

„Dunărea de Jos” University of Galați
Doctoral School of Social Sciences and Humanities
Doctoral field: Management



DOCTORAL THESIS ABSTRACT

**Performance management in secondary
education institutions in Romania from the
perspective of adapting to European models**

PhD Student: Jicman (Enache) Mioara

President: Professor Ifrim Nicoleta, PhD
„Dunărea de Jos” University of Galați

PhD coordinator: Professor Micu Angela-Eliza, PhD
„Ovidius” Universitu of Constanța

Official referents: Professor Aceleanu Mirela Ionela, PhD
The Bucharest University of Economic Studies
Professor Roman Cristina Teodora, PhD
„Alexandru Ioan Cuza” University of Iași
Professor Căpățînă Alexandru, PhD
„Dunărea de Jos” University of Galați

Series E2: Management No. 11

Galați, 2022

The series of doctoral theses publicly defended in UDJG since October 1, 2013 are:

Fundamental field **ENGINEERING SCIENCES**

- Series I 1: **Biotechnologies**
- Series I 2: **Computers and Information Technology**
- Series I 3: **Electrical engineering**
- Series I 4: **Industrial engineering**
- Series I 5: **Materials Engineering**
- Series I 6: **Mechanical Engineering**
- Series I 7: **Food Engineering**
- Series I 8: **Systems Engineering**
- Series I 9: **Agricultural engineering and management and rural development**

Fundamental Field **SOCIAL SCIENCES**

- Seria E 1: **Economies**
- Seria E 2: **Management**
- SSEF Series: **The Science of Sport and Physical Education**

Fundamental field **HUMANITIES AND ARTS**

- U 1 Series: **Philology- English**
- U 2 Series: **Philology- Romanian**
- U 3 Series: **History**
- U 4 Series: **Philology - French**

Fundamental field of **MATHEMATICS AND NATURAL SCIENCES**

- Series C: **Chemistry**

Fundamental field **BIOLOGICAL AND BIOMEDICAL SCIENCES**

- Series M: **Medicine**

Table of contents

Introduction

Chapter 1. State of the art in the field of performance management of secondary education institutions

- 1.1. Approaches in the definition and study of the educational organization
- 1.2. The significance of performance in the educational organization
 - 1.2.1 Explanatory paradigms on managerial performance and performance management
 - 1.2.2 Performance factors of educational institutions
 - 1.2.3 Measuring performance indicators
- 1.3 Peculiarities of performance management in secondary education institutions
- 1.4 The environment of the educational organization
- 1.5 Carrying out the organizational diagnosis
- 1.6 Management of secondary education institutions
 - 1.6.1 The managerial dimension. The managerial act
 - 1.6.2. Manager profile in secondary education
 - 1.6.3 Professionalization of the manager of secondary education institutions
- 1.7 Organizational models of secondary education institutions
 - 1.7.1. Characteristics of European organizational models in secondary education institutions
 - 1.7.2 Organizational models operating in secondary education institutions in Romania
- 1.8 Performance management of secondary education institutions
 - 1.8.1 Determining factors in achieving the performance of secondary education institutions
 - 1.8.2. Strategies for achieving performance management in secondary education institutions
 - 1.8.3. Ways to achieve performance management in secondary education institutions
- 1.9 Evaluation in the performance management of secondary education institutions
 - 1.9.1 External evaluation in measuring institutional performance in secondary education
 - 1.9.2. Ways to carry out the internal evaluation for measuring the performance of secondary education institutions
 - 1.9.3 Exploiting the results of external evaluation in institutional performance management in secondary education
 - 1.9.4 Using internal evaluation in optimizing performance in secondary education institutions

Chapter 2. Perspectives on adapting the performance management of secondary education institutions in Romania to European models

- 2.1 Peculiarities of European education systems
- 2.2. Comparative study of good educational leadership practices related to secondary education in different European countries
 - 2.2.1 Peculiarities of secondary education leadership practices in Germany
 - 2.2.2 Peculiarities of secondary education leadership practices in France
 - 2.2.3 Peculiarities of secondary education leadership practices in Finland
 - 2.2.4 Peculiarities of secondary education leadership practices in the UK

- 2.2.5 Peculiarities of secondary education leadership practices in the Netherlands
- 2.2.6 Peculiarities of secondary education leadership practices in Spain
- 2.2.7 Peculiarities of secondary education leadership practices in Italy
- 2.2.8 Peculiarities of secondary education leadership practices in Hungary
- 2.3 Opportunities to adapt the sets of good practices to the realities of secondary education in Romania
- 2.4 Preliminary conclusions

Chapter 3. Modeling the correlations and causal relationships between the precursors of the performance of secondary institutions at European level, through structural equations (SEM-PLS) and fsQCA

- 3.1 Research methodology and assumptions
- 3.2 Peculiarities of the results in different educational contexts and their approach by the fsQCA method
- 3.3 Analysis of research results based on modeling structural equations
- 3.4 Preliminary conclusions

Chapter 4. Correlation study on the evaluation of the impact of leadership in secondary education in Romania on educational performance

- 4.1 Objectives of the correlational study, presentation of the conceptual model and formulation of hypotheses
- 4.2 Analysis in the main components of the conceptual model
- 4.3 Testing Assumptions Using Regression Analysis, Hi-Square Method, and Pearson and Spearman Correlation Coefficients
- 4.4 Cluster analysis using the K-Means method
- 4.5 Preliminary findings

Chapter 5. Trigonometric matrix statistical analysis on the dynamics of performance indicators of high school graduates in Romania in the period 2016 – 2020

Conclusions, managerial implications and contributions of research conducted to the development of performance management in education

Bibliography

Annex

- List of works
- List of figures
- List of tables

Keywords: educational management, performances, comparative studies, educational strategies, educational innovation

Chapter 1

State of the art in the field of performance management of secondary education institutions

The fundamental purpose of the secondary education system is to provide, at a higher quality level, solutions to social and individual needs such as: training and development of basic skills, indispensable for the evolution of society, training and development of values and attitudes necessary to educate active and involved citizens, pre-professionalization and professionalization for the socio-professional insertion of young people.

Performance refers to achieving goals. Therefore, in educational organizations, performance is associated with the degree of satisfaction of social requirements, the extent to which its activity and results rise to the standards of the quality of education provided and the level at which it meets expectations and ensures satisfaction of education beneficiaries.

In order to determine the level of performance of an educational organization, it is necessary to analyze its performance in terms of the two defining elements of performance (efficiency and effectiveness), from two perspectives: instructive-educational and administrative, respectively in terms of quality of learning and the results obtained by the students and in terms of the quality of the institution's functioning.

In educational institutions, performance management is done at all institutional levels in order to achieve the proposed objectives and if introduced and implemented correctly, can make a significant contribution to the success of the institution.

Measuring the organizational performance of a secondary education institution, as a fundamental tool for performance management, is done by examining and evaluating - most often multi-criteria - the various performance indicators that contribute to its success. The purpose of measuring and evaluating performance is to identify vulnerabilities, or areas for improvement, in the work of the institution and to initiate measures to optimize it. Monitoring performance indicators is a complex managerial process that must be carried out continuously, and the measurement of these factors must be done using a diverse range of evaluation methods, techniques and tools.

The performance indicators that target the educational activity and that can be

measured to evaluate the level of performance of an educational unit are:

- Student learning outcomes (school results, passability, proven high level of key competencies, etc.);
- The level of well-being of students;
- The degree of satisfaction of the beneficiaries (direct and indirect);
- Social results obtained by students / graduates (social / socio-professional integration of graduates, success rate in exams and admission to higher levels of education);
- The quality of the educational offer, as attractiveness and adaptation to the needs and interests of the students;
- The quality of curricular materials and digital teaching aids in the institution and especially the efficiency of their use.

The performance indicators that target the activity of the management team and that can be measured to assess the level of performance of an educational unit are:

- How the educational institution works;
- Implementing the digital transformation of educational processes;
- Leadership and decision-making skills of management team members;
- The managerial styles practiced by the members of the management team;
- Managerial interventions on areas of competence: curriculum, human resources, time resources, financial resources, material resources, information resources;
- Institutional development, organizational ethos and organizational performance;
- The image of the educational institution among the beneficiaries (direct and indirect), in the professional community and in the local community.

The secondary education system in Romania, as an organization, is a very broad system, with a complex structure and very clearly hierarchical, with a multi-level hierarchy correlated with well standardized responsibilities and in which there is a system of hierarchical relations well defined by laws and other regulations and normative acts.

The organizational diagnosis of educational institutions can cover both the systemic elements (respectively the hierarchical institutional supra-system / external environment, the organizational system of the institution as a whole and the subsystems that make it up) and the processes - goal setting, decision making, design and planning, implementation, communication, collaboration, etc. - from within the institution.

In the current context of the Covid-19 pandemic, the management of secondary education units is a complex process, with various fields and difficult problems, carried out on two distinct levels, on which the manager must act in parallel and convergent: teaching and administrative and financial activity for ensure the effectiveness and efficiency of the unit and stimulate the growth of its performance.

In order to meet the specific challenges of the pandemic situation, school principals in Romania must adapt to the requirements of a constantly changing regulatory framework, to the specifics of the institutions they run and the environment in which they operate, and to the demands of modern management. . Due to the complexity of the environment in which it operates, from a socio-economic, legislative, political and educational point of view, the management of educational institutions has at the same time a social, economic, educational and systemic character, which makes the managerial act in education an act. very complex, multidisciplinary and multidimensional. This reality, together with the diversity of types of management that derive from the management processes and from the execution processes, necessitates efforts at system level and the creation of functional mechanisms for the professionalization of managers in the field of education.

The educational management, and especially that of the secondary education institutions, has a series of particularities that come on the one hand from the specifics of the school as an organization and on the other hand from its double dimension: the organizational dimension and the pedagogical dimension. The managerial approaches and behaviors specific to the educational field differentiate it both from the management in the economic field and from that of other public institutions. For this reason, the managerial styles and behaviors practiced in the field of education, especially in secondary education, are different, and the profile of the educational manager in secondary education differs in many respects from the profiles of managers in other sectors.

Regarding the management of secondary education institutions, even if the premises of decentralization were created through the legislative framework, by attempts to synchronize decentralization in education with similar economic and administrative processes and by developing a training program for school managers, the practical results obtained are below the forecast level. Slow and ambiguous administrative and economic decentralization, the existence of bodies that have recentralized school organizations, the establishment of national and local regulations to recentralize the management and selection of teachers, syncope in the involvement of local communities in the development of educational policies, school network and projects Institutional development and its relatively low involvement in the management of secondary institutions are just a few of the causes. Also, the problems encountered in the selection of school managers and the lack of real professionalism of most school managers have meant that, at the management level, some secondary education units face problems and lack the support of the local community. financial, administrative, managerial and pedagogical.

