ECONOMETRIC MODELS OF THE KEY CRITERIA, RELATED TO, AND COMPARED WITH CRITICAL FACTORS IN SUCCESS EU-FUNDED PROJECTS, ACCORDING TO FOREIGN EXPERTS' OPINIONS

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ABSTRACT

The motivation of modelling the opinions and views of foreign experts in project management (PM), in fact, a set of project managers (MPs), mostly working, or cooperating in partnerships or consortia in projects funded by the European Union (EU) in Romania, have as a foundation and substratum a natural desire to increase the number of successful projects, and also boost the absorption rate of European funds. This article generates a database based on a sample of 110 foreign experts in PM, namely the opinions expressed by them, in order to subsequently develop a number of econometric models, which, at a lower level of intensity and a relatively low but acceptable determination, correlate some key success criteria (KSC) with critical success factors (CSFs) or key performance indicators (KPIs), for the first time in the Romanian statistical and managerial literature. Unfortunately, the experience of a first budget of EU-funded financing of the convergence of this country's economy towards the EU's development average did not allow for the emergence of econometric validated models, resulting from the Romanian PM experts' views and opinions.

Keywords: *Key Success Criteria (KSC), Critical Success Factors (CSFs), Key Performance Indicators (KPIs), Guided Sample, Project Manager (MP), Project Management (PM)*

JEL Codes: *O22, H43, C46, C51, C52*

1. INTRODUCTION

In the depth of the content of a modern project, beyond the standards recognized as key success criteria (KSCs), the role played by the Project Manager (MP) has constantly been, and stil lis, a defining one, a factor that can induce success or failure. This shadow guiding director of the architecture of the project is the pragmatic vector of changing an old reality for a modern one, only to the extent that he/she has clear information about the critical success factors (CSFs) or key performance indicators (KPIs) of the project, and shares them with the team that is conducting it. The interrogative issues and the various issues that the MP needs to answer, and which he/she must solve, have exceeded the formation of the team, the partnership or the consortium (Săvoiu, 2006). Thus, MP and PM have continuously extended the iron triangle to the threefold initial constraint on time, cost and scope of activities, by adding quality, then communication, risk, and aquisitions - procurement -, after 2013, and stakeholders since 2013, according to *PMBOK® guide* 1983, 2000 and 2013 (Săvoiu, Tudoroiu, 2017; Tudoroiu, 2017a; Tudoroiu, 2017b).

In this article, starting from a detailed questionnaire presented in the Appendix, and exploited on the Internet and during several conferences, workshops and symposia, as well as other international meetings, a database was created that constituted the source of subsequent econometric models, which were finally exposed. It is for the first time in the Romanian statistical and managerial literature, that there appear several models which correlate the opinions and views of a guided sample made up of 110 foreign PM experts, with a lower intensity and with a lower but sufficient determination, some key success criteria (KSCs), with critical success factors (CSFs) or key performance indicators (KPIs).

2. METHODOLOGY, SAMPLE OF OPINIONS AND FINAL DATA

The sample of foreign experts obtained comprised MPs with whom there have been external collaborations and connections have been maintained (over the last 10 years), to which were added subsequently the lists of participants at international conferences and fairs (Germany, Spain, Italy, Portugal, France, Japan and Serbia) on topics derived from the joint realization of mainly industrial international projects with automotive and purely commercial final products. They formed an initial number of nearly 400 experts, who received the online questionnaire, plus 200 experts to whom a similar form written in English (an excerpt from it appears in Appendix 1) was sent via the SurveyMonkey <surveymonkey@go.surveymonkey.com system; the questionnaire was formulated in keeping with the standard of the surveys conducted by this professional site (Figure 1).

SurveyMonkey questionnaire for foreign experts (PM) who expressed their opinions on KSC and CSF or KPI

Figure 1

However, the final sample of respondents comprised as few as 110 foreign experts, which shows that the response rate to the questionnaire for foreign experts was only 18.3%, much lower than anticipated (20-25%), based on a prior knowledge of the experts with whom there existed collaboration relationships in various projects, validated over time. This selection and sample-taking for the final sample was a guided or directed one, based on criteria of self-administration of the questionnaire, and on the technique of volunteering, and the final respondents were divided into several relatively stratified categories:

a) a sub-sample sent the completed form, online, from the e-mail addresses of the experts (50 of them, out of which only 44 were completed in full);

