**BUCHAREST UNIVERSITY OF ECONOMIC STUDIES**

Doctoral School of International Business and Economics

A blue logo with wings

Description automatically generated

**SUMMARY OF DOCTORAL THESIS**

Presented and publicly defended by author:

**CONSUELA-ELENA M.M. POPESCU**

Driving factors of business performance in the European Union manufacturing sector: the effect of technological level and foreign direct investment

Doctoral supervisor: Prof. Univ. Dr. Alexandra Horobeț

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  | București, 2024 |

**DRIVING FACTORS OF BUSINESS PERFORMANCE IN THE EUROPEAN UNION MANUFACTURING SECTOR: THE EFFECT OF TECHNOLOGICAL LEVEL AND FOREIGN DIRECT INVESTMENTS**

**CONTENTS**

INTRODUCTION……………………………………………………………………………………………………………….1

1.1. A HISTORICAL OVERVIEW OF MANUFACTURING………………………………………………………..10

1.1.1 The decline in manufacturing and the rise in services……………………………………………………15

1.1.2 The Fourth Industrial Revolution………………………………………………………………………………..20

1.2 SMART MANUFACTURING AND THE INDUSTRY 5.0……………………………………………………..24

1.3 MANUFACTURING IN TIMES OF COVID-19 PANDEMIC AND WAR IN UKRAINE…………………26

1.4 SUSTAINABILITY IN MANUFACTURING BUSINESS PERFORMANCE………………………………..33

1.4.1 Introduction…………………………………………………………………………………………………….........33

1.4.2 An overview of ESG ratings and providers…………………………………………………………………….36

1.4.3 A general view of ESG ratings and corporate performance……………………………………………..39

1.4.4 ESG ratings and corporate performance in manufacturing……………………………………………..48

1.4.5 Conclusions……………………………………………………………………………………………………………57

1.5 CONCLUDING REMARKS………………………………………………………………………………………….58

2. MANUFACTURING IN THE EUROPEAN UNION………………………………………………………………….60

2.1 HIGH-TECH VERSUS LOW-TECH MANUFACTURING…………………………………………………….70

2.2 THE PERFORMANCE OF LOCAL VERSUS FOREIGN-OWNED MANUFACTURING COMPANIES…………………………………………………………………………………………………………………..75

2.2.1 Number of enterprises……………………………………………………………………………………………..77

2.2.2 Turnover…………………………………………………………………………………………………………………84

2.2.3 Value added at factor cost………………………………………………………………………………………..92

2.3 CONCLUDING REMARKS………………………………………………………………………………………..100

3. BUSINESS PERFORMANCE IN MANUFACTURING……………………………………………………………102

3.1 PROFITABILITY IN MANUFACTURING INDUSTRY VERSUS PROFITABILITY IN OTHER SECTORS……………………………………………………………………………………………………………………..103

3.1.1 Profitability in manufacturing…………………………………………………………………………………..103

3.1.2 Profitability in services……………………………………………………………………………………………107

3.2 PERFORMANCE PREDICTION IN THE MANUFACTURING SECTOR – EFFECTS OF OWNERSHIP, TECHNOLOGICAL INTENSITY AND SIZE…………………………………………………………115

3.2.1 Introduction………………………………………………………………………………………………………….115

3.2.2 Research background…………………………………………………………………………………………….118

3.2.3 Data and methodology……………………………………………………………………………………………121

3.2.4 Results…………………………………………………………………………………………………………………129

3.2.5 Conclusions………………………………………………………………………………………………………….136

3.3 FOREIGN DIRECT INVESTMENT AND PROFITABILITY – HIGH-TECH VS LOW-TECH MANUFACTURING INDUSTRIES……………………………………………………………………………………….139

3.3.1 Introduction………………………………………………………………………………………………………….139

3.3.2 Research background…………………………………………………………………………………………….140

3.3.3 Data and methodology……………………………………………………………………………………………142

3.3.4 Results…………………………………………………………………………………………………………………149

3.3.5 Conclusions………………………………………………………………………………………………………….154

3.4 CONCLUDING REMARKS………………………………………………………………………………………..155

4. MANUFACTURING BUSINESSES PERFORMANCE DURING CRISES……………………………………157

4.1 DRIVERS OF MANUFACTURING INDUSTRIES PERFORMANCE DURING PERIODS OF TURMOIL………………………………………………………………………………………………………………………158

4.1.1 Introduction………………………………………………………………………………………………………….158

4.1.2 Research background…………………………………………………………………………………………….160

4.1.3 Data and methodology……………………………………………………………………………………………164

4.1.4 Results…………………………………………………………………………………………………………………167

4.1.5 Conclusions………………………………………………………………………………………………………….175

4.2 DIFFERENCES IN MANUFACTURING PERFORMANCE DURING PERIODS OF TURMOIL………………………………………………………………………………………………………………………176

4.2.1 Introduction………………………………………………………………………………………………………….176

4.2.2 Research background…………………………………………………………………………………………….180

4.2.3 Data and methodology……………………………………………………………………………………………183

4.2.4 Results…………………………………………………………………………………………………………………188

4.2.5 Conclusions………………………………………………………………………………………………………….195

4.3 CONCLUDING REMARKS………………………………………………………………………………………..196

THESIS CONCLUSIONS………………………………………………………………………………………………….197

REFERENCES………………………………………………………………………………………………………………..203

LIST OF FIGURES…………………………………………………………………………………………………………...239

LIST OF TABLES……………………………………………………………………………………………………………..243

**Summary of the doctoral thesis**

Undoubtedly, manufacturing, as a crucial catalyst for economic well-being, has elevated living standards on a global scale. The susceptibility of the worldwide manufacturing industry has been brought to attention through occurrences like the Global Financial Crisis of 2008–2011, the COVID-19 pandemic as well as the conflicts in Ukraine and Israel. The importance of modeling company performance in the manufacturing sector has grown in recent years as a result of the incorporation of technology and the evolving dynamics of product characteristics, production cycle economics, and consumer demand.

The main objectives of the doctoral thesis are: (i) to provide a historical overview of manufacturing and its significance in the global economy; (ii) to examine the challenges faced by the manufacturing sector during periods of turmoil; (iii) to conduct a literature review on sustainability in manufacturing business performance; (iv) to analyze the manufacturing sector in the EU focusing on different countries, subindustries and indicators; (v) to investigate the impact of technological intensity, business ownership, location and size on business performance in the manufacturing sector and (vi) to examine business performance during periods of turmoil to extract lessons that can be applied to future crises.

This thesis demonstrates its significance by conducting a comprehensive analysis of the manufacturing sector, including its historical evolution and importance. It also examines current global events and evaluates their impact based on evaluations, outcomes, and deductions from the research conducted in the doctoral program. The significance of ESG (Environmental, Social, and Governance) activities in the shift towards an eco-friendly manufacturing sector is highlighted, with a particular focus on the function of key moderators in comprehending ESG performance. Furthermore, the empirical research given in the thesis can provide economic policymakers with vital tools to mitigate the effects of future crises and formulate customized policies to foster manufacturing and sustainability in the manufacturing sector.

Keywords: manufacturing, business performance, sustainability, foreign direct investment, technology