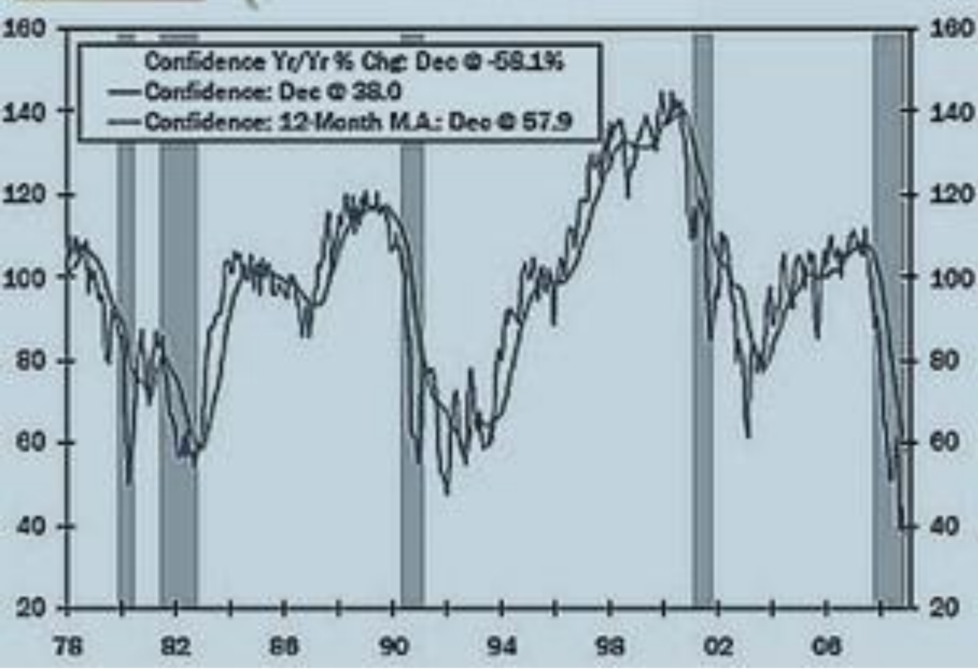
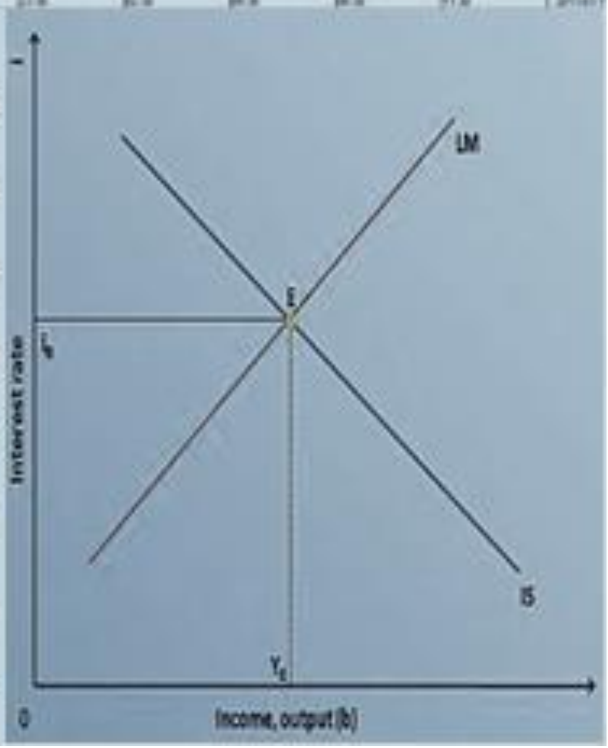
Vol. 8, Issue 2, 2021
ISSN 2343-7995 (online)

Hyperion Economic Journal





HYPERION ECONOMIC JOURNAL

Quarterly journal published by
Faculty of Economic Sciences
Hyperion University of Bucharest
Romania

YEAR VIII, ISSUE 2, JUNE 2021
ISSN 2343-7995 (online)

Editorial Office: Hyperion University, Faculty of Economic Sciences,
Calea Calarașilor no. 169, district 3, Bucharest, 030615
http://www.hej.hyperion.ro hej@hyperion.ro

CONTENTS

HAS THE PANDEMIC CHANGED THE MANAGEMENT STRATEGIES OF THE ORGANIZATIONS?

Laurențiu-George DINU, Ph.D Student
IOSUD-SDSE Valahia University of Târgoviște, Romania, dinulaur2005@gmail.com

Abstract: *The emergence of the COVID-19 pandemic made us all live differently, both in our personal lives and at work. This challenge determined us to carry out, between 03/02/2021 – 03/28/2021, a study on the management strategies of state and private institutions during the pandemic. The purpose of the research was to identify employees' perceptions of the entity in which they work from the perspective of implemented management strategies, to see if there have been changes in them and to find out the level of knowledge of management strategies by employees.*

Keywords: management strategies, COVID-19, perception, organisations, work

JEL Classification: D230, H610, H830

INTRODUCTION

Over time, the public administration has been too little concerned with the strategic aspects of its work. The relationship with the citizen and his treatment as a subject of administration was part of a larger vision that perceived the role of the public service as a mechanical application of the lines drawn by the bosses, who were the only ones able to develop policies and strategies. The accomplishment of the tasks stipulated in the job description was possible without having a long-term perspective, and this was one of the main criticisms brought to the traditional model of public administration.

In the current context, especially after the acceleration of digitalization and the emergence of the COVID-19 pandemic, the framework of the managerial philosophy began to change. The increase in speed due to the use of technology, the gradual change in the mentality of managers of public institutions, media pressure, excessive visibility on social networks lead to placing in the centre of attention the achievement of results for public institutions, and concern for long-term strategies is inevitable.

1. PROBLEM STATEMENT

The strategic dimension analyses the organization in its environment, specifies distinct objectives and goals, prepares the organization to face an uncertain future (Nutt and Backoff, 1992). Administrative institutions and officials are called upon to formulate strategies, objectives and priorities as an integral part of managerial activity. Strategic management concerns civil servants located in positions of responsibility, officials who must not only mechanically perform daily work but also relate to the general objectives of the organization. The activity of a public manager also consists in widening the immediate horizon in order to think in perspective the action of the entity he leads and to adapt to the new challenges. The directions dictated refer to, but are not limited to, digitization, debureaucratization, increasing the speed of response, the introduction and increasing use of the digital signature, the interconnection between institutions. It contains two major aspects:

- defining the objectives, strategy, structure and operating principles of this entity;
- measuring the impact, in space and time, of an important measure that is being taken.

The emergence of the COVID-19 pandemic made us all live differently, both in our personal lives and at work. This challenge determined us to carry out, between 03/02/2021 – 03/28/2021,

a study on the management strategies of state and private institutions during the pandemic. The purpose of the research was to identify employees' perceptions of the entity in which they work from the perspective of implemented management strategies, to see if there have been changes in them and to find out the level of knowledge of management strategies by employees.
The study was conducted free of charge for respondents, online, through the application esurveyspro.com, with the ID 473275, the unique ID 4ea6fa16-feec-49ac-b7b9-b6bed916c524 and the link https://www.eSurveysPro.com/Survey.aspx?id=4ea6fa16-feec-49ac-b7b9-b6bed916c524.

2. RESEARCH QUESTIONS/AIMS OF THE RESEARCH

Statistical survey (selective research) is one of the commonly used observation methods when total observation is not possible or not economically justified (Zizi Goschin, 1999). For extensive prospecting of the organization, the questionnaire method is recommended. In writing the questionnaire, a simple and direct language was used, neologisms were avoided, it was wanted that the language used should not leave room for confusion or interpretations. The variant of a language mix was chosen, using specific expressions and concepts, as well as everyday language, especially because the field of activity is common to all respondents, so it was assumed that they are familiar with the terms in the system. The research was conducted online, because an important vector in ensuring the sincerity of the answers is represented by the place where the respondents are approached and their comfort. Increased attention was also paid to the way the questions were formulated and their order. The questionnaire used open / free questions, closed questions both dichotomous (which offers only two possibilities to answer) and trichotomous (which offers three possibilities to answer), identification questions, control questions (to check the fidelity / constancy of opinion), graphical scales of hierarchy. The identification questions were placed at the end of the questionnaire. In establishing the number of questions, the following were taken into account: the object of the research, the survey technique, the material resources available, the type of subjects to whom the questionnaire was addressed, the average time allocated for completing the questionnaire. The minimization of response distortions, which could damage the value of the results, was also taken into account. The graphic form of the questionnaire was created in order to facilitate the completion. Based on the information needed to be obtained, according to the purpose of the research, from the material and financial resources available, a questionnaire was designed with 27 questions. It was also desired that the time to complete the questionnaire be reasonable, in order to reduce possible negative attitudes, of refusal on the part of the subjects. The contact method used was non-existent. Thus, there was no possibility to ask helpful questions, the cost of administration was higher, the confidentiality granted to the respondent was 100%, not collecting data on their identity.
It was wanted to use a method of investigating people's opinions and knowledge in order to know the opinions and attitudes towards the hypothesis from which it was based.
In applying the survey, an attempt was made to minimize the number of errors, both systematic and accidental, by rigorously applying arithmetic and logic control.
It was also aimed at minimizing errors while respecting the condition of representativeness. In order to ensure the representativeness of the sample (selected from the crowd of respondents), by reducing the sampling error, stratification techniques were used resulting in a sample of 104 subjects. The size and representativeness of the sample are not related to the size of the population we are addressing, ie a sample of “n” subjects has “caeteris paribus”, ie the same representativeness, regardless of the size of the population from which it was extracted (Andrei Novak, 2004). The trends found using this sample will be analyzed and will form the basis of further research. At this point, the findings are strictly related to the data set analysed. The data has been normalized, verified, there is no raw data, so the processing accuracy is good.

Authors such as Emma Bell and Alan Bryman (2007) state that the absolute sample size is more important than the relative size, relative to the entire research entity. Abdelmonem Afifi and Virginia Clark (2000) believe that the number of questionnaires should be 5 to 10 times the number of items to minimize errors. This research has a ratio of 3.85 times (104/27), which shows that there may be errors.

Subjects to whom the questionnaires were applied were classified according to:

- Gender (male or female);
- The environment in which he lives (urban or rural);
- Age (age ranges, as follows: 18-30 years, 31-40 years and 41-50 years, 51-60 years and over 60 years);
- Staff category (Fixed-term employee, Permanent employee, Employer / self-employed, Not working / another situation);
- The last form of education graduated (Secondary education (high school), University studies (college), Postgraduate studies (master's, doctorate, postdoctoral studies)).

Statistical hypotheses were formulated, and based on the answers in the questionnaire, these hypotheses were tested using the SPSS (Statistical Package for the Social Sciences) program.

The statistical hypotheses were defined as follows:

The null hypothesis (null differences hypothesis) - I0 = Regardless of gender, environment, age, staff category or the last form of education completed, the perception of management strategies in organizations is the same.

Alternative hypothesis (states that there is a statistically significant difference) - Ic1 = There are differences in attitude depending on different factors.

The hypotheses were verified by statistical tests performed using the SPSS application.

3. RESEARCH METHODS

The method used was to interpret the results of the questionnaire through SPSS 27.

The study was applied between 03/02/2021 - 03/28/2021. It was wanted to measure, through an econometric instrument, the influence of the Covid-19 pandemic on the management strategies in institutions. The questionnaire has a number of 27 questions, both open and dichotomous. We also used categorization questions, as can be seen at the end of the study.

In this field, a lot of research has been applied. The Covid-19 pandemic has affected the whole world, so strategic crisis management has become an area of interest. Also, this research, mentioned in the bibliography, are a source of inspiration for those who want to adapt their model of strategies to the current context.

4. FINDINGS

From a gender perspective, 66 respondents were female and the remaining 38 were male. It was not our choice. This sample of 104 respondents was given by the interest of people in this field and their willingness to respond to this survey.

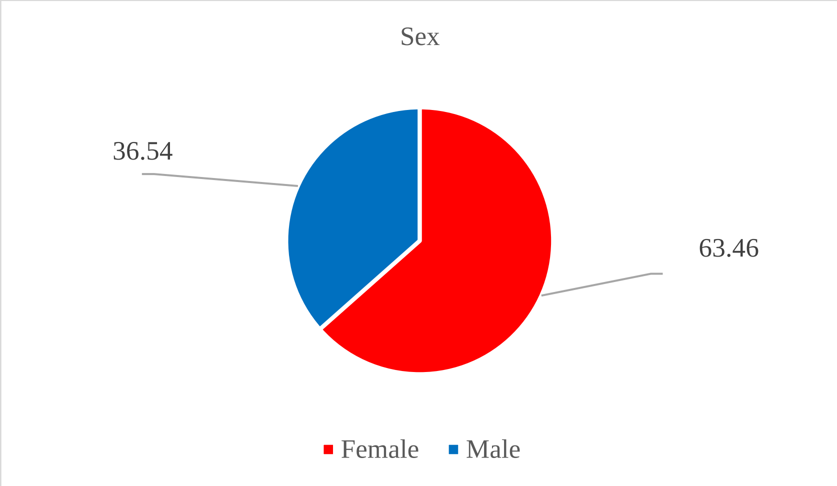


Figure 1. Share of respondents by gender
Source: author

In terms of living environment, 92 respondents live in urban areas, the remaining 12 in rural areas. In Romania, there are a lot of people living in rural areas. The majority percentage is represented by urban dwellers, both due to trends in social movements and due to the fact that the study was started in Bucharest, the country's capital.

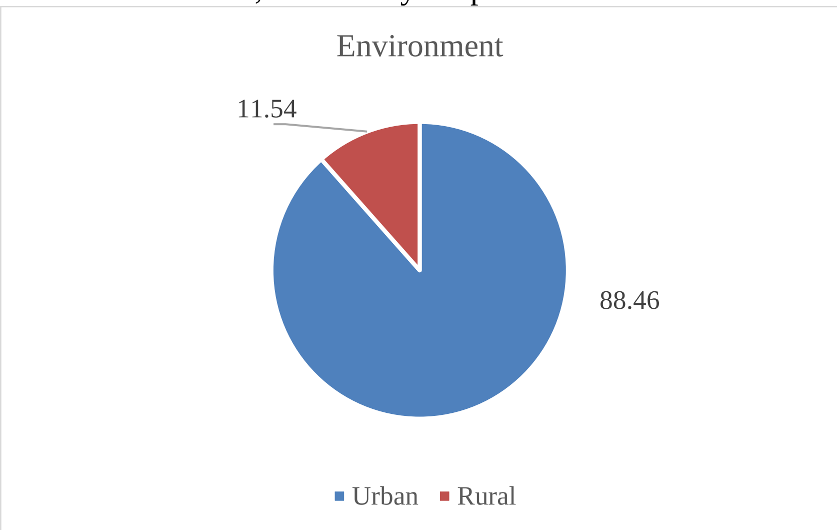


Figure 2 - The share of respondents according to the environment
Source: author

According to the age groups they fall into, we have. Notable in this chart is the presence and availability of young people to participate in the survey. We note that almost 70% of respondents are under the age of 40. They use the technology the most, it is known to them and it comes to them very easily. We also emphasize that over 60 years the percentage is extraordinarily low.

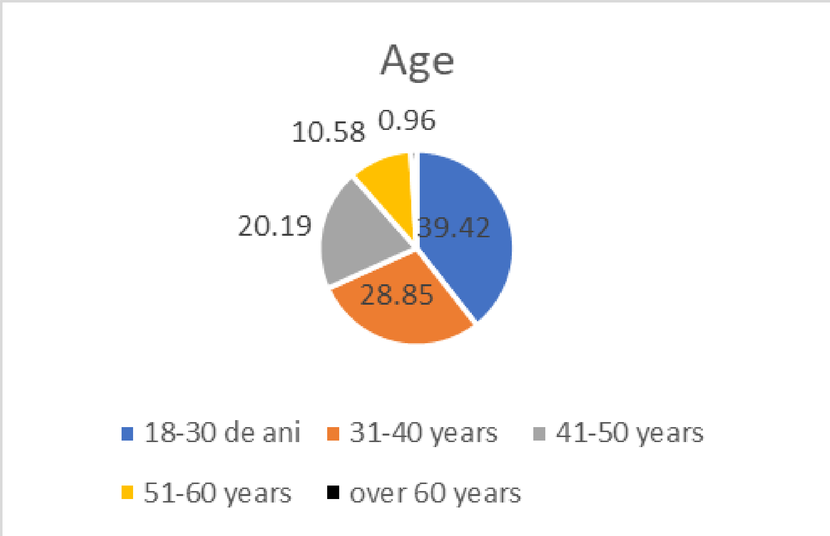


Figure 3 - Share of respondents by age
Source: author

From the point of view of the category of staff to which it belongs, 17 respondents were employed for a fixed period, 71 for an indefinite period, 13 were self-employed (employers), 2 did not work and one was in another situation. We can see the low percentage of people who say they do not work. The percentage of people employed for an indefinite period is also significant. This aspect is desired by most people engaged in the field of work, because it offers a mental comfort, financial facilities, the possibility to make a loan.

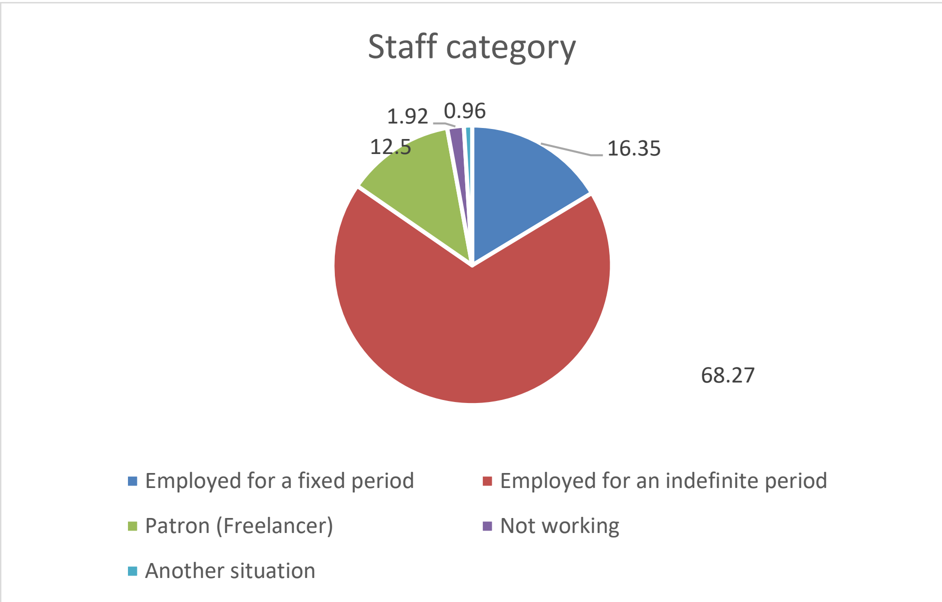


Figure 4 - Share of respondents by staff category
Source: author

From the perspective of the last form of education graduated, 6 respondents had secondary education, 27 university studies, 66 postgraduate studies, and 5 doctoral or postdoctoral studies. The following chart shows the majority of people with master's degrees. That actually means specialization in the field. Of course, it means benefits at work, depending on the employer and the specifics of the activity.