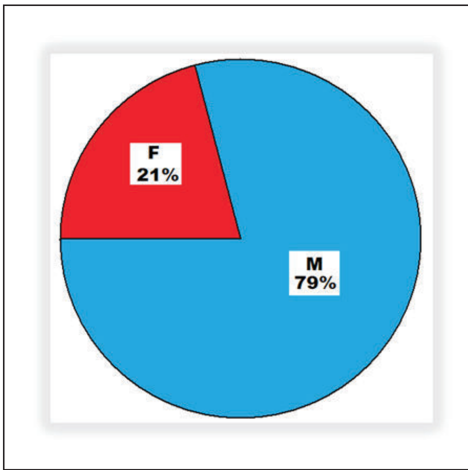
b) the completed questionnaires of another sub-sample were taken over by SurveyMonkey (27 respondents);

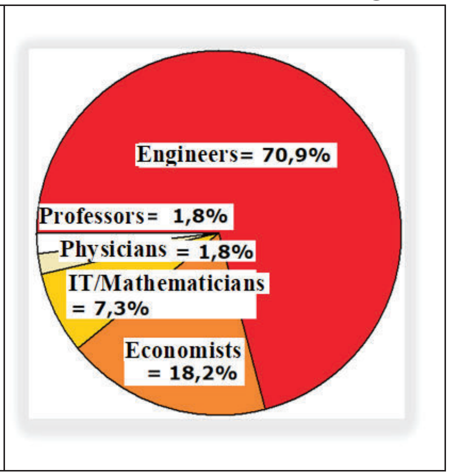
c) a third sub-sample self-administered the questionnaire, directly, during international conferences and fairs (40 of the, out of which 39 ensured the completeness of the filling-in): the final sample comprised 117 respondents, of whom only 110 final respondents ensured the completeness of the answers to all questions).

The structure of the sample of foreign PM experts displays an average age of about 40 years (a homogeneous and moderately asymmetric population, which is mostly distributed normally, according to the Jarque Bera test value, i.e. 4.35), and is shown in Figure 2, starting from gender criteria (the left side chart) and occupational criteria, the professional dominant being engineers (70.9%), followed by economists (18.2%) and IT/mathematicians (7.3%), presented in the the right side graph of the same figure.

Structure diagrams of the sample of the opinions and views of the 110 foreign (PM) experts, concerning the endogenous (KSC) and exogenous variables (CSFs) in the survey questionnaire

