ECONSTOR
Make Your Publications Visible.

A Service of

ZBW Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Popescu, Cristina Raluca; Popescu, Gheorghe N.; Popescu, Veronica Adriana

Article

Assessment of the State of Implementation of Excellence Model Common Assessment Framework (CAF) 2013 by the National Institutes of Research – Development – Innovation in Romania

Amfiteatru Economic Journal

Provided in Cooperation with:
The Bucharest University of Economic Studies

Suggested Citation: Popescu, Cristina Raluca; Popescu, Gheorghe N.; Popescu, Veronica Adriana (2017) : Assessment of the State of Implementation of Excellence Model Common Assessment Framework (CAF) 2013 by the National Institutes of Research – Development – Innovation in Romania, Amfiteatru Economic Journal, ISSN 2247-9104, The Bucharest University of Economic Studies, Bucharest, Vol. 19, Iss. 44, pp. 41-60

This Version is available at:
https://hdl.handle.net/10419/169056

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

http://creativecommons.org/licenses/by/4.0/

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

ASSESSMENT OF THE STATE OF IMPLEMENTATION OF EXCELLENCE MODEL COMMON ASSESSMENT FRAMEWORK (CAF) 2013 BY THE NATIONAL INSTITUTES OF RESEARCH – DEVELOPMENT – INNOVATION IN ROMANIA

Cristina Raluca Popescu[1], Gheorghe N. Popescu[2*] and Veronica Adriana Popescu[3]

[1)] University of Bucharest and The Bucharest University of Economic Studies, Romania

[2)3)] The Bucharest University of Economic Studies, Romania

Please cite this article as:	Article History
Popescu, C.R., Popescu, G.N. and Popescu, V.A., 2017. Assessment of the State of Implementation of Excellence Model Common Assessment Framework (CAF) 2013 by the National Institutes of Research – Development – Innovation in Romania. *Amfiteatru Economic*, 19(44), pp. 41-60	Received: 30 September 2016 Revised: 19 November 2016 Accepted: 20 December 2016

Abstract

The paper highlights the part of the results of a research based on a questionnaire conducted at the National Institutes for Research, Development and Innovation (NIRDI) of Romania, under the coordination, under the authority or the subordination of the National Agency for Scientific Research and Innovation (NASRI), goals being pursued: Assess the current status of implementation of the Common model of excellence Self-Assessment framework (CAF) in 2013 by NIRDI in Romania; Determining the impact that the implementation of one or more management systems has on achieving excellence in research and innovation; Capacity assessment CAF 2013 model of excellence to provide enlightening information on the most important risks and challenges facing the entity being (self-) evaluation. The research was conducted in July 2016 to a representative sample of 51 of the 53 INCDI, under the coordination, under the authority or subordinate NASRI. It appears that although there is a high degree of fulfillment of the 9 criteria of the excellence model CAF 2013 NIRDI have not assimilated the spirit and the purpose of the excellence model induced by the principles of total quality management by importance (percentage) given to each criterion and sub-criterion. It appears real progress criteria "results on customers" and "processes, products and services". At the same time there are serious shortcomings in the criteria "results on the organization" and "results on the staff." On the one hand, based on the results analyzed, it was determined that to achieve excellence in research is not sufficient to implement two or more management systems, on the other hand it was confirmed that the results of (self-) evaluation stage of implementation of the model of

* Corresponding author, **Popescu Gheorghe** – popescu.gh.cafr@gmail.com

excellence CAF 2013 provides significant and enlightening information to identify the principal risks and deficiencies faced by the entity (self) assessed.

Keywords: model of excellence, research-development-innovation, quality, certification, performance criteria.

JEL Classification: A10, D02, F63, I23, M21, M41, M42, P47

Introduction

The long period of transition, without a strategy and a consistent plan, experienced by the Romanian economy has affected all areas of activity inevitably including the research and development and innovation. A proof of this is given by the unflattering last place occupied by Romania in the European statistics in terms of innovation (European Commission, 2015).

The incoherence and the lack of perspective which we had to face in the most part of the transition period were manifested in all areas: political, legislative, economic, managerial. With certaininty we can not even talk about strategy in the research activities in this period.

Although these issues are generally known, and the researchers have felt them in their own activities, we will present some examples with a few legislative inconsistencies. Initially treated as autonomous bodies, the former research centers have been through two or three restructuring stages until the current form of national institute. The evaluation systems have been treated with the same lack of consistency in order to receive the status of a national institute of research and development. The system of evaluation and promotion of researchers, found even now in an extremely difficult period, experienced the same inconsistency. It was expected that these multiple inconsistencies in organizing and funding the research to put its fingerprint including on the work of the managers of NIRDI.

The researchers had no problems in communicating in foreign languages, neither difficulties to analyze and to interpret the requirements or specifications, sometimes very demanding, of various research projects. They were faced with other problems such as, for example, the bureaucracy and the hidden discrimination.

Thus, in order to be eligible in a European project, an entity, as a representative of the East, had to be certified, usually by someone in the West. The same applied in the case of receiving a note of good behavior quality, environmental protection, social protection, security, and so on. It is believed, perhaps rightly, that obtaining this certification represents a guarantee of survival, growth and competitiveness, and why not, a manner to achieve excellence in research activities. The complex interdependencies between quality, certification and excellence are identified and explained in the literature. From our own research we have not found any relevant results on excellence in the research institutes.

Through our research we aim to receive a more nuanced answer to this issue, on the importance and the role of these certifications, searching answeres to the following questions: "Did the certifications achieve their goal?", "Are these certifications sufficient in order to achieve excellence?".

In these circumstances, the purpose of this research is to evaluate the current state of implementation of the Model of Excellence CAF 2013 by the National Institute of Research Development and Innovation (NIRDI) from Romania. To achieve these objectives of our study we presented: the main results reflected in the literature on the subjects of research, quality and business excellence; the methodology, goals and assumptions of research and then the research results.