In order to establish the level of organizational performance of a secondary education institution and to be able to plan its growth, it is necessary that the performance

parameters be measured periodically in relation to the institutional goal and objectives assumed. That is why evaluation is a fundamental process and a key element in performance management. In order for the evaluation to produce relevant, reliable data, on the basis of which appropriate decisions can be made for the development of the institution and to increase its performance, it is necessary to use professionally applied quality measuring instruments.

There are two ways to evaluate the activity and performance of an educational institution:

- external evaluation - the evaluation carried out by one or more evaluators from outside the evaluated institution, respectively by the educational authorities;
- internal evaluation - the evaluation carried out by one or more evaluators within the evaluated institution, respectively by those in the school, alone or together with representatives of other stakeholders.

The external evaluation is performed by an entity outside the institution and may aim at either evaluating the entire activity and performance of the institution, in a holistic approach, or evaluating only certain segments of the activity / performance, depending on the purpose for which it is made.

The internal evaluation is carried out by the secondary education unit itself by persons / groups designated by the unit (possibly with the support of a consultant) and, depending on the purpose of the evaluation, may target the entire activity / performance of the institution.

Chapter 2 Perspectives on adapting the performance management of secondary education institutions in Romania to European models

At the level of national education systems in European countries, studies conducted over the last two decades have shown significant differences between the levels of development and perception of performance management systems in secondary education units. They indicated the existence and use in all countries of performance management systems, mechanisms and tools, even if their level of development, systematization and formalization is very diverse, which are sometimes similar, but often with significant differences between countries, environments (urban-rural), regions or educational units. Practices in the field of performance management are also very diverse at European level: some, sometimes not even perceived as such, are empirical and applied randomly, others are systematic and consistently applied. Their level of effectiveness varies from country to country, but there are many examples of good practice that can be taken over and adapted from one country to another, from one educational system to another.

At European level, the management teams of secondary institutions operate in diverse and dynamic educational contexts. The roles of education leaders have continued to evolve in response to new societal challenges, including decentralization and a greater need for accountability. As European countries try to adapt their education systems to the needs of contemporary society, the expectations of secondary education institutions and their leaders have changed profoundly. Many European countries have succeeded in transforming secondary institutions into more autonomous organizational entities in the decision-making process, while centralizing accountability requirements and requiring schools to adopt new approaches based on experiential learning.

European models of educational leadership have a major impact on educational performance insofar as they can proactively address the following challenges:

- ❖ *Quality assurance for the development of educational institutions*
- ❖ *Permanent adaptation of the curriculum, personal and professional development of students*
- ❖ *Teachers and educational leaders perceive the institutions in which they work as organizations focused on learning actionable knowledge*
- ❖ *Connecting to learning and collaboration networks between European education systems*

The purpose of the comparative study of good educational leadership practices related to secondary education in eight European countries is to provide educational leaders in Romania with validated models of strategies and managerial policies to increase the performance of the institutions they coordinate.

The instructional leadership adopted by high school principals in **Germany** focuses on improving the teaching profession and teachers, promoting effective teachers, and improving learning. Using teacher evaluation practices, efforts are being made to improve classroom teaching, to improve the quality of school life, to accelerate the implementation of educational programs, to identify strengths and weaknesses in teaching and learning, and, in general, to improve the quality of the schooling process. Transformational leadership, specific to a significant share of high school principals in Germany, shows that they develop a compelling vision and, by virtue of their exemplary, motivating, inspiring, and supportive behavior, ensure that teachers adhere to organizational goals and thus are motivated to get involved in achieving these goals.

Teaching experience plays an important role in recruiting educational leaders in **France**, but it is not a requirement for those who aspire to become the director of a secondary education institution. Teaching tasks take up the least amount of time in the management of the French school. A peculiarity of educational leadership in France is the creation of advisory boards coordinated by principals, involved in projects to develop educational strategies to benefit their high schools. These advisory boards have been implemented nationwide, in the hope that the task of improving the performance of high schools could be shared among more people and that principals will thus feel less overwhelmed by the tasks of developing educational strategies.

According to **Finland's** policy on recruiting educational leaders, professional leadership and teaching skills are essential. Professional experience in management and teaching is a strong point for high school aspirants, but is not included in the formal requirements. While a qualification is required, teaching experience is not considered particularly important for the work of an educational leader: under national law, the task of an educational leader is primarily responsible for operating within the parameters of the institution's expected level of performance. The professional development of educational leaders is a national priority to encourage the successful management of high schools in Finland. In this school, educational leaders are offered a variety of professional development and support programs, from participatory management of the institution to the use of information technology in daily tasks. The key feature of Finnish educational leadership is that the relationship between the state, the education sector and communities has been based on mutual trust and solidarity, framed by political consensus and pragmatic

reasoning, where all stakeholders have developed the ability to pursue a common goal, namely to act in the national interest to increase educational performance.

In the **UK**, educational leadership is conceptualized as a process of influence that leads to the desired goal: Successful educational leaders in UK countries develop a vision for their schools based on their personal and professional values. They articulate this vision on every occasion and influence their staff and other stakeholders to share the vision. The philosophy, structures and activities of the school are oriented towards the realization of this common vision.

Transformational educational leadership contributes to improving the quality of educational services in the **Netherlands**, indicates the intention to use the results of the evaluation to improve the functioning of the organization and change it, and this can be done both from the perspective of external control (responsibility) and management. internal (process improvement). The management of the schools is entrusted to the teachers, but the final decision-making power is entrusted to the governing body which, in the field of public education, is the local authority. Both general and deputy directors must be qualified teachers and must have adequate teaching experience and management experience.

Educational leaders in **Spain** can have considerable influence in the context of their schools, given that they have the autonomy to develop the school curriculum, and their leadership is recognized because they have been elected on the basis of a validated management program. They can thus contribute to change by updating and promoting curriculum updates, changing teaching methods, developing new approaches to the use of educational materials, and promoting different ways of evaluating student learning outcomes. They can also have an impact on teachers' job satisfaction and their ability to adopt and use innovative work practices.

Italy's educational leaders set guidelines for school activities and are their legal representatives. They are responsible for the overall management of the school, the use of financial resources and the quality of education provided by their institutions. Educational managers go through a one-year probationary period, and their salaries are based on a fixed input and a variable input that depends on their responsibilities (85% based on the size, type and socio-economic environment of the school and 15% on based on their school results) [119]. The managers of the Italian schools are assisted in their duties by the directors of the general and administrative services.

The selection of educational leaders in **Hungary** involves a public competition for candidates to meet the following professional requirements: qualification for school management as a result of specialized training in Management, at least four years of

professional experience in teaching and full-time employment as a teacher for a period indeterminate. During the competition, the candidate is asked to present a management program based on the analysis of the current situation and the development strategy of the educational institution. Although there are no formal requirements for the content of the management program, it is generally expected to contain a clear institutional vision and be based on the self-assessment of the director and the institution. Candidates for high school leadership positions must present strategic objectives and how to achieve them, indicating criteria of effectiveness and accountability.

Although in a process of modernization and transformation, the secondary education system in Romania is facing persistent challenges (increasing school dropout, increasing functional illiteracy, obtaining poor results in national / international assessments and examinations, the issue of integrating students with requirements special education, the insertion of graduates on the labor market, etc.).

Improving institutional performance and ensuring the success and progress of secondary education institutions can be achieved by developing and implementing effective and modern performance management strategies and systems. The relative congruence of educational ideals in secondary education in Europe and a number of similarities in the structure, organization and educational and managerial practices in European education systems allow the adoption, transfer and adaptation by secondary education institutions in Romania of good practices. and performance management models and tools used in the practice of similar institutions in European countries.

Aware of the value of transformational leadership and collective responsibility, managers in secondary education in Romania must implement mechanisms for systematic and continuous involvement in the decision-making process, while ensuring that attention and support are given to members of teaching and non-teaching staff who feel excluded from participating in decision-making.

Chapter 3

Modeling the correlations and causal relationships between the precursors of the performance of secondary education institutions at European level, through structural equations (SEM-PLS) and fsQCA

The performance of secondary institutions at European level is influenced by a multitude of factors. The aim of this research is to identify the impact of variables such as the quality of educational services, the interest of teachers in developing their skills, the involvement of students in educational processes, the widespread use of innovative teaching methods and interactive educational platforms and student outcomes. educational processes on the performance of secondary education institutions at European level.

The proposed structural model is highlighted in Figure 3.1, highlighting the relationships between variables through six hypotheses.

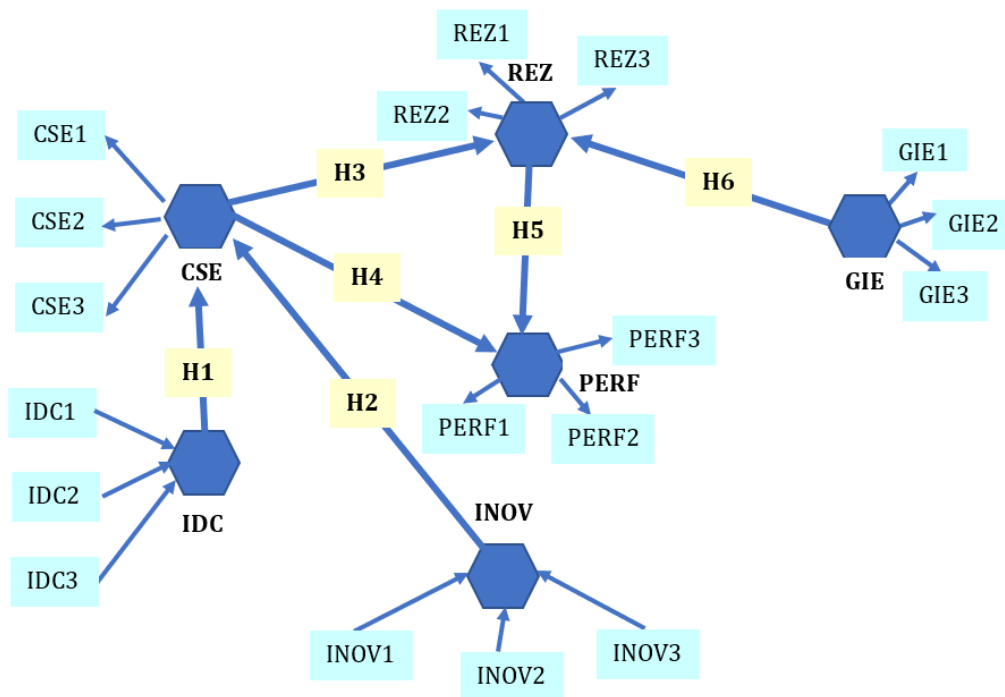


Figure 3.1. The conceptual model of research based on structural equations modelling

Source: personal contribution

We selected as a research method the structural equations modelling, using the least partial squares method (SEM-PLS), because for each variable mentioned above, as a predictor of institutional performance, we identified specific indicators that form or reflect.