Figure 2



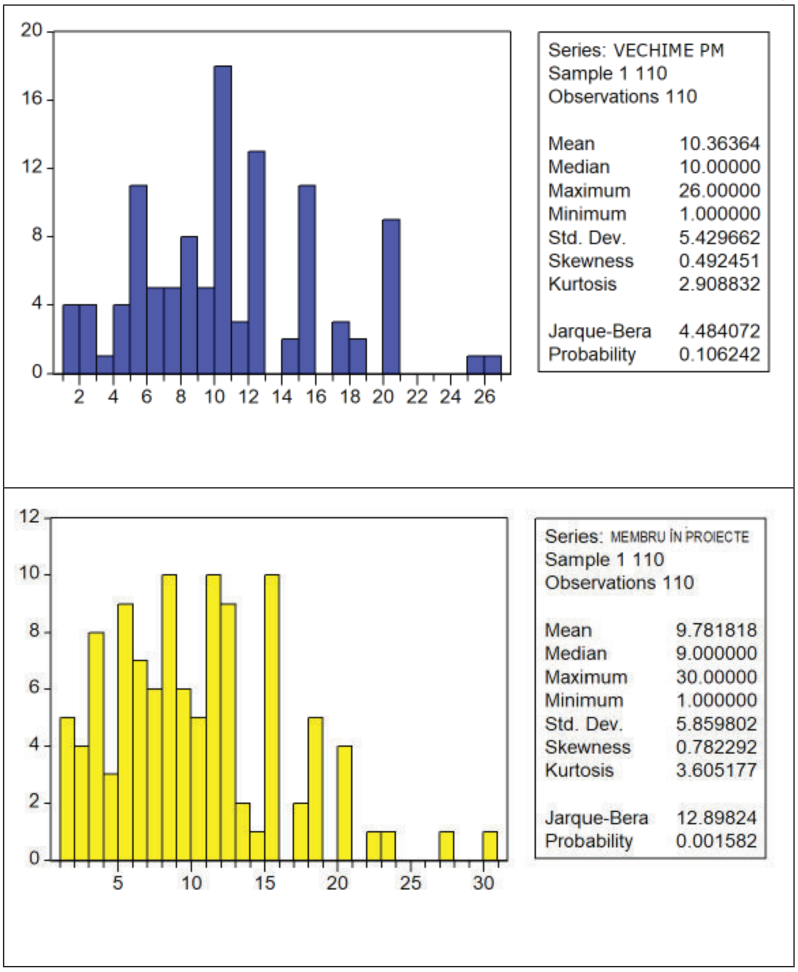


Source: Author's graphics Software used: EViews

As regards the structure of the sample of the 110 foreign (PM) experts, the descriptive statistics identify the participation as MPs with circa *10 years* of experience in the PM (Figure 3, upper line – histogram and descriptive statistics of the "seniority in projects" variable, describing an abnormal and heterogeneous population), and membership in 9-10 projects per average for each respondent (Figure 3, bottom line – histogram and descriptive statistics of the variable "member in the project team").

Histograms and descriptive statistics of the age and number of projects corresponding to the sample opinions of the 110 foreign (PM) experts

Figure 3



Source: histograms and descriptive statistics made by the author. Software used: EViews

The concrete implementation of the database containing a set of 59 variables (six classes of critical success factors [Q1 – Q6], 43 individual classes of critical success factors (CSFs) and 10 key success criteria (ser50 – ser59), and the subsequent data processing were significantly simplified, as no aberrant values were found in the questionnaires, and the correlation matrices and model parameterizations were made with the Eviews software package.

3. MODELS, RESULTS AND DISCUSSION

The descriptive statistics concerning the critical success classes [Q1 – Q6] and key success criteria (ser50 – ser59) reveal a relatively small number of distributional abnormalities in the Q1 CSF Class of the political, economic, social and legislative environment, and Q6 CSF Class of the status and conceptualization of successful projects, as well as the ser50 (harmonization of the activities of the successful project), as can be seen in Table 1a (CSF classes) and Table 1b (key success criteria – KSC).

Descriptive statistics of exogenous variable classes (CSF or KPI) according to the opinions of the 110 foreign experts

Table 1a

	Q1	Q2	Q3	Q4	Q5	Q6
	SER44	SER45	SER46	SER47	SER48	SER49
Mean	2.363636	2.700000	3.472727	3.936364	3.963636	4.563636
Median	2.000000	2.000000	3.000000	4.000000	4.000000	5.000000
Maximum	6.000000	6.000000	6.000000	6.000000	6.000000	6.000000
Minimum	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Std. Dev.	1.612607	1.430660	1.469626	1.503984	1.625075	1.565261
Skewness	0.939496	0.612981	0.297659	-0.265228	-0.443661	-0.983552
Kurtosis	2.679801	2.354424	2.066173	2.280170	1.948381	2.937565
Jarque-Bera	16.65187	8.798853	5.621165	3.664552	8.677363	17.75306
Probability	0.000242	0.012284	0.060170	0.160049	0.013054	0.000140
Sum	260.0000	297.0000	382.0000	433.0000	436.0000	502.0000
Sum Sq. Dev.	283.4545	223.1000	235.4182	246.5545	287.8545	267.0545
Observations	110	110	110	110	110	110

Source: Made by the author with the EViews software package

Descriptive statistics of classes of endogenous variables (KSC) according to the opinions of the 110 foreign experts

Table 1b

	Harmonization	Domain	Time	Cost	Quality	Team	Communication	Risk	Aquisitions	Stakeholders
	SER50	SER51	SER52	SER53	SER54	SER55	SER56	SER57	SER58	SER59
Mean	3.872727	5.081818	5.390909	5.600000	5.981818	4.763636	5.172727	6.190909	6.027273	6.918182
Median	2.000000	5.000000	5.500000	6.000000	6.000000	4.000000	5.000000	6.000000	7.000000	8.000000
Maximum	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000
Minimum	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Std. Dev.	3.115834	2.883461	2.449847	2.201751	2.278668	3.176540	2.688266	2.707433	3.169404	2.819109
Skewness	0.873885	0.233922	0.237714	-0.235626	-0.024248	0.300001	0.236368	-0.253264	-0.382867	-0.577676
Kurtosis	2.268448	1.849792	2.169238	2.541646	2.261923	1.642927	1.802839	1.929279	1.687776	2.077506
Jarque-Bera	16.45355	7.066838	4.199238	1.980766	2.507585	10.09090	7.593095	6.430486	10.57961	10.01841
Probability	0.000267	0.029205	0.122503	0.371434	0.285420	0.006439	0.022448	0.040146	0.005043	0.006676
Sum	426.0000	559.0000	593.0000	616.0000	658.0000	524.0000	569.0000	681.0000	663.0000	761.0000
Sum Sq. Dev.	1058.218	906.2636	654.1909	528.4000	565.9636	1099.855	787.7182	798.9909	1094.918	866.2636
Observations	110	110	110	110	110	110	110	110	110	110

