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## PH.D. THESIS

# **MANAGERIAL CONTRIBUTIONS TO ENSURING SUSTAINABLE BUSINESSES. THE CASE OF BEEKEEPING INDUSTRY**

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Sustainability has increasingly become an area of interest for researchers and practitioners in recent decades. Various initiatives have been considered or implemented with the aim of facilitating economic and social development while reducing or even eradicating environmental damage. However, the variety of initiatives has led to shortcomings in the existence of a 'modus operandi' according to which sustainable development can be ensured, including at firm level.

The first references to the concept of sustainability date back to the 17<sup>th</sup> century, but since then, awareness of the importance of sustainability and sustainable development has grown considerably. In 1987, the World Commission on Environment and Development published the Brundtland Report, which defined sustainable development, an ethical concept, as a "development that meets the needs of the present generation without compromising the needs of future generations" (WCED, 1987). This approach has developed into what is known today as the triple bottom line, which includes the three dimensions of sustainability: social, environmental and economic.

Operationalising the concept of sustainability in general and in business in particular is still crystallising. However, there is consensus among theorists and practitioners that sustainable development at macro level is unlikely without the sustainable development of organisations.

The traditional economic paradigm in business is narrowly focused on issues such as efficient processes, minimal costs or strong market positioning, which are expected to deliver results in the form of profit, market share or dividends. Sustainability in business goes beyond the traditional economic paradigm and incorporates social and environmental considerations.

Sustainability has grown to become a popular concept, both in general and in the agribusiness sector, based on the "people, planet, profit" trilogy. Agriculture plays a central role in sustainable development as it provides the necessary human nutrition, is the foundation of the global economy and constitutes the link between society and nature. The international community has recognised the importance of pollinators and their role in maintaining diversity, with increasing attention being paid to bees as they make up the largest percentage of all pollinators. Therefore, the subject of management in the beekeeping industry is of paramount importance given the sector's implications for health, nutrition, food security, farmers' incomes and biodiversity conservation.

The sustainability of agricultural enterprises involves a number of complex parameters. This leads to the need of a complex assessment based on an aggregated framework, and to date a number of authors have contributed to the development of appropriate methodologies. However, just as one sustainability measurement tool is not applicable to all organisations, neither are sustainability measurement tools in agricultural enterprises universal and applicable to all agricultural sectors.

Thus, the aim of the research is to determine the specific dimensions of business sustainability in the beekeeping sector in Romania. Therefore, the thesis proposes the following three main directions:

A) Sustainability in business and its challenges on management. A multi-level approach

The original elements covered in this strand include: the critical synthesis of views on sustainability as a feasible option in measuring the sustainability of (beekeeping) enterprises; defining the concept of sustainability and positioning it in relation to concepts such as sustainable development in the light of different existing opinions; the multi-level approach to sustainability through the lens of global implications in general and those relating to the enterprises of the future in particular; introducing the imperative of integrating sustainability into business.

#### B) Management and its role in ensuring the sustainability of (beekeeping) businesses

This strand is concerned with addressing the sustainability of beekeeping businesses from both a theoretical and practical point of view. The originality of the approach lies in: identifying the internal determinants of the sustainability approach at firm level; mapping the firm's strategic system for ensuring sustainability (in the beekeeping business); analysing the dynamics of the beekeeping sector in Romania; identifying the need for and usefulness of a model for measuring the sustainability of beekeeping businesses, given the fact that the literature has not developed one yet that is specific to the analysed sector; justifying the need for and usefulness of a model for the sustainable beekeeping business.

#### C) Quantitative and qualitative research on sustainability management of beekeeping businesses at national level

The research aims to determine the sustainability degree of beekeeping businesses taking into account the research goal, objectives and hypotheses; subsequently, the paper incorporates the final conclusions, research limitations and future research directions. The scientific approach was carried out through quantitative research using factor analysis, and qualitative research using in-depth interviews. The research also aims to discover the factors (and their related areas) that signal the need for educating beekeeping entrepreneurs, and to develop a managerial model favourable to sustainable development in beekeeping, while identifying typologies of beekeeping enterprises in Romania.