Hypothesis 1: Teachers' interest in developing their skills (IDC) has a significant effect on the quality of educational services (CSE).

Hypothesis 2: The widespread use of innovative teaching methods and interactive educational platforms (INOV) has a significant effect on the quality of educational services (CSE).

Hypothesis 3: The quality of educational services (CSE) has a significant effect on students' outcomes in educational processes (RES).

Hypothesis 4: The quality of educational services (CSE) has a significant effect on the institutional performance of high schools (PERF).

Hypothesis 5: Students' outcomes in educational processes (RES) have a significant effect on the institutional performance of high schools (PERF).

Hypothesis 6: The degree of student involvement in educational processes (GIE) has a significant effect on students' outcomes in educational processes (REZ).

The questionnaire used in this research was posted online, both in Romanian, at the web address: <https://forms.gle/wAr7iFEiDPWPCrKP7> and in English, at the web address: <https://forms.gle/WxoX3i4eLsyTXyAF8>, and the invitations to complete were sent to the managers of high schools / colleges in Romania and eight other European countries, between April and October 2021.

Qualitative Comparative Analysis (QCA) integrates qualitative and quantitative approaches, being extremely useful to provide an understanding of the causal relationships between the precursors of the performance of educational institutions. Figure 3.2 reflects the conceptual model associated with the configurational study.

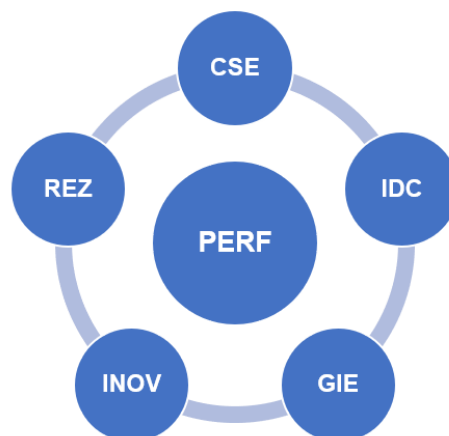


Figure 3.2. Conceptual model of research based on the fsQCA method

Source: personal contribution

In **Finland**, the variable with the highest average response was the quality of educational services (CSE - 5.8), while the variable with the lowest average response was

the widespread use of innovative teaching methods and interactive educational platforms (INOV - 5.14)

In **France**, the variable with the highest average response was the quality of educational services (CSE - 5.77), while the variable with the lowest average response was the widespread use of innovative teaching methods and interactive educational platforms (INOV - 5.09)

In **Germany**, the variable with the highest average of the answers was the quality of educational services (CSE - 5.77), closely followed by the interest of teachers in the development of their skills (IDC - 5.74), while the variable with the lowest average of The response was the widespread use of innovative teaching methods and interactive educational platforms (INOV - 5.12).

In **Italy**, the variable with the highest average of the answers was represented by the quality of the educational services (CSE - 5.7), while the variable with the lowest average of the answers was represented by the widespread use of innovative teaching methods and interactive educational platforms (INOV - 5.06).

In the **UK**, the variable with the highest average response was the quality of educational services (CSE - 5.69), while the variable with the lowest average response was the widespread use of innovative teaching methods and of interactive educational platforms (INOV - 5.09).

In the **Netherlands**, the variable with the highest average of the answers was represented by the quality of the educational services (CSE - 5.86), while the variable with the lowest average of the answers was represented by the institutional performance of the analyzed high schools (PERF - 5.25).

In **Romania**, the variable with the highest average of the answers was represented by the interest of the teachers for the development of their competences (IDC - 6.02), while the variable with the lowest average of the answers was represented by the institutional performance of the analyzed high schools. - 4.98).

In **Spain**, the variable with the highest average of the answers was represented by the quality of the educational services (CSE - 5.77), while the variable with the lowest average of the answers was represented by the widespread use of innovative teaching methods and interactive educational platforms (INOV - 5.1).

In **Hungary**, the variable with the highest average of the answers was represented by the quality of the educational services (CSE - 5.69), while the variable with the lowest average of the answers was represented by the widespread use of innovative teaching methods and interactive educational platforms (INOV - 5.14).

Through the fsQCA method we have shown that the causal recipes that contribute

to increasing the performance of education systems are different from one country to another.

The structural model (Figure 3.3) shows that the results of students in educational processes (REZ) have the strongest effect on the institutional performance of high schools (PERF) included in the research sample (coefficient of effect 0.498), while the quality of educational services (CSE) has a weaker effect on the institutional performance of high schools (coefficient of effect 0.205). Since there is also a relationship between the quality of educational services and the results of students in educational processes (effect coefficient 0.331), we can say that there is a mediating effect between the quality of educational services and the institutional performance of high schools included in the sample of research. in educational processes (REZ). Both the quality of educational services (CSE) and the degree of involvement of students in educational processes (GIE) have an average effect on student outcomes in educational processes (RES) - effect coefficients of 0.331 and 0.316, respectively.

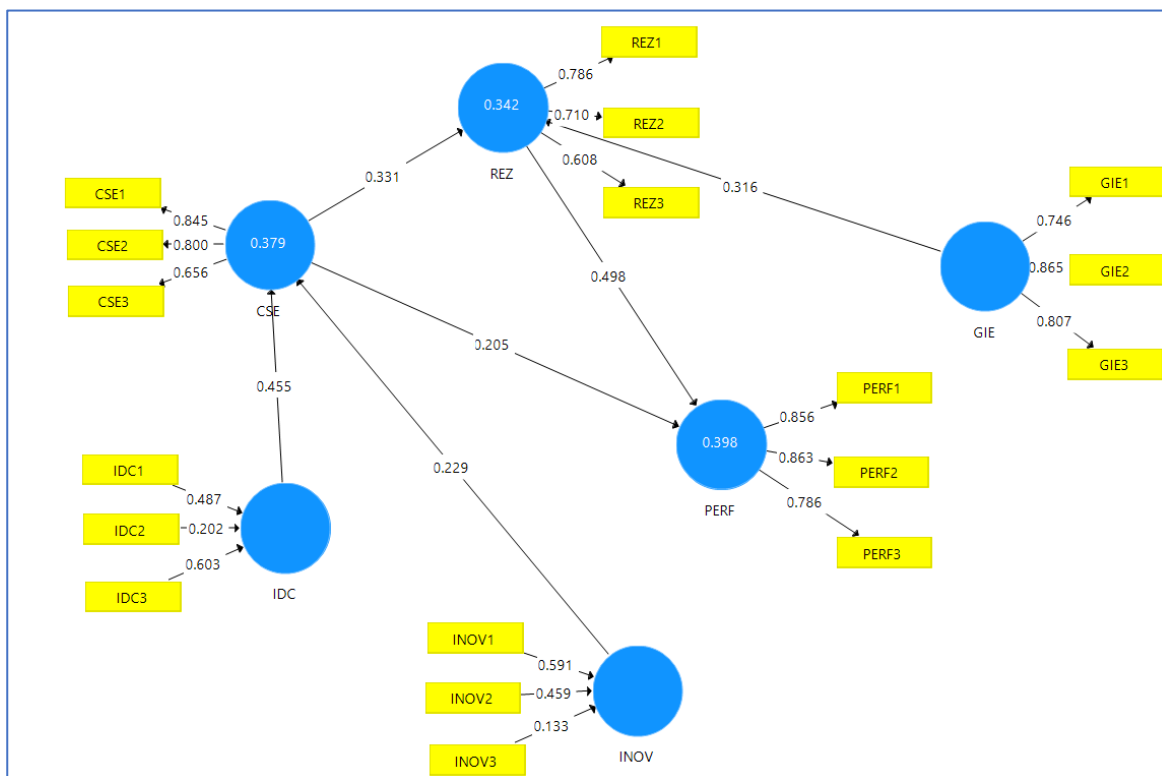


Figure 3.3. Determining the coefficients of effect, the contributions of the indicators to the latent reflective variables and the weights of the indicators to the formative latent variables

Source: Smart PLS software

The data reflected in Table 3.1 are useful for validating / rejecting the hypotheses from the analyzed structural model.

Table 3.1. The values of the asymptotic significance p and the T test for the 6 hypotheses from the structural model

	Eșantion original (O)	Media eșantionului (M)	Deviația Standard (STDEV)	Statistica T (O/STDEV)	Valorile-P
CSE -> PERF	0.205	0.211	0.101	2.033	0.043
CSE -> REZ	0.331	0.334	0.100	3.301	0.001
GIE -> REZ	0.316	0.322	0.098	3.231	0.001
IDC -> CSE	0.455	0.458	0.099	4.579	0.000
INOV -> CSE	0.229	0.245	0.092	2.482	0.013
REZ -> PERF	0.498	0.494	0.088	5.648	0.000

Source: Smart PLS software

All 6 hypotheses are validated, as the p values do not exceed the maximum allowed significance level of 0.05. In addition, the T test shows the magnitude of the correlation between the latent variables in this structural model. Thus, the results of students in educational processes (REZ) have the strongest impact on the institutional performance of the high schools in the sample (PERF) (test T = 5,648, p value tends to zero), while the quality of educational services (CSE) has the highest low impact on the institutional performance of the sample high schools (PERF) (test T = 2.033, p value = 0.043).

Structural equations modelling illustrates the validation of the 6 research hypotheses and demonstrates the role of mediator of students' results in educational processes between the quality of educational services and the institutional performance of high schools included in the research sample. Regarding the performance of high schools, the responses of study participants from the 9 European countries show that managers of educational institutions need to find ways in which increasing the quality of educational services contributes to increasing institutional performance.

In Romania, the interest in developing the skills of high school teachers is at the forefront, while the level of institutional performance has the lowest average response compared to other latent variable averages. In other countries, the lowest level of response averages is associated with the latent variable: the widespread use of innovative teaching methods and interactive educational platforms (INOVs), with the exception of the Netherlands, where innovative educational platforms have a significant impact on high school performance. The highest average of the answers to all 6 variables is found in high schools in the Netherlands (5.59), followed by Finland (5.48) and Germany (5.46), demonstrating the value of these education systems.