Source: Made by the author with the EViews software package

In the constructive context of efficient or performant econometric models, realized by means of the function $y_{ij} = f(x_{ij})$, specifying and subsequently parametrizing the success or failure of a project reflected in the final model, the modelling approach was a one-factor one, by specifying (one endogenous and another one exogenous) and finally multi-factorial, by quantifying the variation of a dependent variabile (y_{ij} = KSCi), explained by the variation of one or more independent variables (x_{ij} = CSFs). In order to facilitate the construction of econometric models, correlation matrices were made use of both between KSCs (the 10 PM standards) and CSFs classes [Q1 – Q6], in Table 2a, and between KSCs (the 10 PM standards) and individualized CSFs, i.e. the 43 individual classes of critical success factors (CSFs) in Table 2b.

Matrix of correlation between the 10 criteria (KSCi) and the 6 classes of factors (CSFs) according to the opinions of the 110 foreign experts

Table 2a

Class and CSF code	DATA SERIES	Harmoni - zation SER50	Area SER51	Time SER52	Cost SER53	Quality SER54	Team SER55	Communi-cation SER56	Risk SER57	Aquisitions SER58	Stakeholders SER59
Q1.	SER44	0.180927	0.052733	-0.152423	-0.002584	0.031776	0.240805	0.072146	-0.198859	-0.296340	0.038893
Q2.	SER45	-0.099200	0.052707	0.075648	0.028543	0.096809	-0.062178	-0.031726	-0.018238	0.022054	-0.017515
Q3.	SER46	0.199586	-0.013541	-0.242910	-0.060108	-0.022066	0.350382	0.290314	-0.186597	-0.333695	-0.048153
Q4.	SER47	-0.056561	-0.191300	0.074042	-0.151825	-0.150253	-0.072309	0.029973	0.162978	0.169737	0.139408
Q5.	SER48	-0.191168	0.125945	0.252480	0.167691	-0.007613	-0.334024	-0.294655	0.105851	0.249568	0.013363
Q6.	SER49	-0.030303	-0.036736	-0.017313	0.004792	0.051771	-0.103966	-0.040791	0.130246	0.176256	-0.126674

Source: Made by the author with the EViews software package

Significant correlations can be identified that contributed to the subsequent modelling of the endogenous KSCs variables from the exogenous CSF class variables as regards time (SER52) in relation to Q_3 and Q_5 classes (classes of the clarity of project content and substance, and the management instruments under the impact of the threefold constraint), the team (SER55) with respect to classes Q_1, Q_3 and Q_5 (classes of political, economic, social and legislative environment, clarity of content and substance of project, and management instruments under the impact of triple constraint), communication (SER56) in relation to classes Q_3 and Q_5 and aquisitions - procurement - (SER58) in relation to classes Q_1, Q_3 and Q_5 (Tudoroiu, Săvoiu, 2017).

In order to ensure a detailed modelling of individual CSFs, a matrix of the 43 exogenous variables was constructed, in the spirit of those built for CSFs classes [Q1 – Q6], in Table 2b:

Correlation matrix between 10 criteria (KSCs) and the 43 factors (CSCs) according to the opinions and views of the 110 foreign experts