The thesis proposes a structure organized in six chapters, the last part of the work being assigned to conclusions and personal contributions. Some of the partial results of the thesis have already been integrated in publications and their dissemination will continue after the completion of the thesis.

The research results presented in the thesis can be considered as supporting elements for improving sustainability management in the beekeeping sector. Another potential impact of the research results is to raise the awareness of beekeeping managers about the importance of sustainability. Moreover, the impact can be considered not only at the socio-economic and environmental level (through the practice of beekeeping managers), but also at the public policy level. Last but not least, the results obtained (including theoretical contributions) may have implications for future research.

**Rapid economic and social development as well as population growth in the 20<sup>th</sup> century** have led to a negative impact of business in general and to the use of technology in particular on the natural and social environment, negatively affecting the quality of life. In addition to this, there has been an **increasing consumption of resources**, which has resulted in **(difficult to reconcile) differences** between the needs of the individual and the needs of the natural environment. Thus, a new paradigm began to emerge, known as sustainable development.

**Sustainable development** was formalised and brought to world's attention by the United Nations Commission on Environment and Development Report, known as the **Brundtland Report**. According to this report, sustainable development is a development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs (WCED, 1987).

The complexity of sustainable development has often led to confusion, both in terms of conceptualisation and operationalisation, given the **multi-level approach** it requires. The sustainable development paradigm envisages **a process that contributes to sustainability** by integrating economic, social, environmental, institutional and technological aspects through social learning, and that calls for change at all levels, aiming to lead to an improved quality of life on the long term. In contrast, sustainability is the long-term overarching goal, which is achieved through the use of sustainable development strategies.

**Sustainability** has also been recognised by international organisations and national governments, which have increasingly embraced it as a goal. Today, more than 100 countries have established national sustainable development strategies and report on their progress. More and more organisations are also developing and publishing (voluntary) standards on sustainability, and there is a growing demand worldwide for practical tools to support sustainability decision-making processes, especially at company level (also considering the increasing pressure from different stakeholders). However, there is no single framework - conceptual and/or instrumental - that integrates all aspects of sustainability, which poses difficulties in operationalising it at different levels and in different industries.

In recent times there have been many **efforts to create a model of sustainability**, but the results range from concepts such as corporate social responsibility and environmental standards to best conduct practices, which often have general applicability. This expansion of sustainability terms places a burden on users in general and on producers and traders in particular. In addition, implementing an integrated approach to all dimensions of sustainability (as a coherent whole) in a company's business or functional strategies remains a major challenge.

The **versatility of sustainability** has elevated it to becoming a **science**. Thus, the rationale of sustainability science is to assess and minimise the negative impacts of human activity on planetary systems at all levels so that humankind can make use of their manifestations not only in the present but also in the future. Moreover, it aims to **balance the dimensions of sustainability in a dynamic context**. A multitude of fields are involved in dealing with the science of sustainability, which is why its theoretical, methodological and practical approaches are carried out through multi-, inter- and trans-disciplinarity.

Recent decades have seen an international intensification of concerns on ensuring sustainability (while also witnessing its shift from the theoretical/academic area to the practical/operational one), and business is one of the pillars mediating its direct applicability. Thus, the role of business in ensuring sustainability has become increasingly understood in recent decades.



Efforts have focused on the links between social values and business actions to improve the quality of life in local communities and achieve long-term benefits. Today, we are witnessing a broad attempt by international organisations and others to bring business as close as possible to sustainability, either through the development of guidelines or standards, or through the development of benchmarking processes and the promotion of best practices on sustainability. As subsystems of the global system, businesses - through their management - have not remained immune to the challenges of sustainable development and sustainability and have resorted to implementing change along the sustainability trajectory. However, despite increased attention, the operationalisation of the notion of sustainability in business still remains inconsistent.