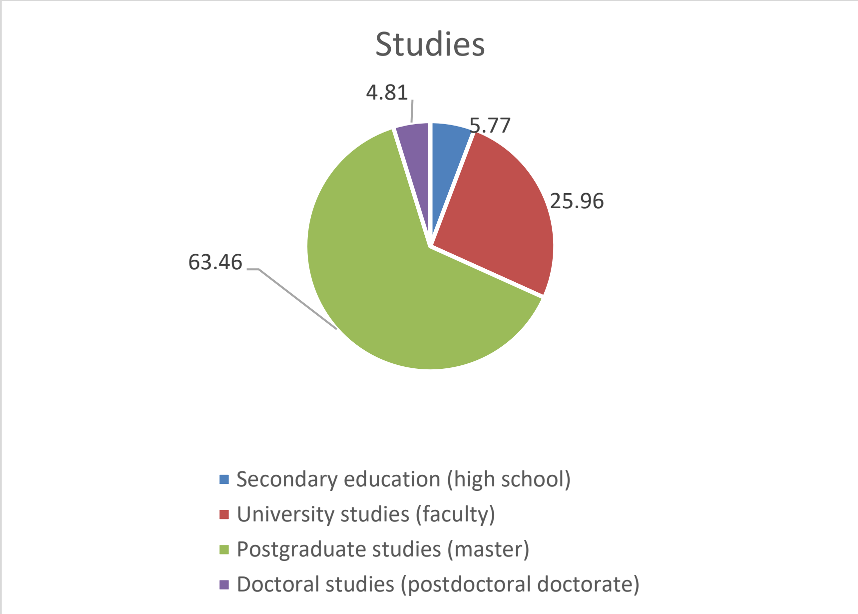


Figure 5 - The share of respondents according to studies
Source: author

In the analysis and interpretation of the results, we found that 94 of the respondents (90.38%) know the expression "management strategy", 5 (4.81%) - no, and 5 (4.81%) preferred not to respond to thi s question. Given the level of education and the environment in which they live, it is found that an overwhelming percentage know or have heard of the expression management strategies. The question asked through the questionnaire did not refer to a definition or understanding of the concept.

Figure 6 - Share of respondents who know the expression "management strategy"
Source: author

Regarding the application of management strategies in public institutions, 66 of the respondents (63.46%) believe that they apply, 20 (19.23%) do not agree and 18 (17.31%) chose the option of not reply.

Figure 7 - Share of respondents who know the expression "management strategy"
Source: author

When asked if they know the management strategies that are applied in the institutions where they operate, 69 respondents (66.35%) said yes, 19 (18.27%) that no, and 16 (15.38%) abstained. There is a similarity between the two questions analysed, so that almost all those who consider that there are management strategies in public institutions say they know them. Worryingly, about 33% of employees do not even know the strategies of the entities in which they operate and do not believe that they apply.

Figure 8 - Applying management strategies in public institutions
Source: author

Among the respondents working in state institutions (53 and 50.96% of the total survey respondents, respectively), 79.24% (42) consider that there have been changes in management strategies since the onset of the COVID-19 pandemic, 11.32% (6) - no, and 9.43% (5) did not answer. Those who work in the private sector (38 - 36.54%) structured their answers as follows: 76.31% (29) stated that the entities in the private sector in which they work changed their strategies, 7.89% (3) - no, and 15.79% (6) did not provide an answer. Those who work on their own (10.58% of the total respondents) had the following answers: 10 (90.90%) adapted their strategies, and one respondent abstained (9.09%).

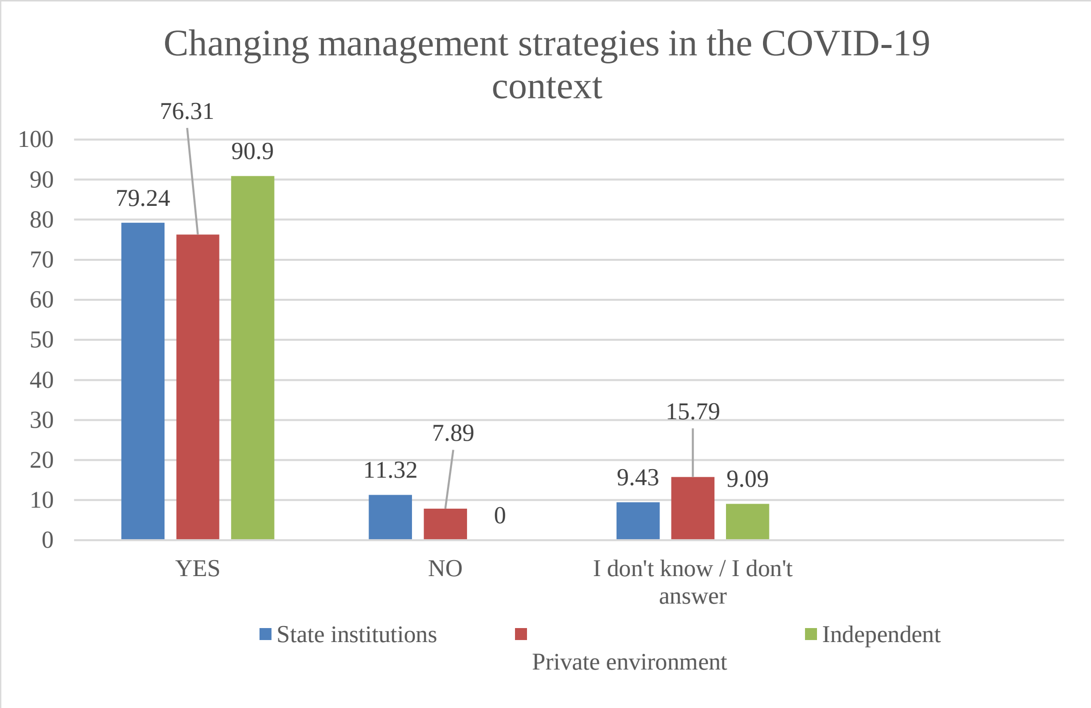


Figure 9 - Changing management strategies since the occurrence of the COVID-19 pandemic, depending on the institution
Source: author

If we analyse as a whole, we will find that 78.85% of the total respondents consider that the institutions in which they work have changed and adapted their management strategies according to the new pandemic context.

Also, 76.93% of respondents reported that management strategies should be changed. This is worth noting, as we have previously found that they have already been modified or adapted since the beginning of the pandemic. However, 9.62% of survey participants stated that management strategies should be completely changed, 67.31% support only their adjustments, while only 13.46% are satisfied with current strategies.

Figure 10 - Reconfiguring management strategies
Source: author

5. CONCLUSIONS

Using the SPSS 27 program (Statistical Package for the Social Sciences), we tested the statistical hypotheses formulated in the research. For this we used the methods of Testing Statistical Hypotheses for the difference of the means of two independent variables, One Way ANOVA, Stepwise for the construction of the Multiple Linear Regression Model and the Durbin Watson Test for the autocorrelation of the errors. Thus, the alternative hypothesis - Ic1 (There are differences in attitude depending on different factors) was validated and we can conclude that the model is significant.

Thus, we can conclude that, depending on the factors analysed (sex, environment, age, staff category and the last form of education completed), the attitude differs. The place where a subject carries out his activity is also significant.

This study also has a number of limitations, primarily due to the number of respondents. But, along with other studies in the field, it can be a complement or, why, a starting point, a challenge for managers or decision makers. Studies prior to 2019 do not exist, because then we were not talking about the Covid-19 pandemic. From the beginning of the pandemic until now, there has been a whole period of transformations and adaptations, both for individuals and for organizations. Adaptability is an essential condition for organizational survival.

Adaptability, connecting to the present and to new challenges are imperative activities for all institutions, whether we are talking about state institutions or those in the private sector. The mentality of human resources is changing, people's security has become more important, the retention of organizations is decreasing and therefore managers should adapt their management strategies constantly. The volatile and uncertain evolution of the pandemic, the restrictions, the appearance or disappearance of some trades impose these aspects.

REFERENCES

[1] Afifi, A., Clark, Virginia, May, Susanne, (2000), *Computer aided multivariate analysis*, fourth edition, Library of Congress, Florida;

[2] Bryman, A., Bell, Emma, (2007), *Business research methods,* second edition, Oxford University, New York;

[3] Cernicova-Buca, Mariana, Palea, Adina, (2021). *An Appraisal of Communication Practices Demonstrated by Romanian District Public Health Authorities at the Outbreak of the COVID-19 Pandemic*, Sustainability, MDPI, Open Access Journal, vol. 13(5), pages 1-19, February;

[4] Culea, M. S., Constantin, D., (2020). *Challenges in Managing the Risks of Error and Fraud in Public Procurement During the State of Emergency Generated by the Covid-19 Virus*, Ovidius University Annals, Economic Sciences Series, Ovidius University of Constantza, Faculty of Economic Sciences, vol. 0(2), pages 624-634, December;

[5] Ershov, M. V., Tanasova, Anna S., Sokolova, Elena Yu., (2019). *On some approaches of public administration to stimulating economic growth*, Upravlenets, Ural State University of Economics, vol. 10(5), pages 20-32, October;

[6] Goschin, Z., (1999), *Statistică*, Expert Publishing House, Bucharest, pp. 22-23;

[7] Khalatur, Svitlana, Kriuchko Lesia, Sirko Anna, (2020). *World Experience Adaptation of Anti-Crisis Management Of Enterprises In The Conditions Of National Economy'S Transformation*, Baltic Journal of Economic Studies, Publishing house "Baltija Publishing", vol. 6(3);

[8] Kostecki, J., (2020). *Security of Public Finances under Economic Crisis and Pandemic: Theoretical-Empirical Aspects*, European Research Studies Journal, European Research Studies Journal, vol. 0(Special 3), pages 360-385;

[9] Mirica, Cristian et.al., (2020). *Managing the Financial Stress Generated by the COVID-19 Pandemic in the Public System. Solutions for Economic Restart in*

Romania, *Economics and Applied Informatics*, "Dunărea de Jos" University of Galati, Faculty of Economics and Business Administration, issue 1, pages 61-67;

[10] Modzelewska, Anna, Skuza, S., et.al. (2020). *Towards Greater Citizen Participation in Financing Public Cultural Institutions—Legal Barriers and Proposed Solutions*, Sustainability, MDPI, Open Access Journal, vol. 12(19), pages 1-25, September;

[11] Munteanu, Ionela et.al, (2020*). Convergent Insights for Sustainable Development and Ethical Cohesion: An Empirical Study on Corporate Governance in Romanian Public Entities*, Sustainability, MDPI, Open Access Journal, vol. 12(7), pages 1-17, April;

[12] Novak, A., (2004), *Statistica și sondajul de opinie*, University Publishing House, Bucharest, p. 249;

[13] Sima, Alexandra Georgiana, Vasile (Vlad), Daniela (2020). *Readjustments in Public Institutions due to Covid-19 Pandemic and the Communication Effects in DÃ¢mboviÈ›a County Council*, Ovidius University Annals, Economic Sciences Series, Ovidius University of Constantza, Faculty of Economic Sciences, vol. 0(2), pages 756-763, December;

[14] Stuti, K., (2020). *An Opportunity to Build Legitimacy and Trust in Public Institutions in the Time of COVID-19*, Research and Policy Briefs 148256, The World Bank;

[15] https://www.eSurveysPro.com/Survey.aspx?id=4ea6fa16-feec-49ac-b7b9-b6bed916c524, accessed in 04/15/2021;

ANALYSIS AND FORECASTING OF BUDGET ACCOUNTING SYSTEMS USING MACHINE LEARNING ALGORITHMS

Bogdan DRAGULIN PhD Student
IOSUD-SDSE Valahia University of Targoviste, Romania, dragulinbogdan@gmail.com

Veronica STEFAN, PhD Professor
IOSUD-SDSE Valahia University of Targoviste, Romania, veronica.stefan@ats.com.ro

ABSTRACT: *The paper debates and amplifies a topic of great interest, related to the current socio-economic context of the field, trying to establish new relationships of interdependence between social-economic factors and the evolution of income and expenditure. Through this paper we will address and analyze aspects of the evolution of income and expenditure, finding certain measurable links between socio-economic factors and the evolution of income and expenditure, finding and expressing strong or weak relationships between cause (socio-economic factors) and effect (amount of income and expenses). The present research was motivated by the use of modern analysis and prediction elements for modeling economic phenomena and for achieving a more accurate decision support. An important objective is to analyze the applicable regression methods in relation to the implementation of Machine Learning algorithms. The public budget is a perfect source of Big data for the implementation of a Machine Learning algorithm, because it allows us to define multiple dimensions for the same information contained. The conclusions and proposals resulting from the analysis of the causality and the interdependence of the analyzed factors are intended to represent a decisional support for the state institutions and at the same time an element of understanding and forecasting of the economic phenomena.*

Keywords: Prediction methods; Simulation models; Budget forecasting; Machine Learning algorithms; Big Data tools

JEL Classification: M41, O21, H61, H68, H83

INTRODUCTION

At this moment, both the budget execution and planning represent an activity with a high impact on society. The transparency and efficiency of budget execution directly results in an increase of society's trust in the state's mechanisms.

This work aims to define the methods for perfecting the forecasting of the public budget so that it will become an efficient instrument for the implementation of fiscal policies.

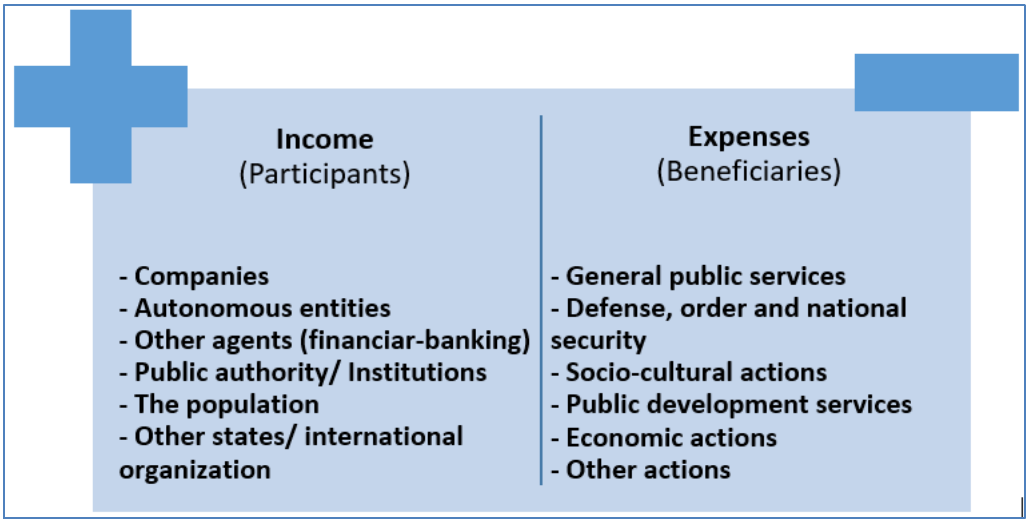
For highlighting the public necessities and for allocating the financial resources needed for achieving them, public authorities need an adequate organizational structure of the financial relations, this is known as “public budget” (Mosteanu T., 1997).

From a juridical standpoint, the public budget represents the use of public authorities of an instrument called “right” for structuring, organizing and highlighting social relations and also for protecting the fundamental social values involved.

In this regard, Leon Duguit remarked, talking about the juridical nature of legal budget dispositions that “*the budget is in part law when creating dispositions and in part administrative act when creating individual and concrete dispositions*” (Duguit L., 1923).

From another perspective, the notion of budget is often used also with the meaning of budget fund, meaning the ensemble of monetary resources mobilized for public authorities and allocated for different destinations.

Figure 1. The budget in terms of participants and relations between participants



Source: Own source

The appearance of the public budget in its legal acceptance laid the foundations for its consecration as a primary instrument for the economic and financial management, maintaining this quality to this day. It appears as a document with mandatory legal value that fixes in a certain structure the public income and expenditure indicators for a period of one year, following default rules, authorizes collecting revenues and making expenses and ensures the premises of control over them.

In this respect, staging the works specific for materializing the public budgets (*projection, approval, execution and control*), is fixed by law, including the meaning of a precise calendar.

The legal acceptance of the budget highlights the implication of public authorities in the process of the budget, income and expenditure indicators projected by the executive being subjected to the authorization by the legislature, which is entitled to a political control over the financial effort of the nation and the directions to which it is channeled.

The consistency with the government programme is ensured, based on which the government has been invested with the trust of the representatives of the nation.

This typical collaboration also expands for the approved revenue and expenditure indicators, respectively the conclusion of the budget execution.

In our country, the legal reglementation of public budget (The law of public finances) genetically defines the notion of budget as "*the document through which there are provided and approved every year the income and expenses or, as the case, only the expenses, depending on the financing system of the public institutes"*.

It is mandatory to specify in this context that in the current language it is also encountered, for the case of different public entities, the notion of "*budget of income and expenses*", seemingly partially debatable by reference to the content of the notion of budget, which would imply income and expenses. It justifies the need to differentiate this budget compared to other categories: *exploitation budget, investment budget, treasury budget* etc. or to highlight or separately treat the two parts of the budget (***income budget and expenses budget***).

The present research was motivated by the use of modern analysis and prediction elements for modeling economic phenomena and for achieving a more accurate decision support.

The interdisciplinary character (*mathematical elements, IT tools, new technologies, factors and social needs are involved, as well as their economic modeling*), makes the approached topic have an original, current character, necessary in order to interconnect the information from the approached fields.

The budget project in terms of revenues and expenditures is carried out in several stages:

- Elaboration of the draft budget for revenues and expenditures
- Approval of the draft budget
- Budget execution
- End the execution of the budget
- Control of budget execution
- Approval of budget execution

Budget planning and execution are organized, at the level of budgetary institution, by *functional classifications* and within the functional classifications, by *economic classifications*. The planning and execution are detailed at the levels subordinated to the institution, and are centralized at the level of the superior units, allowing a follow-up of the activity.

Revenues and expenditures are grouped in the budget based on budget classification.

Revenue is structured by chapters and subchapters of structure revenue; ***expenditure*** is structured by parts, chapters, subchapters, titles, articles, and paragraphs, as appropriate.