Chapter 4

Correlation study on the evaluation of the impact of leadership in secondary education in Romania on educational performance

The decision-making problem in this empirical research is to understand the perception of the impact of leadership in secondary education in Romania on educational performance, by teachers and non-teachers included in the study sample. Another point of interest is the applicability of good practices of educational leadership from other European countries to the educational context in Romania. This decisional problem has crystallized in the formulation of the objectives of the quantitative study, which follow the ways in which the activities of the managers from the secondary education level, but also of the teams he coordinates, lead to the fulfilment of the predetermined performance indicators.

The conceptual model, represented in Figure 4.1, highlights the association / correlation relationships between the proposed independent and dependent variables.

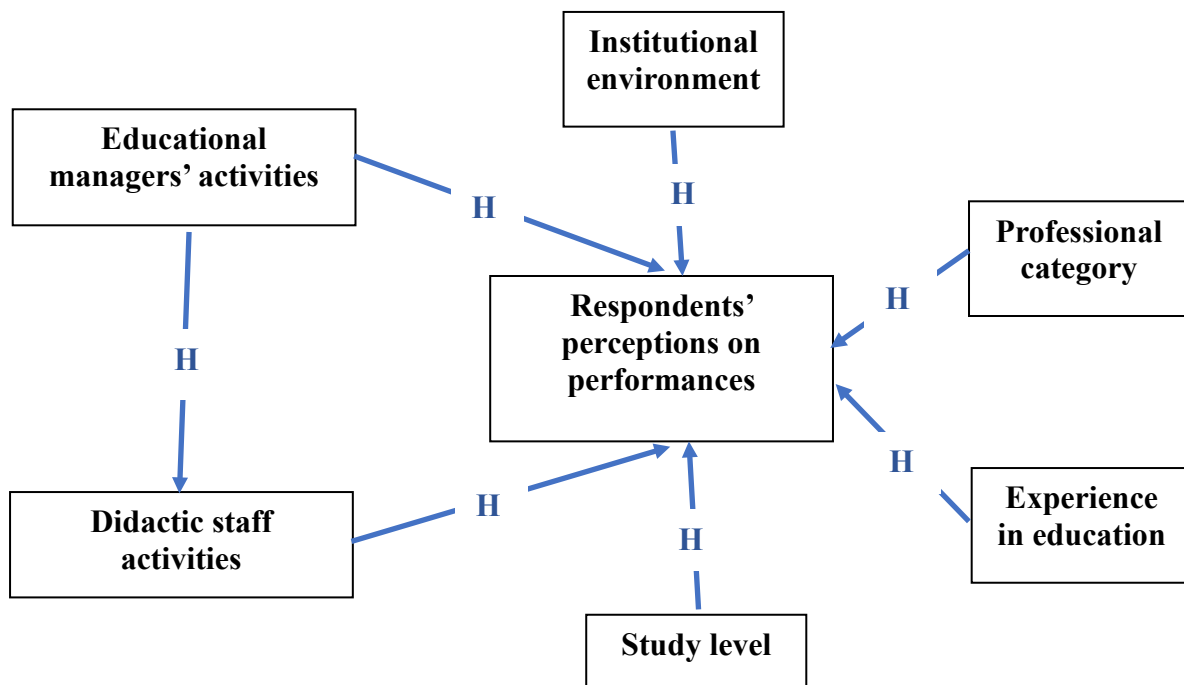


Figure 4.1. Conceptual framework of correlational study

Source: personal contribution

The conceptual model illustrates 7 research hypotheses:

H1 - The activities of educational managers influence in a great extent institutional performance;

H2 - The activities of educational managers influence in a great extent the activities of teachers in the secondary education institutions they coordinate;

H3 - Teachers' activities influence in a great extent institutional performance;

H4 - The institutional environment (urban, rural) influences in a great extent the respondents' perception of the institutional performance;

H5 - The professional category of the respondents (teaching staff, auxiliary teaching staff, non-teaching staff) influences in a great extent their perception of institutional performance;

H6 - Respondents' experience (seniority) in education influences in a great extent their perception of institutional performance;

H7 - The level of education of respondents influences in a great extent their perception of institutional performance.

The first hypothesis follows the existence of the causal relationship between respondents' perception of educational managers' activities and respondents' perception of institutional performance. We used a linear regression analysis, in which the predictor is represented by the respondents' perception of the activity of educational managers, and the dependent variable, by the respondents' perception of the institutional performance.

The Pearson R correlation coefficient is 0.741, which illustrates a very strong correlation between the predictor and the dependent variable.

Table 4.1. Report of correlational model associated to H₁

Model	Correlation coefficient (R)	(R ²)	Adjusted determination coefficient	Standard error of estimated value
1	.741 ^a	.549	.546	.543
a. Predictor: Respondents' perception of the activity of educational managers				

Source: Output SPSS

Consequently, hypothesis H1 is statistically validated.

The second hypothesis follows the existence of the causal relationship between the respondents' perception on the activities of educational managers and the respondents' perception on the activity of teachers.

The Pearson R correlation coefficient calculated using SPSS software is 0.873, which illustrates a very strong correlation between the predictor (respondents' perception of educational managers' activities) and the dependent variable (respondents' perception of teachers' activity) (Table 4.2).

Table 4.2. Report of correlational model associated to H₂

Model	Correlation coefficient (R)	(R ²)	Adjusted determination coefficient	Standard error of estimated value
1	.873 ^a	.761	.760	.415
a. Predictor: Respondents' perception of the activity of educational managers				

Sursa: Output SPSS

Consequently, hypothesis H₂ is statistically validated.

The third hypothesis follows the existence of the causal relationship between the respondents' perception on the teachers' activity and the respondents' perception on the institutional performances.

The calculated Pearson R correlation coefficient is 0.819, which reflects a very strong correlation between the predictor (respondents' perception of teacher activity) and the dependent variable (respondents' perception of institutional performance) (Table 4.3).

Table 4.3. Report of correlational model associated to H₃

Model	Correlation coefficient (R)	(R ²)	Adjusted determination coefficient	Standard error of estimated value
1	.819 ^a	.671	.669	.464

a. Predictor: Respondents' perception of the activity of didactic staff

Sursa: Output SPSS

Consequently, hypothesis H₃ is statistically validated.

The fourth hypothesis analyzes the correlation between the background of the educational institution (urban / rural) and the respondents' perception of the institutional performance through the Chi square test and the Pearson and Spearman correlation coefficients.

Since the value of the asymptotic significance coefficient is close to zero (0.0001), it is lower than the allowed threshold of 0.05 and because the value of the Chi square indicator (18,886), in the context of 3 degrees of freedom, is higher than the tabular Chi square indicator (7.81), hypothesis H₄ is statistically validated (Table 4.4).

Table 4.1. Chi square test result for hypothesis H₄

	Value	Degrees of freedom	Asymptotic significance
Chi-Square value	18.886	3	.0001
Likelihood ratio	20.221	3	.0001
Linear association	10.997	1	.001
Number of valid cases	150		

Source: Output SPSS

The fifth hypothesis analyzes the correlation between the professional category to which the respondents belong (non-teaching staff, auxiliary teaching staff, teaching staff) and their perceptions of institutional performance.

The value of the asymptotic significance in this case (0.020) is lower than the maximum allowed level of 0.05, while the calculated Chi square value (15,085) is higher than the tabular one (12.59) in the context of 6 degrees of freedom (Table 4.5). Hypothesis H₅ is thus validated.

Table 4.5. Chi square test result for hypothesis H₅

	Value	Degrees of freedom	Asymptotic significance
Chi-Square value	15.085	6	.020
Likelihood ratio	15.523	6	.017
Linear association	1.692	1	.193
Number of valid cases	150		

Source: Output SPSS

The sixth hypothesis analyzes the correlation between respondents' experience in education, associated with their seniority and their perceptions of institutional performance.

The value of the asymptotic significance in this case (0.554) is higher than the maximum allowed level of 0.05, while the calculated Chi square value (7.807) is lower than the tabular one (16.92) in the context of 9 degrees of freedom (Table 4.6). Consequently, hypothesis H₆ is invalidated.

Table 4.6. Chi square test result for hypothesis H₆

	Value	Degrees of freedom	Asymptotic significance
Chi-Square value	7.807	9	.554
Likelihood ratio	8.432	9	.491
Linear association	1.389	1	.239
Number of valid cases	150		

Source: Output SPSS

The seventh hypothesis analyzes the correlation between respondents' level of education and their perceptions of institutional performance.

The value of the asymptotic significance in this case (0.014) is lower than the maximum allowed level of 0.05, while the calculated Chi square value (25.090) is higher than the tabular one (21.03) in the context of 12 degrees of freedom (Table 4.7). Hypothesis H₇ is thus validated.

Table 4.7. Chi square test result for hypothesis H₇

	Value	Degrees of freedom	Asymptotic significance
Chi-Square value	25.090	12	.014
Likelihood ratio	26.378	12	.009
Linear association	2.084	1	.149
Number of valid cases	150		

Source: Output SPSS

In conclusion, the validation of six of the seven hypotheses tested through the SPSS software indicates the existence of significant correlations between respondents' perceptions of the activities of colleagues, educational managers, perceived as leaders, and institutional performance.

Clearly, there are multiple role expectations for leaders in European secondary education. All high schools need principals who are able to play the role of leaders who ensure and influence the quality of education. Fulfilling these multiple responsibilities implies a vision of sustainable education, which should constantly guide leaders in the strategic lines of future development of high schools, without losing sight of the missions and objectives of their institutions. Successful high school principals at European level have understood the importance of setting clear learning goals and achieving a commitment at school - and even community - level - to these goals. The development of a clear vision and goals for learning is emphasized by high-performing high school principals. They have high expectations for teachers and students to achieve these goals, proactively involving them in organizational projects. Genuine educational leaders provide emotional support to their peers and are seen as having the ability to encourage the development of interpersonal relationships.

Chapter 5

Trigonometric matrix statistical analysis on the dynamics of performance indicators of high school graduates in Romania in the period 2016 - 2020

The objective of this statistical study, based on the trigonometric matrix analysis, consists in the longitudinal exploration of the dynamics of high school graduates from Romania, in the period 2016 - 2020, who obtained the baccalaureate diploma, respectively of the dynamics of high school graduates from Romania, between 2016 - 2020, who did not pass the baccalaureate exam in the two sessions of the year in which they graduated. Matrix trigonometry allows the understanding of the correlations between the indices from the time series related to the two indicators of educational performance.

The first statistical analysis refers to the dynamics of the performance indicators regarding the graduation of the baccalaureate exam, at national level, in the period 2016 - 2020. The statistical data are reflected in Table 5.1.