Table 2b

Class and CSF code	DATA SERIES	Harmonization SER50	Area SER51	Time SER52	Cost SER53	Quality SER54	Team SER55	Communi-cation SER56	Risk SER57	Aquisitions SER58	Stakehol-ders SER59
F1.1	SER01	*	*	*	*	*	*	*	*	0.397744	*
F1.2	SER02	-0.230719	*	*	*	*	*	-0.250205	*	0.420140	*
F1.3	SER03	-0.330098	*	*	*	*	-0.345795	-0.327884	*	0.535793	*
F1.4	SER04	*	*	*	*	*	-0.380162	-0.295660	*	0.513982	*
F1.5	SER05	*	-0.225457	*	*	*	-0.311176	-0.269096	*	0.507177	*
F1.6	SER06	-0.280541	-0.210252	*	*	*	-0.300721	*	0.254040	0.457179	*
F1.7	SER07	*	-0.215756	*	*	*	*	*	*	0.397744	*
F2.1	SER08	-0.363795	*	*	*	0.240264	*	*	0.243765	0.295808	*
F2.2	SER09	-0.311075	*	*	*	*	*	*	0.279580	0.366929	*
F2.3	SER10	-0.260671	*	*	*	*	*	*	0.202201	0.326265	*
F2.4	SER11	-0.261074	-0.215524	*	*	0.280035	-0.259223	*	0.256492	0.457865	*
F2.5	SER12	-0.256019	*	*	*	*	*	*	0.221338	0.334015	*
F2.6	SER13	*	-0.216160	*	*	*	*	*	0.208507	0.367454	*
F2.7	SER14	*	-0.206953	*	*	0.253308	*	*	*	0.311236	*
F3.1	SER15	*	*	*	*	*	*	*	*	0.238837	*
F3.2	SER16	*	*	*	*	*	*	*	*	*	*
F3.3	SER17	*	*	*	*	*	*	*	*	*	*
F3.4	SER18	*	-0.215788	*	*	*	*	*	*	0.213568	*
F3.5	SER19	*	*	*	*	*	-0.230853	*	0.260614	0.289240	*
F3.6	SER20	*	*	*	*	*	*	*	*	*	*
F3.7	SER21	*	*	*	*	*	*	*	*	*	*
F3.8	SER22	-0.228738	*	*	*	*	*	*	*	0.219950	*
F4.1	SER23	-0.205462	*	*	*	*	-0.207445	*	*	0.373854	*
F4.2	SER24	*	*	*	*	*	-0.200983	*	*	0.361576	*
F4.3	SER25	*	*	*	*	*	-0.222074	*	*	0.437154	*
F4.4	SER26	*	*	*	*	*	-0.340881	*	*	0.246750	*
F4.5	SER27	*	*	*	*	*	-0.284659	*	*	0.419541	*
F4.6	SER28	*	*	*	*	*	*	*	*	0.237182	*
F4.7	SER29	*	*	*	*	*	*	-0.214616	*	0.417682	*
F5.1	SER30	-0.213113	*	*	*	*	*	*	*	0.293672	*
F5.2	SER31	-0.260646	-0.207515	*	*	*	-0.226537	*	0.207523	0.411130	*
F5.3	SER32	*	*	*	*	*	-0.370395	-0.254940	*	0.476503	*
F5.4	SER33	-0.269826	*	0.205513	*	*	-0.218729	-0.233858	*	0.378466	*
F5.5	SER34	*	-0.228484	*	*	*	*	*	*	0.304792	*
F5.6	SER35	*	*	*	*	*	-0.223073	*	*	0.337831	*
F5.7	SER36	*	*	*	*	*	-0.275366	*	*	0.433158	*
F6.1	SER37	*	*	*	*	*	*	*	*	0.218234	*
F6.2	SER38	*	*	*	*	*	-0.201896	*	0.228576	0.350802	*
F6.3	SER39	*	-0.264585	*	*	*	-0.261551	*	*	0.447756	*
F6.4	SER40	*	-0.295238	*	*	*	*	*	*	0.301806	*
F6.5	SER41	*	*	*	*	*	*	*	*	0.238951	*
F6.6	SER42	*	*	*	*	*	-0.293032	*	*	0.411736	*
F6.7	SER43	*	*	*	*	*	*	*	0.215593	0.271121	*

Source: Made by the author with the EViews program package. *Note:* * = |R| ≤ 0,2.

The analysis of each matrix shows that multiple models can be constructed from the correlation ratio values (Table 2a and Table 2b), as well as varied uni- and multifactorial models covering nine variables of ten KSC type variables (stakeholders representing the only uncorrelated variable of minimum confirmation and testing intensity in relation to CSIF or CSF individualized classes). Selecting the effective models of (PM) expert opinions is then made with determination coefficient R^2 (Rsquared), and the final validation is done with Durbin-Watson, t, Fisher tests, etc. (Săvoiu, 2011; 2013).

As one single paper cannot possibly present too many models, only two models were selected in the end, and further articles will be developed further, detailing not only the econometric models themselves, but also some critical aspects of modelling, and especially the consequences of modelling of the key criteria according to the critical factors in the successful EU-funded project in Romania, with a major impact on the increase in the absorption rate of European funds in this country.

I. From the group of models of KSCs according to the CSF classes [Q1 – Q6], econometric models that have an R greater than 0.2 (in the correlation matrix in Table 2a), and intuitively linear or linearisable, a model of multifactorial form was presented below:

$Y_i = f(X_{1i,} X_{2i,} X_{3i,}) + \boldsymbol{\varepsilon}_i$ sau $Y_i = a + bX_{1i} + cX_{2i} + dX_{3i,}) + \boldsymbol{\varepsilon}_i$ (1) validated, where $f(X_{1i,} X_{2i,} X_{3i,})$ becomes concretely $f(Q_{1i,} Q_{3i,} Q_{5i,})$.