The context of this scientific research is related to the ability to forecast as accurately as possible the evolution of the public budget. New technologies and the evolution of algorithms and computing systems in the contemporary period allow determining the interdependence of causal factors of an event at an unprecedented level, allowing their analysis without having an explicit direct relationship between them.

The following research hypotheses are considered:

• The social structure directly influences the realization and execution of the public budget;

• Identifying the factors and their share in the influence is a necessity for understanding budgetary phenomena;

• The use of advanced algorithms and technologies increases the level of understanding and representation of the interaction between social factors and the public budget;

• Making predictions as close to reality as possible allows an efficiency of the activity of public authorities; the correct predictions allow the realization of budgets close to the needs of the society and achieve an increase of the social trust in the state mechanisms and at the same time a transparency of the decisions of the executive factors.

1. LITERATURE REVIEW

Predicting financial and economic time series is a complicated operation primarily due to unprecedented changes in economic trends and changes, as well as incomplete information. Frequent changes in legislation as well as rapid developments in recent years make it very difficult to make a rigorous financial forecast. Therefore, the assessment of forecast accuracy is necessary when using different forms of forecasting methods and, more specifically, forecasting using regression analysis, as they have many limitations in applications.

The main objective of this article is to investigate which forecasting methods provide the best predictions in terms of lower forecast errors and higher forecast accuracy. The best known method for univariate series is *Auto-Regressive Moving Average* (ARMA). In this method, the *Auto-Regressive* (AR) and *Moving Average* (MA) models are combined.

The univariate *Auto-Regressive Integrated Moving Average* (ARIMA) method is a special type of regression in which differences are taken into account in the model. Multivariate ARIMA models and *Vector Auto-Regression* (VAR) models are other popular prediction models that generalize univariate ARIMA models and univariate *Auto-Regressive* (AR) model allowing more variables.

Machine learning techniques and, more importantly, ***Deep Learning algorithms*** have introduced new approaches to prediction problems in which the relationships between variables are modeled in deep and layered hierarchies (Levity, 2021; Great learning, 2021; Flatiron school, 2021). Techniques based on machine learning such as *Support Vector Machines* (SVM) and *Random Forests* (RF) as well as algorithms based on Deep Learning, such as *Recurrent Neural Network* (RNN) and *Long Short-Term Memory* (LSTM), have captured great interest in recent years given their multi disciplinary applicability (IBM, 2020).

Deep Learning methods are able to identify the structure and pattern of data sets, such as nonlinearity and complexity in time series forecasting.

LSTM has been used in many fields, such as: natural language processing (Tarwani & Edem, 2017); handwriting recognition (Graves et al., 2008); speech recognition [(Robinson, 2002), (Sak et al. 2014)]; time series prediction [(Hochreiter & Schmidhuber, 1997), (Gers et all, 2002), (Zhang et all, 2019), (Brownlee, 2016), (Gamboa, 2017), (Roondiwala, 2017)]; modeling economic and financial data series [(Heaton et all, 2016), (Kohzadi, 1996), (Giles et al. 2001), (Huck, 2009), (Xiong, 2015)].

An interesting and important research question is the comparison of the accuracy and precision of traditional forecasting techniques in relation to forecasting algorithms based on

Deep Learning. To our knowledge, there is no specific empirical evidence for the use of the NRM / LSTM method in forecasting economic and financial time series to be able to assess performance and compare them with traditional econometric forecasting methods, such as ARMA.

This paper aims to make a comparison between the classic *Auto-Regressive* (AR), *Moving Average* (MA), *Moving Average Auto Regressive* (ARMA) forecast models compared to Deep Learn (RRN and LSTM models).

The models were chosen in order to be able to compare the result in terms of errors and accuracy.

2. DATA AND METHODOLOGY

2.1 CHRONOLOGICAL DATA SERIES

Timelines are everywhere. We can see them in weather forecasts, price fluctuations, the evolution of expenses or incomes, evolution trends (Moore's law), audio samples, power consumption, etc.

Chronological data series are an ordered sequence of values, usually at equal intervals in time, distributed per year, month, day, hour, minute or even microseconds. If for each unit of time there is only one value associated with each step, the chronological data series are called ***univariate time series.***

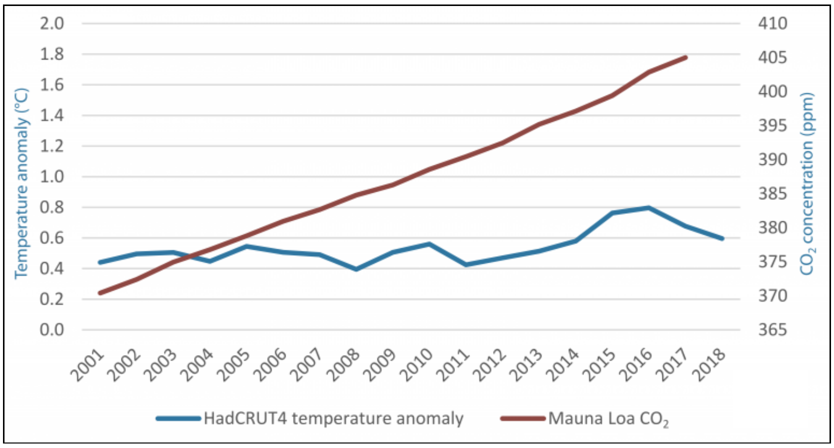
Figure 2. An univariate chronological data series

Source: Web

Time series that have two or more values associated with each moment are called ***multivariate time series***. Examples of multivariate chronological data series can be found in the evolution over time of births in relation to deaths, in the evolution over time of heating in relation to the increase of CO2 emissions.

These time series can be treated as two or more univariate time series, but they can also be treated together in order to highlight the relationships between them.

Figure 3. A multivariate chronological data series



Source: Web

The analysis of time series has many ***applications***, the most obvious is *the forecast of the evolution of the series based on previous experiences.*

For example, analyzing the incomes for the last four years, we could predict what the income will be for the next year. This forecast can be made at different scales of the temporary step (annual, quarterly or monthly forecast can be made).

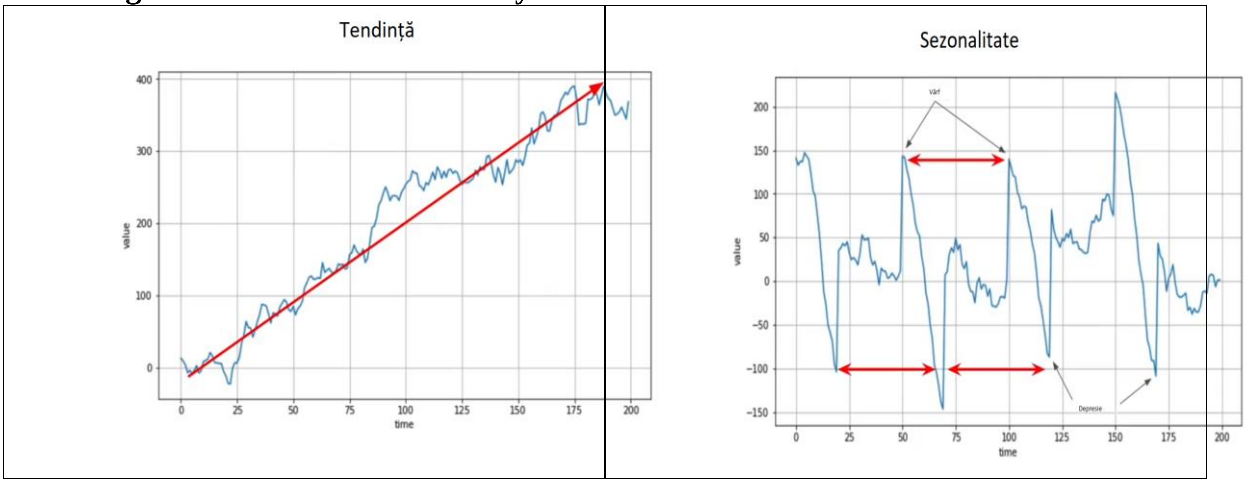
The chronological data series can be also used to analyze the processes or factors that generated the evolution of values (we can analyze the socio-economic factors that influence the evolution of the income of a Territorial Administrative Unit).

Some series evolve gradually increasing or decreasing over time. The characteristic of ascending or descending evolution is called ***tendency*** (ascending tendency or decreasing tendency).

Other series have repetitive time periods in which evolution retains the same characteristics. The evolution of these series is defined by peaks and depressions that are repeated at intervals and are called ***seasonal*** series (near the payment deadlines associated with taxes and duties there is a significant increase (peak) of budget revenues, at the same time, during the holidays and vacations there is a decrease (depression) of payments to the budget.

There are very common series that have a tendency to increase or decrease but also have seasonality.

Figure 4. Trend and seasonality in time series



Source: Web

2.2 METHODOLOGY

The main objective is to identify the biunivocal influences between causal socio-economic factors and the public budget (directly or indirectly through its elements: public revenues and expenditures), in a framework that starts from the premise that both the state with its institutions and civil society play an important role.

The main methodological objectives are the following:

- Identifying the potential factors that influence the evolution of the public budget;
- Identifying the quantitative and qualitative properties of the identified factors, their dependence or interdependence; we will analyze potential determining factors in the evolution of incomes and expenses, we will achieve their normalization and structuring, analyzing both from the point of view of the temporal evolution and from the point of view of the spatial structure;
- Analysis of the regression methods applicable in relation to the implementation of Machine Learning algorithms. Within this objective we analyze the efficiency of different regression methods in terms of effectiveness. At the same time we eliminate the possible variables that are linearly dependent or that do not have a direct influence on the generated models. At the same time we implement artificial neural networks (simple and convolutional).

The research process uses *both empirical and theoretical research methods*, with both a qualitative and quantitative character, in which thematic analyzes are performed to highlight the characteristics and attributes of the analyzed data.

Quantitative research is performed using data from official statistical records as the primary source, but also data from forecast situations as a secondary source.

The data on the budget execution of revenues and expenditures of Targoviste municipality were extracted from the website "NATIONAL REPORTING SYSTEM" of the Ministry of Finance published within the "BUDGET TRANSPARENCY" program. The website can be accessed through the browser by navigating to the address:

https://extranet.anaf.mfinante.gov.ro/anaf/extranet/EXECUTIEBUGETARA/Rapoarte_Forexe

Multiple criteria search for export. The search parameters used were:

- Type of Report: Detailed budget execution
- Budget sector: 02 - Local budget (local government)
- CIF Main Authorizing Officer: 4279944
- CIF Public Entity: 4279944
- County: Dâmbovița

Figure 5. The source of data: Website ForExeBug

Source: own source

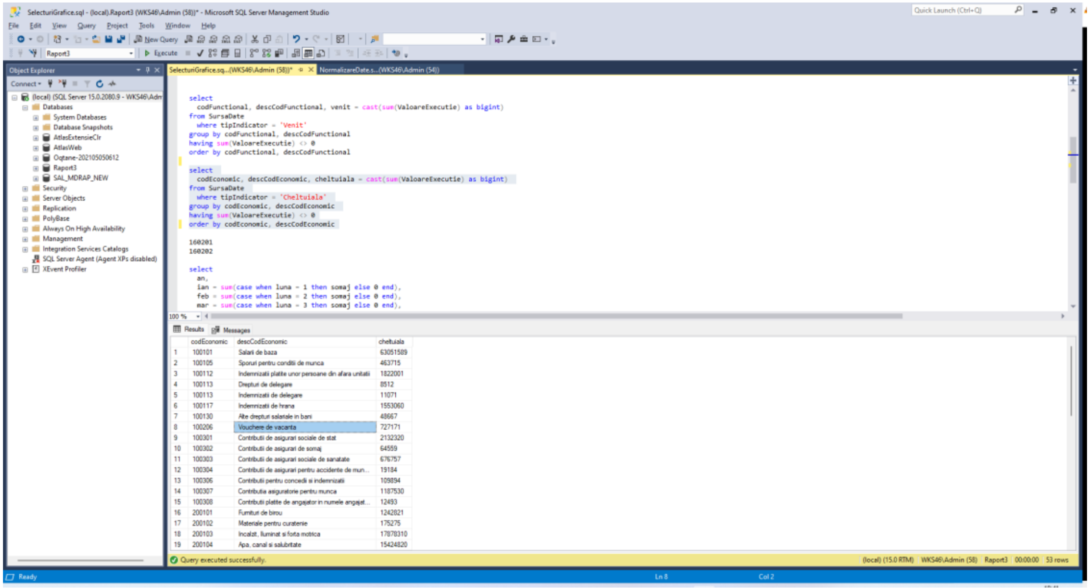
The data were extracted *for the period 2016 - 2021* in the form of *xml*. In order to be able to use the data sets throughout the period, we are analyzing, transfer, deserialization and normalization operations were necessary. A SQL Server 2019 Express Edition was used to process the xml and to organize, normalize, serialize, reserialize, and structure the data.

Normalization of data sets involved:

- Uploading data to the database
- Data deserialization
- The actual normalization of the data
- Uniformization of the field of values
- Export in csv format

It was used to export data in csv format the native function of SQL Server Management Studio (SSMS).

Figure 6. The result of running the SQL query



Source: own source

Based on the data analyzed by inductive methods, ***a qualitative analysis*** of the information is performed.

The conclusions of the interpretations, through ***inductive and deductive methods***, allow the establishment of relationships between primary data, financial statements and financial developments.

We aim to identify some distinctive elements, defining in order to make connections with activities of public institutions that are directly influenced by future budget provisions. Thus, it can be seen and validated the possibility of using as feedback information for modern analysis processes accounting data, to optimize the allocation of resources for future activities.

The Machin-Learning algorithms fit perfectly in a research activity, being necessary the structuring of the representative data, the realization of the successive analysis of the input data as well as of the obtained results. It is also necessary to optimize the indicators by identifying the linearly dependent elements and eliminating them from the analyzed data sets.

The public budget is a perfect Big Data source system for implementing a Machine Learning algorithm, because it allows us to define multiple dimensions for the same information contained.

For the realization of an assisted learning algorithm to make a budget forecast we have:

- ***Task S***: making a budget forecast
- ***Performance measurement P***: shift from previous budget executions
- ***Experience E***: making predictions for different sets of input data.

In the process of modeling algorithms using Machine Learning, we go through the following ***steps:***

1. *Defining the areas of interest*, the indicators for which the forecast is made ex (Expenditures: investments, personnel expenses, auxiliary materials, services, etc.; Revenues: direct, from transfer, attracted)
2. *Filtering the indicators* that are relevant in the monitored areas; Iterative procedures determine the impact of each indicator on the result. In this step we modify the parameters to perform local validations (validation set)
3. *Eliminates indicators that are linearly dependent*; By running successive micro predictions we eliminate data that are linearly dependent, that can be expressed by other data included in the learning set.
4. *Running distinct models for each measured indicator and determine the average errors*; In the optimization processes we calculate the average errors related to the reference set.
5. *Selecting the models with the optimal result* according to the minimum error.
6. *Validating the learned algorithm* by using the entire data set and compare it with the reference data.

Going through these steps we want to identify the intrinsic relationships of input data and use this data to analyze the current situation of public authorities and to make predictions based on data, learned based on Machine Learning algorithms.

3. RESULTS AND DISCUSSION

In the process we consider certain situations that can decisively influence the correctness of the resulting algorithm:

• We need to strike a balance between variation and movement and highlighting the variation by the fact that we have very different predictions for the analyzed data sets. We find the displacement when the prediction is systematically wrong.

• The number of parameters directly influences the results and the quality of the predictions. Through successive adjustments of the variation and displacement, we achieve an optimal framing.

• We need to refine the range of indicators for model stability within the input data space and eliminate the random events.

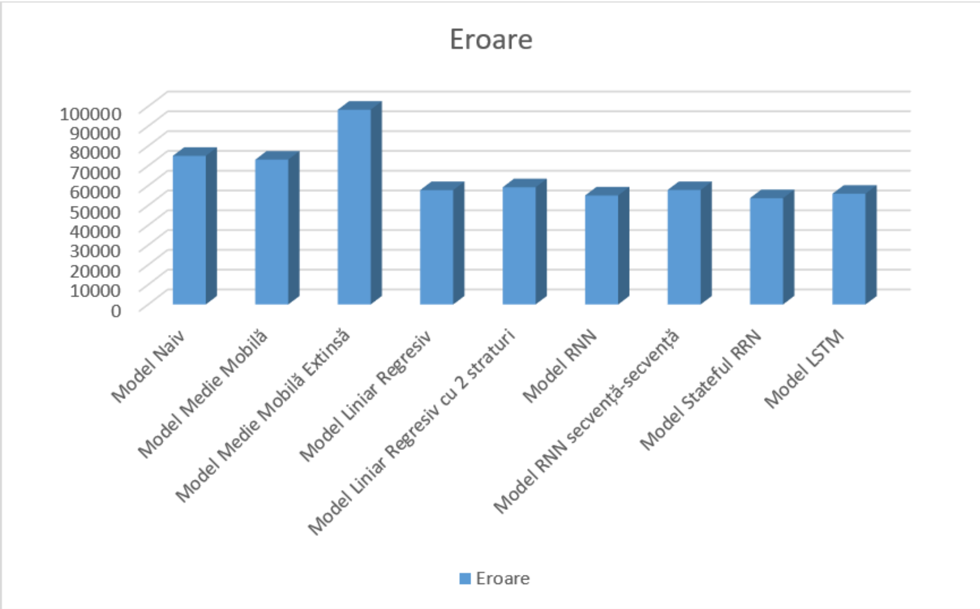
Table 1. The result obtained by using different forecasting methods

Model name	**Absolute Average Error**
Naïve Model	75049
Moving Average Model	73155
Extended Moving Average Model	98373
Regressive Linear Model	57767
Regressive Linear Model with 2 layers	59201
RNN Model	55041
Sequence-sequence RNN model	57795
Stateful RRN Model	53706
LSTM Model	55940

Source: own source

From the comparison of the results obtained by using different models, we obtain the table 1 and the following graph:

Figure 7. The result obtained by using different forecasting methods



Source: own source

From the data set and hyper parameters used for the prediction it results that *the classical RRN model has the smallest error.* The result is visibly better than the naive forecast.

CONCLUSIONS

The conclusions and proposals resulting from the analysis of the causalities and the interdependence of the analyzed factors, are intended to represent a decisional support for the state institutions and at the same time an element of understanding and transparency of the economic phenomena.

Financial planning is a process in which comprehensive strategies are developed and implemented in order to achieve the financial objectives of a public institution. These strategies are developed based on future projections, made for different time horizons.

Public institutions assess the likelihood of these projections and develop a response (financial plan) to mitigate adverse financial consequences. Although used mainly by firms, financial planning tools and techniques will eventually become part of current public administration practice.

