

ACADEMY OF ECONOMIC STUDIES OF BUCHAREST

The Council for Doctoral Studies

Doctoral School of Cybernetics and Economic Statistics

**CYBER MODELING OF ORGANIZATIONAL
CHANGE SUCCESS: THE ROLE OF DYNAMIC
AND PROJECT MANAGEMENT CAPABILITIES**

Orlando-Marian M. VOICA

PhD supervisor: Prof. univ. dr. Stelian STANCU

Bucharest, 2024

TABLE OF CONTENTS

SUMMARY	1
ABSTRACT	2
I. INTRODUCTION	3
1.1. RESEARCH CONTEXT (IMPORTANCE AND MOTIVATION)	3
1.2. THE PURPOSE AND OBJECTIVES OF RESEARCH	4
1.3. EXPECTED RESEARCH CONTRIBUTION	5
1.4. STRUCTURE OF THESIS.....	6
CHAPTER 1. SUCCESS OF ORGANISATIONAL CHANGE, PROJECT MANAGEMENT CAPABILITY, DYNAMIC CAPABILITY AND MOTIVATIONAL CAPABILITY - CURRENT STATE OF KNOWLEDGE	9
1.1. ORGANISATIONAL CHANGE AND MANAGEMENT	9
1.1.1. Definition of organizational change	9
1.1.2. Approaches to organisational change.....	11
1.1.3. Characteristics of organizational change.....	12
1.1.4. Processes of change	17
1.1.5. Organizational change management models	20
1.2. PROJECT MANAGEMENT CAPABILITY	24
1.2.1. Definition of project.....	24
1.2.2. Success of a project	27
1.2.3 Project management capability	29

1.2.4. Project management and organizational changes	30
1.3. DYNAMIC CAPABILITY OF THE ORGANIZATION	31
1.4. ABILITY TO MOTIVATE THE ORGANIZATION	37
1.5. DEFINITION OF HIGHER-ORDER CONSTRUCTS.....	39
1.5.1. Project management capability.....	39
1.5.2. Dynamic capability	40
1.6. ORGANIZATIONAL CHANGE - CHARACTERISTIC MODELS	42
1.6.1. Organisational change and knowledge management: operational flexibility model.....	42
1.6.2. Organizational change: the model of organizational dynamism	45
1.6.3. Model of organizational change capability	46
1.6.4. Models of a project success.....	47
1.7. METHODOLOGICAL MILESTONES OF STUDYING THE SUCCESS OF ORGANIZATIONAL CHANGE	49
CHAPTER 2. STATISTICAL METHODS AND TECHNIQUES USED	53
2.1. APPROACHES TO THE ANALYSIS OF ORGANIZATIONAL PHENOMENA	53
2.1.1. Structural equations: structural equations modeling (SEM).....	53
2.1.2. Building models of structural equations	55
2.1.3. Structural equation modeling: CB-SEM vs PLS-SEM	59
2.2. EVALUATION OF PLS-SEM MODELS	62
2.2.1. Methodology for calculating indicators	62
2.2.2. Assessment of reflective constructs	64
2.2.3. Evaluation of formative constructs	66
2.3. UPPER-ORDER CONSTRUCTS: HIERARCHICAL COMPONENT MODELS.....	67
2.3.1. Estimation of higher-order constructs: two-stage estimation strategy	67

2.3.2. Establishing the reliability of structural models	68
2.4. IMPORTANCE-PERFORMANCE MATRIX ANALYSIS (IPMA)	71
CHAPTER 3. THE RELATIONSHIP BETWEEN DYNAMIC CAPABILITY, PROJECT MANAGEMENT, MOTIVATION AND SUCCESS OF ORGANIZATIONAL CHANGE	76
3.1. THE CONCEPTUAL MODEL OF RESEARCH	76
3.2. RESEARCH HYPOTHESES	77
3.2.1 The success of organizational change	78
3.2.2. Project management (PM) capability of the organization	78
3.2.2.1. PM: Planning capability (of change)	79
3.2.2.2. PM: Organizational capability (of change processes)	81
3.2.2.3. PM: Implementation capability (of change).	83
3.2.2.4. PM: Monitoring and control capability of change processes	85
3.2.3. Dynamic capability	87
3.2.3.1. Scanning (and detection) capability	88
3.2.3.2. Learning capability	89
3.2.3.3. Integration capability	89
3.2.3.4. Coordination capability	90
3.2.4. Motivating capability of the organization	91
3.3. METHODS OF MEASUREMENT OF RESEARCH VARIABLES	92
3.3.1. Variable measurement “Success of change”	94
3.3.2. Latent variable measurement “Project planning capability”	95
3.3.3. Measurement of the latent variable “Project organization capability”	96
3.3.4. Measurement of the latent variable “Project implementation capability”	97
3.3.5. Latent variable measurement “Monitoring and control of the project”	98
3.3.6. Measurement of the second-order latent variable “Dynamic capability”	98
3.3.7. Measurement of the latent variable “Scanning capability (and detection)”	98