Modelling the priority and rank of the team or human resource criterion (SER55) presents an econometric solution validated against Q_1, Q_3 and Q_5 classes (SER44, SER46 and SER48 or CSF classes of the political, economic, social and legislative environment; the content and substance of the project, the management tools under the impact of the triple constraint), which is validated as the intensity of the multifactorial correlation, although $R^2 = 0.1648$ or $R = 0.406$ (the intensity of the model connections according to $F_{calculated} = 6.97$ when $F_{theoretic} = 3.92$ for $\boldsymbol{\alpha} = 0{,}05$), yet having a higher validation potential in point of intensity level in perspective (the model passes the Durbin-Watson test with d=1.79 ($d_2 < d < 4\text{-}d_2$ or $1.65 < 1.75 < 2.31$, the residual values being independent).

Modelling the criterion rank in keeping with the project team or its Human Resource (SER55) relative to the CSF classes of the Q_1, Q_3 and Q_5 type (SER44, SER46 and SER48)

Table no. 3

Dependent Variable: SER55 Method: Least Squares				
Included observations: 110 Sample: 1 110				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.357075	1.706957	1.966702	0.0518
SER44	0.274376	0.190439	1.440754	0.1526
SER46	0.525939	0.235870	2.229786	0.0279
SER48	-0.269552	0.227675	-1.183930	0.2391
R-squared	0.164860	Mean dependent var		4.763636
Adjusted R-squared	0.141224	S.D. dependent var		3.176540
S.E. of regression	2.943705	Akaike info criterion		5.032901
Sum squared resid	918.5325	Schwarz criterion		5.131100
Log likelihood	-272.8096	F-statistic		6.974946
Durbin-Watson stat	1.751992	Prob(F-statistic)		0.000250

Software utilizat: EViews

II. From the second group of models focusing on KSC directly associating with individual CSFs of standardized form of classical multifactorial models:

$$Y_i = f(X_{1i,} X_{2i, \dots,} X_{ki}) + \varepsilon_i \text{ or } Y_i = a + bX_{1i} + cX_{2i} + \dots kX_{ki} + \varepsilon_i \quad (2)$$

where $f(X_{1i,} X_{2i, \dots,} X_{ki})$ is concretely and specifically $f(CSF_{1i,} CSF_{2i, \dots,} CSF_{ki})$, a wide range of (partially or fully) validated econometric models were presented below, conerning ***aquisitions - procurement -*** (SER58), mainly described from ser003 or *the favourable legal framework in the EU and in the economies involved*, ser04 or *stable macroeconomic conditions in the EU and the economies involved* (Table 4), ser05 or *mature and available financial market in the economies involved*, and ser06 or *public and community support in the economies involved*, without however commenting in detail on all those models, which still have higher values of the Fisher test and are more closely related (according to Rsquared)

Multifactorial econometric models of the aquisitions criterion

Table 4

Dependent Variable: SER58 Method: Least Squares				
Included observations: 110 Sample: 1 110				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.106188	0.927102	-0.114538	0.9090
SER03	0.566713	0.277441	2.042645	0.0436
SER04	0.176330	0.325496	0.541729	0.5891
SER05	0.329913	0.249039	1.324743	0.1881
R-squared	0.312646	Mean dependent var		6.027273
Adjusted R-squared	0.293192	S.D. dependent var		3.169404
S.E. of regression	2.664577	Akaike info criterion		4.833654
Sum squared resid	752.5967	Schwarz criterion		4.931853
Log likelihood	-261.8509	F-statistic		16.07150
Durbin-Watson stat	1.449686	Prob(F-statistic)		0.000000

Dependent Variable: SER58 Method: Least Squares				
Included observations: 110 Sample: 1 110				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.005523	0.927237	-0.005957	0.9953
SER03	0.647348	0.271635	2.383159	0.0189
SER04	0.406907	0.276019	1.474199	0.1434
R-squared	0.301266	Mean dependent var		6.027273
Adjusted R-squared	0.288205	S.D. dependent var		3.169404
S.E. of regression	2.673960	Akaike info criterion		4.831892
Sum squared resid	765.0568	Schwarz criterion		4.905542
Log likelihood	-262.7541	F-statistic		23.06702
Durbin-Watson stat	1.458942	Prob(F-statistic)		0.000000