1. Literature review

The research, development and innovation are the "main engines for progress" (Kao, 2007) at the micro and macroeconomic level. The research and development activity includes scientific research, experimental development and innovation based on scientific research and experimental development. Some authors define innovation as "a complex process that enables the communication between the scientific community, the market and the technology" (Brad et al., 2006). The innovation processes together with the creative activity are the main engines of the economic growth and development (Dinu, Grosu and Săseanu, 2015). Innovation is a key element in achieving sustainable competitive advantages for the success of organizations (Petrariu, Bumbac and Ciobanu, 2013). Finally, the initiative, the creativity, the innovativeness, the development of organizational capacity and the ability to take risks are all attributes of a progress capable generating national wealth. (Popescu, Garcia-Sanchez, Nicolae and State, 2015).

The quality concept was linked from the beginning with the procurement and the sales of goods constituting a guarantee, an additional insurance for the user. This concept has evolved together with the development of the society. The modern history of the concept of "quality" starts with the twentieth century when the principles, methods, techniques and tools for the quality assurance and the improvement processes, products and services were discovered and developed and applied. During this century, the approach of the concept of quality has seen successive four stages (Drăgulănescu, 1996), each of these steps being remarked by improving the principles and practices of the previous stage, which was additionally enhanced inevitably by supplementing it with its own principles and practices.

Starting from the "Deming" program, which the Japanese have accepted, assimilated and promoted since the '50s (Vokurka, Stading and Brazeal, 2000), perfecting it and taking advantage of it to the "Japanese miracle" at the early '80s in the US, Australia, Canada and the '90s in the European Union, several programs have been developed for the assessment and the recognition practices in the field of the total quality high performance level organizations. These programs have become models of reference for the organizations concerned with the problem of implementing the TQM practices (total quality management) in their business processes. The studies and especially the practical experience has shown that no two organizations have the same implementation of the TQM (Issac, Rajendran and Anantharaman, 2004; Sila and Ebrahimpour, 2003). This largely explains the rich literature dedicated to the total quality management such as: Azhashemi and Ho, 1999; Bollapragada and Sadeh, 2004; Dahlgaard and Dahlgaard, 2002; Kanji and Wallace, 2000; Kara, 2005; Parameshwaran și Srinivasan, 2008; Roman, Roman și Jaba, 2009; Androniceanu, 2012; and so on.

Despite the diversity of the TQM models implemented, yet today there are several reference TQM models supported at a regional scale as models of organizational

excellence, such as the EFQM European model, the American MBNQA model, the CAE Canadian model and the ABEF Australian model.

The EFQM model is promoted by the European Foundation for Quality Management, established in 1989. It was developed in 1991 and was later improved in several stages. The EFQM European model is subject to several studies: Blessing and Parker, 2000; Hall, 2000; Hammond, 2000; Hughes and Halsall, 2002; London, 2002; Marra, 2002; Androniceanu, 2014 and so on.

In the current time period, the quality has become the most important competitive advantage. But in order to achieve the expected results, the organizations will have to place "quality" on a special position in their strategy.

The European Union promotes a quality policy. The elaboration of the White Paper on the subject of the European Single Market in 1994 represented an important contribution to the development of the EU policy on promoting quality ("Growth, competitiveness, employment – challenges and ways for the 21st Century"). Later the document called "European policy to promote the quality and the excellence path to Europe" was elaborated. Here it is stated that the European policy includes "a strategic vision on quality" and "a European program for promoting quality" (Olaru et al., 2011).

For increasing the quality and the competitiveness of the public institutions and the public interest, the representatives of the European Union have asked the experts to develop an appropriate tool in order to assist the public institutions in their journey towards continuous improvement, towards excellence. Defined through its characteristics of organization and implementation of the law (Sararu, 2016), the public administration plays an important part in reaching this objective.

The Common Assessment Framework (CAF) is a total quality management tool developed by the public sector for the public sector, inspired by the Excellence Model of the European Foundation for Quality Management (EFQM). CAF is a free tool, easy to use, representing the support for the public interest entities, using the quality management techniques in order to improve performance. CAF has been revised three times, namely in 2002, 2006 and 2013. As the EFQM Excellence Model, CAF 2013, figure no. 1, uses nine criteria.

The criteria from 1 to 5 take into account the management practices of the organization (the factors). They reflect what the organization does and how to achieve its objectives. The criteria 6-9 (the results) reflect the results quantified by measuring the perception and the performance relating to citizens / customers, personnel, social responsibility and key performance. The 9 criteria contain 28 sub-criteria reflecting the main issues that need to be considered when making of the organization. The sub-criteria are explained with the help of numerous examples, suggestions and best practices to be better understood and properly evaluated. Integrating the conclusions of the (self-) evaluation in managerial practices, it is in fact the actually learning cycle and continuous innovation on the way to excellence.

The recommendations for use of the CAF model 2013 grant a freedom quite large to interested parties but, however, both **the structure** with the 9 criteria and 28 sub-criteria and **the use of the tables of scoring**, are the bases from which deviations are not permitted.

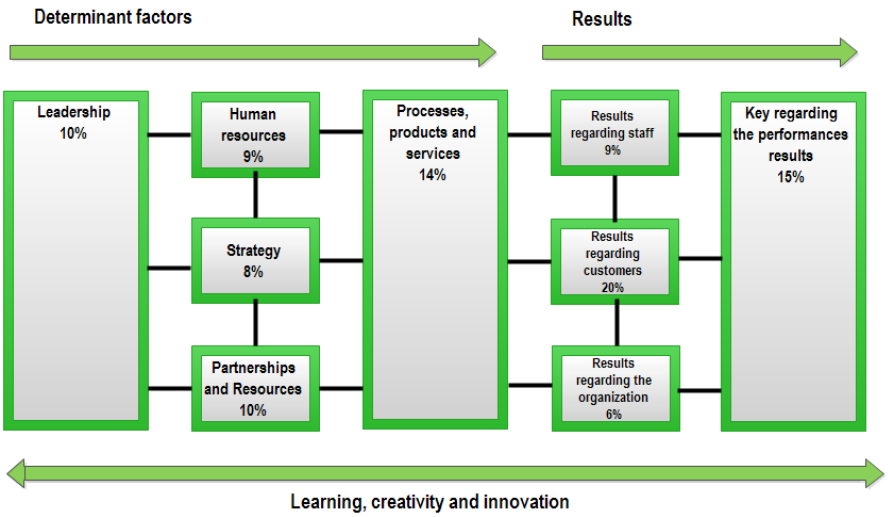

Figure no. 1: The CAF 2013 excellence model
Source: EIPA and EUPAN, 2013

"CAF aims to be a catalyst for a full improvement process and has five main goals:

- To introduce public administrations in the culture of excellence and the TQM principles;
- To progressively guide them to a PDCA cycle (planning, implementation, verification, action);
- To facilitate self-assessment of the public sector organizations in order to obtain a diagnostic analysis and a definition of the improvement actions;
- To act as a bridge between different models used in quality management, both in the public and private sectors;
- To facilitate the bench learning between different public sector institutions." (EIPA and EUPAN, 2013)

To achieve its goals the 2013 CAF model promotes the eight principles of total quality management (Olaru et al., 2013), and for promoting the spirit and the purpose of the excellence model, it gives different levels of interest (share in percent) to the criteria and the sub criteria of the model that can change with time.