The **agricultural sector** plays a key role in a multitude of social and environmental issues such as climate change, poverty levels or providing food for the growing global population. **Exploring and understanding the agricultural sector from a managerial perspective becomes necessary** mainly because of the different characteristics of the agribusiness sector compared to other industries, but also because many businesses in the sector are small enterprises deeply rooted in their communities.

As an agricultural branch, the **beekeeping sub-sector** is distinguished by its specific features, making indispensable contributions to society and the environment by ensuring the pollination process or supplying products with nutritional and medicinal properties in the form of finished products or raw materials for various industries. However, despite a long tradition, beekeeping practice and therefore beekeeping enterprises are faced with a number of **economic and technical problems** such as variable yields or loss of bee colonies. There is therefore a need to restructure the agricultural market, especially regarding the way in which beekeeping businesses are launched and managed.

The **dynamics of the beekeeping sector** show that the traditional way of beekeeping no longer meets the medium- and long-term competitiveness requirements of a modern society and is no longer sufficient to generate sustainable development. Consequently, beekeeping entrepreneurs need to demonstrate proactive management, differentiate themselves from competitors and identify appropriate mechanisms to improve their performance in a competitive market. Despite this, sustainability tools for the beekeeping sector have been insufficiently explored.

Therefore, the **reason for choosing the research topic** is based on a current need of a sector with multiple implications - not only economic, but also social and environmental - as the business environment becomes increasingly competitive and the pressures on the finality of resources and on solving social and environmental problems are becoming more and more felt. As a result, there is a growing expectation from managers to develop greater accountability with respect internal and external stakeholders and review the way they manage their businesses. Under these circumstances, firms face the imminent challenge of adapting their strategic orientation and value proposition accordingly. Thus, strategic orientation can be seen as a prerequisite for sustainable development, as sustainable development constitutes more than an ideological construct.

For enterprises, sustainable development implies the adoption of strategies and activities that lead to meeting the current needs of the firm and its stakeholders, while protecting the human and natural capital needed by the firm in the future (IISD et al., 1992). To meet the requirements of the triple bottom line (Dyllick and Hockerts, 2002) and sustainability strategies, firms need to adapt their strategies at all strategic levels.

Consequently, the present research approach is scientifically relevant as it seeks to fill identified knowledge gaps and thus it aims to **develop a holistic model for ensuring and assessing sustainability in beekeeping enterprises**. The target audience of such a model is given by beekeeping businesses, but the approach can also provide a holistic assessment that is **relevant to government strategies and policies**. The model developed brings together the vision of multiple viewpoints from the literature as well as from international organisations (eg. FAO, through the SAFA instrument), and provides a **multidimensional view** of the concept of sustainability, built around four pillars: **Economic, Social, Environmental and Governance**. For each of these, related factors and sub-factors have been defined. Under these circumstances, the main **goal** of the paper is to determine the specific dimensions of sustainability of beekeeping businesses in Romania.

The **main objective** of the doctoral research is to generate new knowledge within the chosen topic and involves finding answers to questions such as "what is a sustainable business in the beekeeping sector?" or "what do beekeeping entrepreneurs understand by sustainability and to what extent have they thought about it in practice?".

The objectives of the paper include, first of all, a **critical analysis of the sustainability dimension of business management in the beekeeping industry** in relation to the current state of knowledge in the local and foreign literature as well as to practices in the field. Then, another objective includes the **development of a model for the evaluation and analysis of sustainability in beekeeping** by carrying out a national research-documentation activity. The paper also aims to **identify the level of application of sustainable farm management** and to highlight the means by which the sustainable development of the sector could be achieved by **increasing the awareness of beekeeping entrepreneurs on sustainable development issues**. Moreover, the research aims to **outline a profile of the business model used by Romanian beekeepers**, as well as a **current profile of the beekeeper at national level** in terms of age, income, education, membership of a beekeeping association, farm size, etc., while analysing the **factors favouring business sustainability** and **drawing up a best practice guide for beekeeping entrepreneurs**.