After implementing the prediction models and calculating the absolute errors, it can be concluded that the phenomena that describe the chronological data series can be successfully modeled using Machine Learning algorithms.

Even if the data set was small and the analysis was limited to univariate data sets, the efficiency of recurrent neural networks proves to be quite good.

REFERENCES

1. CECCAR (2015), Practical guide for applying the accounting regulations regarding the individual annual financial statements and the consolidated annual financial statements approved by OMFP no. 1802/2014, Bucharest, CECCAR Publishing House
2. Coman, M.D., Denisa, C. M., & Florina, B. R. I. (2012), Managerial accounting–a source of information for an efficient management in SME, Procedia-Social and Behavioral Sciences, vol. 62, pp. 521-525
3. Duguit L., Traité de droit constitutionnel, Tome 2, La théorie générale de l'État, Boccard, Paris, 1923, pg. 144
4. Flatiron school, (2021), AI, https://flatironschool.com/blog/deep-learning-vs-machine-learning Accessed on May 2021
5. Gers F.A., Eck D., Schmidhuber J. (2002), Applying LSTM to Time Series Predictable Through Time-Window Approaches, Perspectives in Neural Computing, Springer, London, 2002
6. Graves A., Schmidhuber J., Advances in Neural Information Processing Systems, Vancouver, British Columbia, Canada, December 2008
7. Great learning, (2021), https://www.mygreatlearning.com/blog/machine-learning-tutorial/
    - Accessed on August 2021
8. Heaton, J. B., Polson, N. G., and Witte, J. H., (2016), Deep learning in finance, February 2016, http://arxiv.org/abs/1602.06561.pdf
9. Hochreiter S., Schmidhuber J., (1997), Long short-term memory, Neural Computation Journal, 9(8):1735-1780, 1997
10. IBM (2020), Cloud, https://www.ibm.com/cloud/blog/ai-vs-machine-learning-vs-deep-learning-vs-neural-networks Accessed on June 2021
11. Jason Brownlee J., (2016), Time Series Prediction with LSTM Recurrent Neural Networks in Python, Deep Learning for Time Series, 2016
12. Kanchan M. Tarwani, Swathi Edem, Survey on Recurrent Neural Network in Natural Language Processing, International Journal of Engineering Trends and Technology (IJETT), V48 (6), 301-304 June 2017, ISSN:2231-5381, www.ijettjournal.org
13. Kohzadi N., Boyd MS., Kermanshahi B., (1996), A comparison of artificial neural network and time series models for forecasting commodity prices, Neurocomputing. 10(2):169–181
14. Levity, (2021), AI, https://levity.ai/blog/difference-machine-learning-deep-learning
    - Accessed on July 2021
15. Moşteanu T., Buget şi trezorerie publică, Ed. Didactică Pedagogică, Bucureşti, 1997, p. 8
16. Robinson A. J., (2002), Connectionist speech recognition of Broadcast News, Speech Commun Journal, Volume 37, pg. 27-45
17. Roondiwala M., Patel H., Varma S., (2017), Predicting Stock Prices Using LSTM, International Journal of Science and Research (IJSR) 6(4)
18. Sak et al, (2014), Long Short-Term Memory Based Recurrent Neural Network Architectures for Large Vocabulary Speech Recognition, Cornell University, 2014
19. Xuan Zhang et al, (2019), An Attention-based LSTM Model for Financial Time Series Prediction, Materials Science and Engineering, Volume 569, Issue 5

ASPECTS REGARDING THE CHANGE OF THE QUALITY MANAGEMENT PARADIGM IN SCHOOL ORGANIZATIONS

Elena Teodorescu (Manescu), PhD student
IOSUD-SDSEValahia University of Targoviste, Romania, madalinaelena_teo@yahoo.com

Elena - Raluca Prodan (Vasile)
Primary school teacher at Highschool Cojasca, prodan_raluca09@yahoo.com

ABSTRACT: *Quality management is the extremely important pillar in supporting the quality of a school organization in both Romanian and global education. Continuous innovation of this pillar is needed to support the evolution of highly innovative and dynamic contemporary society. The change in the quality management paradigm in school organizations is based on the specialist referential, proposing a model that needs to be measured permanently, being analyzed as a continuous process. The best quality management is achieved through systematic, constant attention in order to improve it and include quality in an organised quality assurance system. Quality and quality assessment in education should be analysed in parallel with the implementation of new paradigms based on the integrated dimension of education, professionalization of teaching careers, innovative evaluation, aimed at increasing institutional autonomy, but also highlighting responsibilities. The introduction of systematic evaluation, with the main reason for better use of resources, makes the objectives set in the strategic management policy effective.*

Keywords: *quality, quality management, performance evaluation*

JEL Code: I21, I14, M410

1. INTRODUCTION

Through the theoretical research carried out, this scientific approach illustrates the concern to improve the paradigm of quality management in school organizations, trying to identify the essential aspects that can develop, but also to improve the aspects with negative impact on quality management. In an innovative society, changing and adapting to new trends can be a solution to improve quality. In this approach it was aimed at formulating directions that can generate the paradigm of quality management.

2. CONCEPTUAL ANALYSIS OF THE MAIN TERMS ON QUALITY MANAGEMENT

The reforms carried out in the educational system also brought into discussion the change of the quality management paradigm, especially in the current socio-economic context. The change of the paradigm must be based on the specifics of the Romanian educational system, on the national and European economic context, on the ethnic specifics of the Romanian people, but also on the establishment of a national educational objective. Improvement from an innovative perspective is needed to improve quality management. Quality management at the level of the school organization refers to the totality of the work processes carried out according to existing methods, techniques and procedures at the school level, as a basic unit of the pre-university education system. (Man M., 2006) The consideration of education as a process and not a phenomenon determined the thinking and design of the student-centered didactic act. Thus, an integrated education is achieved to ensure the graduate the development of the key competencies necessary for integration into the labor market. By forming the European profile of the graduate, the product of the educational process, the graduate, is able to successfully adapt to any national or European socio-economic context.

Another element that can underlie the change of the quality management paradigm is the professionalization of the teaching career. The teacher has an essential role in obtaining quality in school organizations. It is also the determining factor in achieving the quality of the educational product. The scientific approach does not analyze the aspect only related to the educational product but follows the educational process and the attitude towards education throughout life, the so-called continuous education. The analysis on the professionalization of the teaching career can lead to the identification of some essential elements in changing the paradigm of quality management in school organizations. Teachers are important stakeholders who determine the quality of education. Researching their behavior in terms of skills development anticipates the need for continuing vocational training. This ensures the sustainability of the quality of the educational process. Teachers must show innovative potential, productivity of information in carrying out the teaching act. The role of the teacher has changed radically in recent years, evolving from information transmission to mentoring and coaching.

Maican, D. (2001) considers people an important source, the most valuable asset, and Popa, I. and Filip, R. (2001) say that organizations live through people, they develop them, keep them on the market, close them for to adapt to the new requirements of society. The teacher must have pedagogical skills, specialized skills, psychosocial skills, managerial skills. In order to train these competencies, it is necessary to rethink the current initial training offered by the university system and continuous improvement. The directions of action for increasing the quality of teachers are: attracting valuable candidates to the teaching profession, solid and quality initial training, motivation and morale of teachers.

Another extremely important element in changing the paradigm of quality management in the education system is evaluation. This is represented by actions based on techniques and tools that facilitate a decision (Cerghit, I, 2009). Evaluation is based on the process of verification, measurement and grading. A new paradigm of assessment refers to the verification of competencies, individualization of learning, measurement of results by using modern tools existing in the educational portfolio, and grading. The traditional assessment must be replaced by the cumulative and periodic verification of the level of competences acquired by the student at the end of a study period.

3. A CONCEPTUAL MODEL FOR CHANGING THE QUALITY MANAGEMENT PARADIGM

Quality management in education is represented by planning, control and quality improvement activities. In order to improve it, a number of aspects must be considered: increasing the education of beneficiaries, increasing the credibility of school organisations through the quality of teaching staff, developing the specifics of the school organization, achieving the satisfaction of society through the integration of graduates into the labour market. Education aims at developing skills, valots, attitudes and knowledge, which ensure the economic and social development of a country, which is very important in the current global context. A quality management model in school organisations should be measured at all times, with directions of action followed, as shown in the figure below:

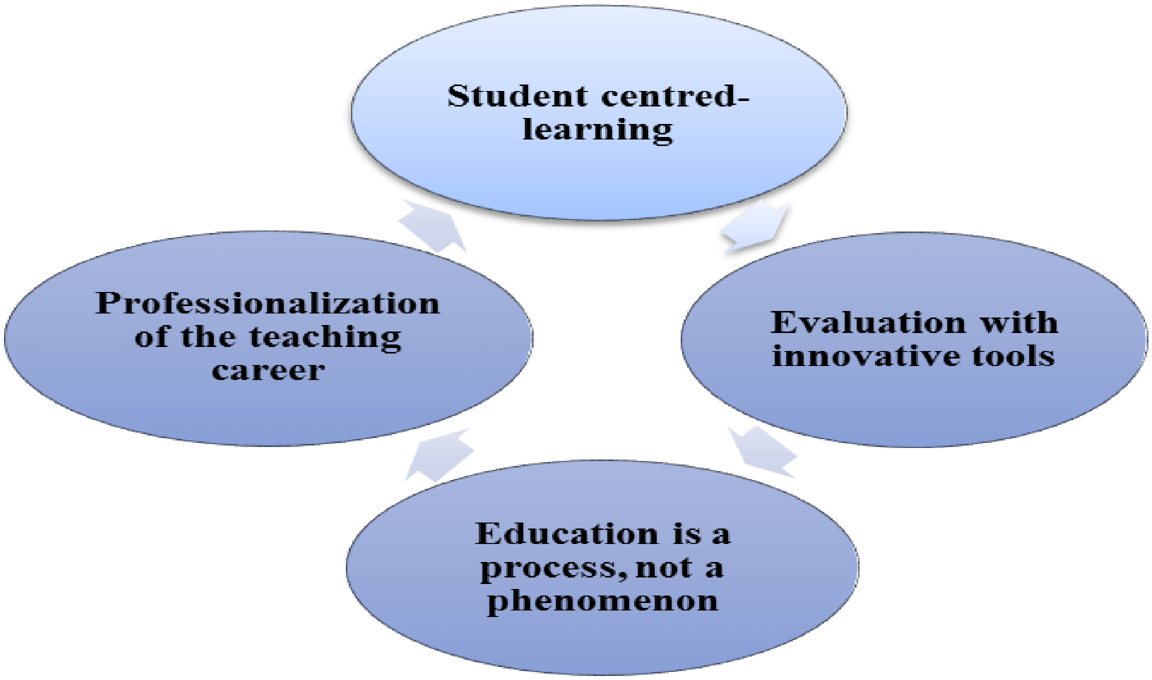


Figure 1: Directions of action to increase quality
Source: By author

In changing the paradigm of quality management in school organisations, the manager plays an essential role. It manages knowledge productivity, quality of work, innovation and educational performance. It must have a number of competences: communication, networking, use of technology, monitoring, evaluation, management, administration, knowledge and law enforcement, strategic vision. Added to this are a number of abilities: cognitive, affective, motivational, managerial. The manager thinks strategists, implements them, evaluates them to achieve quality standards. It ensures the succes of educational reform through quick and effective decisions. The educational leader-manager forms a professional community that aims to achieve quality, ensures the involvement of all actors in decision-making and professional affirmation. For this he develops within the organisation a favourable environment, finds the right tools for development, creates opportunities to develop the organization.

The development directions of quality management in school organisations in our country must be correlated with European trends. This is what it is all about: the efficient use of the organisation's resources, the development of a new mentality regarding education, digitalisation, social inclusion, lifelong vocational training, a common European basis of best practice and cross-border collaboration. At the national level, the change in the quality management paradigm aims at developing autonomy, creativity, entrepreneurship and continuous improvement. The objectives are: strategic learning experiences, guaranteeing equal opportunities, collaboration and collaboration between the school organization, the economic sector and the community. In the context of concerns to improve quality management in school organizations, quality is the responsibility of each employee, generating a way of behaviour, a mental attitude and an organizational culture dedicated to continuous improvement.

4. CONCLUSIONS

The issue of management of school organisations has become significant in today's social environment, where all aspects and debates on education take into account the quality, efficiency of educational systems and activities. Deficiencies in change management in education and the inability of educational actors and stakeholders to adapt even more, to accept these changes, as well as to want change in the context of better quality management have generated problems in educational management. The implementation of the quality management system in the school organizations in Romania represents an objective condition and necessity, in order to ensure the compatibility with the education tendencies from the developed European countries. This creates the basis for cooperation, collaboration and compatibility of knowledge in the field of science education and research. The deepening and particularization of the principles in the educational field, lead to the increase of the quality of the educational system. The implementation of modern concepts generates the development of the quality assurance mechanism in education. Knowing the factors that influence performance ensures the system's competitiveness and correlation with international standards in the field. Approaching a new paradigm of quality assessment in educational management is an essential element in identifying directions for the development of quality management in school organizations. The need to change the paradigm of quality management in secondary school organizations in our country is growing and is based on the approach of educational management from the perspective of its professionalization and teaching career.

REFERENCES:

1. China, R., (2015), Quality management in pre-university education. References, models, techniques, tools, Bucharest, University Publishing House
2. Maican, D., (2001) Human resources management, Casa Corpului Didactic Publishing House, Slatina - Olt,
3. Manolescu, A., (2009) Human resources management, Economic Publishing House,
4. Man, M., (coord), (2006), The efficiency of managerial activity in pre-university education, Arves Publishing House
5. Popa I., Filip R., (2001) International Management, Economic Publishing House,
6. Stegăroiu I., Niculescu C., (2000), Excellence in management, Bucharest: Niculescu Publishing House
7. Ţoca, I., (2007), Educational management, Didactic and pedagogical publishing house, R.A., Bucharest

THE ROLE OF PUBLIC INSTITUTIONS IN ROMANIA IN THE MANAGEMENT OF MIGRATION

Ioan Puhace, PhD Student
IOSUD-SDSE Valahia University of Targoviste, Romania, ioanpuhace@yahoo.com

ABSTRACT: *Central and local public institutions in Romania play a decisive role in the proper management of migration, but they must be more aware of this role and take on it, be proactive and more efficient, ensure transparency of the performed managerial act and solve the needs of community members more pragmatically. The analysis carried out presents the social and economic problems arising from migration and highlights the need for public authorities to actively intervene in the process of good migration management.*

Keywords: *immigration, migration, public institutions, local public authorities, management, integration.*

JEL: D73, F22, K37, O15.

INTRODUCTION

The purpose of this study is to identify and present, in an exploratory way, the active role that the public institutions in Romania have in creating an appropriate social, economic and cultural framework for the harmonious development of the members of local communities, in an international and European context favourable to the mobility and migration of persons, but temporarily exposed to the pandemic generated by the spread of the human cLIVED-2 human virus. The study realistically presents the degree of involvement of the Public Authorities in Romania in the management of a known global phenomenon: migration. Starting from the conclusion expressed in the Global Compact for Safe Migration, "Migration has been part of human experience throughout history and we recognise that it is a source of prosperity, innovation and sustainable development in our globalised world and that these positive effects can be optimised by improving migration governance", we therefore ask ourselves: How can we optimise and improve migration governance in local communities in Romania?

1. USEFUL ELEMENTS IN THE APPROACH OF THE MIGRATION-PUBLIC AUTHORITY RELATIONSHIP

The subject, although attractive to any researcher, is less analysed in Romania, due particularly to its specificity, the scarcity of data on immigrants, and mostly to the lack of work of an inter-institutional forum, coordinator at the national level, on the whole issue of migration (emigration/immigration), using statistical data, research, civil society suggestions and proposals of the local and central migration authorities and gathering all the results in public policy proposals, which the authorities subsequently implement.

It is also important to investigate, analyse and predict the effects of the international flow of legal or illegal migration on local communities here and to what extent the Romanian institutions and public authorities can influence the development or the range of the phenomenon through gradual, medium or long-term measures, applying strategies, policies, programmes, plans, or other measures to manage the phenomenon, the safety and the well-being of an intercultural community.

The author's practical experience of more than 24 years of activity in the field of immigration regulation and illegal immigration control has led him to approach this subject with the idea of sending a message of encouragement to the authorities for a better knowledge of the field and its management in the interests of the communities they deal with.

It is essential, today, for a community with intercultural interference, such as the Romanian one, to know by public institutions the active role they must face in managing the good coexistence of all members of the community.

Based on this principle, we believe that the public authorities have an obligation to investigate, assess, legislate and manage the entire immigration phenomenon (legal or illegal) in line with existing community-wide needs. The following programme document, "The National Immigration Strategy for the period 2021-2024" mentions 23 central public institutions which, according to their competences, participate in the implementation of the strategic provisions contained in the document.

The document, initiated by the Inspectorate-General for Immigration, settles the principles and guidelines for the regulation of the national policies in the field of admission, legal residence, labour immigration, combating illegal immigration, leaving Romania, granting the form of protection to immigrants in need and integrating them into the local community.

The activities implementing the action directions settled in the Strategy are scheduled in the Action Plan 2021-2022, in consultation with all participating public institutions. As a procedure, the document was also under public debate before being promoted for approval by the government.

The evidence and interference of the statistical data, always in dynamics about the immigration and immigrants shows, among other things, the degree of involvement of the public authorities in community life and its management. The economic, social and cultural implications of immigration can only realistically be presented through the understanding of the receiving community and the response of the authorities to the needs or effects that occur between members of different ethnicities in the community. Local authorities at the forefront of managing social mobility issues have this key role in the migration management, but it is often aware of the theory and less at day-to-day practice. Although they are the beneficiaries of many training programmes in the field, including in projects which intend to integrate and harmonise the inter-Community relations, the practical application of acquired knowledge is slow and deprived of involvement.

Another important element to mention, strictly related to the proactive role of these institutions is inter-institutional cooperation, in a transparent manner, in the interest of all the members of the community, as well as the need for real strategic coordination of this field at the level of the Government and the Parliament of the country.

2. BRIEF ANALYSIS OF THE EFFECTS OF MIGRATION IN ROMANIA

Unlike the European Union, Romania did not pay particular attention to the study of the migratory phenomenon (emigration-immigration), although it should have been particularly concerned about the political factor as well as the national and local authorities after 2001, given the overseas departures of the Romanian citizens and the regular flows of illegal immigration. Even if remittances sent by immigrants to families remaining in the country are consistent (5.954 million USD in 2020) however, in the medium and long term the negative effects (drawbacks) of emigration are retrieved and will continue to be felt in the social-economic development of the Romanian society.

