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NEURO

Modern Approach to Economics Disciplines

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ABSTRACT

The monograph deals with neuroscience and its use in the field of economic disciplines with an emphasis on management, marketing and business, as well as its use on the basis of intelligent systems. Part of it is the institutionalization of neuroscience in the form of neurocenters and the possibility of their establishment and management, especially in a university environment. The monograph also responds to problems associated with the application of the neuroscientific approach in economic disciplines and their solution based on an ethical approach and management of this activity.

Keywords: neuroscience, neuroeconomics, neuromanagement, neurobusiness, neuromarketing, consumer neuroscience, nanoneuroscience, neuroethics, code of ethics, neurocenter.

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PREFACE

Neuroscience in general is a field that is developing at a rapid pace and cuts across various areas of scientific inquiry and practice. We therefore tried to create a brief and yet clear overview of the knowledge of neuroscience and related disciplines with an emphasis on the economic field.

Our ambition was not to treat the topic of neuroscience comprehensively in the entire spectrum of its areas. We focused only on some of them, which have relevance to economic sciences and related disciplines, in order to present knowledge so that they logically follow each other.

Nowadays, economics and management need new resources and tools to face the reality of the business world. Global economic trends and the digital revolution have stimulated the organizational and business environment and transformed it into an extremely complex and increasingly competitive ecosystem. All organizations face challenges and strive to discover or maintain their competitive advantages to improve organizational performance.

Given the importance and impact of scientific progress and digitization, it was necessary to redefine management and analyze its variables from a different perspective. An interdisciplinary vision was needed to enable research and explanation of decision-making processes and the development of strategic plans that would lead to organizational performance. This new approach is called neuromanagement, which is the challenge of the new millennium and opening the horizon of new possibilities to be explored and discovered.

The association of economic disciplines with the term "neuro" suggests that this is not an entirely new field of inquiry. The broad spectrum of neuroscience has been a major topic in recent years and a constant challenge for many researchers. This science analyzes the functioning of the nervous system as a whole. To strengthen research in this discipline, neuroscientists must think from the molecular level to the level of human behavior. Important advances in neuroscience, information and discoveries about the brain and neural processes, open important perspectives for the future.

The broad arena of neuroscience and its applications has facilitated the transition and development from economics, management, leadership and marketing to neuroeconomics, neuromanagement, neuroleadership and neuromarketing or neuroentrepreneurship, which allow access to a wide range of knowledge.

The digital era places us in a context characterized by the complexity of new global scenarios. The progress made in the field of neuroscience is an extraordinary tool for designing new forms of management and leadership in this new context.

The presented monograph is focused on those areas of neuroscience that relate to economics, management, marketing and business, and the institutionalization of neuroscience. Its goal is to create a platform of knowledge and procedures that represent the basis for further research in this area.

The monograph is compiled based on the use of methods for obtaining, gathering and processing information, as well as creating a solution to the problem. The purpose of using these methods and tools is to achieve the goal of the monograph. The set of used methods and solution techniques depended on the type of qualitative research carried out, in the processing of which basic scientific methods were used.

A knowledge platform created by primary and secondary information sources was needed when preparing the monograph. The primary sources of information were data obtained through the method of sociological inquiry in the form of personal interviews. Secondary sources of information are the result of the analysis of the issue based on published case studies focused on the investigated issue and document analysis.

The following methods were used to obtain and collect information:

- the method of document analysis – used primarily when obtaining knowledge about the current state of the problem being solved from the sources of foreign authors, as well as in the framework of preliminary research when obtaining information from the official websites of foreign universities and neuro centers;
- the method of inquiry using a standardized questionnaire – used to obtain information related to the pace of nanotechnology in the context of the chapter on nanoneuroscience;
- the method of inquiry in the form of an unstructured personal interview –was used to obtain additional information in the researched area, the personal interviews were focused primarily on the leaders of the university and commercial for neuro centers and were focused on ethical issues related to their activities.

The methods of information processing and problem-solving were used:

- analytical-synthetic methods – the investigated subject, phenomenon or process is broken down into individual elements, parts, resulting in partial theoretical conclusions and knowledge, which are rejoined by synthesis into a single whole, system;

- content analysis – use in the processing of theoretical starting points for the given issue;
- abstraction and simplification – serves to separate non-essential properties of phenomena from essential ones, a certain degree of generalization is necessary because the problems solved at the level of strategic management are characterized by their complexity, breadth and depth, and it is not possible to take into account all attributes when solving them;
- synthesis of knowledge, their connection, classification and hierarchization;
- method of comparison – allows of to identify similar and different aspects of the investigated phenomena, solutions of similar problems in different ways with subsequent comparison of the results of these solutions;
- the method of induction and deduction – induction is the process from specific data to their generalization, it is a tool that tries to provide a causal explanation of phenomena (it is therefore a tool of causal analysis), deduction, on the other hand, is a path from the general to the specific;
- modeling – creation of a model solution using previous methods of analysis, synthesis, abstraction, comparison and synthesis of knowledge;
- verification – in the form of comparison of knowledge, research results and proposed model solution with real cases, primarily with investigated cases from abroad; the result of the comparison is a set of conditions and risks that are directly related to the possible implementation of the model in practice.

In order to achieve better scientific accuracy, theoretical terms were defined in the conceptualization phase in a way that enabled their subsequent operationalization. Operationalization was used to define the context and meaning of individual concepts with regard to their use in research. It resulted in contextualization as a reflection of the multidimensionality of the given phenomenon or problem, determination of its internal and external relations, connections, interactions and developmental influences of the given issue.

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