2. Research methodology

In order to achieve the objectives of this research a study was conducted based on a questionnaire. The questionnaire was offered for completing to the 53 representatives belonging to the top management of the 49 National Institutes of Research Development (NIRD) coordinated by NASR, to the two Institutions and Units for Scientific Research, Technological Development and Innovation subordinated to NASR and the two Institutions and Units of Scientific Research, Technological Development and Innovation, which operate under the authority of NASR, during a work meeting held in July 2016. Out of the 53 questionnaires set up for completing, 51 questionnaires received were correctly filled in.

The questionnaire, as an "instrument and research technic in social and human sciences" (Chelcea, 2001), was used in two key areas of the research, as follows.

In the first instance, the objective was the analysis of the perception of decision makers from the National Institutes of Research – Development and Innovation of Romania on the most important issues that a research institute is facing. The questionnaire contained an open question (**question B:** *Please indicate at least five of the most important issues that your institute is facing*).

In the second phase of the research, the questionnaire was used to allow the assessment of the current state of the implementation of the excellence model after the model CAF 2013 in the National Institutes of Research – Development and Innovation in Romania.

The questionnaire used in this research is divided into the categories of the process of the CAF model (Common Assessment Framework), see figure no. 1, namely: Leadership; Strategy; Human Resources; Partnerships and Resources; Processes, Products and Services; Staff's satisfaction; Customer's satisfaction; Society' Satisfaction; Key Business Performance.

The questionnaire on the factors of the CAF model 2013, including the criteria from 1 to 5, see Table no. 5 the lines having the codes from 1 to 5, was preceded by question A, considered "closed qualifying question" (**question A:** *Please specify how many management systems are certified in your institute: In our institute are certified: 0 management systems; ISO 9001; ISO 9001 plus 1 management systems; ISO 9001plus 2 management systems; ISO 9001 plus more than 2 management systems.*).

The questions regarding the results of the CAF model 2013, criteria from 6 to 9, see Table no. 5 the lines having the codes from 6 to 9, have been separated from the questions concerning the factors, the criteria from 1 to 5, by question B, an open question, previously presented.

The questionnaire was accompanied by an explanatory letter about its usefulness and necessity and by ensuring the confidentiality of the responses, and so on. Also, the assessment criteria were presented for each of the criteria and sub-criteria of factors or results, according to the CAF 2013 methodology, which can be found in Table no. 1. – Rules regarding the evaluation of factors (criteria 1-5) and respectively Table no. 2. – Rules regarding the evaluation of results (criteria 6-9).

Table no. 1: Rules regarding the evaluation of factors (criteria 1-5)

We do not perform activities in this field; we have no information or there is insufficient information held upon this topic.	0-10
We plan to achieve this.	11-30
We implement this.	31-50
We are checking to see if the right steps were correctly followed.	51-70
Based on the analysis, we make the necessary changes.	71-90
Everything we do we plan, implement and adjust regularly and we continue the learning process from others. We are in a cycle of continuous improvement on the subject.	91-100

Table no. 2: Rules regarding the evaluation of results (criteria 6-9)

No results measured and / or no information available	0-10
The results are measured and show a negative trend and / or results do not meet relevant targets	11-30
The results show a trend of stagnation and / or some relevant targets are met	31-50
The results show improving trends and / or most relevant targets are met	51-70
The results indicate a major breakthrough and / or all the relevant targets are met	71-90
Excellent results were achieved. All relevant objectives were met. Positive comparisons were achieved for key results with relevant entities	91-100

The research objectives are:

- The analysis of the perception of the decision makers in the Research Development and Innovation National Institutes of Romania on the most important issues that the research institutes are facing.

- The assessment of the current status of implementation of the CAF 2013 Model of Excellence by the National Institute of Research Development and Innovation in Romania by determining the degree of fulfillment by the Romania INCDIE of the 9 criteria and the 28 sub-criteria of the model by:

- The analysis of the achievement of the excellence criteria and sub-criteria of the CAF 2013 model based on the self-assessments made by the respondents;

- The verification of the criteria and the sub-criteria of the excellence model in order to see if they have similarities in culture.

In our study we will also check the following assumptions:

- Verifying the hypothesis: if *an excellent organization requires much more than the implementation and the certification of one or more models of management systems*;

- Verifying the hypothesis: if *based on the assessment of the current state of the 9 criteria implementation used by the CAF model 2013 can be identified key weaknesses and risks*.

3. Research results

The results of the questionnaire are summarized in Tables no. 3 – 5.

At question A) of qualification, requesting information on the status of the implementation of the quality management and of other management systems in the institute, the answers received were presented in Table no. 3 – Management Systems Certified in NIRDI.

Table no. 3: Management Systems Certified in NIRDI

In our institute are certified:	Total:
0 management systems	0
ISO 9001	2
ISO 9001plus 1 management systems	19
ISO 9001plus 2 management systems	23
ISO 9001plus more than 2 management systems	7

At question B), open, which require the submission of at least 5 of the most important problems the institute is facing, the following statement need to be taken into consideration: the problems were summarized, analysed and systematized into different categories. Thus, on the basis of the 357 problems mentioned by the 51 respondents to the questionnaires were identified 12 groups of main issues (Table no. 4). The presentation was made in the order of their occurrence while processing the questionnaires, except that in the case of similar types of problems, a more comprehensive reformulation of the entire set of problems was performed.

