

BUCHAREST UNIVERSITY OF ECONOMIC STUDIES

Doctoral School of Business Administration

**FOOD SAFETY MANAGEMENT. APPLICATIONS OF THE
HACCP SYSTEM IN THE ROMANIAN MEAT
PROCESSING INDUSTRY.**

-SUMMARY-

Elena RADU

PhD Supervisor: Prof. Univ. Dr. Dorin-Vicențiu POPESCU

Bucharest, 2024

TABLE OF CONTENTS

SUMMARY	1
CONTENTS	2
INTRODUCTION	5
GENERAL CONTEXT OF THE RESEARCH TOPIC	5
SETTING RESEARCH OBJECTIVES AND HYPOTHESES	7
RESEARCH METHODOLOGY	10
NOVELTY AND RELEVANCE OF THE RESEARCH	13
PRESENTATION OF THE STRUCTURE OF THE PAPER	13
1. GLOBAL FOOD SECURITY - PRESENT AND PROSPECTS	16
1.1. INTRODUCTION TO FOOD SECURITY ISSUES	16
1.2. CHALLENGES IN THE GLOBAL SUPPLY CHAIN	21
1.3. SUSTAINABILITY AND FOOD SECURITY IN THE GLOBAL SUPPLY CHAIN 25	
2. QUALITY MANAGEMENT IN THE FOOD INDUSTRY	28
2.1. INTRODUCTION TO QUALITY MANAGEMENT IN THE FOOD INDUSTRY	28
2.2. QUALITY CONTROL IN PRODUCTION - PROCESSES AND FINAL PRODUCT	29
2.3. QUALITY CONTROL IN THE FOOD INDUSTRY	33
2.4. QUALITY ASSURANCE IN THE FOOD INDUSTRY	35
2.5. QUALITY MANAGEMENT SYSTEMS IN THE FOOD INDUSTRY	36
2.6. FOOD QUALITY MANAGEMENT	43
3. FOOD SAFETY MANAGEMENT - A MAJOR CHALLENGE FOR THE CONTEMPORARY FOOD INDUSTRY	48
3.1. INTRODUCTION TO FOOD SAFETY ISSUES.....	48
3.2. CONCEPTUAL DELIMITATIONS ON FOOD SAFETY	52
3.2.1. Food hygiene.....	52
3.2.2. Food innocuity	53
3.2.3. Food safety.....	54
3.3. FOOD SAFETY STRESSORS	55
3.3.1. Physical hazards.....	57
3.3.2. Chemical hazards	58
3.3.2. Biological hazards.....	59

3.4.	GOOD PRACTICES IN FOOD MANUFACTURING PROCESSES	60
3.5.	SAFETY OF MEAT PRODUCTS	61
4.	HACCP SYSTEM - A MAJOR VECTOR FOR ACHIEVING FOOD SAFETY.....	63
4.1.	INTRODUCTION TO THE HACCP SYSTEM	63
4.2.	COMPLEXITY OF THE HACCP SYSTEM.....	64
4.2.1.	Origin and evolution of the modern food safety management system: HACCP	64
4.2.2.	Developing a HACCP plan	66
4.2.3.	Principles of HACCP	68
4.2.4.	Prerequisites for HACCP implementation	71
4.2.5.	Implementing and maintaining the HACCP plan.....	75
4.2.6.	Benefits of HACCP implementation	78
4.2.7.	Barriers to the effective use of HACCP	79
4.3.	THE RELATIONSHIP BETWEEN HACCP AND QUALITY MANAGEMENT SYSTEMS	82
4.3.1.	The future of HACCP	87
4.4.	CONCLUSIONS PART I	89
5.	GLOBAL TRENDS AND RESEARCH DIRECTIONS ON HACCP AND MODERN QUALITY MANAGEMENT SYSTEMS IN THE FOOD INDUSTRY	93
5.1.	THE IMPORTANCE AND RELEVANCE OF THE BIBLIOMETRIC STUDY IN THE CONTEXT OF THE THEMATIC AREA	93
5.2.	RESEARCH METHODOLOGY	102
5.3.	RESULTS OF BIBLIOMETRIC RESEARCH.....	108
5.4.	LIMITATIONS AND FUTURE RESEARCH DIRECTIONS.....	131
5.5.	CONCLUSIONS	134
6.	MEAT MARKET INTROSPECTION AT GLOBAL, EUROPEAN AND NATIONAL LEVEL	135
6.1.	INTRODUCTION TO THE MEAT MARKET	135
6.2.	RESEARCH METHODOLOGY	136
6.3.	GLOBAL TRENDS.....	136
6.4.	EUROPEAN TRENDS	146
6.5.	PARTICULARITIES OF MEAT SUPPLY ON THE ROMANIAN MARKET	152
6.5.1.	Analysis of the meat processing industry at national level	152
6.5.2.	Main meat producers at national level	156
6.5.3.	Conclusions	167
6.6.	FUTURE OF THE MEAT INDUSTRY	167
6.7.	MEAT CONSUMER BEHAVIOR	169

7. A DEMATEL INVESTIGATION OF THE MAIN BARRIERS TO THE ADOPTION OF HACCP CERTIFICATION IN THE ROMANIAN MEAT INDUSTRY
Error! Bookmark not defined.

7.1. INTRODUCTION TO THE DEMATEL RESEARCH AND HACCP CERTIFICATION IN THE MEAT INDUSTRY	174
7.2. IDENTIFICATION OF BARRIERS TO THE ADOPTION OF HACCP CERTIFICATION IN THE FOOD INDUSTRY	177
7.3. DEMATEL RESEARCH METHODOLOGY	182
7.4. DEMATEL RESEARCH RESULTS	186
7.4.1. Results obtained for the demographic questions	186
7.4.2. Results obtained from the DEMATEL questions	192
7.5. CONCLUSIONS	206
CONCLUSIONS AND PERSONAL CONTRIBUTIONS.....	207
CONCLUSIONS AND SUGGESTIONS FOR IMPROVEMENT	207
THEORETICAL AND PRACTICAL CONTRIBUTIONS	209
RESEARCH LIMITATIONS	212
FUTURE RESEARCH DIRECTIONS	213
BIBLIOGRAPHY	214
ANNEXES.....	239
LIST OF FIGURES.....	245
LIST OF TABLES	247

SUMMARY

The PhD thesis "*Food Safety Management. Applications of HACCP in the Romanian meat processing industry*" investigates and provides solutions to improve food safety management in the Romanian meat industry, with a focus on the application of HACCP. The seven-chapter thesis presents an interdisciplinary and comprehensive approach to the topic, integrating theoretical perspectives and practical aspects of HACCP application in this specific industry. **Chapter 1** examines the issue of food safety, highlighting indicators of food availability, access and use. **Chapter 2** presents quality management in the food industry. **Chapter 3** addresses food safety management, the major challenges of the contemporary food industry and the drivers of food safety. **Chapter 4** reviews the HACCP system, presenting the origin, principles, benefits and barriers to effective implementation. **Chapter 5** presents the bibliometric analysis of HACCP and modern quality management systems. **Chapter 6** provides an introspection of the meat market at global, European and national level, highlighting the particularities of meat supply in Romania and meat consumer behaviour. **Chapter 7** includes DEMATEL's research on the main barriers to HACCP adoption in the Romanian meat industry.

Keywords: quality management, food safety, meat industry, HACCP, DEMATEL, meat market, meat consumer behaviour.