3.3.8. Measurement of the latent variable “Capability for organizational learning”	98
3.3.9. Latent variable measurement “Integration capability”	99
3.3.10. Measurement of the latent variable “Synchronization capability”	99
3.3.11. Measurement of the latent variable “Motivation capability”	100
3.4. BUILDING THE DATA COLLECTION TOOL	101
3.5. DESIGN OF THE ONLINE FORM	102
CHAPTER 4. MEASURING THE RELATIONSHIPS BETWEEN ORGANISATIONAL PROJECT MANAGEMENT CAPABILITY, DYNAMIC CAPABILITY AND SUCCESS OF ORGANISATIONAL CHANGE	
104	
4.1. RESEARCH METHOD	104
4.2. PROMOTION AND APPLICATION OF QUESTIONNAIRE	106
4.3. SAMPLE AND DATA COLLECTION PROCEDURE	106
4.4. DATA COLLECTION AND VALIDATION	107
4.5. RESPONDENTS PROFILE - DESCRIPTIVE STATISTICS	108
4.5. DATA ANALYSIS AND RESEARCH RESULTS	112
4.6. EXPLORATORY FACTORIAL ANALYSIS (Exploration Factor Analysis - EFA) ..	113
4.6.1. Testing the unidimensionality and fidelity of each sub-scale	113
4.6.2. Exploratory analysis of ”Dynamic capability”	115
4.6.3. Exploratory analysis of ”Project management capability”	118
4.6.4. Exploratory analysis of the estimated model	120
4.7. CONFIRMATORY FACTORIAL ANALYSIS	123
4.7.1. Measurement model for second-order construction ”Dynamic capability”	124
4.7.2. Model of measurement for the construction ”Project management capability” ..	133

4.7.3. Model of measurement for the formative construct "Success of Change".....	145
4.8 PROPOSED MODEL FOR MEASURING THE RELATIONSHIP BETWEEN "SUCCESS OF IMPLEMENTATION CHANGE", "DYNAMIC CAPABILITY" AND "PROJECT MANAGEMENT CAPABILITY"	147
CHAPTER 5. ANALYSIS OF THE RELATIONSHIP BETWEEN ORGANISATIONAL PROJECT MANAGEMENT CAPABILITY, DYNAMIC CAPABILITY AND SUCCESS OF ORGANISATIONAL CHANGE	166
5.1. TESTING OF THE STRUCTURAL MODEL SPECIFIED BY SEM	166
CONCLUSIONS	176
BIBLIOGRAPHY	183
LIST OF FIGURES	212
LIST OF TABLES	214
ABBREVIATIONS LIST	218
ANNEX LIST	221
Annex 1	222
Annex 2	226
Annex 3	231
Annex 4	233
Annex 5	235
Annex 6	237
Annex 7	240

Keywords: organizational change, success of change, cyber model, organizational capability, project management, dynamic capability, capability motivation.

SYNTHESIS

CYBER MODELING OF ORGANIZATIONAL CHANGE SUCCESS:. THE ROLE OF DYNAMIC AND PROJECT MANAGEMENT CAPABILITIES

The change has become a relentless organizational reality, driven by the permanent need to adapt to the dynamic requirements of the internal and external environment. In such a dimension, our research aims to develop a cyber model of organizational change success based on a study conducted online. Thus, we designed and tested a measuring instrument that evaluates the relationship between the success of change and a few organizational capabilities: the project management capability, the extrinsic motivation capability and the dynamic capability for the organizations in Romania.. In our quest to study how the success of implementing an organizational change is directly and indirectly influenced by the project management capability, the motivation capability and the dynamic capability of the organization, the purpose of the paper is to identify relationships between the up-mentioned capabilities and the success of organizational change. To this end, we developed a model based on a set of variables considered to be representative for each of the organizational capability of interest: project management capability, dynamic capability and motivation capability..

The study of our target relationships presents numerous conceptual and methodological difficulties. The project management capability, respectively the dynamic capability, have a latent, multidimensional, complex nature, quite difficult to express through a limited number of items. In addition, our target audience can be reached through online studies, but their effectiveness is liable to a multitude of factors.

Our endeavour aims to surmount these elements through a research design that allows achieving the purpose of the study. Several research objectives have been set-up regarding the relationship between project management, motivation capability, dynamic capabilities and the success of organizational change, as follows:

O1: developing valid measurement tools for project management capability, motivation capability and dynamic capability of organizations implementing organizational change;

O2: studying the influence of project management capability on the (implementation) success of change;

O3: investigating the influence of dynamic capability on the (implementation) success of change;

O4: investigating the influence of motivation capability on the (implementation) success of change;

O5: analysis of the influence of dynamic capacities on the relationship between project management capability and the (implementation) success of change;

O6: developing a model of the relationships between project management capability, dynamic capability, the ability to motivate organizations and the success of organizational change.

