COMPLEX MULTIFACTORIAL ANALYSIS, METHOD OF PRECISE ANALYZE OF HERITAGE SPECIMENS IN ARCHITECTURE./ "Ion Mincu" University of Architeture and Urban Planning, Romania

Iana-Mihail Codruța
kodruyana@gmail.com

Abstract.
Complex multifactorial analysis, acronym A.C.M. is one of the scientific research methods, used, precisely because of its versatility, in many fields. This versatility comes from the combination of several research methods, starting from the simple one, on specimen analysis (used in fields such as biology, zoology but also archaeology), up to complex mathematical models, including Boolean matrices (used predominantly in economic fields , of financial-banking analysis or astronomy). The novelty of the work consists in the application of A.C.M. in the theory and study of architecture, the work being also a user guide in these fields. A.C.M. results they are very precise, precisely because they use mathematical methods, based on them, detailed and complex theories can be developed in any theoretical field in architecture. The method of application and adaptation to the field of architecture is the innovation proposed by me.
It should be stated that the term "multifactorial" comes from the fact that the study hypotheses can be from all fields of activity. For example, in the analysis of an architectural style there can be hypotheses from related (history, theory) but also different fields, such as sociology, psychology, medicine, etc., this very important aspect is what gives the novelty and complexity of the study.
The first part presents the operation of the method, its origins and application in different fields. A.C.M. start the study by developing some preliminary hypotheses, based on the existing information in the researched field. The second stage is the one in which a collection of specimens to be studied is drawn up, a collection thoroughly documented and placed in criteria tables, which later generate the matrices for validating the hypotheses. These not only validate hypotheses but also establish a hierarchy between them, as well as equality-inclusion-exclusion relationships, relationships on the basis of which an entire theory can be extrapolated. A.C.M. results not only does it thoroughly determine, for example, the invariants of a style, the belonging of a building, interior, textures or colors to that style, but it also highlights the relationship of the studied specimen in relation to the subject under discussion.
At any stage of research A.C.M. we would stop, the results can be remarkable, from the preparation of the specimen collection, to the validated hypotheses or the relationships between them for the most precise conclusions. Explanation of the A.C.M. method. it is done on the basis of an example study of the analysis of a subject from the theory of architectural styles, respectively the degree of belonging of an architect's projects to the style where it is placed by the specialized bibliography and its multifactorial analysis, i.e. on different levels. The work is thus also a user guide in the theory, history and documentation of architecture.

DECARBONIZING HISTORICAL BUILDINGS: OBJECTIVES AND CONSTRAINTS./ University of Genoa, Italy

Adriano Magliocco, Paola Sabbion
adriano.magliocco@unige.it, paola.sabbion@gmail.com

Abstract.
The need to decarbonize the European construction sector clashes with a building stock in many cities dating back a few centuries, with variable energy performance. This raises the question of how much to focus on embodied carbon, the choice of materials, or operational carbon, hence energy efficiency. The Italian National Energy and Climate Change Plan proposes the progressive electrification of the building sector as the primary decarbonization measure, replacing heating sy tems with heat pumps. This prediction raises several questions. Non-monumental historic buildings are often subjected to landscape restrictions or present typological and decorative characteristics that do not allow insulation interventions, such as reducing energy consumption significantly and, therefore, related CO_2 emissions. Furthermore, the need to replace and centralize the systems raises the problem of positioning the external units and heat distribution. The paper defines issues and opportunities through considerations and graphical schemes.