Table no. 4: Categories of problems identified in NIRDI

No.:	The main group of problems:	No. of times when encountered:	Frequency (%):
1.	Reluctance and insufficient involvement of the employees	31	60,78
2.	Lack of team spirit and initiative	23	45,10
3.	No set of indicators to measure employee performance was implemented and the motivation tools are limited	33	64,71
4.	Old technical equipment and inadequate spaces	28	54,90
5.	Lack of reasearch atractivity for exceptional young individuals	31	60,78
6.	Lack of syncronization between the costs and the profit	50	98,04
7.	Lack of impact assessments of NIRDI on society's activity	8	15,69
8.	Lack of employee satisfaction assessments	19	37,25
9.	Lack of customer satisfaction ratings	33	64,71
10.	Difficulties in using research results	43	84,31
11.	The long period between the submission and project funding	48	94,12
12.	Lack of integrated computer systems	10	19,61
	TOTAL PROBLEMS	**357**	**X**

The responses to the questionnaire regarding the assessment of the current state of implementation of the CAF 2013 Excellence Model by the NIRDI in Romania are summarized in Table no. 5.

Table no. 5: The Implementation stage of the CAF model 2013 in NIRDI

Code:	Criterion / sub-criterion / question	Average score:	CAF importance:
1.	**With regard to the institute's management team the following statements can be made:**	**88,67**	**0,1**
1.1.	Does the managerial team ensure the institute's direction for further evolution, by developing its mission, its vision and its values?	90,24	0,25
1.2.	Does the managerial team administrate the institute, its performances and its continuous development?	88,20	0,25
1.3.	Does the managerial team motivate and support the institute's personnel and acts in terms of a behavioural model for the personnel?	88,51	0,25
1.4.	Does the leadership team manage effective relationships with political authorities and other stakeholders?	87,73	0,25
2.	**With regard to the institute's policy and strategy team the following statements can be made:**	**80,17**	**0,08**
2.1.	The policy and the strategy are based on the current and future shareholders?	84,69	0,25
2.2.	The policy and the strategy are based on the assessments, data and indicators from both the institute's internal environment and the external environment?	88,25	0,25
2.3.	The institute's policy and strategy are reviewed and adjusted periodically?	76,00	0,25
2.4.	The policy and the strategy are communicated and implemented in all the organizational structures of the institute?	71,73	0,25
3.	**With regard to the institute's employees the following statements can be made:**	73,15	0,09
3.1.	The need for human resources is identified and planned in a transparent manner, consistent with the institute's strategy and policy?	75,88	0,33
3.2.	Are the skills of the employees' identify, develop and harnessed at the institute's level aligning to both the individual and organizational goals?	75,76	0,33
3.3.	Is the staff are involved in achieving the institute's by promoting an open dialogue about its rights and responsibilities?	67,80	0,33
4.	**With regard to the institute's partnerships and resources the following statements can be made:**	85,24	0,09
4.1.	Does the institute develop and manage mutually beneficial partnerships with relevant organizations?	83,73	0,16
4.2.	Does the institute develop and implement long-term partnerships with customers and suppliers?	73,27	0,16

Code:	Criterion / sub-criterion / question	Average score:	CAF importance:
4.3.	Does the institute manage the financial resources based on budgets in order to achieve its targets?	85,59	0,16
4.4.	Does the institute manage the information and knowledge through quick access to both information and knowledge?	91,76	0,16
4.5.	Does the institute manage the appropriate technologies?	88,00	0,16
4.6.	Does the institute value the strengths and opportunities?	89,08	0,16
5.	**With regard to the processes occurring in the institute the following statements can be made:**	79,95	0,14
5.1.	Are the processes identified, described, used and updated on an on-going basis, involving the stakeholders?	77,80	0,33
5.2.	Are the services and products developed and implemented taking into account the customers' requirements?	81,76	0,33
5.3.	Is the coordination processes within the institute correlated with the requirements of other relevant organizations?	80,29	0,33
6.	**According to your opinion regarding the results oriented towards the citizens / the customers:**	86,92	0,2
6.1.	Are there indicators that measure customers' satisfaction?	84,24	0,25
6.2.	Are the customers' satisfied with the services provided by the institute?	89,61	0,75
7.	**According to your opinion regarding the results concerning the employees:**	68,27	0,09
7.1.	Are there indicators that measure employees' satisfaction?	64,31	0, 25
7.2.	Are the employees' satisfied?	72,24	0,75
8.	**According to your opinion regarding the social responsibility:**	73,83	0,06
8.1.	Are there indicators for measuring and tracking the environmental and social involvement?	75,24	0, 25
8.2.	Is the institute known and appreciated by the individuals?	72,43	0,75
9.	**According to your opinion concerning key results regarding performance:**	86,69	0,15
9.1.	Are there indicators for measuring and tracking the institute's results?	87,65	0,50
9.2.	Are the results obtained from the measurements excellent?	85,73	0,50

The correlation of the results of this questioner allows us to give an answer based on the objectives and the assumptions of our study.

3.1. The assessment of the current stage of implementation of the CAF 2013 Model of Excellence by the National Institutes for Research, Development and Innovation in Romania

Based on the data summarized in the Table no. 4: Categories of problems identified in response to question B, after grouping them in an ascending order based on their frequency, the frequency can represent the major obstacles as shown in Figure no. 2: Frequency by the categories of problems that INCDIE is facing.

