Efficient Mechanism for Development of Competitive European Entrepreneurship

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Abstract:- **The basic instruments of cohesion policy for reducing disparities between individual areas with the aim to promote balanced sustainable development are structural funds and cohesion fund. Beneficiaries access financial resources through decentralized and centralized calls for project applications, which are evaluated by previously known criteria. The purpose of this article is to present the mechanism for efficient drawing of funds from European structural funds. It is based on combining quantitative and qualitative measures and criteria and searching for "beyond state of the art" projects.**

Keywords:- European cohesion policy, public calls, mechanism for evaluation of projects.

I. INTRODUCTION

The fundamental goal of the European Union is to achieve a uniform and comprehensive development of the member states. The basic ideas of the Lisbon Strategy and the Europe 2020 Strategy are the growth of productivity and competitive present of SMEs and large companies in the global market, boosting entrepreneurship and higher added value. The idea of financial injections for successful European entrepreneurship is implemented in reality through refundable and non-refundable funds within decentralized and centralized public calls. Supported development projects are aimed at commercialization of new technological solutions and employment of flexible staff, willing to learn. Effective implementation of the EU cohesion policy is only possible by using appropriate protocols for harmonization of data from different institutions [14].

Financial resources from structural and cohesion funds are an additional resource of revenue for the EU member states or regions, lagging behind in development. Structural funds direct their resources into regions in accordance with the priority objectives. Objectives are EU-based guidelines, reflecting the priorities in structural policy and are the basis for making decisions which projects should be supported [5].

The European Commission has defined three priority elements for development by 2020: smart growth, sustainable growth and inclusive growth [9]. Its goal is to create economy with a high level of employment, productivity and social cohesion. All members were invited to adjust the national objectives and actions to the defined guidelines.

The European Cohesion Policy is implemented through 11 thematic objectives over the period 2014 – 2020 [11]. The third objective deals with increasing the competitiveness of micro, small and medium-sized enterprises (hereinafter referred to as SMEs).

This objective will be achieved through actions under the following four priorities:

- Encouraging entrepreneurship, in particular facilitating economic exploitation of new ideas and promoting creation of new businesses, including business incubators.
- Developing and implementing new business models for SMEs, especially with regard to internationalization.
- Supporting creation and dissemination of advanced facilities for the development of products and services.
- Supporting the SME capacities to grow on regional, national and international markets, and engaging them into innovation processes.

When preparing public calls for applications from the European structural funds, a valuation process is selected to select projects that should receive financial support. This is a search for broad-based promising projects that will raise the level of economic activity, improve the competitiveness of the economy, strengthen human potential and bring new research, technological and innovation knowledge.

The key question that is being addressed by the research subject is: which is an effective valuation model, on the basis of which long-term projects are selected? Within the framework of research, the guidelines, criteria and weights of the individual criteria were analysed, including their influence on the decisions on the selection of projects with emphasis on SMEs.

II. CLASSIFICATION OF PROJECTS

The European cohesion funds are aimed at development-oriented projects that contribute to raising competitiveness, productivity, tackle the unemployment problems and strengthen the innovation potential of the economy. The structural funds in the form of direct and indirect incentives, intended for the economic development of SMEs, serve as developmental restructuring of the industry towards technological and non-technological development, the exploitation of the state's natural potentials and the improvement of access to human capital [10].

Selecting the best project in any field is a problem that like many other decisions is complicated because projects usually tend to have more than one aspect in terms of measurement, and therefore, involve more than one decision maker [6].

The selection among enterprises or projects applying for financial support from a restricted budget, constitutes a typical ranking problem where the decision maker is called to single out the most attractive alternatives by taking into account different aspects of projects. Multiple Criteria Decision Analysis (MCDA) methods [1], [7] are widely used in the complex decision making of ranking the projects.

Several outranking methods have been proposed to help selecting and ranking (evaluating) the projects [2], but ELECTRE [3], [4] seems to be the most suitable one.