In this respect, the **specific objectives** of the paper are outlined as follows:

- o Structuring the issues surrounding sustainability;
- o Clarifying how to integrate sustainability into the organisation's strategy;
- o Identifying strategies for sustainability at the level of the beekeeping enterprise;
- o Determining a model for measuring sustainability at beekeeping enterprise level;
- o Identifying the characteristics of the business model used by Romanian beekeepers;
- o Developing a best practice guide for sustainable beekeeping.

Based on the objectives, a number of **main hypotheses** were formulated as follows:

**H1:** There are conceptual differences between sustainable development and sustainability.

**H2:** Existing sustainability assessment models at agricultural level are not fully applicable to systems in the beekeeping sub-sector.

**H3:** The set of variables corresponding to each sustainability factor is multidimensional.

**H4:** Romanian beekeeping enterprises are sustainable.

**H5:** Beekeeping enterprises run by managers familiar with the concept of sustainability achieve higher sustainability scores than those run by managers who are not familiar with the concept of sustainability.

The structure of the thesis follows three parts, with its **logical scheme** being shown in Figure 1 and illustrating the progression of the scientific approach. The content of the paper is based on 507 bibliographical references, 43 tables and 58 figures.

The **research methodology** has been designed to respond to the complexity of the topic - lying at the confluence of several research sub-fields from the Management sphere (organisation theory and leadership, strategy and strategic management, business models, operations and value chain management) and in relation to it (sustainability, sustainable development, entrepreneurship) as well as under the influence of a multitude of contextual factors (that manifest at individual, micro, meso and macro economic levels).

A **cyclical research design** - theory-research questions/deduction-empirical data-data analysis/induction-theory (Taylor et al., 2006) - guided the entire research process.

The review of the current state of knowledge was organised thematically - to facilitate the critical appraisal and interpretative analysis of the existing literature (by identifying strengths/weaknesses, controversies and/or inconsistencies with respect to theories, hypotheses, research methods or results). The **critical review of the scientific literature** was complemented by the **desk research** of statistics, studies and reports published and/or produced (in the field of sustainability/sustainable development, agribusiness sector and beekeeping industry) by national and international institutions/organisations.

Organising, comparing, collating, summarising, aggregating and interpreting the extracted information led to: (1). describing, assessing and clarifying what is already known in the field of ensuring the sustainability management of beekeeping businesses; (2). identifying the limitations of previous research - namely: the absence of a holistic model (in general) and the inexistence of studies/research assessing the sustainability management of Romanian beekeeping firms (in particular); (3). outlining the research problem, establishing the aim and objectives (central and secondary), and formulating the hypotheses (from the perspective of the four defining dimensions of the studied process: Economic, Social, Ecological, Governance) to be then empirically tested in order to make further contributions to knowledge.

**Figure 1. Logical scheme of the thesis**



Source: Own

On the applicative side, in order to ensure - under research validity and fidelity conditions - the achievement of the assumed goal and objectives, two main **strategies** were chosen: (1) inquiry - associated with the deductive approach and often used in exploratory and descriptive studies (Saunders et al., 2016); and (2) theory development - combining inductive, deductive and abductive approaches, usually used for the development of explanatory or conceptual constructs (Creamer, 2021). The implementation of these strategies was carried out using both questionnaire and in-depth interview **methods**, with quantitative and qualitative **data** being generated. The mixed-model approach of the research involved combining quantitative and qualitative data collection **techniques** with **mixed** (quantitative and qualitative) data **analysis** procedures - both to interpret, compare and establish relationships between data and to assess the accuracy and consistency of the results. The statistical methods of analysis were chosen in accordance to the established goal and objectives and the type of defined variables, while the statistical analysis software SPSS V.23 constituted the supporting tool; the principal component **factor analysis** holds centrality, together with **techniques/procedures** such as: assessment of the internal consistency of the items (Cronbach's Alpha coefficient); descriptive statistics (mean values, standard deviation and variation coefficient); analysis of correlations between variables (Pearson coefficient); analysis of the validity/accuracy of the variables (KMO test), analysis of the variance shared among variables of the same dimensional set (communality), the explained variance for the extracted components of the analysis (meeting the criterion of having eigenvalues greater than 1), respectively analysis of the association between the analysed variables and the extracted components (loading coefficients from the Component Matrix).