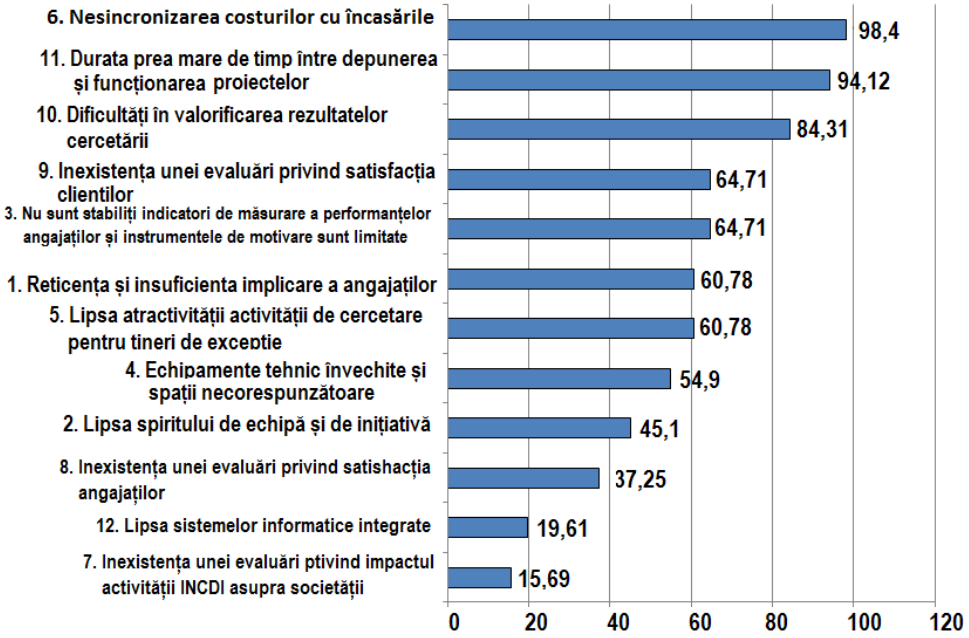

Figure no. 2: Frequency by the categories of problems

From the analysis of the main problems the National Institutes of Research, Development and Innovation in Romania are facing, we discovered that the most delicate ones, the ones with the highest frequency are based on external causes (*The lack of the costs and the incomes synchronization and The length of time between the submission and the financing of the projects*), the following problem, as frequency, is based on both an external business environment cause and an internal cause due to the lack of entrepreneurship of the managers (*Difficulties in using research results*). The problems with a lower degree of generality, in the perception of the decision makers, concern the *Lack of the impact assessments of the INCDIE activity on society* and the *Lack of the integrated computer systems*.

3.2. The assessment of the current status of the CAF 2013 Model of Excellence implementation by the National Institute of Research Development and Innovation in Romania

To assess *the current state of implementation of the excellence model CAF 2013* by the National Institutes of Research, Development and Innovation in Romania: we will analyse the criteria and sub-criteria model of excellence fulfillment and we will also assess whether the criteria and sub-criteria of the model of excellence CAF 2013 are fulfilled taken into consideration its spirit and purpose.

- ***The degree of fulfillment of criteria and sub-criteria of the model of excellence***

On the basis of processing the results from table no. 5, in figure no. 3 the chart radar represents the degree of fulfillment of the nine criteria of the CAF 2013 excellence model. The degree of compliance was calculated for each criterion based on the averages obtained from the calculation of the sub-criteria reported. By analyzing the chart we can notice a high level of the degree of fulfillment of its nine criteria.

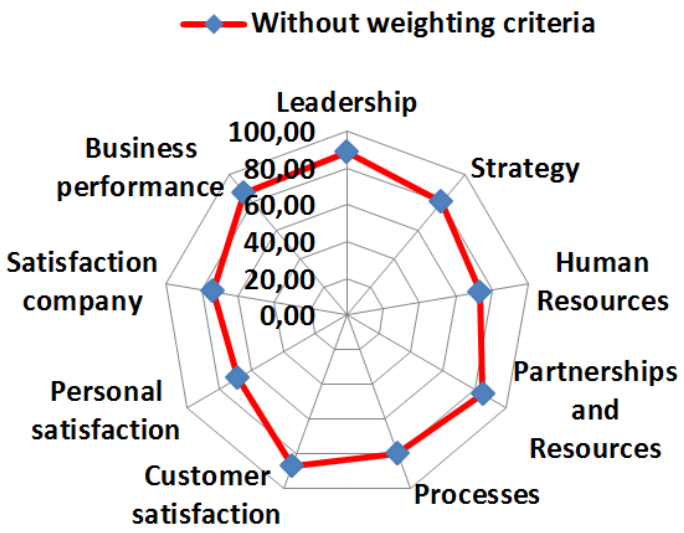

Figure no. 3. The radar graph of the degree of fulfillment of those 9 criteria of the excellence model CAF 2013 without taking into account the importance (expressed in percentage) given by the model to its criteria and sub-criteria

The results obtained in each criterion are presented below.

The degree of fulfillment of criterion 1: "Leadership"

According to the research, the National Institutes of the Research and Development and Innovation (NIRDI) achieved an average score of 88.67%, which corresponds to the stage of "leadership based on analyzes propose the necessary amendments". This criterion values ranged from 46.25%, which is "implementing a management system" to 92.5%, that "everything is done planning, implementing and adjusted regularly. Learn from others".

The degree of fulfillment of criterion 2: "Strategy"

According to the research, NIRDI achieved an average score of 80.17%, which corresponds to the stage "are based on analyzes necessary changes". This criterion values ranged from 52.25%, respectively "checks are being conducted to see if they followed the right steps" to 92.25%, respectively "continuous improvement cycle strategy".

The degree of fulfillment of criterion 3: "Human Resources"

According to the research, NIRDI achieved an average score of 73.15%, which corresponds to the stage "based on the analysis the necessary adjustments are made". The values for this criterion ranged from 50.00%, which represents that it "is being implemented" to 71.66%, which is "based on the analysis necessary adjustments are made".

The degree of fulfillment of criterion 4: "Partnerships and resources"

According to the research, NIRDI achieved an average score of 85.24%, which corresponds to the stage "based on the analysis necessary adjustments are made". This criterion values ranged from 70.16%, which is "based on the analysis necessary adjustments are made" to 94.5%, meaning "cycle of continuous improvement".

The degree of fulfillment of criterion 5: "Processes, products and services"

According to the research, NIRDI achieved an average score of 79.95%, which corresponds to the stage "based on the analysis necessary adjustments are made". The values of this criterion ranged from 54.66%, respectively "checks are being conducted to see if they followed the right steps" to 94.33%, respectively "continuous improvement cycle".

The degree of fulfillment of criterion 6: "Results on customers"

According to the research, NIRDI achieved an average score of 86.92%, which corresponds to the stage "results indicate a major breakthrough". This criterion values ranged from 74.00%, respectively "the results indicate a major breakthrough" to 96.50%, respectively "excellent results were achieved".

The degree of fulfillment of criterion 7: "Results about staff"

According to the research, NIRDI achieved an average score of 68.27%, which corresponds to the stage "results show improving trends". This criterion values ranged from 50.50%, "the results show a trend of stagnation" to 90.50%, "excellent results were achieved".