Table 5.1. Number of high school graduates who passed the baccalaureate exam, at national level, in the period 2016 - 2020

Years	Number of high school graduates who passed the baccalaureate exam (thousands) (ω_i)	Segments
2016-2017	94,6	AB=AF
2017-2018	91,0	AC=AG
2018-2019	93,4	AD=AM
2019-2020	95,2	AE=AZ

Source: INSSE Bucharest

We will use the coefficient of variation method to identify the trend of the dynamics of the number of high school graduates who passed the baccalaureate exam during the analyzed period. The coefficient of variation is the standard deviation index and allows comparability of data series, even if the averages differ greatly. The lower the value of the coefficient of variation, the greater the homogeneity of the analyzed data.

The path described by the variable ω is assigned to a quadratic function $\omega_t = a + b \cdot t_i + ct_i^2$ as the value of the coefficient of variation is minimal for this trend model.

We can make predictions of the number of high school graduates who are characterized by an increased probability of passing the baccalaureate exam according to

the formulas:

$$\omega_{2020-2021} \text{ Number of high school graduates most likely to pass the bacalaureate exam} = 91,3 + 0,36 \cdot 3 + 0,9 \cdot 3^2 = 100,48 \text{ thousands of persons}$$

$$\omega_{2021-2022} \text{ Number of high school graduates most likely to pass the bacalaureate exam} = 91,3 + 0,36 \cdot 4 + 0,9 \cdot 4^2 = 107,14 \text{ thousands of persons}$$

These predictions are extremely useful for education decision-makers, who can make scientifically sound predictions that will be compared with the results obtained in the final exams in the coming years. Deviations from forecasts can be explained by specific conjunctural factors.

Defining trigonometric functions based on the triangle associated with modelling the dynamics of high school graduates who passed the bacalaureate exam provides a means of addressing situations that cannot be modelled with geometry tools.

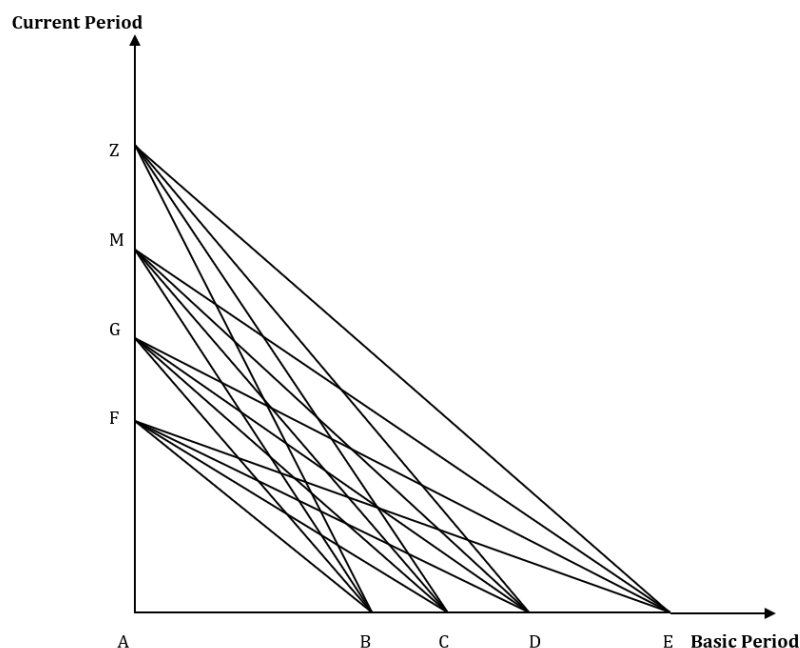


Figure 5.1. The triangle associated with the trigonometric modelling of the dynamics of the variable ω

Source: personal contribution

The individual indices show the variations of the values for the phenomena regarding the promotions to the bacalaureate exam in Romania, in the current periods, in contrast to the reference periods, which are equivalent to the tangent values of all angles of all four rectangular triangles that appear in each rectangular triangle AME and AZE. So,

we can say that the level of the phenomenon in each current period is equivalent to the value of the inverse leg, and the level of the phenomenon in each reference period is equivalent to the value of the neighbouring leg. Also, we can specify that the individual index reflects an increase of 1.93% of the promotion to the bacalaureate exam in Romania, in the period (2019-2020), in relation to the period (2018-2019). If we focus on the period (2019-2020), compared to the period (2017-2018), the individual index shows an increase of 4.62% in passing the bacalaureate exam in Romania. Similarly, if we analyze the interval (2019-2020), in relation to the interval (2016-2017), the individual index shows an increase of 0.63% of the pass at the graduation exam in Romania. If we study the period (2018-2019) compared to the period (2017-2018), the individual index shows an increase of 2.64% when passing the bacalaureate exam in Romania. By analogy, if we analyze the period (2018-2019) compared to the period (2016-2017), the index shows a decrease of 1.27% when passing the bacalaureate exam in Romania. If we analyze the period (2017-2018), proportional to the phase (2016-2017), the individual index indicates a decrease of 3.81% when passing the bacalaureate exam in Romania.

The second statistical analysis refers to the dynamics of performance indicators regarding the completion of high school studies, without passing the bacalaureate exam, at national level, in the period 2016 - 2020. The statistical data are reflected in Table 5.2.

Table 5.2. Number of high school graduates in Romania, in the period 2016 - 2020, who did not pass the bacalaureate exam in the two sessions of the year in which they graduated

Years	High school graduates without taking the bacalaureate exam (thousands of persons)- ξ	Segments
2016-2017	153,6	HI=HP
2017-2018	148,7	HJ=HR
2018-2019	149,2	HK=HS
2019-2020	148,0	HL=HT

Source: INSSE Bucharest

The path described by the variable ξ is assigned to a quadratic function $\xi_{t_i} = a + b \cdot t_i + ct_i^2$, as in the case of the previously analyzed variable, as the value of the coefficient of variation is minimal for this trend model.

We can also project forecasts of the number of high school graduates without taking the bacalaureate exam according to the formulas:

$$\begin{aligned} \omega_{2020-2021} &= \text{Number of high school graduates without taking the bacalaureate exam} \\ &= 148,3333333 + (-1,07) \cdot 3 + 0,616666666 \cdot 3^2 = 150,6733333 \text{ thousands of persons} \\ \omega_{2021-2022} &= \text{Number of high school graduates without taking the bacalaureate exam} \\ &= 148,3333333 + (-1,07) \cdot 4 + 0,616666666 \cdot 4^2 = 153,92 \text{ thousands of persons} \end{aligned}$$

The tangents of the angles reflected by the segments highlighted in Figure 5.2 will be calculated, in which we presented the statistical data on the temporal evolution of the number of high school graduates without taking the bacalaureate exam, in the period 2016 - 2020.

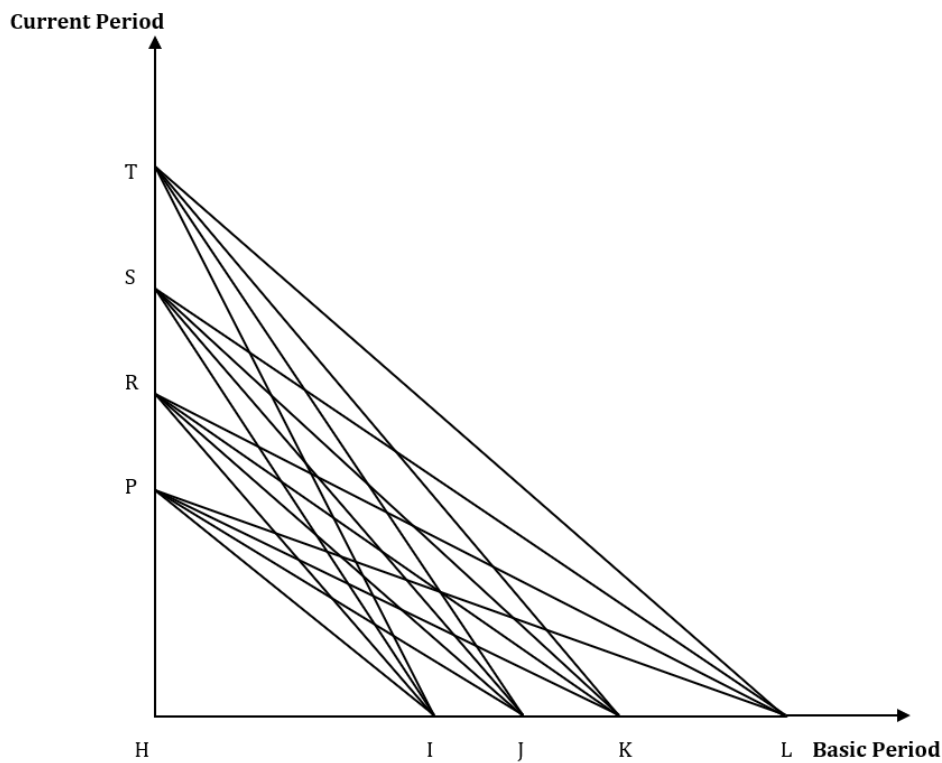


Figure 5.1. The triangle associated with the trigonometric modelling of the dynamics of the variable ξ

Source: personal contribution

It can be appreciated that the individual index expresses a decrease of 0.80% regarding the completion of high school studies without taking the bacalaureate exam, in the period (2019-2020) in contrast to the period (2018-2019). If we analyze the period (2019-2020), compared to the period (2017-2018), the individual index reflects a decrease of 0.47% in terms of completing high school without taking the bacalaureate exam. By

analogy, if we study the interval (2019-2020), compared to the interval (2016-2017), the individual index shows a decrease of 3.65% regarding the completion of high school studies without taking the baccalaureate exam. If we focus on the period (2018-2019) as opposed to the period (2017-2018), the individual index shows an increase of 0.34% in terms of completing high school without taking the baccalaureate exam. Similarly, if we look at the period (2018-2019) compared to the period (2016-2017), the individual index shows a decrease of 2.87% regarding the completion of high school studies without taking the baccalaureate exam. If we analyze the period (2017-2018), compared to the period (2016-2017), the individual index indicates a decrease of 3.19% in terms of completing high school without taking the baccalaureate exam.

In conclusion, we can say that a trend model that incorporates the dynamics of performance indicators specific to the completion of high school studies has several advantages. First, it provides a methodological framework for the empirical testing of the temporal evolution of the increase and decrease indices related to the performance indicators from a trigonometric perspective. To our knowledge, this is the first global study to address trends associated with educational performance indicators through trigonometric modelling correlated with the coefficient of variation method.