Throughout the work, **ethical considerations as well as norms of good conduct in scientific research** were followed (Greenfield and Greener, 2016; Kara, 2018; Saunders and Lewis, 2018; Academy of Management Code of Ethics). Thus: (1) with regard to the critical analysis of the current state of knowledge were considered the following issues: drawing on (predominantly) scientifically validated sources (through peer review and/or indexing in internationally recognised databases), displaying the diversity of opinions/views expressed in the literature (and not just one perspective), accurately understanding and expressing existing ideas and theories (especially since most of them involved translation from the English-language literature), the rigorous use of citations and references; (2) the design and conduct of the applied research were in accordance to the fundamental ethical principles of scientific research – respecting both the protection of participants' rights (by ensuring their informed consent, the voluntary nature of their participation, the protection of personal data, the confidentiality/anonymity of the data collected, etc. ), as well as ensuring the integrity of the research in terms of the objectivity of the approach and the accuracy of the results (by communicating transparently and honestly with the study participants, not intervening to influence them and/or alter the data/results of the research, reporting the results without bias or omission, etc.).

The used references include multiple sources such as books, academic journal/conference articles (indexed in Web of Science, SCOPUS, SpringerLink, Science Direct, Google Scholar, etc.), but also official reports published by relevant international organisations (United Nations Sustainable Development Knowledge Platform, at <http://www.sustainabledevelopment.un.org>; World Business Council for Sustainable Development, at <http://www.wbcsd.org>; Sustainable Development Goals Compass, at <http://www.sdgcompass.org>; Global Reporting Initiative, at <http://www.globalreporting.org>, etc.).

The analysis of the beekeeping sector is based on secondary data from sources such as national and international statistics (Eurostat, INS, FAOSTAT) and published reports (MADR, European Commission, etc.), while the identification of the variables was carried out through the bibliographic study. The analysis of the factors that determine the sustainability of the business in the beekeeping sector uses cross-sectional research and the quantitative research method - through survey, with the questionnaire acting as the research instrument – as well as the qualitative research, through in-depth interviews (used to validate the results). Also, for conducting the analysis at firm level, data were collected from firms' official online platforms (eg. own website, social media accounts).

The **innovative characteristics** of the thesis lie mainly in the empirical research carried out, which has not been conducted before at the Romanian level. Also, the thesis generated new data and applied new methods, highlighting new approaches, while the scientific results obtained led to accumulating new knowledge in the studied area, since the subject was insufficiently explored. Beyond this, the **originality of the thesis** is based on the fact that the approaches used have led to new results and possibilities that benefit stakeholders (beekeeping managers - through the identification of good practices in beekeeping management and the development of a managerial model conducive to sustainable development in beekeeping, decision-makers at political-administrative level, researchers - through the proposed factor analysis model that can be used for future research etc.).

The way in which the thesis set out to make **substantial contributions to knowledge** started from the identification of the research niche, the identification of the research problems and questions, and ended with their resolution through an appropriate methodology. In addition, the thesis has redirected the focus of research concerns from sustainability measurement models in general to those applied at the agricultural level, but especially at beekeeping level. Thus, the results contribute to the accumulation of new knowledge in an under-explored field and propose a factor model for analysis, which can be used for future research. The results also respond to current socio-economic requirements by identifying best practices in beekeeping management and developing a management model conducive to sustainable development in beekeeping.

Conducting the whole research approach involved a period of over five years, while partial research results were disseminated at national and international conferences and through the publication of scientific articles.

**Key Words:** Sustainable Development, Sustainable Businesses, Beekeeping Sector, Managing Sustainability