According to statistical data recorded at the level of the United Nations, the number of Romanian citizens leaving the country rises to 3.58 million people. In the last 10 years, according to the National Statistical Institute data, 1,994,728 Romanians have left Romania, which means more than 10% of the country's resident population.

Romania is, in a "ranking" drawn by the UN, on the 2nd place (26%) at the export of qualified persons (doctors, teachers, engineers, young graduates, etc.). The same global organisation shows that in the period 2000-2020, Romania had the largest increase in the growth of the migration stock of all the Member States of the European Union (+287%). Urban communities, and in particular rural communities, continued to depopulate at a sustained pace. Despite these obvious statistical data, the decision-makers did not consider a priority to identify and eliminate the causes of continued emigration of Romanians.

The sociologist professor at the University of Bucharest, Dumitru Sandu, in the article "As a drifting archipelago – the villages of Romania 2018" (Dumitru Sandu, 2018) stated, among other things, that "the lack of public policies for rural communities" plus (...) "corruption and incompetence sustained by client professional selection" have led to "inability to develop infrastructure", and "weakness/decay of public institutions"- hence to the increase of Romanian emigration. Public authorities, with few exceptions at the local level, have found no concern in finding solutions for the remaining Romanian citizens in the country. The Ministry for Romanians Everywhere focuses its directions of action on the activities of Romanians in the diaspora and less on programs that, in reality, promote the return to the country of the departed and support the reintegration of Romanian immigrants returned home.

In the study "The Challenges of Migration and Local Governance in Romania" we evaluated local development programmes for the next 4 years (2020-2024) in 9 major town halls in Romania (eg. Bucharest, Iaşi, Cluj, Brașov, Constanta, Timisoara, Galați, Vaslui, Oradea) and only one (Iaşi) had mentioned provisions on the insertion/reinsertion of people with migrant pasts and two (Iaşi and Bucharest) had under their command structures with clearly established competences for this type of persons/people. We can therefore agree with the view expressed by some representatives of the civil society (see Coalition for the Rights of Migrants and Refugees) of a lack of coherence in government measures in this area, to which the ignorance shown at the local decision level is added, where the town halls have not been concerned about promoting measures to attract indigenous labour and to make young Romanians remain in the home community. The degree of involvement shown by the authorities is found in the statistical results recorded on the Romanian emigration line over the last 20 years.

With regard to the immigration of foreigners to Romania, things are different and require more nuanced clarifications/ clear specifications. Out of the communist period, when the state authorities had restrictive control over all foreigners entering the country, Romania was not assaulted by immigrants, due in particular to the restrictive legislation perpetuated from that period until 2001, when it was repealed (Law No. 25/1969 on the regime of foreigners in Romania was repealed by H.G. no. 123/2001). The approval of the Government Emergency Ordinance No. 194/2002 on the regime of foreigners in Romania brings the regulation of the field of immigration closer to the existing legislation at European level. After 2007 – Romania's entry into the European Union – the country was fully transposed to the requirements of the European acquis, which led to the diversification of the tasks of the public institutions competent in the field. Also from that year on, the Romanian National Strategy on Immigration was promoted at a national level which is a programmatic document, subsequently renewed every 3 years in accordance with the Romanian realities, the evolution of the migratory phenomenon and the European Union's prospects on migration as a global phenomenon of social mobility.

There are also several institutional transformations, the most important being the establishment of the General Inspectorate for Immigration as a specialized institution of the central public administration, with legal personality, under the Ministry of Internal Affairs, which exercises the powers given to it by law for the implementation of Romania's policies in the fields of migration, asylum and integration of foreigners, as well as relevant legislation in these areas.

After 2007 the immigrant population in Romania with the right of temporary or long-term residence has increased from year to year. If in 2007 44,741 foreigners were registered in IGI records, on 31.12.2020 the number reached 137 200 foreigners. Citizens of the EU Member States enjoy a more favourable legal regime governed by the Government Emergency Ordinance No.102 of 2005 on the free movement within Romania for the citizens of the Member States of the European Union, the European Economic Area and the citizens of the Swiss Confederation.

In contrast, citizens of the third countries may enter the country on the basis of an entry visa granted by the Romanian diplomatic missions and the purposes for which immigrants may enter are: for work, studies, business, family reunification, visit, tourism or asylum seekers coming from conflict or calamity areas. The authorities intervene continuously, both in the regulatory framework of the legal regime of foreigners and in the flow of implementation of its procedures. The extension of the right of residence, granting of work permit, family reunification, enrolment of children in the education system, learning the Romanian language, right to redundancy, are part of the health insurance system, the resolution of applications for the international protection, the support of integration into the Romanian society through integration programmes are just some of the areas in which public authorities demonstrate their competence and social-administrative management skills.

The latest data recorded at the level of the General Inspectorate for Immigration show an increase in the number of immigrants expressed in percentage shares of 0.7% of the total number of population currently living on the Romanian territory. At the level of Romanian society there is a very large gap between the immigrant population of Romania and the immigrant population that settles in the communities here.

3. MIGRATION MANAGEMENT – BETWEEN RISK AND DEVELOPMENT.

The active role of public authorities in managing the causes and effects of migration is essential for the safety and development of local communities. Migration and in particular illegal migration flows cause uncertainty, and create high risks and expenditure at the community level. Immigrants are usually people in need and deprivation. Without the lawful and transparent intervention of the public institutions, the risk of public disorder and insecurity increases. The risk of crimes committed by foreigners or even acts of terrorism increase as well. Accommodation in open (eg. Accommodation centres and procedures for asylum seekers) or enclosed centres (Centres for foreigners taken into custody) and the provision of food and sanitary hygiene are the first necessary measures of the authorities to mitigate a primary risk of public safety on the part of immigrants. Access to legal procedures, advice by representatives of civil society (NGOs with competences in the field) the possibility of access to Romanian language courses, to the public health system, are elements designed to reduce the risks of the public safety.

The more prepared and active public authorities are in managing migration problems, the fewer the risks posed by migrants. Supporting migrants through reintegration/integration measures such as facilitating the acquisition or construction of a house/establishment, finding a job, enrolling children in school, learning the Romanian language by immigrants, enrolling in the public health system have the effect of creating a social framework for community development in which migrants want to live together.

All these measures of the authorities can also have the effect of blurring the differences in cultural level as well as the easier acceptance of the indigenous way of life. At the same time, the requirements of the authorities must be directed towards penalising the illegal entries and stays of immigrants by combating their illegal acts by developing legislation and removal procedures in the most effective way possible. Radical ideologies must be combated by information, active participation in the community life or removal by declaring the immigrants who promote such ideas as undesirable/unwanted people.

With regard to the reintegration of its own migrants, Romania must develop national reintegration programmes supported by its own funds, in which the main implementation role lies with local public authorities. Stimulating small local businesses, ensuring a suitable living space, facilities for enrolling children in the education system, a permissive and efficient public health system, facilitating the development of local infrastructure, transparency of local governance are just a few sustainable and necessary elements to be included in these programmes.

Conclusions

The conclusions resulting from this brief analysis of the relationship between public authorities and migration in Romania show that public authorities, whether local or central, have a particularly important role in the migration management and only their continuous, competent, joint intervention, both at local and central level, can ensure the safety of community members and the prerequisites for sustainable development. The insight of the way migration is manifested, the acquirement of the specific legislation and the manner to intervene in the exercise of the public act are essential for all public institutions. Cooperation, knowledge, involvement, transparency, the willingness for support are the elements of good governance necessary to any public authority.

All these objectives must be set on the realities of the Romanian society, which point to the activation of a demographic crisis accentuated by the desire of young Romanians to emigrate further at increasing rates, the lack of workforce and the intentions of economic development of the Romanian state.

References:

1. Government Emergency Ordinance No. 194/2002 on the legal regime of foreigners, republished with subsequent amendments and additions.

2. H.G. no.639/2007, updated, on the organisational structure and duties of the General Inspectorate for Immigration.

3. Government Ordinance No. 44 of 204 on the social integration of foreigners who have acquired international protection or a right of residence in Romania, as well as citizens of the Member States of the European Union, the European Economic Area and citizens of the Swiss Confederation, as amended, published in Official Gazette No 93 of 31 January 2004.

4. Prof. Dumitru Sandu "As a drifting archipelago – villages of Romania 2018", article published in Dilemma Magazine, Year XV, no. 748, 21-27 June 2018.

5. World Bank ”Migration and Development” Brief Report 33 October 2020;

6. The Challenges of Migration and Local Governance in Romania published in The International Journal of Business and Finance Research ISSN 1931 -0269.

7. Report of the Centre for the Comparative Study of Migration INDEX INTEGRATION OF IMIGRANTS IN ROMANIA 2019.

8. The Global Compact for Safe, Orderly and Regulated Migration, signed at the Marrakech Conference on 10-11 December 2018 by representatives of UN Member States.

9. Romania as country of origin, transit and destination of migrants, author Maria Stoicovici, "Romanian Journal of Sociology", new series, year XXIII, no. 5–6, 429–443, Bucharest, 2012.

DIGITALIZATION OF THE TAX ADMINISTRATION AND COMBATING TAX EVASION

Leliana DIANA (BOLCU), PhD student
IOSUD-SDSEU, Valahia University of Targoviste, leliana_d@yahoo.com

Andreea-Cristina SAVU, PhD student
IOSUD-SDSEU, Valahia University of Targoviste, andreea_savu@ymail.com

Mihaela-Raluca BOHARU (MIRCEA), PhD student
IOSUD-SDSEU, Valahia University of Targoviste, ralcont2003@gmail.com

ABSTRACT: *Romania is currently at the beginning of the road in implementing the digitalization of the tax administration and improving the efficiency of economic activity by combating tax evasion. The aim of the article is to highlight the impact of information and communication technology on accounting systems and the vision of transforming the tax system into a digital organization in order to increase the performance of public services in terms of collection and facilitate interaction between tax administration and taxpayers. A new challenge in the financial services sector can be seen by implementing in Romania the international standard for electronic exchange of accounting data between companies / organizations and tax authorities, SAF-T (Standard Audit File for Tax), interconnection of cash registers and implementation of electronic invoicing by adopting the common standard of the basic XML format. SAF-T has already been implemented by several European tax authorities and will be implemented in our country starting with January 2022. The SAF-T standard was introduced by the Organization for Economic Cooperation and Development, being seen as automatically generating files in a common, readable and easily exportable format, regardless of the software used according to a defined set of accounting records. This study presents the SAF-T standard, the connection of electronic fiscal cash registers, the evolution of the implementation of electronic invoicing in EU Member States and Latin America as well as the advantages of digitalization of the National Tax Administration Agency (ANAF) in combating tax evasion.*

Keywords: SAF-T, OECD, ANAF Digitization, SAF-T in Romania, e-invoices

JEL: M40, M42, M48

INTRODUCTION

In this article, we will try to emphasize the importance of digitizing the information systems of the National Agency for Fiscal Administration (ANAF) and the adoption of common reporting standards in the form of XML base.

The need to adopt this standard arises in a globalized environment with different accounting systems, standardization being essential for the identification of tax fraud.

The electronic invoice was implemented in our country only at the level of the public procurement field according to Law no. 199/2020 of September 8 and published in the Official Gazette no. 825 of September 9, 2020.

The implementation of the electronic invoice in Romania is based on the “European standard on electronic invoicing - a European standard specially created for the semantic data model on the essential elements of an electronic invoice. It describes the usefulness of electronic invoicing by simply circulating in electronic format keeping the XML structure defined by the EN 16931 standard and taken over automatically by the computer system, thus reducing savings with document processing and leading to the reduction of tax fraud.

Connecting the cash registers to the IT system of MF-ANAF and implementing the electronic invoice according to the digital strategy for 2021-2025 will reduce the VAT GAP (GAP is the difference that is collected from the state from VAT and what could be collected according to economic reporting).

In the age of digitization, the operations related to the movement of invoices as supporting documents continue to be prone to errors as long as a standard of data exchange is not established between the (accounting) purchase and sale operations to be taken over and processed by software applications. The European standard reduces the errors in public procurement, and it is possible to easily check the invoices in parallel with what has been contracted. Increasing the efficiency and accuracy of data now and in the near future will be due to new technologies of digitization, robotics, cloud services, artificial intelligence and Big-Data.

As we can see the interest of the digitalization of the ANAF institution lately and the proposals made in the strategies of the last years, the accounting profession rises in an area continuously subject to digitalization. This remark on the accounting profession in terms of knowledge in the technological fields can be seen all over the world due to the continuous globalization.

We can observe a quality of data recording in terms of automation of records through imports of bank statements that can be done directly in accounting software due to the recent development of banking services such as internet banking, mobile banking, etc., so with a few clicks The accountant has a maximum efficiency of tasks and at the end of the day can have the balance of receipts and payments for various reports.

The implementation of the electronic invoice aims to create a service without borders that will increase the degree of interoperability, trust in research and development and investment in networks in the markets of the electrical environment.

2. REVIEW OF THE SPECIALIZED LITERATURE

Regarding the specialized literature, the challenges of the accounting profession are digitized as a topical issue. In an economy characterized by digitalization, IT skills are necessary as most of the activities of the professional accountant take place on the computer.

According to the report from 8.10.2018 of the publication *Ziarul Financiar* (Razvan Botea, 2018), “Accounting is the field in which automation and digitalization have penetrated the strongest, along with the audit activity. The accounting profession is in the area where 97% of the activities are suitable for digitization, so there is a need to adapt to the new reality and reconfigure the activity of the accountant”.

”Those who adapt to change will survive, but those who do not keep up will be taken out of the market, said Phillippe Arraou, first vice president of CILEA (*Latin American Intergation Committee Europe-America*), at the CECCAR Congress (*Body of Chartered Accountants and Chartered Accountants Romania*), an event that took place at the end of September at the Parliament Palace.

In the future, we cannot rule out the risks that modern technology offers us, but they can be counteracted by the advantages they offer in terms of choosing the finished product (Delian David, 2020).

3. RESEARCH METHODOLOGY

In the literature, we find a variety of definitions. In a systemic approach, the methodology of scientific research is considered as the systematic study of methods that are, can be or have been applied in a discipline, the aim being to obtain a comparative study of different approaches (Mackenzie & Knipe, 2006).

For this paper, we used the comparative method that studied the steps of digitalization of tax administration and combating tax evasion, compared to other countries in the European Union.

4. DIGITIZATION OF PUBLIC INSTITUTIONS. CONNECTING THE FISCAL CASH REGISTERS TO THE COMPUTER SYSTEM OF MF-ANAF

In order to identify the tax fraud, the procedure for connecting the fiscal cash registers to the IT system of MF-ANAF was implemented, starting with 31.03.2021 according to ANAF no.435/2021.

The connection is made for all models of electronic cash registers installed in the areas served by the communication networks for which the National Institute for Research and Development in Informatics ICI Bucharest issued a favorable technical approval and, as the case may be additional approval, according to the legal provisions established at the art.3, paragraph (7) of GEO no. 28/1999.

After connecting the fiscal electronic cash register to the computer system, according to the procedure, the economic operator holding the cash register can check through the Virtual Private Space service any messages that the computer system can send, regarding the malfunctions of sending files from AMEF to the IT system, according to the provision of art.2 paragraph (2) of OpANAF no.435 / 2021.

The electronic cash registers will be connected to the MF-ANAF computer system by authorized persons.

The fiscal devices will automatically transmit, at the end of each day, as soon as the closure report has been issued, the necessary data to the ANAF server.

5. DIGITIZATION OF PUBLIC INSTITUTIONS SAF-T

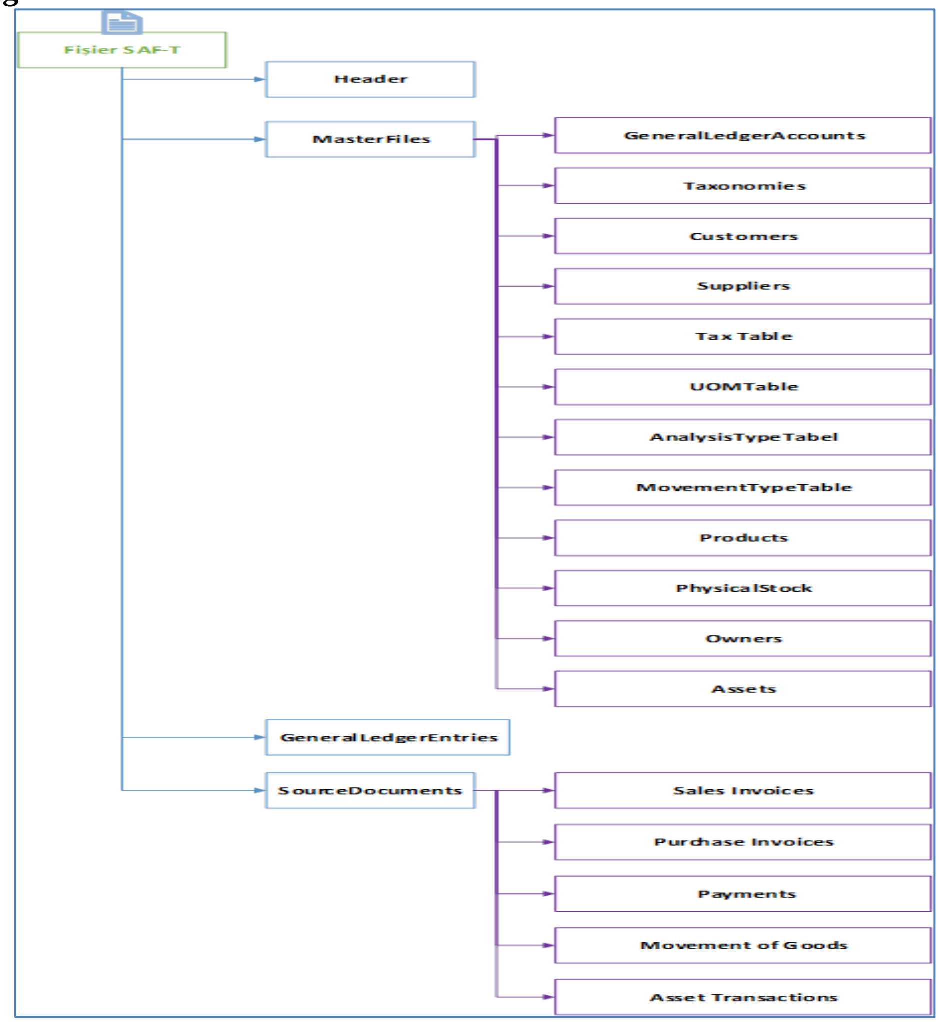
The need to adopt the SAF-T standard arises in a globalized environment with different accounting systems, standardization being essential for the identification of tax fraud.