Conclusions, managerial implications and contributions of research conducted to the development of performance management in education

Projects aimed at transferring good educational practices at European level are a major opportunity for secondary education institutions in Romania, from the perspective of adapting development strategies and elements of institutional performance management to models and practices in secondary education institutions in European countries. . Through the assumed objectives, this doctoral thesis aimed to contribute to the identification of some pillars of the increase of the performances of the secondary education institutions at European level and their adaptation to the current educational context in Romania.

The performance management processes at the level of secondary education institutions must reflect the context and nature of the individual contributions of the teaching and non-teaching staff to the achievement of the objectives; education managers need to make sure that everyone who works at the institution understands the impact of their contribution to the development of the organization. The role of educational leaders in assessing institutional performance is paramount, as is the need to continually develop performance management strategies that reflect the changing environment in which high schools and colleges operate.

The theoretical contributions of this thesis, approached in the first two chapters, are focused on the following aspects:

- the realization of some conceptual delimitations of the organizational components that contribute to the increase of the performances of the educational institutions;
- highlighting the multiple meanings of the concept of performance in educational institutions, in general, and those in the secondary environment, in particular;
- critical analysis of the factors that have an impact on the performance of educational institutions in terms of experience gained in managerial positions in the Romanian education system;
- identifying and explaining some managerial practices that have proven their success in monitoring the performance indicators of the educational systems in Romania, in relation to other educational systems at European level;
- coherent illustration of the stages of the organizational diagnosis of the educational institutions, thus facilitating the understanding of the interdependencies between the stages of this complex managerial process;

- multi-dimensional analysis of the manager's profile in secondary education;
- structuring and arguing the advantages of adopting different organizational models that operate in secondary education institutions in Romania;
- synthesizing the elements related to the internal and external evaluation processes in the performance management of secondary education institutions in Romania;
- highlighting the particularities of some European educational systems, exploring specific contexts that created the premises for a sustainable development of educational processes;
- the comparative approach of the good practices of educational leadership related to the secondary education from eight European countries, which served as a basis for the substantiation of the empirical study from chapter 3, approached both quantitatively and qualitatively-comparatively;
- providing scenarios regarding the capture of opportunities to adapt the managerial practices identified in the eight educational systems of European states to the realities of secondary education in Romania.

The practical contributions of the thesis emerge from the studies presented in extenso in chapters 3, 4 and 5 and can be summarized as follows:

- ❖ Determining the causal configurations that have a significant effect on the institutional performance of high schools in nine European countries (including Romania) through the fsQCA methodology, considering the previous conditions: the interest of teachers to develop their skills; widespread use of innovative teaching methods and interactive educational platforms; the quality of educational services; the results of the students in the educational processes and the degree of involvement of the students in the educational processes;
- ❖ highlighting the differences in the causal prescriptions of previous conditions in the nine samples of cases, related to the European states included in the research, following the application of the Quine-McCluskey algorithm;
- ❖ the use of the five antecedent conditions mentioned above and the outcome of the fsQCA approach (the level of institutional performance of the analyzed high schools) as endogenous and exogenous latent variables in the conceptual model for applying modeling by structural equations, using the least partial squares method (SEM-PLS);
- ❖ identification, through the effect coefficients, of the latent variables from the SEM-PLS model that have a strong impact on the institutional performances of the analyzed high schools;
- ❖ rigorous evaluation of the reflective and formative measurement submodels,

respectively, from the SEM-PLS model associated with the quantitative study, by testing and validating the convergent validity, the discriminant validity and the collinear statistical test;

- ❖ confirmation, following the application of a bootstrapping procedure with the help of SmartPLS software, of the main predictors of the institutional performances of the analyzed high schools, by validating the hypotheses of the study carried out by SEM-PLS;
- ❖ comparative analysis of the average values of the indicators from the structural model in the nine countries in the research sample;
- ❖ determining variables with high correlation indices within the conceptual model associated with correlational study, which focuses on assessing the impact of leadership in secondary education in Romania on educational performance, using main component analysis and factor analysis;
- ❖ analysis of correlations between variables integrated in three clusters (educational manager activities, teacher activities and institutional performance) by applying appropriate statistical methods: Pearson Chi-Square, Pearson R, Spearman, regression analysis and ANOVA;
- ❖ achieving an innovative conceptual modeling using the clustering process used by K-Means, which highlights the differences in perception of participants in the correlational study on the activities of educational managers, teachers' activities and institutional performance;
- ❖ carrying out an original statistical study, based on trigonometric matrix approaches, which aims at the dynamics of performance indicators of high school graduates in Romania in the period 2016 - 2020;

There are important managerial implications arising from the empirical studies conducted in this thesis. First of all, if the educational managers from the secondary sector in Romania want to improve the level of performance of the institutions they lead, they should take into account both the managerial practices from the other European educational systems analyzed and adapt them intelligently to the Romanian context. and the results of the correlational study conducted on the sample of teachers in Romania, as their perceptions of the precursors of organizational performance are extremely useful for improved decision-making processes. Second, when choices need to be made regarding strategic areas of education that can benefit from the digital transformation of educational services, high school and college managers in Romania will be able to access the research reports of this thesis to understand the correlations between the included variables. in the two conceptual models.

References

1. Baker, D. (2020). *The schooled society*. Stanford University Press.
2. Popescu, M., & Crenicean, L. C. (2012). Innovation and change in education–economic growth goal in Romania in the context of knowledge-based economy. *Procedia-Social and Behavioral Sciences*, 46, 3982-3988.
3. Gochhayat, J., Giri, V. N., & Suar, D. (2017). Influence of organizational culture on organizational effectiveness: The mediating role of organizational communication. *Global Business Review*, 18(3), 691-702.
4. Branco, A. U. (2018). Values, education and human development: the major role of social interactions' quality within classroom cultural contexts. In *Alterity, Values, and Socialization* (pp. 31-50). Springer, Cham.
5. Gavrea, C., Ilies, L., & Stegorean, R. (2011). Determinants of organizational performance: The case of Romania. *Management & Marketing*, 6(2).
6. Păun E. (2017). *Pedagogie. Provocări și dileme privind școala și profesia didactică*, Ed. Polirom, Iași.
7. Drucker, P. F. (1995). *People and performance: The best of Peter Drucker on management*. Routledge.
8. Niculescu, M. (2011). Promoting quality in education through involvement in the learning process and through mentorship. *Journal of Educational Sciences/Revista de Stiintele Educatiei*, 13(1).
9. Wallner, J. (2008). Legitimacy and public policy: Seeing beyond effectiveness, efficiency, and performance. *Policy Studies Journal*, 36(3), 421-443.
10. Briner, R. B., Denyer, D., & Rousseau, D. M. (2009). Evidence-based management: concept cleanup time?. *Academy of management perspectives*, 23(4), 19-32.
11. Baird, K. M., Harrison, G. L., & Reeve, R. C. (2004). Adoption of activity management practices: a note on the extent of adoption and the influence of organizational and cultural factors. *Management accounting research*, 15(4), 383-399.
12. Blackmore, J. (2006). Deconstructing diversity discourses in the field of educational management and leadership. *Educational Management Administration & Leadership*, 34(2), 181-199.
13. Wheatley, M. J., & Kellner-Rogers, M. (1996). *Self-organization: The irresistible future of organizing*. Strategy & Leadership.
14. Sukirno, D. S., & Siengthai, S. (2011). Does participative decision making affect performance in higher education?. *International Journal of Educational Management*.

15. Law, D. C. S. (2010). Quality assurance in post-secondary education: Some common approaches. *Quality Assurance in Education*.
16. Gonand, F., Joumard, I., & Price, R. (2007). Public spending efficiency: institutional indicators in primary and secondary education.
17. Gherguț, A. Management general și strategic în educație. Ghid practic, Editura Polirom, Iași, 2007
18. Jäppinen, A. K. (2017). Analysis of leadership dynamics in educational settings during times of external and internal change. *Educational Research*, 59(4), 460-477.
19. Badawy, M., El-Aziz, A., & Hefny, H. (2018). Exploring and measuring the key performance indicators in higher education institutions. *International Journal of Intelligent Computing and Information Sciences*, 18(1), 37-47.
20. Chomsky, N. (2014). *Aspects of the Theory of Syntax* (Vol. 11). MIT press.
21. Law, W., Elliot, A. J., & Murayama, K. (2012). Perceived competence moderates the relation between performance-approach and performance-avoidance goals. *Journal of Educational Psychology*, 104(3), 806.
22. Klieme, E., Hartig, J., & Rauch, D. (2008). The concept of competence in educational contexts. *Assessment of competencies in educational contexts*, 3, 22.
23. Pors, N. O. (2008). Management tools, organisational culture and leadership: an explorative study. *Performance Measurement and Metrics*.
24. Zakrajšek, S., Rajkovič, V., Bernik, M., Jereb, E., & Rajkovič, U. (2021). Evaluation of education scenarios for acquiring digital competences of secondary school students in Slovenia. *Central European Journal of Operations Research*, 1-17.
25. Mahajan, M., & Singh, M. K. S. (2017). Importance and benefits of learning outcomes. *IOSR Journal of Humanities and Social Science*, 22(03), 65-67.
26. Bewick, B., Koutsopoulou, G., Miles, J., Slaa, E., & Barkham, M. (2010). Changes in undergraduate students' psychological well-being as they progress through university. *Studies in higher education*, 35(6), 633-645.
27. Belash, O., Popov, M., Ryzhov, N., Ryaskov, Y., Shaposhnikov, S., & Shestopalov, M. (2015). Research on university education quality assurance: Methodology and results of stakeholders' satisfaction monitoring. *Procedia-Social and Behavioral Sciences*, 214, 344-358.
28. Hurst, B., Wallace, R. R., & Nixon, S. B. (2013). The impact of social interaction on student learning. *Reading Horizons*.
29. Bini, M., & Masserini, L. (2016). Students' satisfaction and teaching efficiency of university offer. *Social Indicators Research*, 129(2), 847-862.