III. RESEARCH METHODOLOGY

The method of comparative analysis of quantitative and qualitative criteria is used for the valuation of investment and the so called soft projects. It has been established that the quantitative criteria have clearly defined absolute, relative and descriptive values in advance, while the qualitative criteria lead the assessor to subjectively assess the criteria that are described. Comparative research with the elimination of the scenario led to the final design of the integral valuation model based on ELECTRE I method.

The concordance index used in ELECTRE I is defined as [1]:

$$C(a,b) = \frac{\sum_{i \in Q(a,b)} w_i}{\sum_{i=1}^{m} w_i}$$

where Q(a,b) is the set of criteria for which a is equal or preferred to (at least as good as) b.

The concordance index is the proportion of criteria with weights allocated to those criteria for which a is equal or preferred to b. The index takes on values between 0 and 1 (higher values indicate stronger evidence in support of the claim that a is preferred to b).

The discordance index suggested for ELECTRE I is given by

$$D(a,b) = \frac{\max_{i \in R(a,b)} [w_i(z_i(b) - z_i(a))]}{\max_{1 \le i \le m} \max_{c,d \in A} [w_i|z_i(c) - z_i(d)|]}$$

where R(a,b) is the set of criteria for which b is strictly preferred to a and A is the set of all alternatives.

The discordance index for a compared to b is the maximum weighted value by which b is better than a, expressed as a proportion of the maximum weighted difference between any two alternatives on any criterion. This also takes on values between 0 and 1, with a high value

indicating that on at least one criterion b performs substantially better than a, thus providing counter-evidence to the claim that a is preferred to b.

However, the form of this index means that it is only appropriate if all evaluations are made on a cardinal scale and the weights render scales comparable across criteria, which are quite restrictive assumptions. An alternative approach is to define a veto threshold for each criterion i, say ti, such that a cannot outrank b if the score for b on any criterion exceeds the score for a on that criterion by an amount equal to or greater than its veto threshold.

That is

$$D(a,b) = \begin{cases} 1 & if\ z_i(b) - z_i(a) > t_i\ for\ any\ i \\ 0 & otherwise \end{cases}$$

Next we have to specify concordance and discordance thresholds, C* and D*:

- If C(a,b)>C* and D(a,b)<D* then a outranks b.
- If C(b,a)>C* and D(b,a)>D* then b outranks a otherwise b does not outrank a.

It is also required, that C(a,b)≥C(b,a) - to reduce the possibility of two alternatives each outranking the other.

The values for C* and D* are specified for a particular outranking relation and they may be varied to give more or less severe outranking relations: the higher the value of C* and the lower the value of D*, the more severe the outranking relation, that is, the more difficult it is for one alternative to outrank another.

IV. RESULTS

By 2020, more than 10,000 centralized and decentralized calls with pre-defined topics will be announced by the European and national callers which will contribute to achieving the strategic goals of a successful Europe. Demand for European funds is always greater than available.

Project idea development starts with the analysis of needs, opportunities and challenges [13]. After the administrative examination of received application, the evaluators evaluate the projects according to previously known criteria. The evaluation relates to the administrative suitability of the beneficiary or partners, their personnel and financial capacities, the level of innovativeness of ideas, the foreseen impact on people and the environment, and realistic implementation.

Numerical data is evaluated on the basis of quantitative criteria of mathematical-statistical methods. Results are measurable and objectively comparable, and the reliability of the ratings depends on the quality of the input data.

The quantitative financial criteria comprise:
- Data from the current balance sheets (e.g. income, profit, labour).
- The ratio between realized and forecasted items (e.g. revenue growth in two periods – when the application is submitted and after the project is completed).
- Indicators (e.g. added value per employee, productivity, profitability, indebtedness).
- Statistical data (GVA/inhabitant, developmental vulnerability of geographical areas).

The accuracy of the assessment is between 95% and 100%. Wrong evaluation and consequent sorting results from incorrect or incomplete input data.