The degree of fulfillment of criterion 8: "Results on the organization"

According to the research, NIRDI achieved an average score of 73.83%, which corresponds to the stage "results show improving trends". This criterion values ranged from 50.00%, "the results show a trend of stagnation" to 92.50%, "excellent results were achieved".

The degree of fulfillment of criterion 9: "Key Performance"

According to the research, NIRDI achieved an average score of 86.69%, which corresponds to the stage "results indicate a major progress". This criterion values ranged from 68.00%, "the results show a trend of improvement" to 93.00%, "excellent results were achieved".

- ***The evaluation of whether the spirit and purpose of the excellence model CAF 2013 were assimilated***

To assess whether the spirit and the purpose of the excellence model CAF 2013 were assimilated into the culture of the NIRDI we can use several methods (Lefter et al., 2000). Our option was the evaluation based on results. Specifically, we assessed the degree of fulfillment of the criteria of excellence model induced by CAF 2013 in the spirit of that model, based on the importance assigned to each criterion and sub-criterion within the model.

As it results from the analysis and conclusions presented in the section 3.3, the NIRDI of Romania has not yet assimilated the spirit, nor purpose of the CAF model 2013.

In conclusion, the evaluation of the present stage of implementation of the CAF 2013 Model of Excellence by the National Institute of Research Development and Innovation in Romania reveals a poor level of implementation. It can be noted, however, the real **progress** in the following criteria: the "results concerning the customers" and the "processes, products and services". In the same time, we note the existence of serious **shortcomings** in the criteria "results concerning the organization" and "results concerning the staff."

3.3. Testing the hypothesis of whether the implementation of one or more management systems is sufficient to achieve excellence

To substantiate the answer to the question "*Is the implementation of one or more management systems sufficient to achieve excellence?*", it will be analyse to what extent the research and innovation institutes implemented or not one or more management systems and it will be assess to whether the criteria and sub-criteria of the CAF 2013 model of excellence are met in its spirit and purpose (weights).

According to the data analysis it can be noticed that, on the one hand, according to the results summarized in Table no. 3 all the NIRDI analysed have implemented at least one management system (namely ISO 9001) and, on the other hand, based on the results reflected in the synthesis image provided by Figure no. 3, our hypothesis *is verified* (more precisely: it is enough to implement one or more management systems in order to achieve excellence).

Instead, if it is analysed whether the criteria and sub-criteria of the CAF 2013 model of excellence are met in its spirit and purpose, a different conclusion is reached. More exactly:

- when the radar chart represented by the degree of fulfilment of the 9 criteria of the CAF 2013 model based on *the importance* (weights) assigned to each criteria of the model, as shown in Figure no. 4, *an imbalance* and *a decrease* in the degree of fulfilment for more criteria is noticed.

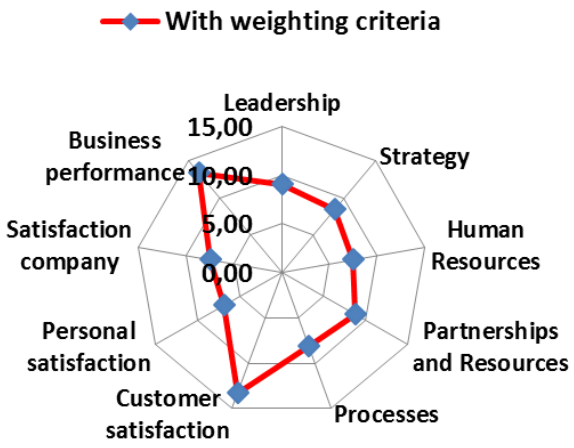

Figure no. 4: The radar graph of the degree of fulfilment of the 9 criteria of the excellence model CAF 2013 taking into account the importance (weight) given model only to the criteria.

- moreover, the radar chart in Figure no. 5 presents the degree of fulfilment for the 9 criteria of the CAF 2013excellence model, taking into account *the importance* (weight) given by the model to its criteria and sub-criteria.

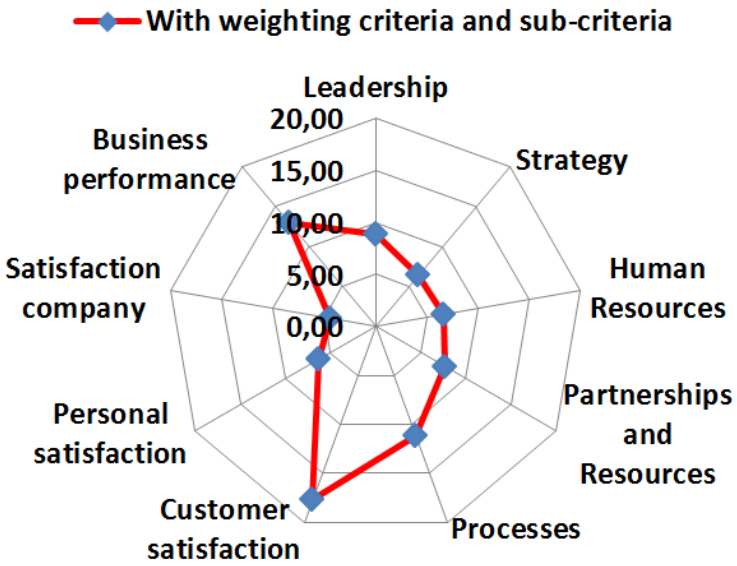

Figure no. 5: The radar graph of the degree of fulfilment of the 9 criteria of the excellence model CAF 2013 taking into account the importance (weight) given by the model to the criteria and sub-criteria.

Figure no. 5 represents the closest reality representation of the achievement of the 9 criteria and sub-criteria of the excellence model CAF 2013 and, as stated, it is much different than the one shown in Figure no. 3. In the Figure no. 3 the CAF 2013 excellence model was

formal, without having implemented the basic principles of the CAF model, otherwise similar to those of the EFQM model. It is noted therefore that the eight principles of the model are reflected by the importance given to different criteria and sub-criteria.

For example: The focus on the customer's satisfaction is reflected in the model by the weight of 20% given to evaluate the criteria and 75% in terms of regarding the customer's perception towards this satisfaction.