Also for the identification of tax fraud on the agenda of the digital strategy for 2021-2025, the implementation of SAF-T (Standard Audit File for Taxation) was introduced starting with July 2021 according to the press release of 31.12.2020 sent by ANAF. ANAF makes available to software producers the SAF-T technical documentation through a press release with the number A_RPC 641 / 22.04.2021 “Mandatory and optional elements incorporable at the level of the new SAF-T declarative model. (ANAF, 2021) "

SAF-T is a standard file used by European tax authorities (Portugal, Hungary, Poland, Norway, Lithuania, Luxembourg, Austria) as a means of filing tax returns electronically.

Romania has taken over the implementation of SAF-T in order to reduce the VAT collection deficit to the state budget.

Figure 1. SAF-T structure in Romania



Source:https://static.anaf.ro/static/3/Anaf/20210422154037_comunicatsaft_%2022aprilie2021.pdf

"*SAF-T is an international standard file that allows the exchange of information between tax authorities and taxpayers, based on a standardized format. The file was designed taking into account the financial-accounting data usually held by taxpayers*. (CCF, 2020, p.26) "

Our country follows as an example other Member States that have managed to increase the collection rate in recent years, Poland being a good example. The integration of the SAF-T Audit Standard in Poland was based on three strong supporting ideas: *modern legislation, efficient tax administration and close cooperation with the business environment*. SAF-T is a tool that has a positive effect in combating the preparation of false invoices and reduces the risk of VAT fraud.

The first version v.1.0 of the SAF-T standard audit file was published in May 2005 by the OECD and is based on general ledger records, customer and supplier account statements, details of invoices, orders, payments and receipts. The SAF-T audit standard has as its syntax the schema in XML format.

Since April 2010, version v.2.0 has been updated and to improve it, the suggestions of OECD member countries, which have included information on inventory and fixed assets, have also been taken into account. The OECD leaves it to each country to choose how to implement the information that will be transmitted through the standard audit files.

Regarding the Digitalization of Romania, this took shape through the Government Decision no. 89/2020 regarding the organization and functioning of the Authority for the Digitalization of Romania (ADR). For the implementation of strategies in the field of digital transformation and information society, a new structure has been organized and operates, ADR which brings together all departments or services of strategy, coordination, supervision and implementation in the field of e-government.

6. DIGITIZATION OF PUBLIC INSTITUTIONS THROUGH ELECTRONIC INVOICING

In this paper we can highlight the advantages of implementing the basic XML standard in terms of implementing the electronic invoice taking as an example the short history of its implementation in Latin America and Europe.

By implementing the electronic invoice we can have a fiscal transparency, a control of the taxes and an efficiency of the provision of the services from the fiscal administration. With the passage of time and the improvement of the technological system, the tool can be updated both for information protection and for its quick and easy availability to the public. Following this implementation, the advantage will be on both sides both for the tax administration that will improve and for the small and medium taxpayers that will make more efficient the registration of their invoices in accounting through automatic processing systems.

The large amount of information created in the electronic invoicing information system can be used in risk analysis and could improve national accounting and the competition mechanism.

A complete map of transactions across the economy can provide an index of society's well-being. The electronic invoice originated in Latin America with the modernization process of the 1990s under the impetus of ideas that emerged from the innovative efforts of digitalization of the TA administration and under the influence of "*government reorganization*" (Osborne and Gaeler, 1993).

The key factor in modernizing the tax administration was due to the imbalance caused by the financial-fiscal crises and it was imperative to improve the efficiency of tax collection in the region.

Initially, *electronic invoicing in Latin America* was seen as a document control tool on the billing process, thus avoiding the omission of false records of sales and purchase invoices. The Latin American tax administration will change the relations following the digitalization between taxpayers, the public and the private sector. Thus, by controlling freight transactions and reporting prices for certain goods, clear conclusions can be drawn regarding certain exchange markets, as a conclusion these exchanges of goods in the electronic invoicing system can help the public sector to improve by ensuring real competition on the exchange market and better transparency of public procurement.

The 21st century was the engine of modernization that first started in Chile in 2003 and advanced in mid-2017 in Argentina, Brazil, Ecuador, Peru, Mexico and Uruguay, with electronic invoice implementation projects underway and in progress. other countries such as Costa Rica, Colombia, Guatemala, Panama and Paraguay. The development of the system will also be analyzed in countries such as: Dominican Republic, El Salvador, Honduras and Venezuela.

Some Southeast Asian countries are also considering the introduction of the electronic tax invoice.

A development of this electronic invoicing system has also spread throughout Europe through the ***pan-European project PEPPOL.***

The PEPPOL project was set up in 2008 as a pilot project with the aim of making external procurement as transparent as possible using the technological standards to be implemented by all governments in Europe. The PEPPOL project has implemented a standards-based pan-European IT infrastructure to provide public procurement services with electronic documents that have a standardized format. PEPPOL aimed to provide a set of technical specifications that allows business partners to implement in existing software solutions the exchange of electronic documents based on technological specifications standards in the procurement process increasing efficiency and reducing its costs. The pan-European Peppol project ended at the end of August 2012, transferring the responsibilities and services of the international non-profit association OpenPeppol, established on September 1, 2012.

We currently meet OpenPeppol members in 39 countries, "31 countries in Europe plus Australia, Canada, Japan, Mexico, New Zealand, Singapore, South Africa and the USA" (André Hoddevik, 2020).

According to the people.eu website, the Romanian Agency for the Digital Agenda is also part of the list of OpenPeppol members displayed since 22.06.2021.

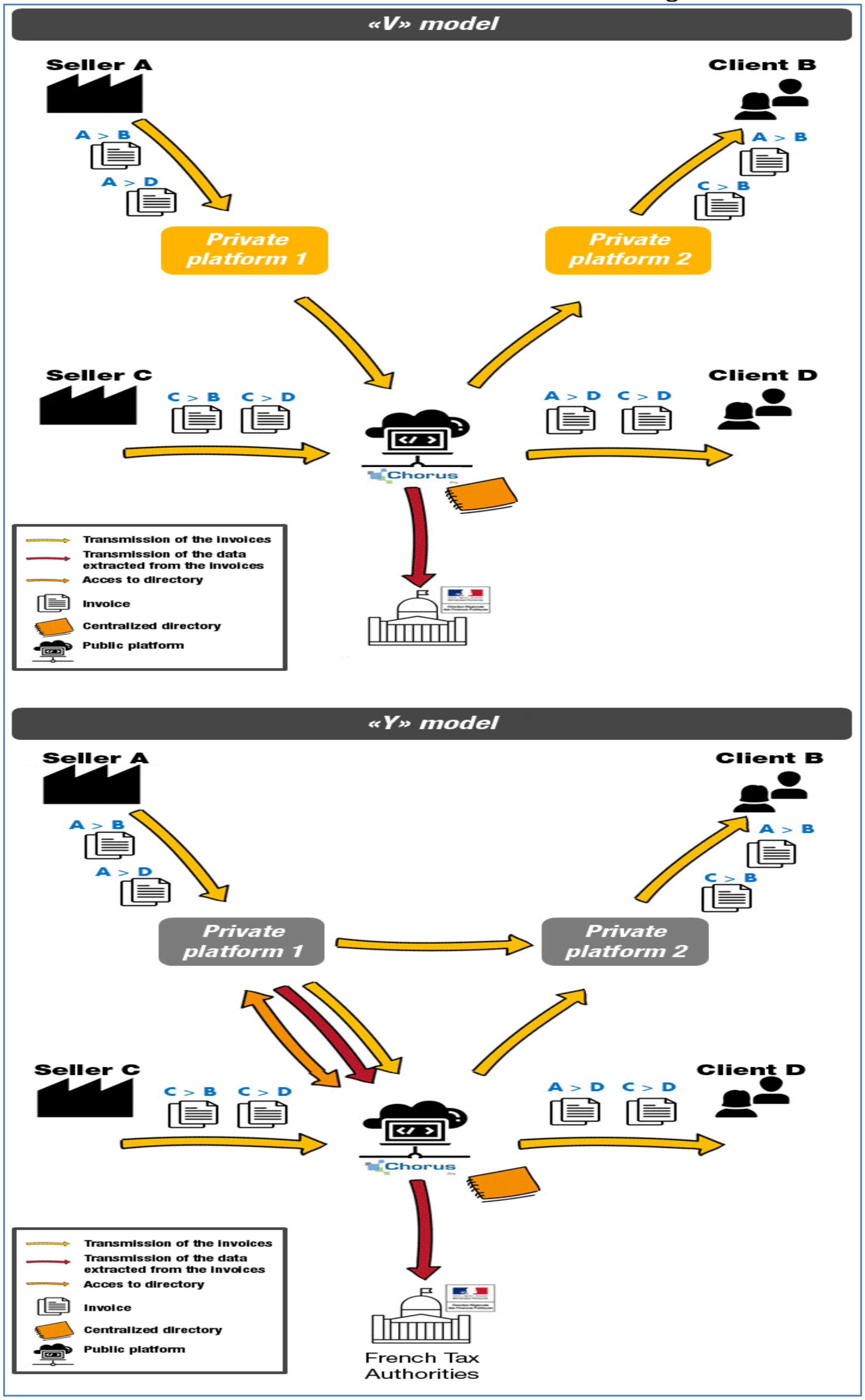
To enable companies to communicate with any government institution in the procurement process, they need to work with certified AS4 Peppol service providers (André Hoddevik, 2020).

"*AS4 is a protocol for transferring electronic documents in the Peppol network, to protect data transfer, CEF eDelivery encourages software developers to examine the list of software products that have passed compliance tests by the European Commission of the AS4 eSENS profile*" (CEF eDelivery, 2019).

The first EU country to introduce the electronic invoice authorization model was ***Italy***. From 2019, all companies are required to be able to send and receive electronic invoices to the Italian tax authority through the system "*Sistema de interscambio*" (hereinafter referred to as "SDI"). SDI verifies each invoice and approves it with a digital signature, before sending it to the final customer.

Followed by ***France***, which has gradually implemented electronic invoicing in recent years, the main difference being the legislation for B2G electronic invoicing from year to year, based on the number of employees in the company. As of January 1, 2017, B2G e-invoicing became mandatory for companies with more than 5,000 employees, a year later it became mandatory for companies with 250-5000 employees and, from January 1, 2020, B2G e-invoicing was mandatory for companies of all sizes.

Figure 2. Circulation flow of the electronic invoice-technical diagrams



Source: *https://www.pwcavocats.com/fr/ealertes/ealertes-international/2020/reform-2023-2025-or-the-generalisation-of-e-invoicing-in-france.html*

The figure above presents the flow of the electronic invoice between the customer and the supplier:

• Model "V": mandatory transit of invoices through a public platform that ensures the transmission of invoices to the customer through a private platform, in the form of a single hub. The public platform would extract from the invoices the data relevant to the authorities and transmitted to the information system (IS) of the DGFIP.

• Model “Y”: invoices can transit directly between certified private platforms without using the public platform. Certified private platforms would extract the information for authorities from invoices and transmit it to the public platform, which would group it and send it to the IS from DGFIP. The main advantage is that these operators can ensure transmission while handling multiple billing formats.

In some countries such as ***Denmark,*** electronic invoicing has been mandatory since 2005, and transactions have been made in the public sector, with 99% of B2G invoices being electronic. Denmark has its own "NemHandel" platform and its own standard format. The standard adopted by Denmark regarding electronic invoicing is XML Billing Standard - OIOUBL UBL (Gerrit Onken, 2019).

Poland *s*tarted this procedure in 2019, when the provisions of the Law on Electronic Invoicing in Public Procurement, Concessions for Construction or Service Works and the Public-Private Partnership, according to which the contracting authority must accept structured electronic invoices, entered into force.

Germany is one of the EU countries that has shown involvement in the procedure for regulating electronic invoices.

The federal legislation called the eBill Act was issued in 2017 and introduced some general key points regarding the implementation of EU Directive 2014/55, but it also went beyond the principles of the directive. Starting in 2020, invoice issuers will be required to send electronic invoices to federal public entities, non-federal public entities are subject to local legislation issued by federal states.

The Netherlands has adopted a more flexible approach, requiring only the sending of electronic invoices to central public authorities and only for contracts signed with one of these authorities after 1 January 2017. The Dutch government has not implemented or developed any other regulations at this time. , other than the adoption of the EU Directive and mandating all public authorities to be able to receive and process electronic invoices. The main government portal is Digipoort, but most companies deliver bills to the government through Peppol.

7. Electronic invoicing system

In order for an electronic invoice to be treated as absolutely equivalent to a paper invoice, the following instructions must be followed in addition to the basic requirements for an invoice:

- The recipient of the invoice must agree with the electronic invoice;
- The electronic invoice must be issued, sent, received and processed in an electronic format, such as PDF format;
- The electronic invoice must be legible to a person;
- The authenticity of the origin of the electronic invoice must be guaranteed, for example, by an internal control procedure;
- The integrity of the electronic invoice must be guaranteed.

Compared to traditional paper invoices, electronic invoices have a number of ***key advantages*** - including the following:

- Electronic invoicing is cheaper than paper invoices - we can see the difference, especially if the number of invoices increases. We can save on the cost of mailing it along with the money spent on paper and other goods;
- Electronic invoices can be paid faster compared to paper invoices. This means that we will pay the receivables, credited to the accounts of the business companies faster than before. An electronic invoice is more practical in terms of distribution, than an invoice sent by e-mail, which, for example, can end up in the spam filter due to its too large attachment;
- Electronic invoicing reduces errors because the recipient does not have to manually re-enter billing information. Verification and approval of the invoice are sufficient;
- An electronic invoice is paid effortlessly, so that we can offer it to customers together with a good quality service and a professional image of the business. Companies have the right to receive electronic invoices if they wish. So, we just need to make sure that we can meet the necessary requirements for electronic invoicing.

From the buyer's perspective, electronic invoicing also reduces the risk of fraudulent invoices and various types of fraud. In traffic between electronic invoicing operators, both the recipient and the sender must always be identifiable and, for this reason, false invoices are generally received by letter or e-mail.

Electronic invoicing is a system that protects the environment by reducing the number of paper prints in the world.

Thanks to electronic archiving, the tax advisor and the tax office can be granted access to important data at any time. The time saved can be used to the advantage of companies, leading to greater efficiency and increased potential for efficiency. In particular, small businesses benefit because they have to worry more about their core business and less about accounting. Annoying sorting, pre-accounting, filing and so on are no longer required. With a modern cloud-based system, sales invoice processing can be largely left to automation.

First, automation deals with creating and sending invoices, for example, monthly recurring sales invoices can be set to self-generate and leave at the time agreed for the customer. In addition, when the customer pays the invoice, the performance is automatically transferred to the accounting. This significantly saves working time and eliminates manual number entry as well as data transfer from the billing process.

Second, it is important that the software has ready-made banking connections so that you can view payments from the software in real time, instead of connecting to online banking several times a day. The software takes over the payments received to the invoices from the bank and they are automatically assigned to the invoices based on the reference. The software also detects if something in your billing does not match and reports errors.

Thanks to automation, the sales register and other financial reports are always real-time, which makes it easier to manage operations. Monitoring cash flows is an important function for a company's finances.

At the same time, it is important for liquidity that the money for the products and services sold be collected smoothly and on time and not be a commercial receivable longer than the payment period granted. E-government helps us see how much we owe. We can see from the sales register who paid their bills on time and who did not.

CONCLUSIONS

As can be seen from this article, different EU countries have different strategies when it comes to implementing electronic invoicing. Italy already has an authorization model, France is aiming for an authorization model, and Germany and the Netherlands have only implemented B2B regulations. Other EU countries are mainly following the path of Germany and the Netherlands.

The level of digitization varies from country to country, but now one can distinguish the final capacity of digitization. In the age of digital evolution, new technologies as well as new ways of working are helping to accelerate digitalisation and it is becoming clear that we need to take full advantage of the new era and the new economy. Tax fraud, the hidden economy and corruption remain major obstacles to an efficient and transparent economy of the tax system as a whole.

Digitization and new technologies such as blockchain, Distributed Ledger Technology DLT, Machine Learning, Artificial Intelligence and Robotics are all tools that can help reduce these situations. The benefits of e-invoicing have been recognized not only in public procurement procedures in the European Union, but also in the context of transactions between B2B companies in some EU Member States and in many countries around the world.

Romania is currently at the beginning of the road in implementing the digitalization of the tax administration and improving the efficiency of economic activity by combating tax evasion.

The challenge in the financial services sector can be seen by implementing in Romania the international standard for the electronic exchange of accounting data between companies / organizations and tax authorities, SAF-T, the interconnection of cash registers and the implementation of e-invoicing.

REFERENCES

1. Digitalizarea ANAF în era tehnologiei SAF-T Anca MACOVEI, Senior Manager - PwC România Boris FEGHIU, Senior Consultant - PwC România- Consultant Fiscal, anul XIII nr 68 iulie- septembrie 2020
2. Percepția profesioniștilor contabili în ceea ce privește viitorul profesiei contabile în era digitalizării - Conf. univ. dr. Delia DAVID, prof. univ. dr. Lucian CERNUŞCA CECCAR BUSINESS REVIEW ISSN 2668-8921 • ISSN-L 2668-8921 N0 7/2020
3. Profesia contabilă într-o economie bazată pe globalizare și digitalizare *(I) -NUMĂRUL 41, 29 OCT. - 4 NOV. 2019* » *EXPERTIZA ŞI AUDITUL AFACERILOR*; CECCAR
4. https://blog.seeburger.com/introduction-to-e-invoicing-and-the-use-of-peppol-in-scandinavia/
5. http://ccfiscali.ro/content/revista/cf_nr68_site.pdf
6. https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/Access+Point+software
7. https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/eDelivery+AS4+conformant+solutions
8. https://peppol.eu/what-is-peppol/peppol-country-profiles/
9. https://peppol.eu/who-is-who/openpeppol-member-list-2/
10. https://peppol.eu/who-is-who/certified-as4-peppol-service-providers
11. https://static.anaf.ro/static/3/Anaf/20210422154037_comunicatsaft_%2022aprilie2021.pdf
12. https://publications.iadb.org/en/publications/english/document/Electronic-Invoicing-in-Latin-America.pdf
13. https://static.anaf.ro/static/10/Anaf/legislatie/LG_199_2020.pdf
14. https://www.ceccarbusinessreview.ro/public/store/documente/articole/2020/7/CBR-The-perception-of-professional-accountants-regarding-the-future-of-the-accounting-a48.pdf

15. https://www.clujit.ro/mai-bine-pentru-toti-cu-facturarea-electronica-standardizata/
16. https://www.fatturapa.gov.it/it/index.html
17. https://www.pwcavocats.com/fr/ealertes/ealertes-international/2020/reform-2023-2025-or-the-generalisation-of-e-invoicing-in-france.html
18. https://www.zf.ro/eveniment/profesia-de-contabil-este-cea-mai-in-pericol-de-a-fi-inlocuita-de-digitalizare-contabilul-care-se-adapteaza-schimbarii-va-ramane-in-timp-ce-contabilul-care-nu-tine-pasul-va-iesi-din-piata-17547407

THE ROLE OF CONTINUING EDUCATION / TRAINING ON QUALITY OF LIFE

Elena TEODORESCU (MANESCU), PhD student
IOSUD-SDSE Valahia University of Targoviste, Romania,
madalinaelena_teo@yahoo.com

Elena PIRVAN (OPRESCU), PhD student
IOSUD-SDSE Valahia University of Targoviste, Romania, teodorao@yahoo.com

ABSTRACT: *The importance of knowledge and learning has been recognized since the beginning of time in terms of social and economic development. The welfare of society depends on the welfare of its members. A low level of development has the effect of limiting investments in education and human resources, and diminishes the quality and productivity of work, regardless of the field of activity. In this paper, we present the link between the dependent variable Gross Domestic Product and the independent variable school life expectancy indicator for the period 2012-2019 using the simple regression model. The results stand out the influence of school life expectancy on the degree of the well-being of the population.*

Keywords: quality, education, human resources, social and economic development

JEL Classification: I21, I18, M410

1. INTRODUCTION

A common problem in contemporary society is quality, it generates the evolution and development of mankind. Quality is an objective both in social and professional life, but it is also reflected in personal life. Quality is, therefore, a concept that is found in all areas of activity. In the new economic context, characterized by instability, crises and competitive pressures, the quality of education in the formation of human capital becomes, therefore, an essential pillar, leading to economic growth and development, being recognized that it is one of the engines of economic development, both at social and community level, as well as at individual level.