Subjective assessment according to qualitative criteria allows for biased assessment and human error. A substantially perspective yet poorly written project because of illiteracy of the writer, lack of knowledge or lack of understanding of the tender documentation can be ranked so low that it does not obtain co-financing.

The qualitative non-financial criteria comprise:
- Innovativeness of ideas, concepts and models.
- Degree of importance of European problems that are being addressed by projects.
- Quality of proposed solutions, applicants and partners.
- The extent of the impact on target groups.

Horizon 2020 criteria [8] are structured and unified. Differences between programmes are in weights, thresholds for individual criteria and the overall thresholds.

In the public call SME Instrument Phase 2 within Horizon 2020, the evaluation is divided into Impact, Excellence and Implementation. The threshold for impact is 4. The threshold for Excellence and Implementation is 3. The overall threshold, applying to the sum of the three individual scores, is 12. Weighting for the SME instrument (phases 1 and 2), to determine the ranking, the score for the criterion 'impact' is given a weight of 1.5.

$$TNP = \sum_{i=1}^{n} (P_i * F_i)$$

H2020 specific:

$$TNP = \sum_{i=1}^{3} (P_i * F_i)$$

P1= points Impact
P2= points Excellence
P3= points Implementation
F1= 1,5
F2= 1
F3= 1

This results in:
$TNP = P\_1 * 1{,}5 + P\_2 + P\_3$

Where [8]:

0 - The proposal fails to address the criterion or cannot be assessed due to missing or incomplete information.
1 - Poor. The criterion is inadequately addressed, or there are serious inherent weaknesses.
2 - Fair. The proposal broadly addresses the criterion, but there are significant weaknesses.
3 - Good. The proposal addresses the criterion well, but a number of shortcomings are present.
4 - Very Good. The proposal addresses the criterion very well, but a small number of shortcomings are present.
5 - Excellent. The proposal successfully addresses all relevant aspects of the criterion.
Any shortcomings are minor.

Evaluation of Excellence [12]:
- Clarity and pertinence of the objectives.
- Credibility of the proposed approach.
- Soundness of the concept, including appropriate consideration of interdisciplinary approaches and, where relevant, use of stakeholder knowledge.
- Extent that the proposed work is beyond the state of the art, and demonstrates innovation potential.
- Overall assessment of the Excellence criterion (25% weight in the assessment of this criterion).

Evaluation of Impact [12]:
- The expected impacts listed in the work programme under the relevant topic.
- Enhance innovation capacity.
- Strengthen the competitiveness and growth of companies and create new market opportunities.
- Address issues related to climate change or the environment, or bring other important benefits for society (not already covered above).
- Quality of the proposed measures to exploit and disseminate the project results, and communicate the project activities to different target audiences.
- Overall assessment of the Impact criterion (25% weight in the assessment of this criterion).

Evaluation of Implementation [12]:
- Quality and effectiveness of the work plan, including extent to which the resources assigned to work packages are in line with their objectives and deliverables.
- Appropriateness of the allocation of tasks, ensuring that all participants have a valid role and adequate resources in the project to fulfil that role.
- Overall assessment of the Quality and Efficiency of Implementation Criterion (25% weight in the assessment of this criterion).
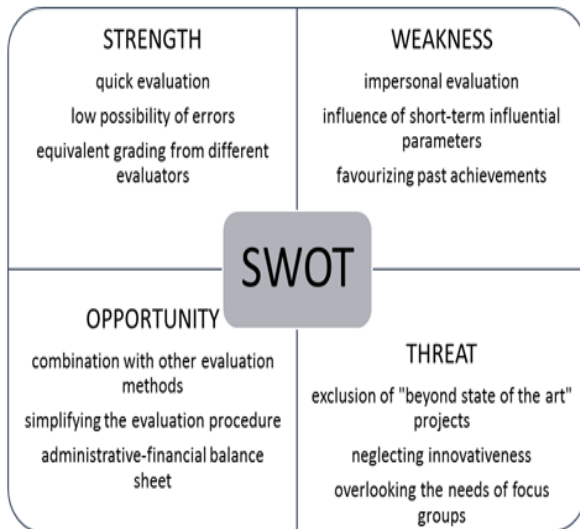
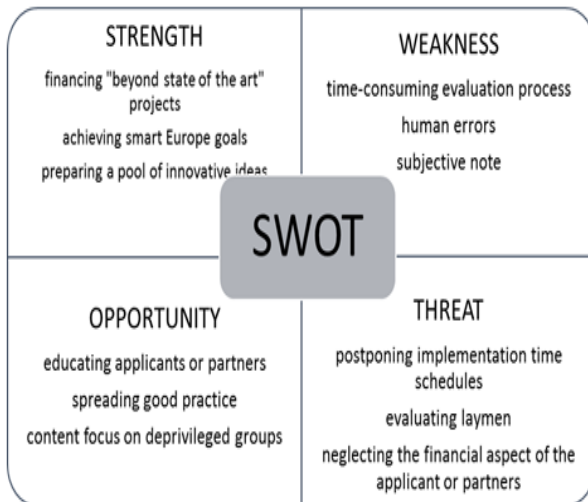Fig 1:- SWOT analysis of evaluation on the basis of quantitative criteria

