chain encompasses the production and purchase of raw materials, the distribution of finished products, bringing together the whole cycle from the procurement of raw materials to the delivery of finished products to customers.

Supply chain risks are everywhere. Prices, financial crises, cataclysms. Identifying them is very important because changes at one stage of the supply chain can have an impact in any part of the chain.

Taking into account the issues outlined above, through my PhD thesis topic, I set out to answer the question of how companies should deal with these categories of risk in order to build a more efficient and sustainable supply chain.

Developing an integrated supply chain requires managing the flow of materials from three perspectives: strategic, tactical and operational, with resources at each level coordinated and harmonised as a whole.

The supply chain is an important area for business. The supply chain includes manufacturers, suppliers, transporters, warehouses, retailers of the same customers.

In a supply chain, risks can be found at almost every stage. From product development to market launch, from procurement to production, from distribution to after-sales service and end-of-life product management, supply chains are vulnerable to risk. The challenge for managers in today's business environment is to manage and mitigate these risks by creating more resilient supply chains.

In this context, I believe that the chosen topic is not only topical, but also extremely important for business, highlighting how supply chain managers relate to risk in order to minimise the negative effects on their companies.

The paper is structured in eight chapters, starting with the introductory aspects (presentation of the topicality and importance of the chosen topic, definition of the objectives, research methodology), continuing with the theoretical part, and then moving on to case studies and personal contributions.

In the first chapter I have tried to place the chosen topic in the scientific field, considering it important to mention the rationality of the choice of the topic and its topicality, as well as the objectives on which the whole research process and the methodology itself were based.

Chapters two, three and four deal from a theoretical point of view with the concepts of logistics, supply chain, risk and risk management methods in supply chains. We begin by defining the concept of logistics and its purpose, and then review the evolution of the concept over time. As far as supply chains are concerned, I thought it relevant to clarify what this concept entails and what the underlying elements are, as well as some aspects of supply chain management. Starting from the title of the thesis, I further explored the meaning of the term risk in the literature, both in general terms and as applied to supply chains, and then identified the main categories of risks that companies may face.

And because it is not enough just to have an idea of the main sources of risk that can occur in an activity, we have devoted chapter four to dealing with risk management, with the elements mentioned highlighting risk assessment and treatment strategies and the stages of the risk management process.

Chapter five is considered an area that makes the transition from the theoretical part of this thesis to the practical one, talking here about the design of a survey-based research, touching on topics such as sampling, types of questions used in a questionnaire, data analysis using SPSS statistical processing software.

In chapters six and seven we conducted two research studies, as follows:

- the first is related to supply chains and their associated risks among Romanian firms, where I aimed to identify among others the importance of logistics within the respondent firms, the extent to which firms face risks on the three areas of supply chains (production, supply and distribution), the economic impact of risks on firms' activity and the perception related to a risk management/assessment/treatment system (if there is one, what kind of system, what are the sources of risk identification).
- the second research is closely related to the challenges mankind has gone through in recent years, namely the COVID-19 pandemic and how it has influenced the logistics sphere. I have tried to first present the effects that the pandemic has had on companies in various sectors, and then focus on the impact on supply chains. I also conducted an interview with representatives of several companies in Transylvania to see if Romanian companies have also faced the same problems encountered in other countries and how they managed to overcome the crisis period.

The last chapter deals with the novelty of the work and the proprietary methods found to optimise supply chains used in the Romanian business environment. More specifically, we talked about the ways to optimize chains, mathematical models that can be used for this purpose and an effective action plan for companies.

For this study we have reviewed 203 bibliographical references, the research results have been valorized through 4 articles published as first author, one ISI Proceedings article and three BDI indexed articles.