2. PROBLEM STATEMENT

Over the years, researchers in the field have drawn attention to the increased importance of quality education in building human capital and achieving economic growth.

Schultz (1971) concluded from his research that the increase in income from work is due in an appreciable proportion to the increase of human capital and considers that education is the "main source" of social and economic development.

E.F. Denison (1974) tries to measure the effects of human capital on economic growth and demonstrates after long research that education and training determine the increase of national income.

In the literature, reference is often made especially to educational capital, emphasizing the idea of costs regarding investments in training and education (Lazar, 2005) and the fact that investments in human capital involve long-term benefits for the individual, company, and society as a whole. (Stoican, 2012)

School organizations that focus on increasing quality, pay special attention to improving education by perfecting curricula, introducing more modern teaching methods, using advances in contemporary science and technology. (Antohi, Bozbei, 2014)

Human capital is the fundamental force of a country's economic development. (Badea & Rogojanu, 2012)

Regardless of the level at which it takes place, education plays an important role in increasing competitiveness at the national level, which is why in this paper, in terms of a cross-sectional analysis of time series and development of the macro-econometric model of interdependence between Gross Domestic Product (GDP) and School Life Expectancy, we want to draw attention to the need for solid educational policies that not only lead to facilitating access to the education system, but also to aim at quality, as a perspective of economic and social development. At the same time, the study undertaken in this paper focuses on a comparative approach to the Human Development Index in our country compared to other countries in the world.

The Human Development Index (HDI) is a composite index that measures the average achievement in three basic dimensions of human development - a long and healthy life, knowledge, and a decent standard of living. (Overview Human Development Report, 2019)

Akbas, Senturk and Sancar (2013) present a study on the causality between several macroeconomic indicators, including the Gross Domestic Product.

Dumitrescu, Anghel and Anghelache (2015) present an analysis model designed to outline some of the Gross Domestic dependences, on the case of Romanian economy.

Cahil (2010) examines the correlation between various transformations of GDP and the other elements of the HDI, and the principal components method of factor analysis is used to construct HDI-like indexes with the alternative transformations of GDP.

Kabir (2008) examines the social-economic determinants of life expectancy for 91 developing countries using multiple regression frameworks.

3. RESEARCH QUESTIONS/AIMS OF THE RESEARCH

This paper aims to analyze the interdependence between education and economic and social development in our country. Research questions cover the following issues:

- does education have a strong impact on the macroeconomic results recorded at the state level?
- does the increase in the level of education lead to the increase of the GDP?

4. RESEARCH METHODS

For the analysis of the links between education and socioeconomic development, we developed and tested a linear macro-econometric model of simple regression. This model combines time-series with cross-section analyzes, using a data panel for the period 2012-2019, specific to Romania. The simple linear regression model has the following general form:

$Y=\beta_1 + \beta_2 X + \varepsilon$, where (1)

Y represents an endogenous variable, X represents an exogenous variable, and ε = random variable that summarizes the influence of other variables (unspecified in the model). Gross Domestic Product is the dependent variable, and the independent variable is School Life Expectancy (see Equation 1). We use Data Analysis from the Microsoft Excel program, to create the macro-econometric model described above.

5. FINDINGS

The degree of the well-being of the population of a country measured by the Human Development Index places Romania in the most recent top on the 49th position out of 189 countries considered. (Figure 2)

Regarding the evolution of the well-being of the Romanian population, in the last ten years, it had an ascending trend, the lowest value of HDI 0.709 being registered in 2000 and the highest HDI 0.828 corresponding to 2020. (Figure 1)

Reported at the level of 2019, the ranking shows that Romania registers a value of HDI of 0.828 and a value of the Gross National Income (GNI) per inhabitant, 29.497 dollars, respecting the rule of purchasing power parity.

At the top of the ranking are countries such as Norway with HDI 0.957, Ireland and Switzerland, both with HDI 0.955, as well as high values of Gross National Income per capita. At the bottom of the ranking is Niger with the lowest HDI value of 0.394 and a GNI value of $ 1.2 per capita, which indicates a low degree of population welfare. (Figure 2)

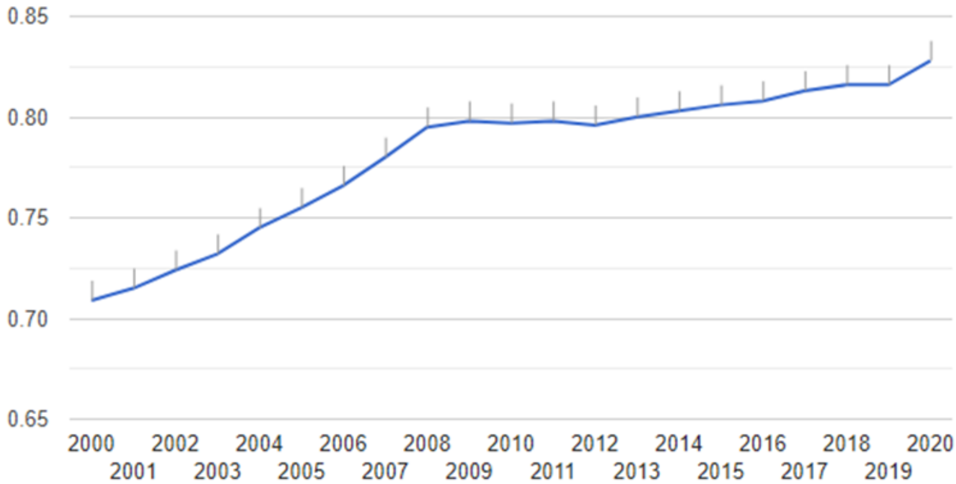


Figure 1. Romania Human Development Index 2000 – 2020
Source: adapted from http://www.theglobaleconomy.com/Romania/human_development/ visited at 26.03.2021, 11:32

Human Development Index (HDI) Ranking

From the 2020 Human Development Report

Page 1 of 19

Rank	Country	HDI value (2019)	Life expectancy at birth (years) SDG3	Expected years of schooling (years) SDG 4.3	Mean years of schooling (years) SDG 4.6	Gross national income (GNI) per capita (PPP $) SDG 8.5
1	Norway	0.957	82.4	18.1	12.9	66,494
2	Ireland	0.955	82.3	18.7	12.7	68,371
2	Switzerland	0.955	83.8	16.3	13.4	69,394
4	Hong Kong, China (SAR)	0.949	84.9	16.9	12.3	62,985
4	Iceland	0.949	83.0	19.1	12.8	54,682
6	Germany	0.947	81.3	17.0	14.2	55,314
7	Sweden	0.945	82.8	19.5	12.5	54,508
8	Australia	0.944	83.4	22.0	12.7	48,085
8	Netherlands	0.944	82.3	18.5	12.4	57,707
10	Denmark	0.940	80.9	18.9	12.6	58,662
49	Romania	0.828	76.1	14.3	11.1	29,497
181	Mozambique	0.456	60.9	10.0	3.5	1,250
182	Burkina Faso	0.452	61.6	9.3	1.6	2,133
182	Sierra Leone	0.452	54.7	10.2	3.7	1,668
184	Mali	0.434	59.3	7.5	2.4	2,269
185	Burundi	0.433	61.6	11.1	3.3	754
185	South Sudan	0.433	57.9	5.3	4.8	2,003
187	Chad	0.398	54.2	7.3	2.5	1,555
188	Central African Republic	0.397	53.3	7.6	4.3	993
189	Niger	0.394	62.4	6.5	2.1	1,201

Figure 2. Human Development Index (HDI) Ranking of the world
Source: adapted from 2020 Human Development Report Office
http://hdr.undp.org/en/content/latest-human-development-index-ranking visited at 26.03.2021, 10:32

The analysis of the data from the period 2000-2019 on the percentage evolution of Romania's economic growth, more precisely of the macro-indicator Gross Domestic Product, shows large fluctuations over the period considered. There is a negative value of economic growth in 2009, -7.5 percent compared to the previous year, then a steady growth that reaches its maximum value in 2017, of 8.9 percent compared to the previous year, after which the trend decreases until 2020, when it reaches the lowest value, of -10 percent compared to the previous year, due to the pandemic crisis worldwide. (Figure 3)

Figure 3. Romania Economic (GDP) growth percent 2000-2020
Source: http://www.theglobaleconomy.com/Romania/gdp_growth/ visited at 26.03.2021, 11:44

The analysis of the values of the school life expectancy of Romania, in the period 2012-2019, shows an ascending evolution from 14.4 in 2012 to 14.6 in 2016, when the maximum value is reached, after this year there is a downward trend up to 14.3 in the year 2019. Compared to the countries that occupy the first three places in the HDI ranking in the world, which register in the analyzed period exclusively an ascending trend of this indicator, Romania reaches a peak in 2016 and then decreases constantly. (Table 1)

Table 1. School Life Expectancy

	012	**013**	**014**	**015**	**016**	**017**	**018**	**019**
N orway	7.5	7.7	7.7	7.8	8.0	8.1	8.1	8.1
Ir eland	8.0	7.9	8.2	8.7	8.8	8.8	8.8	8.7
S witzerlan d	5.8	5.9	6.0	6.2	6.2	6.2	6.3	6.3
R omania	4.4	4.5	4.5	4.5	4.6	4.3	4.3	4.3
B ulgaria	4.5	4.9	5.2	5.1	4.9	4.6	4.4	4.4

Source: adapted from http://www.hdr.undp.org/en/indicators/69706 visited at 26.03.2021, 11.50

In terms of economic growth, during the period under review 2012-2019, the highest growth was recorded in Ireland in 2015 when it reached a peak of 25.66 percent compared to the previous year. Norway and Switzerland are also experiencing upward economic growth until 2017 and then a slight decrease in 2018 in Norway compared to the previous year, while in Switzerland economic growth has a steady trend. Romania and Bulgaria have similar paths in terms of economic growth over the period considered, the lowest percentage value of economic growth in our country is recorded in 2015, after which the growth trend remains constant.

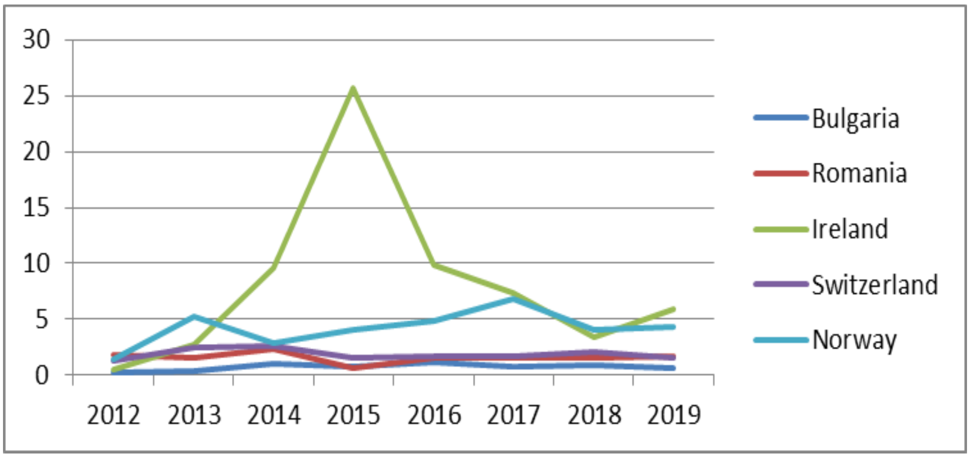


Figure 4. Economic growth, percent change in quarterly real GDP 2012-2019
Source: http://www.theglobaleconomy.com visited at 19.05.2021, 10.50

Before analysing the linear model, we can observe the similar tendency of the evolution of the two variables analysed over the statistical period making the subject of the analysis (Figure 5).

As noticeable from the following graphic, during the analysed period, 2012-2019, the evolution of the two variables is a sinuous one, but relatively similar.

The analysis performed in order to finalize the linear model have been achieved by utilizing the official data published by HDI Reports, hence the original data basis, without making the additional tests and implicitly, the first difference. In this case it has been assumed that the data series is stationary.

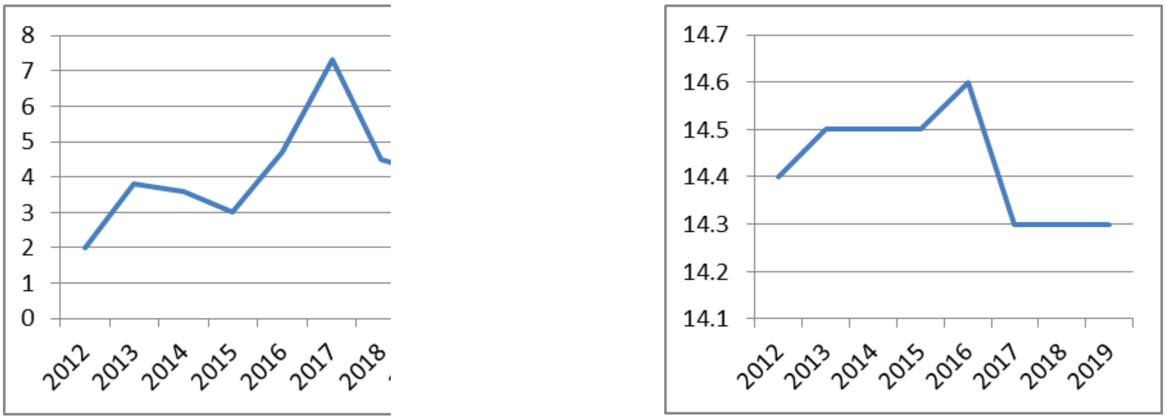


Figure 5. The evolution of the two variables analysed: Gross Domestic Product and School Life Expectancy

Source: adapted from http://www.hdr.undp.org/en/indicators/69706 and http://www.theglobaleconomy.com/Romania/gdp_growth/ visited at 26.03.2021, 11:44

The correlation coefficient between the two variables Gross Domestic Product growth rate and School Life Expectancy, taken into account in the realization of the macro-economic model, registers a negative value of -0.3452, which proves that there is an inverse link between the two variables. (Table 2)

Table 2. Correlation coefficient

	Gross Domestic Product- the growth rate	**School Life Expectancy**
Gross Domestic Product- the growth rate	1	
School Life Expectancy	-0.3452	1

Source: data processed by the author

Using the coefficients from the analysis summary (see Figure 6) we obtain for the macro-econometric model (see equation 1) the simple linear regression model below for Romania data panel:

$$Y = 70.1763157894739 - 4.57894736842107\,X \qquad (2)$$

The coefficient for the independent variable recorded the value of -4.57894736842107, a negative value which indicates a reverse link between Gross Domestic Product and expected years of schooling.

The free term equal to 70.1763157894739 represents the value of the dependent variable when the independent variable is equal to zero.

The coefficient of determination (R Square) being 0.1191 indicates that the variation of Gross Domestic Product is explained at a rate of 12% by the variation of School Life Expectancy.

The Adjusted R Square value is -0.027 which refers to the adjusted value of the determination coefficient.

The significance limit, F-test, in the ANOVA analysis validates the model since F is 0.811 and Significance F is 0.04023 (lower than 0.05) we conclude that the regression model is valid and we can use it to analyze the relationship between the two variables.

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.3452028
R Square	0.1191649
Adjusted R Square	-0.0276409
Standard Error	1.56648
Observations	8

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.991842105	1.9918421	0.811718	0.040232666
Residual	6	14.72315789	2.4538596		
Total	7	16.715			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	70.176316	73.31473529	0.9571925	0.3754325	-109.2183789	249.57101	-109.218379	249.5710104
X Variable 1	-4.57895	5.082332296	-0.900954	0.4023267	-17.0149665	7.8570718	-17.0149665	7.857071759

Figure 6. Linear regression model

Source: data processed by the author

6. CONCLUSIONS

The issue of a nation's quality of life (well-being) can be interpreted from many points of view, but in this study, we chose to give more importance to the role of education and its quality in increasing the long-term well-being of a nation. The attention given to education is reflected in the obtained macroeconomic results. Increased spending on education will lead to sustainable growth in GDP.

As Teselios D., (2014) have studied the link between education and the social and economic growth of a country and Anghelache and Sacală (2016) studied and tested the applicability of macro-econometric models in the study of the dynamics of the Gross Domestic Product, this study continues the research of the interdependence between the two variables analyzed and described above.

The results of the analysis show that the variation of Gross Domestic Product is explained at a rate of 12% by the variation of School Life Expectancy. Although in this research approach we focused on the relationship between education, more precisely school life expectancy and Gross Domestic Product per capita, we admit that research limits are several possible variables of influence, and the possibility of building a multiple regression model leads to further research. Compared to international studies, reports on the association between population welfare and increasing school life expectancy in EU Member States - using individual states as units of analysis - have shown a more consistent pattern of association, and education has been proposed as one of the followed.

Increase of school life expectancy are found by simulation to be growth and welfare promoting. Knowledge, learning, savings and health care are complements in equilibrium, rising with economic development. The goal of developing any country is to create conditions in which people can live a long and healthy life and benefit from knowledge.