Fig 2:- SWOT analysis of evaluation on the basis of qualitative criteria

Evaluating projects entirely on the basis of quantitative financial criteria or qualitative non-financial criteria is wrong. This is shown by the multi-correlation analysis of investment, development and the so called "soft projects", proving that this method also rejects many "beyond the state of the art" projects.

Type of evaluation	Weakness	Reason	Possibility of wrong evaluation	Solution
Quantitative	Short-term financial fluctuation	Sudden loss of the market, entry of new competitors, exchange rate fluctuation.	>70%	Evaluation of accounts of several consecutive years.
Quantitative	Long development phase with huge investments	Breaking point and movement into the stage of maturity happens relatively late in the life-cycle. Operations show financial losses.	>80%	Evaluating the whole economic life of the project (n+5...30 years after the breaking point)
Quantitative	Start-up company	Focus on an innovative entrepreneurial idea, financial resources and searching for personnel in the first 5 years of existence.	60-75%	Broad knowledge of strategic plans of the management.
Qualitative	Incomprehensible presentation of the business idea	Wrong wording of the project idea, insufficient project terminology.	45-60%	Training on writing projects, presentation of good practices of preparing applications.
Qualitative	Not knowing the cohesion policy goals	Lack of time for obtaining information about cohesion policy.	50-60%	Presentation of a logical project framework that fits within the cohesion principles
Qualitative	Credit rating	Prices are worse during the recession due to spill over effects of the whole chain (supplier, producer, distributer, and buyer).	60%	Informing the evaluators with macro-economic movements and market conditions in the said industry.

In order to decrease anomalies, the most suitable principle for evaluating projects is the ELECTRE I metod.

V. CONCLUSION

Grants and return funds from centralized and decentralized calls must be given to institutions that are financially stable and have the necessary personnel, and those that develop innovative products and services. They have to be selected on the basis of the combination of quantitative and qualitative criteria. Ranking is efficient when made on the basis of ELECTRE I method. Projects must be assessed from the general to specific, considering as many successful aspects as possible: financial stability, idea, innovative solution, and implementation.

Using only quantitative financial or only qualitative non-financial criteria is not suitable. One needs a combination of both types of criteria. Criteria as such are not wrong, wrong is the inadequate combination that favours only one aspect and neglects the others. It therefore makes sense to carry out further research of project evaluation on the basis of quantitative and qualitative criteria and influence of them on the suitability of the selection.

In addition to the weights, an important role in the comprehensive evaluation of projects is also the one of the evaluator. The latter must perform an objective evaluation in accordance with the guidelines of the European programme documents. Projects must be ranked in such a way that

projects with stable applicants and with competent personnel be selected. The role of those who write the calls for proposals is to prepare a combination of criteria that will enable such ranking.

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