30. Chen, D., & Macleod, G. (2021). Effectiveness of Digital Tools to Support Pupils' Reading in Secondary School: A Systematised Review. *International Journal of Mobile and Blended Learning (IJMBL)*, 13(2), 1-16.
31. Lytras, M. D., Aljohani, N. R., Visvizi, A., Ordonez De Pablos, P., & Gasevic, D. (2018). Advanced decision-making in higher education: Learning analytics research and key performance indicators. *Behaviour & Information Technology*, 37(10-11), 937-940.
32. Sum, N. L., & Jessop, B. (2013). Competitiveness, the knowledge-based economy and higher education. *Journal of the Knowledge Economy*, 4(1), 24-44.
33. Ciolan, L., Stîngu, M., & Iftimescu, S. (2021). The institutional conditions of adapting to future challenges in the Romanian education system. Working Paper. CEU Center for Policy Studies.
34. Schechter, C., & Asher, N. (2012). Principals' sense of uncertainty and organizational learning mechanisms. *International Journal of Educational Management*.
35. Connolly, M., & James, C. (2006). Collaboration for school improvement: A resource dependency and institutional framework of analysis. *Educational Management Administration & Leadership*, 34(1), 69-87.
36. Ainsworth, R., Dehejia, R. H., Kim, B., Pop-Eleches, C., & Urquiola, M. S. (2020). The Importance of Value Added in School Choice: Evidence from an Information Experiment in Romania. *The Importance of Value Added in School Choice: Evidence from an Information Experiment in Romania* (December 1, 2020). KDI School of Pub Policy & Management Paper Forthcoming.
37. Hannay, L., Jaafar, S. B., & Earl, L. (2013). A case study of district leadership using knowledge management for educational change. *Journal of Organizational Change Management*.
38. Temirov, D. S. (2017). Diagnosis of Subjective Attitude of Educational Relation Participants to Educational Institutions. *Eastern European Scientific Journal*, (4).
39. Reboloso, E., Fernández-Ramírez, B., & Cantón, P. (2005). The influence of evaluation on changing management systems in educational institutions. *Evaluation*, 11(4), 463-479.
40. Hassin, A. (2010). Effective diagnosis in organisation change management. *Journal of Law and Governance*, 5(2).
41. Bhasin, B., Gupta, G., & Malhotra, S. (2021). Impact of Covid-19 Pandemic on Education System. *EPRA International Journal of Environmental Economics, Commerce and Educational Management*, May 2020, 6-8.

42. Stoica, A. M. (2020). From Challenges to Opportunities in Educational Management during COVID-19 Pandemic: The case of Fun Science Romania. *Manager*, (31), 101-107.
43. Constantinescu, M. (2017). Valuing the educational changes in the Romanian educational system. *Global Journal of Psychology Research: New Trends and Issues*, 7(2), 86-89.
44. Irgens, E. J. (2014). Art, science and the challenge of management education. *Scandinavian journal of Management*, 30(1), 86-94.
45. Noordegraaf, M., & De Wit, B. A. S. (2012). Responses to managerialism: How management pressures affect managerial relations and loyalties in education. *Public Administration*, 90(4), 957-973.
46. Hofstede, G. (1996). *Managementul structurilor multiculturale*, București: Editura Economică
47. Covey, S. R. (1989). *The 7 habits of highly effective people (Vol. 1)*. New York: Simon & Schuster.
48. Bicar, B. B., Añar, L. E., Del Rosario, A. S. C., Lorenzo, V. I. M., & Mugot, M. A. C. (2021). Educational Landscape Transformations Amidst COVID19 Pandemic. *Psychology and Education Journal*, 58(2), 10360-10369.
49. Enceanu, N. C. (2019). Managementul educațional - stiluri de management. În *Managementul educațional și calitatea în educație* (pp. 83-88). Editura Lumen, Asociația Lumen.
50. Tușa, A., Voinia, C. S., & Dumitrașcu, O. (2016). Romanian pre-university educational management in the context of european integration. In *Challenges, Performances and Tendencies in Organisation Management* (pp. 409-415).
51. Bladen, C., & Kennell, J. (2014). Educating the 21st century event management graduate: Pedagogy, practice, professionalism, and professionalization. *Event Management*, 18(1), 5-14.
52. Bratanu, S. (2021). Entrepreneurship in the Educational Field. Modernization of Romanian Education by Professionalizing the Function of Director. *Ovidius University Annals, Economic Sciences Series*, 21(1), 470-477.
53. Enache, R., & Crisan, A. (2014). The analysis of teachers' skills and abilities for the pre-university system in the initial and continuous training programs. *Procedia-Social and Behavioral Sciences*, 114, 519-526.
54. Chervase, C. V. (2012). Some Aspects Regarding the European Legislative Framework of the Teaching and Managerial Professions in Pre-University Education.

- Analele Științifice ale Universității» Alexandru Ioan Cuza «din Iași. Științe ale Educației, (XVI), 137-148.
55. Brauckmann, S., Pashiardis, P., & Ärlestig, H. (2020). Bringing context and educational leadership together: Fostering the professional development of school principals. *Professional Development in Education*, 1-12.
 56. Covey, S. R. (2000). *Etica liderului eficient sau Conducerea bazată pe principii*, Editura Alfa, București
 57. Leal Filho, W., Eustachio, J. H. P. P., Caldana, A. C. F., Will, M., Lange Salvia, A., Rampasso, I. S., & Kovaleva, M. (2020). Sustainability leadership in higher education institutions: An overview of challenges. *Sustainability*, 12(9), 3761.
 58. Connolly, M., James, C., & Fertig, M. (2019). The difference between educational management and educational leadership and the importance of educational responsibility. *Educational Management Administration & Leadership*, 47(4), 504-519.
 59. Heystek, J. (2011). School governing bodies in South African schools: Under pressure to enhance democratization and improve quality. *Educational management administration & leadership*, 39(4), 455-468.
 60. Abdullah, H. H., & Siam, M. (2014). The influence of organizational structure and organization culture on the organizational performance of higher educational institutions: The moderating role of strategy communication. *Asian social science*, 10(13), 142-154.
 61. Little, T. (2013). 21st century learning and progressive education: An intersection. *International Journal of Progressive Education*, 9(1), 84-96.
 62. Corbo, J. C., Reinholz, D. L., Dancy, M. H., Deetz, S., & Finkelstein, N. (2014). Sustainable change: A model for transforming departmental culture to support STEM education innovation. *Physics Education Research*.
 63. Zierer, K. (2015). Educational expertise: the concept of 'mind frames' as an integrative model for professionalisation in teaching. *Oxford Review of Education*, 41(6), 782-798.
 64. Ord, J. (2012). John Dewey and Experiential Learning: Developing the theory of youth work. *Youth & Policy*, 108(1), 55-72.
 65. Mandarano, L. (2015). Civic engagement capacity building: An assessment of the citizen planning academy model of public outreach and education. *Journal of Planning Education and Research*, 35(2), 174-187.
 66. Felner, R. D., Seitsinger, A. M., Brand, S., Burns, A. M. Y., & Bolton, N. (2007). Creating small learning communities: Lessons from the project on high-performing

- learning communities about “what works” in creating productive, developmentally enhancing, learning contexts. *Educational Psychologist*, 42(4), 209-221.
67. Hollins-Alexander, S. (2013). *Online professional development through virtual learning communities*. Corwin Press.
 68. Paraschiva, G. A., Farkas, Z. B., Jitarel, A., & Draghici, A. (2018). A study of the evolution of educational efficiency: Romanian case. *Management*, 16, 18.
 69. Păun, E. (1999). *Școala – abordare sociopedagogică*, Editura Polirom, Iași
 70. Stoll, L., & Fink, D. (1996). *Changing our schools: Linking school effectiveness and school improvement*. Open University Press.
 71. Walker, R. M., Damanpour, F., & Devece, C. A. (2011). Management innovation and organizational performance: The mediating effect of performance management. *Journal of public administration research and theory*, 21(2), 367-386.
 72. Issa, C. F., & Popescu, D. M. (2012). Modern Approaches In The Pre-University Educational Institutions. In *Proceedings of the International Management Conference (Vol. 6, No. 1, pp. 419-425)*. Faculty of Management, Academy of Economic Studies, Bucharest, Romania.
 73. Coleman, P., & Collinge, J. (1991). In the web: Internal and external influences affecting school improvement. *School Effectiveness and School Improvement*, 2(4), 262-285.
 74. Gay, G. (2013). Connections between classroom management and culturally responsive teaching. In *Handbook of classroom management (pp. 353-380)*. Routledge.
 75. Cenar, I. (2020). Non-financial Reporting and Performance in Pre-university Education. *Ovidius University Annals, Economic Sciences Series*, 20(2), 830-836.
 76. Mulder, R. H. (2020). The Relevance of Quality Assurance for Work-Based Learning.
 77. Avasilcăi, S. (2001). *Managementul performanței organizaționale*, Editura Tehnopress, Iași
 78. Olson, E. M., & Slater, S. F. (2002). The balanced scorecard, competitive strategy, and performance. *Business Horizons*, 45(3), 11-16.
 79. Komarraju, M., Musulkin, S., & Bhattacharya, G. (2010). Role of student–faculty interactions in developing college students' academic self-concept, motivation, and achievement. *Journal of college student development*, 51(3), 332-342.
 80. Corbu, L. C. (2019). The role and impact of human resources in pre-university education. *The USV Annals of Economics and Public Administration*, 19(2 (30)), 71-76.

81. Cherny, A., & Madan, D. (2009). New measures for performance evaluation. *The Review of Financial Studies*, 22(7), 2571-2606.
82. FAO, Organization Analysis and Development, FAO Capacity Development, Paris, preluat din: http://www.fao.org/docs/eims/upload/314528/fao_cd_lm4.pdf
83. Patrașcu, O. (2012). Reforma în școala românească, Ghid de management școlar, secțiunea F 1.5, RAABE România, LBW, București
84. Pătrăuță, T. (2019). Management-Calitate-Formare inițială pentru cariera didactică. *Quality Assurance Review*, 9.
85. Comisia Europeană/EACEA/Eurydice, Asigurarea calității în educație: politici și abordări asupra evaluării școlare în Europa. Raport Eurydice. Luxemburg: Oficiul pentru Publicații al Uniunii Europene, 2015
86. de Eça, M. T. T. P. (2005). Using portfolios for external assessment: An experiment in Portugal. *International Journal of Art & Design Education*, 24(2), 209-218.
87. Ordonanța de Urgență a Guvernului României nr. 75/20.07.2005 privind asigurarea calității în educație, aprobată prin Legea nr. 87/10.04.2006, cu modificările și completările ulterioare, art. nr. 9, alin. d).
88. Ordinul ministrului educației, cercetării, tineretului și sportului nr. 5574 / 06.10.2011 privind aprobarea Regulamentului de inspecție a unităților de învățământ preuniversitar, Anexa nr. 1 la Regulament.
89. Szekeres, G., & Căldăraru, A. (2021). The influence of financing on results in the pre-university education system. *Journal of Financial Studies*, 10(6), 136-151.
90. Agasisti, T., Bonomi, F., & Sibiano, P. (2012). Do the managerial characteristics of schools influence their performance?. *International Journal of Educational Management*.
91. Sarrico, C. S., Rosa, M. J., & Coelho, I. P. (2010). The performance of Portuguese secondary schools: An exploratory study. *Quality Assurance in Education*.
92. Sarrico, C. S., Rosa, M. J., & Manatos, M. J. (2012). School performance management practices and school achievement. *International journal of productivity and performance management*.
93. Bouckaert, G., & Halligan, J. (2006, September). A framework for comparative analysis of performance management. In Study Group on Productivity and Quality in the Public Sector at the Conference of European Group of Public Administration, Universităă Bocconi, Milan. Retrieved November (Vol. 13, p. 2013).
94. Brown, A. (2005). Implementing performance management in England's primary schools. *International Journal of Productivity and Performance Management*.