We can conclude that: excellence cannot be achieved simply by the implementation and certification of two or more management systems. It is imperative that the 8 principles of total quality philosophy should be assimilated and implemented into the organizational culture in their true essence (spirit) of which, incidentally, is based the road to excellence.

Assimilating the spirit of the 8 principles of total quality philosophy underpinning the sustainable approach to excellence, clearly offers a new perspective in terms of capitalizing the results of (self-) evaluation in terms of the criteria of the achievement of the CAF model. Thus the management's principle oriented towards the processes and the facts correlated with the focus on customer satisfaction, transforms the objectives into the outputs of the processes. "The customer's satisfaction is given by successful processes whose outputs represent its needs and requirements. Once defined the processes outputs (approved by the administrator and the customers), regardless of whose needs and requirements are met (namely an internal or external customer), they become objectives" (Zybaczynski and Manole., 2005, p. 29).

In the spirit of this approach, if our goal is to meet the 9 criteria of the excellence model CAF 2013, any cause that stops us to achieve our objective, is certainly a *risk* that must be avoided. Analysing the root causes of risk of default objective of meeting the 9 criteria of the excellence model CAF 2013 and proposing solutions to eliminate or reduce the risk outcomes, the (self) assessment of the achievement of criteria CAF model of excellence, may underlie the rationale of the strategy and the organization's policies, contrary to what some authors may claim that they do not offer the possibility of developing future actions to improve (Andersen, Lawrie și Shulver (2000)). Instead, we can agree with them on the fact that the models of excellence **do not** formulate strategies, **do not** evaluate strategies, but rather *evaluate the process of the strategies' creation.*

3.4. Testing the hypothesis whether based on results of the (self-) evaluation of the achievement of the criteria of the CAF 2013 excellence model there could be identified some weaknesses and risks

To substantiate the answer to this issue it will examined whether the top managers' perceptions about the problems they are facing is consistent or not with the results provided by the CAF 2013 model.

Based on the frequency analysis of the categories of problems, as shown in Figure no. 2, a higher frequency is noticed concerning the following aspects: the performance (the problems no. 6, 11, 10); the employees (the problems no. 3, 1, 6, 4); the processes (the problems no. 4, 12). These problems identified by the top management consistent, in most cases, with the failures reflected in the chart radar the degree of fulfilment of the 9 criteria of the excellence of the CAF 2013 excellence model in Figure no. 5, but in a different

order: the satisfaction, the society, the employees, the processes, and the performance. It is noted that some differences appear concerning the problem no. 9, evidenced by the frequency of the categories of problems regarding the evaluation of customer satisfaction, which is not consistent with the information shown in chart radar. In this case, it is believed that the issue of the customer satisfaction assessment was not properly understood. The fact that the institutes did not evaluate the customers' satisfaction through a market study does not mean that there are unsatisfied customers or that there are no other criteria to assess their dissatisfaction (such as, for example, complaints, returns, trials, etc.).

In conclusion, based on the analyses conducted, it can be stated that this hypothesis is verified. More exactly, based on the assessment of the current state of the CAF 2013 – model of excellence, there can be identified key shortcomings and risks.

Conclusions

The research conducted allowed the determination of the implementation stage of the 2013 CAF excellence model for the first time in Romania. It appears that although there is a high degree of fulfillment of the 9 criteria of the excellence model CAF 2013 NIRDI have not assimilated the spirit and the purpose of the excellence model induced by the principles of total quality management by importance (percentage) given to each criterion and sub-criterion. It appears real progress criteria "*results concerning the customers*" and "*processes, products and services*". At the same time there are serious shortcomings in the criteria "*results concerning the organization*" and "*results concerning the staff*".

On the one hand, it has been found that excellence can not be obtained simply by the implementation and the certification of two or more management systems. It is mandatory that the organizational culture is assimilated and applied in the spirit of the eight principles of total quality philosophy underlying the approach to excellence. They are induced in the model of excellence by the importance (share in percent) given to each criterion and sub-criterion.

On the other hand, based on assessment of the current state of the implementation of the CAF 2013 excellence model the main weaknesses and risks can be identified. Even more, the assimilation of the eight principles of the total quality management philosophy underlying the approach to sustainable excellence in practice and in the organizational culture forces us to value the results of the (self-) evaluation.

Taking into account the research results, we can conclude that the (self-) evaluation stage of the implementation of the excellence model CAF 2013 can be a beneficial alternative that does not require additional expenses to increase the quality and the competitiveness of the research and innovation activities and of achieving the excellence in business. The study results may constitute a starting point for future research aiming to identify the best avenues to finding and resolving risks and deficiencies.

References

Andersen, H., Lawrie, G. and Shulver M., 2000. *The Balanced Scorecard vs. the EFQM Business Excellence Model*. Berkshire: 2GC Active Management.

Androniceanu, A., 2012. The impact of quality management implementation within the Romanian local public administration. *Quality – Access to Success*, 13 (127), pp. 96-99.

Androniceanu, A., 2014. Research on management capacity of medical units for addicts to deliver quality services in time of crisis. *Revista de Cercetare si Interventie Sociala*, 47, pp. 78-104.

Azhashemi, M. and Ho., S., 1999. Achieving Service Excellence: A New Japanese Approach versus the European Framework. *Managing Service Quality*, 9(1), pp. 40-46.

Blessing, L. and Parker, N., 2000. *Information Needs of SMEs. A Study of the I2N Project*. s.l: Cambridge University.

Bollapragada, R. and Sadeh, N., 2004. An Empirical Study of Policies to Integrate Reactive Scheduling and Control in Just-in-Time Job Shop Environments. *Int. J. Prod. Res.*, 42(4), pp. 693-718.

Brad, S., Ciupan, C., Pop, L., Mocan, B. and Fulea, M., 2006. *Ingineria şi Managementul Inovaţiei*. Bucureşti: Editura Economică.

Chelcea, S., 2001. *Metodologia cercetării sociologice: metode cantitative și calitative.* Bucureşti: Editura Economică.

Common Assessment Framework (CAF), 2013. *Common Assessment Framework* [online] Available at: <http://www.eipa.eu/files/File/CAF/CAF_2013.pdf> [Accessed 20 August 2016].