Dependent Variable: SER58 Method: Least Squares				
Included observations: 110 Sample: 1 110				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.042308	1.242992	-1.643057	0.1035
SER03	0.307513	0.315483	0.974737	0.3320
SER04	0.150153	0.340393	0.441115	0.6601
SER05	0.050926	0.279267	0.182357	0.8557
SER06	0.099175	0.252635	0.392561	0.6955
SER11	0.279792	0.223571	1.251466	0.2136
SER32	0.321677	0.262996	1.223124	0.2241
SER39	0.232916	0.261793	0.889697	0.3757
R-squared	0.350353	Mean dependent var		6.027273
Adjusted R-squared	0.305769	S.D. dependent var		3.169404
S.E. of regression	2.640764	Akaike info criterion		4.849961
Sum squared resid	711.3109	Schwarz criterion		5.046359
Log likelihood	-258.7478	F-statistic		7.858318
Durbin-Watson stat	1.563252	Prob(F-statistic)		0.000000

Dependent Variable: SER58 Method: Least Squares				
Included observations: 110 Sample: 1 110				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.660761	1.165488	-1.424949	0.1572
SER03	0.290235	0.314566	0.922654	0.3583
SER04	0.211668	0.332960	0.635716	0.5264
SER05	0.110693	0.270793	0.408772	0.6836
SER06	0.058811	0.248277	0.236876	0.8132
SER11	0.304905	0.221558	1.376184	0.1717
SER32	0.396729	0.248848	1.594261	0.1139
R-squared	0.345311	Mean dependent var		6.027273
Adjusted R-squared	0.307174	S.D. dependent var		3.169404
S.E. of regression	2.638091	Akaike info criterion		4.839509
Sum squared resid	716.8309	Schwarz criterion		5.011358
Log likelihood	-259.1730	F-statistic		9.054434
Durbin-Watson stat	1.576503	Prob(F-statistic)		0.000000

Dependent Variable: SER58 Method: Least Squares				
Included observations: 110 Sample: 1 110				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.801685	1.093370	-0.733224	0.4651
SER01	0.019302	0.205925	0.093733	0.9255
SER02	0.003653	0.246089	0.014846	0.9882
SER03	0.419100	0.309649	1.353466	0.1789
SER04	0.155271	0.344238	0.451057	0.6529
SER05	0.280026	0.264378	1.059190	0.2920
SER06	0.065050	0.262123	0.248167	0.8045
SER07	0.254157	0.227644	1.116469	0.2668
R-squared	0.323875	Mean dependent var		6.027273
Adjust R-squared	0.277475	S.D. dependent var		3.169404
S.E. of regression	2.694041	Akaike info criterion		4.889908
Sum squared resid	740.3012	Schwarz criterion		5.086307
Log likelihood	-260.9450	F-statistic		6.979965
Durbin-Watsonstat	1.419708	Prob(F-statistic)		0.000001

Dependent Variable: SER58 Method: Least Squares				
Included observations: 110 Sample: 1 110				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.811555	1.044300	-0.777129	0.4388
SER03	0.327260	0.316024	1.035555	0.3028
SER04	0.269765	0.333403	0.809125	0.4203
SER05	0.229572	0.262246	0.875408	0.3834
SER06	0.055532	0.250101	0.222038	0.8247
SER11	0.331079	0.222581	1.487458	0.1399
R-squared	0.329156	Mean dependent var		6.027273
Adjusted R-squared	0.296903	S.D. dependent var		3.169404
S.E. of regression	2.657572	Akaike info criterion		4.845704
Sum squared resid	734.5197	Schwarz criterion		4.993003
Log likelihood	-260.5137	F-statistic		10.20570
Durbin-Watson stat	1.470309	Prob(F-statistic)		0.000000

Software used: EViews

The models focusing on aquisitions (aquisitions - procurement -) see a more pronounced diversification, as these KSCs are strongly or relatively strongly correlated with 90% of individual CSFs.

4. CONCLUSIONS

In the whole sample of the opinions of the population of foreign PM experts (110 respondents) there are, in keeping with the correlation matrix in Tables 2a and 2b, significant associations and correlations between KSCs and groups of CSIF or individualized CSFs, which generated econometric models that simplify any future priority-oriented approach in the decisions of successful project managers. At the level of the sample of Romanian PM experts these aspects cannot be found, and there are no suitable correlations which allow the construction of detailed econometric models.As in any other pioneering research focused on volunteering and implicitly guided so as to analyze the opinions and views of foreign experts, the research in this article is original through its methodology, its results and its placement within a new, unprecedented area of investigation (Dinu, Săvoiu, Dabija, 2017).