By achieving the above mentioned research objectives, we aim to get an answer to the question “Why do some organizations have greater success than others in making changes?”.

The expected contribution of our work is two-folded: the development of the current framework of knowledge in the field, and on the other hand, bringing to the fore the practical elements usable in the field of management. Thus, the paper aims to address and clarify some conceptual and methodological issues regarding the study of dynamic capacities and project management capabilities in the context of organizational change, by assimilating and adapting some definitions from the literature and testing / validating some instruments for measuring these constructs. Our research also analyzes the relationship between the multidimensional constructs such as project management capability or the dynamic capability and the success of organizational change. In this way, we contribute to expanding the awareness of contributors to the success of change by highlighting the role of some organizational routines and competencies in achieving the success of an organizational change.

The paper also contributes to the development of the field of multidimensional statistical research through the use of a structural equation modeling (SEM) approach performed through the PLS method, whose use has experienced wide expansion in the last years due to its benefits.

The content of this paper was developed over five chapters, each one being associated with a series of subchapters, depending on the themes and sub-themes analyzed.

The introduction presents the context of the research - by highlighting the importance of studying the relationship between project management capability, motivation capability, dynamic capability and success of change (implementation) - the purpose, the objectives and expected contribution of our study, as well as a brief presentation of the operational definitions associated with the concepts used.

Chapter 1 offers a critical analysis of the literature on organizational change, project management capability, motivation capability, dynamic capability, presenting the modalities for measuring the variables of interest and the research methods used. The objectives of the literature review are to describe the theories regarding the constructions of interest, to define the multidimensional constructs project management capability, respectively dynamic capability, to present the main models of the constructions of interest, as well as the identification of ways to measure the variables of interest and identification of scales and models of measurement of research variables.

Chapter 2 is built on the modern statistical analysis tools and highlights the benefits of using structural equation modeling analysis. As a result of the benefits provided by the PLS-SEM approach for our research, in the last part, the chapter presents the ways of assessing the formative, reflective and higher order models, highlighting the practical aspects resulting from the use of state-of-the-art software (SmartPLS).

Chapter 3 deals from an analytical perspective with the relationship between the success of organizational change and its estimated determinants: project management capability, dynamic capability and motivation capability. In this chapter, the first part presents the conceptual model of the research, the hypotheses formulated regarding the relations between variables, as well as the arguments from the literature supporting the proposed hypotheses. In the second part, the chapter presents the research efforts to develop the tool for data collection and pre-testing of scales used to measure variables in the conceptual model.

Chapter 4 describes the research methodology, presenting the arguments for choosing the research method, sampling method, and other aspects of data collection and validation. The validity and reliability analyses of the scales used to measure variables in the conceptual model are presented. The chapter presents the proposed model of the relationships between the success of organizational change and its estimated determinants: project management capability, dynamic capability and motivational capability.

The results of statistical procedures for testing our research hypotheses through SEM are analysed in Chapter 5. The chapter concludes with a series of conclusions on the assumptions tested on the basis of the proposed structural model.

The final chapter presents conclusions of the analysis, highlighting the theoretical and managerial implications. Personal contributions, study limits, and some suggestions for future research directions are also presented.

The modelling carried out in this paper proposes as research results a framework of variables useful in safeguarding the success of an organizational change. Thus, as a

contribution to managerial practice, our study can support a better understanding of the role of daily routines in determining the success of an organizational change emphasizing the dynamic capabilities, project management and motivation are important conditions.

By confirming the model for measuring the success of change, management practitioners can punctually evaluate and intervene on the different dimensions of organizational capabilities, such as project management, motivation or dynamic capability. Therefore, from a practical point of view, the validated sub-scales allow management specialists to evaluate the organizational capabilities involved in implementing change, helping them act with precision to increase the success rate of organizational change. The measurement model can also be a tool for an *ex-ante* estimation of the level of success that an organizational change initiative can have, in order to optimize the change efforts.

This study has a few limits whose enumeration is relevant from the perspective of a methodological and deontological approach. Thus, our research was conducted in Romanian, this element being a possible limitation from a conceptual point of view. In addition, the sample used is one of convenience, made up of managers, consultants or executives who have experienced an organizational change completed in the last five years. Despite the fact that internet access is specific to our target, the topic and the duration of completing the questionnaire made that only a small part of those who experienced changes to participate in this research. The coverage of diversity of situations was thus limited as a result of this self-selection of respondents. In addition, there may be differences in individual perceptions regarding the specific elements of the constructs analyzed.

Our research is a first step in analyzing the relationships between project management capability, motivation capability, dynamic capability of the organization and the success of organizational change. Future studies could focus on replicating our study to confirm /recheck the results obtained. Another direction of future researches could be the expansion of the study by proposing other types of relations between current factors (for example, moderation) or other factors that could be sources of organizational success.