95. Moos, L., & Dempster, N. (1998). Some comparative learnings from the study. *Effective school leadership: Responding to change*, 98-111.
96. O'Brien, C. (2013) To investigate whether or not the current performance management process is effective in Irish Post-Primary Schools. Masters thesis, Dublin, National College of Ireland.
97. Hovdhaugen, E., Vibe, N., & Seland, I. (2017). National test results: Representation and misrepresentation. Challenges for municipal and local school administration in Norway. *Nordic Journal of Studies in Educational Policy*, 3(1), 95-105.
98. Bryderup, I. M., Larson, A., & Trentel, M. Q. (2009). ICT-use, educational policy and changes in pedagogical paradigms in compulsory education in Denmark: From a lifelong learning paradigm to a traditional paradigm?. *Education and Information Technologies*, 14(4), 365-379.
99. Chung, J. (2015). International comparison and educational policy learning: Looking north to Finland. *Compare: A Journal of Comparative and International Education*, 45(3), 475-479.
100. Teasley, C. (2004). The culture of discourse on educational reform in Spain. *The Review of Education, Pedagogy, and Cultural Studies*, 26(4), 249-275.
101. ETUCE School Leadership Survey Report - School Leadership in Europe: issues, challenges and opportunities (2012), <https://www.csee-etu.org/images/attachments/SchoolLeadershipsurveyEN.pdf> accesat în data de 11.02.2021
102. Azorín, C. (2020). Beyond COVID-19 supernova. Is another education coming?. *Journal of Professional Capital and Community*.
103. McLeod, S., & Dulsky, S. (2021, March). Resilience, Reorientation, and Reinvention: School Leadership During the Early Months of the COVID-19 Pandemic. In *Frontiers in Education* (Vol. 6, p. 70). Frontiers.
104. European ideas for better learning: the governance of school education systems Produced by the ET 2020 Working Group Schools The final report and thematic outputs of the ET2020 Working Group Schools (2018), <https://www.schooleducationgateway.eu/downloads/Governance/2018-wgs6-Full-Final-Output.pdf> accesat în data de 24.02.2021
105. Brauckmann, S., Geißler, G., Feldhoff, T., & Pashiardis, P. (2016). Instructional Leadership in Germany: An Evolutionary Perspective. *International Studies in Educational Administration* (Commonwealth Council for Educational Administration & Management (CCEAM)), 44(2).

106. Klein, E. D., & Bronnert-Härle, H. (2020). Mature school cultures and new leadership practices—An analysis of leadership for learning in German comprehensive schools. *Zeitschrift für Erziehungswissenschaft*, Springer, 23(5), 955-977.
107. Tulowitzki, P. (2013). Leadership and school improvement in France. *Journal of Educational Administration*. Vol. 51 Iss 6 pp. 812 – 835, <http://dx.doi.org/10.1108/JEA-03-2012-0026>
108. Barrere A. (coord.) (2012). Building professional identities School heads in France <https://www.france-education-international.fr/en/revue-internationale-deduction-sevres/leading-a-school> accesat în data de 4.03.2021
109. Hargreaves, A., Halasz, G., & Pont, B. (2007). School leadership for systemic improvement in Finland. Paris: Organization for Economic Cooperation and Development, 1-44.
110. Uljens M., Nyman C. (2013) Educational Leadership in Finland or Building a Nation with Bildung. In: Moos L. (eds) Transnational Influences on Values and Practices in Nordic Educational Leadership. *Studies in Educational Leadership*, vol 19. Springer, Dordrecht. https://doi.org/10.1007/978-94-007-6226-8_3
111. Sahlberg, P. (2011). The fourth way of Finland. *Journal of educational change*, 12(2), 173-185.
112. Lumby, J. (2006). Leadership preparation and development—a perspective from the United Kingdom. *Journal of Research on Leadership Education*, 1(1), 1-5.
113. James, E. A., Milenkiewicz, M. T., & Bucknam, A. (2008). Participatory action research for educational leadership: Using data-driven decision making to improve schools. Sage.
114. Bal, J., & de Jong, J. (2007). improving school leadership-oEcD review, Background report for the netherlands. prepared for the Ministry of Education, Culture and Science, Netherlands, <https://www.oecd.org/education/school/38639469.pdf> accesat în 3.03.2021
115. Derring, A., Brundrett, M., Slavíková, L., Karabec, S., Murden, B., & Nicolaidou, M. (2005). Educational leadership development in Finland, the Netherlands and France: An initial comparative report. *Management in education*, 19(5), 34-37.
116. Krüger, M. (2009). The big five of school leadership competences in the Netherlands. *School Leadership and Management*, 29(2), 109-127.
117. Moreira, M. A., Rivero, V. M. H., & Alonso, J. J. S. (2019). Leadership and school integration of ICT. Teachers perceptions in Spain. *Education and Information Technologies*, 24(1), 549-565.

118. Spanish Ministry of Education. (2007). School leadership in Spain: OECD country background report. <https://www.oecd.org/spain/38529289.pdf> accesat in data de 3.03.2021
119. Figueroa, D. T., Golden, G., Giovinazzo, M., Jankova, B., & Horvathova, M. (2017). Education Policy Outlook: Italy. OECD Publishing. <http://www.oecd.org/education/Education-Policy-Outlook-Country-Profile-Italy.pdf> accesat în 4.03.2021
120. Paletta, A., & Bezzina, C. (2016). Governance and leadership in public schools: Opportunities and challenges facing school leaders in Italy. *Leadership and Policy in Schools*, 15(4), 524-542.
121. Baráth, T., Horváth, L., Nóbik, A., & Verderber, É. (2019). Educational leadership in Hungary. *Leadership in education*, 113.
122. Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage publications.
123. Pappas, I. O., & Woodside, A. G. (2021). Fuzzy-set Qualitative Comparative Analysis (fsQCA): Guidelines for research practice in Information Systems and marketing. *International Journal of Information Management*, 58, 102310.
124. Gustafson, K. (2006). The trigonometry of matrix statistics. *International Statistical Review*, 74(2), 187-202.
125. Vișinoiu N. (1996). *Statistică matriceală*, Ed. ALL, București

Lista de lucrări

Drd. Jicman (Enache) Mioara

Articole care prezintă contribuții științifice originale, in extenso, publicate într-o revistă indexată ERIH+

1. Jicman (Enache) M., Teacu (Spac) C., Capatina, A. (2021), *Tracking Key Performance Indicators within Educational Institutions: The Balanced Scorecard Approach*, Annals of "Dunarea de Jos" University of Galati Fascicle I. Economics and Applied Informatics Years XXVII – no1/2021 ISSN-L 1584-0409 ISSN-Online 2344-441X
http://www.eia.feaa.ugal.ro/images/eia/2021_1/Jicman-Enache_Teacu-Spac_Capatina.pdf
2. Teacu (Spac) C., Jicman (Enache) M. (2020). *Comparative Analysis Regarding Managerial Flexibility within Romanian Public and Private High Schools*, Annals of "Dunarea de Jos" University of Galati, Fascicle I. Economics and Applied Informatics, Years

XXVI – no2/2020, ISSN-L 1584-0409 ISSN-Online 2344-441X

http://www.eia.feaa.ugal.ro/images/eia/2020_2/Teacu-Spac_Jicman-Enache.pdf

Articole care prezintă contribuții științifice originale, in extenso, publicate într-o revistă indexată de cel puțin 2 din bazele de date internaționale recunoscute

1. Jicman (Enache) M., Teacu (Spac) C., Parincu (Teacu), A. (2021), A Comparative Analyses of Educational Leadership Practices in European Countries: The Role of Neuroleadership Consulting Services, Proceedings of the International Conference Risk in Contemporary Economy” ISSN-L 2067-0532 ISSN online 2344-5386 XXII th Edition, 2021, Galati, Romania, “Dunarea de Jos” University of Galati, Romania – Faculty of Economics and Business Administration

http://www.rce.feaa.ugal.ro/images/stories/RCE2021/Jicman_Teacu_Teacu.pdf

Articole/studii prezentate/publicate în volumele conferințelor internaționale desfășurate în țară sau străinătate (cu ISSN sau ISBN)

1. Jicman (Enache) M., Teacu (Spac) C., Capatina, M. (2021), Exploring the innovative mindset of manager from Romanian high schools a qualitative analysis, Proceedings of International Conference - 13th annual International Conference on Education and New Learning Technologies EDULEARN21, ISBN: 978-84-09-31267-2, ISSN: 2340-1117, pp. 2314-2321

<https://library.iated.org/publications/EDULEARN21>

<https://library.iated.org/download/EDULEARN21TOC>

2. Teacu (Spac) C., Jicman (Enache) M. (2021). *Digital transformation impact on managerial activity from educational institutions, in the context of the global pandemic*, 9th International Conference of SCDS-UDJS 2021, Perspectives and challenges in doctoral research, Galati, 10 and 11 of June 2021

<http://www.cssd-udjg.ugal.ro/index.php/2020-2/abstracts-2023>

3. Teacu (Spac) C., Jicman (Enache) M. (2020). *The role of management staff from Romanian public and private high schools on shaping institutional performances*, International Conference ACIEK 2020

<https://www.aciek-academy.com/2020/03/01/2020-aciek-virtual-conference/>

4. Teacu (Spac) C., Jicman (Enache) M. (2020). *Essential criteria of innovative management in private educational institutions*, 8th International Conference of SCDS-UDJS 2020, Perspectives and challenges in doctoral research, Galati, 18th and 19th of June 2020

<http://www.cssd-udjg.ugal.ro/index.php/2020/abstracts-20201>

5. Teacu (Spac) C., Jicman (Enache) M. (2019). *Assessment of the key performance indicators in the case of Romanian educational institutions: a Balanced Scorecard approach*, International Conference INEKA 2019

<https://www.aciek-academy.com/previous-aciek/the-10th-conference-edition-11-to-13-of-june-2019-verona/>

6. Jicman (Enache) M. (2019). Peculiarities of Performance Assessment in Romanian Educational Institutions, 7th International Conference of SCDS-UDJS 2019, Galați, 13-14 iunie 2019

<http://www.cssd-udjg.ugal.ro/index.php/2019/abstracts-2019>