In the future, the investigation needs to be continued as the requirement to access complex projects arises, which can bring together teams of a growing diversity of training and increasingly diverse economic and social areas, which requires further modelling in order to outline the specificity of the econometric model of the successful EU-funded project in Romania, focused on the endogenous variable of the key success criteria (KSC), described and quantified by Critical Critical Factors (CSF) classes, or by individualized Critical Critical Factors (CSFs). The issue of success is increasingly and more clearly linked to the modelling of the relationship between criteria and factors, and this must be more clearly described in the Romanian specialized literature, which is unfortunately rather scarce in this field.

5. BIBLIOGRAPHY

1. Dinu, V., Săvoiu, G., Dabija, D.- C., 2017. *A concepe, a redacta și a publica un articol științific. O abordare în contextual cercetării economice*, ed. II, București: Editura ASE .
2. *PMBOK® Guide – Fifth Edition.* 2013. *A Guide to the Project Management Body of Knowledge.* [on-line] Available at: <https://www.pmi.org/pmbok-guide-standards/ foundational/pmbok> [Accessed 11 April, 2018].
3. *PMBOK® Guide-Fifth Edition.* 2013. *Poject Management in Glossary of Project Management Terms.* [on-line] Available at: <http://www.pmgloss.com/about/> [Accessed 15 June 2017].
4. Săvoiu, G., 2006. *Proiecte cu finanțare externă*, Pitești: Editura Independența Economică.
5. Săvoiu, G., 2011. *Econometrie,* București: Editura Universitară
6. Săvoiu, G., 2013. *Modelarea economico – financiară. Gândirea econometrică aplicată în domeniul financiar*, București: Editura Universitară.
7. Săvoiu, G., Tudoroiu, L., 2017. Factori critici şi criterii majore în proiectele de succes, bazate pe finanaţare externă, *Revista Română de Statistică Supliment*, vol 3, pp. 3- 15.

8. *Stakeholder and sponsor*. 2013. *The PMI Lexicon of Project Management Terms*. [on-line] Available at: <https://www.pmi.org/pmbok-guide-standards/lexicon> [Accessed 10 April, 2018].
9. *Stakeholdermap.com*. 2016. *Project Management Triangle - Time, Cost and Quality - Iron Triangle.* [on-line] Available at https://www.stakeholdermap.com/project-management/project-triangle.html [Accessed 21 April, 2018]
10. Tudoroiu, L., 2017a. Instruments for statistical ranking of the major factors of EU-funded projects in Romania, *Romanian Statistical Review Supplement*, vol 4, pp.126 - 136.
11. Tudoroiu, L., 2017b. Conceptualizarea proiectului turistic de succes și identificarea factorilor critici specifici în proiectele turistice din România, finanțate de Uniunea Europeană (UE), Iasi: Editura Perfomantica, vol. XXX, pp.112 -120.

APPENDIX 1

Excerpt from the questionnaire, shown on the Internet by means of the SurveyMonkey enquiry system

IDENTIFYING KEY CRITERIA AND SUCCES FACTORS OF INTERNATIONAL PROJECTS

Dear PM expert, colleague or respondent to my survey,

I am interested in a hierarchical / intensive study in which I need data on the major factors of the financed project & partnership practices in UE with your help and after the analysis of the results I hope to be able to send you back some conclusions. Please answer to all questions and finally write the rank of the importance of the class factor (from 1 – minimum to 7 – maximum importance) Thank you for your effort and understanding!

* Required

Please add valid e-mail address. I will not share it or abuse it, only use it to validate responses.

Please enter your year of birth

Please enter your gender

Female Male Prefer not to say

Please enter your experience in financed projects (in years)

How much projects were you managing?

How much projects were you working at as team member?

Graduated Faculty or PhD IT/math Engineer Economist Other:

Q1.Rank the factors from THE POLITICAL, ECONOMIC, SOCIAL AND LEGISLATIVE STABILITY CLASS that has played an important role in the success of your projects: *

HOW TO ANSWER THIS QUESTION: NO OPINION = 0 Unimportant = 1 Not so important = 2 Important = 3 More important = 4 Very important =5 Essential = 6 Crucial = 7

Political stability and support in implied economies

Economic and social policy based on transparency and honesty

Favorable legal framework in implied economies

Stable macroeconomic conditions and implied economies

Mature and available financial market in implied economies

Public/community support in implied economies

Government and other institutions providing guarantees

Q2.Rank the factors from THE IMPACT OF REGIONAL CONVERGENCE AND ADEQUACY TO EU PROGRAMS AND FUNDS CLASS that has played an important role in the success of your projects: *