REFERENCES

[1] Anghelache, C., Sacală, C. (2016). Multiple linear regression is used to analyze the correlation between GDP and some variables. Romanian Statistical Review, Supplement, 9, pp. 94-99.

[2] Akbas, Y.E., Senturk, M., Sancar, C. (2013). Testing for Causality between the Foreign Direct Investments. Current Account Deficit. GDP and Total Credit: Evidence from G7. Panoeconomicus. Vol. 60. Issue 6 (December). pp. 791-812

[3] Antohi, L., Bozbei, V. (2014). Investițiile în capital uman în cadrul instituțiilor de învățămînt superior [Investments in human capital in higher education institutions]. In Analele Ştiinţifice ale Universităţii de Stat "Bogdan Petriceicu Haşdeu" din Cahul [Scientific Annals of the State University "Bogdan Petriceicu Hasdeu" from Cahul], No. 10, pp. 212-220.

[4] Badea, L., Rogojanu, A. (2012). Controverse privind relaţia educaţie superioară– capital uman – competitivitate [Controversies regarding the relationship higher education - human capital - competitiveness]. In Revista Economie Teoretică şi Aplicată [Journal of Theoretical and Applied Economics], vol. XIX, No. 12, pp.122-139.

[5] Cahil, M. (2002). Diminishing returns to GDP and the Human Development Index. Applied Economics Letters,Vol. 9, Issue 13, pp. 885-887.

[6] Denison, E. (1974). Accounting for United States Economic Growth 1929-1969. Washington, DC: Brookings Institution Publishing.

[7] Dumitrescu, D., Anghel, M., Anghelache, C. (2015). Analysis Model of GDP Dependence the Structural Variables. Theoretical and Applied Economics, Volume XXII, No. 4(605), Winter, pp. 151-158

[8] Kabir, M. (2008). Determinants of Life Expectancy in Developing Countries. The Journal of Developing Areas, Vol. 41, No. 2 Spring, pp. 185-204

[9] Lazăr, L. (2005). Evaluarea capitalului uman – Strategii de ocupare a forţei de muncă [Human capital assessment - Employment strategies]. Cluj-Napoca: Risoprint Publishing.

[10] Schultz, Th. (1971). Investment in Human Capital, The Role of Education and Research. New York: The Free Press, Division of The Macmillan Company.

[11] Stoican, M. (2012). Dezvoltarea capitalului uman în condițiile formării economiei inovaționale [Development of human capital in the conditions of the formation of the innovative economy]. Chișinău: ASEM.

[12] Teselios, D., Savu, M., Mihai, I. (2014). The analysis of school expectancy influence on the gross domestic product at the level of the Romanian economy. Management strategies journal published by ″Constantin Brâncoveanu″ University, Pitesti, no.4, p.790.

[13] Overview Human Development Report. (2019). Beyond income, beyond averages, beyond today: Inequalities in human development in the 21st century. New York: UNDP Retrieved from http://hdr.undp.org/sites/default/files/hdr_2019_overview_-_english.pdf

MANAGEMENT ANALYSIS REGARDING THE DEVELOPMENT OF PROFESSIONAL COMPETENCIES OF GENERALIST NURSES

Isabela Florina Marinescu (Barbu), PhD student
IOSUD-SDSE Valahia University of Targoviste, Romania,
florinaisabelabarbu@yahoo.com

ABSTRACT: *Through the theoretical research formulated and carried out, the present scientific approach is in the field of national concerns and not only, for increasing the quality in the training of generalist nurse and awareness of the importance of the profession in the context of health management. The results of this scientific approach highlight those positive aspects, accumulations and examples of good practice, which must be exploited, but also the weak aspects identified in shortcomings, deficiencies, negative aspects and which must be eliminated from the practice of organizations providing medical services and those professional deformation.*

Keywords: management, skills, development, performance, evaluation

JEL Code: I21, I25, M410

1. INTRODUCTION

The main global problem of healthcare, that of lack of human resources can be solved starting from the promotion of the profession itself. In order for this to be promoted, a compliant salary is needed, but especially an instructive-educational system that emphasizes the idea that nurses are not just professionals who perform the medical act, which in itself is an overworked process and with a degree high risk, but their role is a creative and constructive one through which they support the entire medical system to develop, are respected and benefit from all the conditions to be able to practice, contribute and research. This area is recognized as a priority in the context of globalization and the full manifestation of the society based on knowledge and innovation.

2. CONCEPTUAL ANALYSIS OF THE MAIN TERMS REGARDING THE MANAGEMENT OF THE DEVELOPMENT OF PROFESSIONAL COMPETENCIES OF GENERAL ASSISTANTS

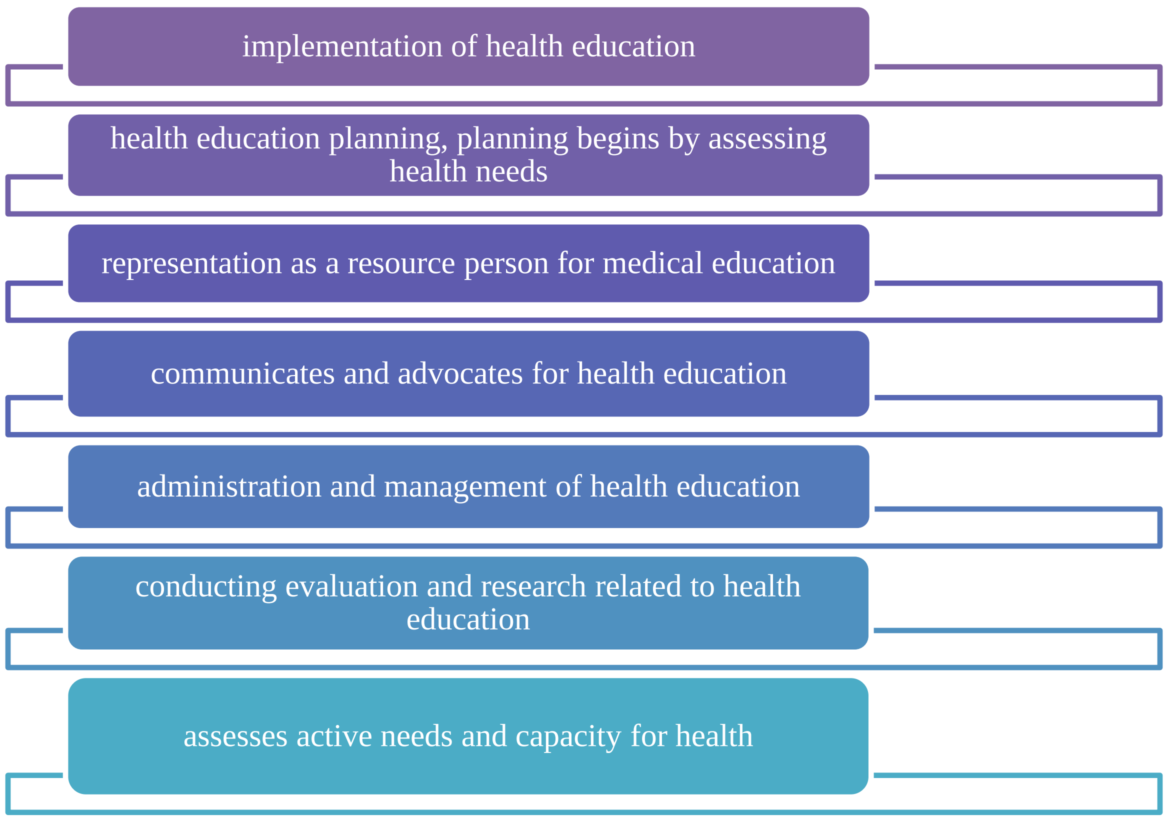
The sole function of nurses in caring for sick or healthy individuals is to assess their responses to their health and to assist them in carrying out those activities that contribute to the development of their health or their recovery. (Zuzelo, 2020) training in the field of healthcare must thus take into account the future of the profession (Hunt, 2014)

Previous steps on the chosen topic have been made by the American Medical Association or the World Health Organization (WHO), but these organizations have chosen to address only general guidelines on the future of nurses, and not to try a multidisciplinary approach. The care provided by nurses is the main criterion that patients use to measure the quality of care in hospitals. (Kelly, 2007)

The instructive-educational process refers to a formal learning program that takes place before and as a precondition for employment in the medical system for general nurses. (Ayala, 2020)

The proposals in the field of the instructive-educational process of nurses should based on more areas of responsibility:

Figure no. 1: The main areas of responsability



Source: Own projection

As clinical leaders, general nurses work in the healthcare category and can influence the delivery of health services and the profession in general. (Dyson, 2018)

The report's message is clear: governments need to invest in a massive acceleration of healthcare education, job creation for healthcare and leadership. Without nurses, midwives and other health workers, countries cannot win the battle against outbreaks, as the recent case of the COVID-19 pandemic has shown.

In order to provide the workforce that the population needs, WHO and its partners recommend to all countries:

- increase funding for the education and employment of more nurses;
- strengthening the capacity to collect, analyze and act on data on the health workforce;

• monitoring the mobility and migration of nurses and managing the process responsibly and ethically;

• educating and training nurses, developing their scientific, technological and sociological skills that they need to drive progress in primary care;

• establishing leadership positions, including at government level, and supporting the development of leadership among young assistants;

• ensuring that nurses in primary care teams work to their full potential, for example in managing the process of disease management and prevention;

• improving working conditions, adequate pay, respect for nurses' rights to health and safety at work;

• implementation of gender-sensitive labor policies;

• modernization of professional healthcare regulations by harmonizing education and practice standards and the use of systems that can recognize and process nurses' accreditations globally;

• strengthening the role of nurses in care teams by bringing different sectors (health, education, migration, finance and labor) together with health care stakeholders for political dialogue in order to increase the capacity of the workforce.

3. MANAGEMENT ANALYSIS REGARDING THE DEVELOPMENT OF PROFESSIONAL COMPETENCIES OF GENERALIST NURSES

The results of this scientific approach highlight those positive aspects, accumulations and examples of good practice, which must be exploited, but also the weak aspects identified in shortcomings, deficiencies, negative aspects and which must be eliminated from the practice of organizations providing medical services and those vocational training, in Romania.

Strenghts

- the positive quantitative evolution of the total number of nurses and midwives in Romania, the number reported per 100,000 inhabitants, Romania being in the middle of the ranking;
- organization at national level under the auspices of a single representative body: the Order of General Nurses, Midwives and Nurses in Romania (OAMGMAMR);
- the existence of professional standards, of the deontological and ethical code;
- the current involvement of WHO and the International Council of Nurses (ICN) in the field of nurses, by conducting studies on the current state of the field of healthcare;
- academic partnerships, as well as collaboration with public actors for the practical specialization of nurses;
- EU efforts to standardize healthcare practice and curriculum at EU level;

Weaknesses

- the focus of the healthcare education system on the training of secondary school nurses, being the EU country with the highest number of secondary school graduates in the field of healthcare;
- the distribution of expenditures in the health system, less than 2% being allocated to health care services, compared to the European average of 5%;
- poor country rating on the quality of nursing education (5 out of 9);

- the shortage of nurses on the labor market, the overcrowding of some health systems;

- the membership of ICN does not imply the observance of international standards regarding the quality of the medical services provided or the level of education and professional qualification of the nurses in each country;

- different curriculum and requirements at global level regarding the accreditation of general nurses; reporting statistical data;

Opportunities

- the increase by over 100% in 2018 of the remunerations from the health system;

- increase in expenditure on

- increase in expenditure on hospital services from the budget allocation;

- development of the system of continuous medical education, for the over-specialization of nurses;

- the development of a unitary curriculum in the field of healthcare at international level that conditions the status of a member of the WHO or the ICN;

- the development of an international body to periodically check compliance with standards in the field of medical services provided, as well as to periodically check the professional skills of nurses;

- creating standards for in-hospital processes with a view to improving them;

- developing leadership qualities at the level of the health unit;

- development of new models for managing in-hospital processes and inter-professional cooperation through advanced technology;

Threats

- the decrease in the number of graduates with higher education in the last three Eurostat statistics; only 1 in 19 annual medical graduates is a graduate;

- uneven distribution of medical staff in Romania, the number being twice as high in Bucharest and the West, Center and North-West regions compared to the rest of the country;

- reduced spending on health prevention;

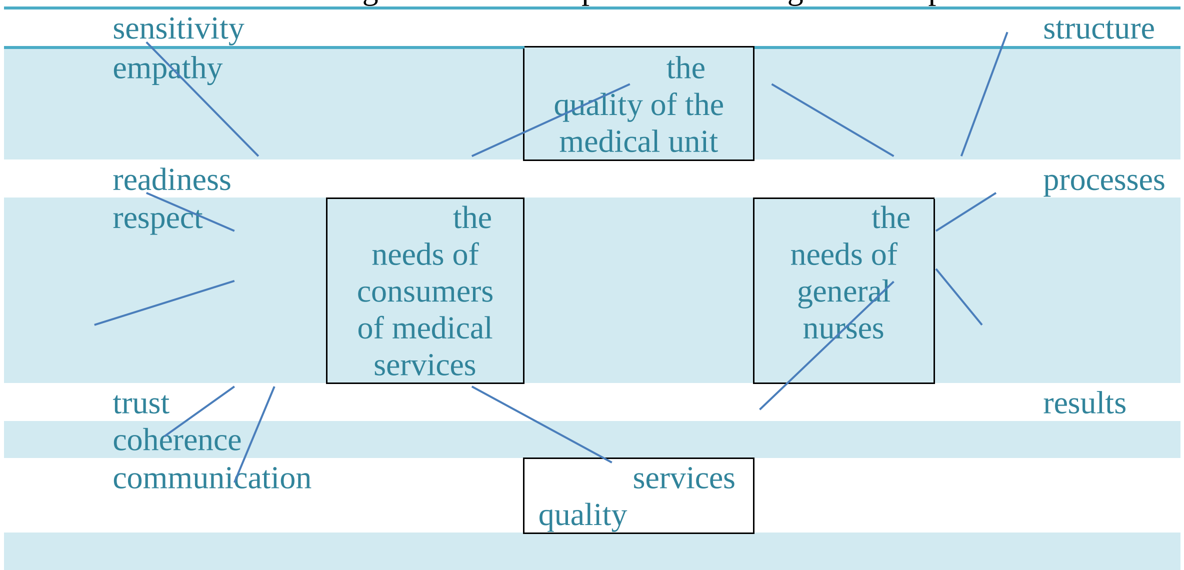
- the effects that the shortage of nurses on the labor market could have on the decrease of the quality of the medical act and of the medical services provided, the increase of the mortality rate;

- abuse and violence in the workplace can lead to a decrease in the number of general nurses;

- cultural diversity which can lead to discrimination and, implicitly, lead to a decrease in the number of general nurses;

- migration of the workforce in the field of healthcare, from the Eastern Mediterranean area, the number of generalist nurses with higher education in these areas being below 30% of the total number of nurses;

Figure no. 2: The operational management map



Source: Own projection

It is important that in their approach, nurses also consider the entire medical process itself, so that they can create an operational map of their work, in order to improve the medical act. (figure no.2)

4. CONCLUSIONS

Collaboration is essential among health units. Actions on curriculum development in the field of general nurses include cross-sectoral dialogue between ministries of health and education and heads of nurses, as well as the involvement of other relevant ministries and public and private sector stakeholders. A key element is to strengthen the capacity for efficient public policy management, so that private sector investment, educational capacity and the roles of nurses in the provision of health services can be optimized and aligned with public policy objectives. Healthcare professional associations, educational institutions and educators, regulators and trade unions, student groups, all are valuable contributors to strengthening the role of nurses in care teams working to prioritize public health.

Therefore, remuneration should be fair and adequate to attract, retain and motivate nurses. Furthermore, countries should prioritize and implement policies to address and respond to the sexual harassment, violence and discrimination that nurses face in the pursuit of their profession.

While the emphasis is on disease prevention and individual well-being, technological solutions can help identify and diagnose health risks earlier, leading to preventive and effective interventions and a reduction in the burden and expense of health. Technology can therefore help remove barriers to care, ensuring equitable access for all. The benefits can be particularly pronounced for some marginalized segments of society.

As healthcare becomes person-centered, its consumers will be actively involved in the care team. Full access and control of one's own data can contribute to consumer involvement and empowerment, which in turn can lead to better quality of health services.

Human-centered design principles can improve the care experience for everyone: patients, providers (doctors) and caregivers (nurses). As the practice of nurses, in which it is expected to measure patient outcomes and adopt evidence-based practices, healthcare education will be tested to develop outcomes and adopt evidence-based education. Passive learning, using the traditional format of conferences will be replaced by critical thinking exercises that address simple or complex practical situations, independent decision-making and creative problem solving. In addition, a reconfiguration of evidence-based teaching and learning will be needed as part of the accreditation process (thus there is a need to increase the importance of practical learning programs).

The educational units will be involved in the evolution of the medical system and from the perspective of assessing the students' ability to respond to changes in patient requirements. Although the use of simulation is fairly new in practical medical education, technology is advancing and this trend is expected to continue. A challenge for caring students, which is unique to the use of the virtual environment, is the process of meeting patients' avatars in the virtual environment and interacting with patients who are not physically present. The visibility of the patient's avatars on a virtual environment can be very different from that which involves the on-site analysis of the patient, touch and interaction with him. The concept of the virtual world of patients puts nurses in front of new problems such as the use of technology to improve the practice of nursing students.

REFERENCES:

1. Ayala R.A. (2020). Towards a Sociology of Nursing, Edit. Palgrave Macmillan, Singapore, p.16-17
2. Brixey J.J., Brixey J.E., Saba V.K., McCormick K.A.(2016). Essentials of Nursing Informatics, Study Guide, Edit. McGraw Hill Education, New York
3. Dyson S.E.(2018). Critical Pedagogy in Nursing – Transformational Approaches to Nurse Education in a Globalized World, Edit. Palgrave Macmillian, Londra, p.89-90
4. Hunt D.D. (2014). The Nurse Professional – Leveraging Your Education for Transition Into Practice, Edit. Springer Publishing Company, New York, p.112
5. Kelly D.L. (2007). Applying Quality Management in Healthcare- A Systems Approach, Edit. AUPHA, Chicago, p.12
6. Zuzelo P.R. (2020). Indirect Care Handbook for Advanced Nursing Roles, Edit. Jones & Barlett Learning, New York, p.16-17
7. International Council of Nurses, Annual Reports, available at https://www.icn.ch/who-we-are?fbclid=IwAR3kAcJv41aoiGh14JphYQLPR7WlIN_ydHsTl3gE8LjqFfFRvWcPu8gmZq4 visited at 12.06.2021, 9.57