Constituţia României, Republicată în Monitorul Oficial, Partea I, nr. 767 din 31 octombrie 2003, cu modificările și completările ulterioare.

Dahlgaard, J.J. and Dahlgaard, M.P., 2002. From Defect Reduction to Reduction of Waste and Customer/Stakeholder Satisfaction (Understanding the New TQM Metrology), *Total Quality Management*, 13(8), pp. 1069-1085.

Dinu, V., Grosu, R.M. and Saseanu, A.S., 2015. Romanian Immigrant Entrepreneurship: Utopia or Reality? An Overview of Entrepreneurial Manifestations of Romanian Immigrants in Andalusia, Spain. *Transformations in Business & Economics*, 14(1(34)), pp. 48-64.

Drăgulănescu, N., 1996. *De la calitatea controlată la calitatea totală*. Bucureşti: Editura Alternative.

European Institute of Public Administration (EIPA), 2016. *European Institute of Public Administration* [online] Available at: <http://www.eipa.eu> [Accessed 20 August 2016].

EIPA and EUPAN, 2013. *The Common Assessment Framework (CAF). Improving Public Organisations through Self-Assessment.* [online] Available at: <http://www.eipa.eu/files/File/CAF/CAF_2013.pdf> [Accessed 2 June 2016]

European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, 2015. *Innovation Union Scoreboard 2015*. [onlilne] Available at: <http://www.urenio.org/el/wp-content/uploads/2015/10/1.2.-Innovation-Union-Scoreboard-2015.pdf> [Accessed 3 June 2016].

European Foundation for Quality Management, n.d. *The EFQM Excellence Model 2013*. [online] Available at: <http://www.efqm.org/the-efqm-excellence-model> [Accessed 20 August 2016].

European Foundation for Quality Management, n.d. *Fundamental Concepts*. [online] Available at: <http://www.efqm.org/efqm-model/fundamental-concepts> [Accessed 20 August 2016].

Kanji, G. and Wallace, W., 2000. Business Excellence Through Customer Satisfaction. *Total Quality Management*, 11(7), pp. 979-998.

Kao, J., 2007. *Innovation Nation: How America is losing its innovation edge, why it matters, and what we can so to get it back*. New York: Free Press.

Kara, A., 2005. A Concept of Optimal Quality and an Application. *Total Quality Management*, 16(2), pp. 243-255.

Lefter, V., Olaru, M., Isaic-Maniu, Al., Pop, N. Al., Popescu, S., Drăgulănescu, N., Roncea, L. and Roncea, C., 2000. *Tehnici şi instrumente utilizate în managementul calităţii*. Bucureşti: Editura Economică.

Hall, R., 2000. Distributed Excellence and the Dell Model. *Target*, 16(2), pp. 6-11.

Hammond, J., 2000. The Naked Truth About Business Excellence. *Total Quality Management*, 11(4), pp. 5666-5673.

Hughes, A. and Halsall, D., 2002. Comparison of the 14 Deadly Diseases and the Business Excellence Model. *Total Quality Management*, 13(2), pp. 255-263.

Ionescu, B.Ş., Bendovschi, A. and Prichici, C., 2015. Optimising textile industry processes using cloud computing technology. *Industria Textilă*, 66(4/ 2015), pp. 215-222.

Issac, G., Rajendran, C. and Anantharaman, R. N., 2004. A conceptual framework for total quality management in software organizations. *Total Quality Management*, 15(3), pp. 307-344.

London, C., 2002. Strategic Planning for Business Excellence. Take the Right Road to Reach Your Destination. *Quality Progress*, August iss., pp. 26-33.

Marra, T., 2002. The Case for Customer Relationship Excellence. *EFQM Magazine*, 1(2), pp. 20-23.

Olaru, M., Dinu, V., Stoleriu, G., Sandru, D. and Dinca, V., 2010. Responsible Commercial Activity Of Smes And Specific Values Of Sustainable Development In Terms Of The European Excellence. *Amfiteatru Economic*, 12(27), pp. 10-26.

Olaru, M., Stoleriu, G., Langa, C. and Sandru, D., 2011. Evaluation of the degree of fulfilment of the EFQM Excellence Model criteria by the SMEs in Romania. *Total Quality Management & Excellence*, 39(2/2011), pp. 33-38.

Olaru, M., Maier, D., Nicoară, D. and Maier, A., 2014. Establishing the basis for Development of an Organization by Adopting the Integrated Management Systems: Comparative Study of Various Models and Concepts of Integration. *Procedia – Social and Behavioral Sciences*, 109, pp. 693-697.

Parameshwaran, R. and Srinivasan, P.S.S., 2008. An Integrated Closed-loop Model for Service Performance Management. *International Journal of Services and Operations Management*, 4(1), pp. 4-55.

Petrariu, R., Bumbac, R. and Ciobanu, R., 2013. Innovation: a path to competitiveness and economic growth. The case of CEE countries. *Theoretical an Applied Economics*, 5(582), pp. 15-26.

Popescu, D., Garcia-Sanchez, A., Nicolae, V. and State, C., 2015. Empirical Research Regarding the Importance of Volunteering for the Sustainable Development of Social Economy Enterprises. *Economic Computation and Economic Cybernetics Studies and Research*, 49(4), pp. 49-67

Roman, M., Roman, M. and Jaba, E., 2009. Educational Process Efficiency Analysis By Data Envelopment Analysis Method. In: s.n., *EDULEARN09 International Conference on education and new learning technologies*. Barcelona, Spain, 6-8 July 2009. s.l:s.n.

Săraru, C.S., 2016. Considerations on the public services in the XXI century. *Juridical Tribune*, 6(Special Issue), pp. 160-166.

Sila, I. and Ebrahimpour, M., 2003. Examination and Comparison of the Critical Factors of Total Quality Management (TQM) Across Countries. *International Journal of Production Research*, 41(2), pp. 235-268.

Vokurka, R.J., Stading, G.L. and Brazeal, J., 2000. A Comparative Analysis of National and Regional Quality Awards. *Quality Progress*, August iss., pp. 41-49.

Zybaczynski, Gh. and Manole, V., 2005. *Îmbunătățirea continuă și managementul variațiilor pentru creșterea performanței*. București: Editura IRECSON.