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TITLE: A methodology of analysis and selection of Business Development Projects on a Regional Subcontinental scale

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SUMMARY:

The objective of this paper is to set up, among a group of projects and by means of multivariate techniques, a selection process that allows to choose those with the best performance and to establish the factors and variables characterising successful cases. This way, we can offer a model for the evaluation and selection of development projects. New ideas and approaches for the promotion politics of business services should come out of the extraction of common models and behaviours among the cases with best performance. More specifically, for the empirical development of this research, we have used the project portfolio of business development services of the Inter-American Development Bank between 1995 and 2002.

JEL classification:

Keywords: *business development project, factor, cluster*

1. Introduction

The interest of Latin-American governments and private sector for small and medium enterprises[1] has risen substantially during the last years. It is a sector with a great potential, although it is subjected to an increasing pressure as a result of the globalisation and liberalisation of economies. The Inter-American Development Bank (IADB), as a regional development organism, has made efforts to solve the problems of this sector and to help it to overcome the challenges it faces. The IADB actions for the support of those enterprises focus on the improvement of business environment, on providing access to financial services and on strengthening markets of business development services (BDS). In this paper, we analyse the projects financed by the IADB on this regard.

Between 1995 and 2002, the IADB financed 177 projects for the support of small and medium enterprises in this sub-continental region for a value of 2,383 million dollars, applying the BDS model[2]. That model is based on the external recruitment of specialists by small enterprises so that they provide them with training and technical assistance in order to be able to improve their performance. It is required an organisation –generally private- that promotes the development of markets with public resources for an indefinite period of time, whether it is by systematisation and diffusion of information or by a temporal regime of decreasing subsidies in order to facilitate the exchange between supply and demand.

The BDS model is being used for more than 10 years now by the main multilateral organisms and donor agencies, but it has been never done so far an understanding evaluation for the analysis of a wide portfolio of BDS projects and the comparison of their characteristics and results.

This paper is in keeping with another wider one whose aim has been to evaluate the afore-mentioned portfolio and to extract lessons in order to tackle with success new actions by the IADB and other international Agencies specialised in the promotion of

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[1] Mifflin (2001) offers a general view of the problems of small enterprises, and the main challenges they face. In Solís and Angelelli (2002) politics for the support of SME in Latin-American and the Caribbean are discussed. Zevallos (2003) shows the characteristics and situation of micro, small and medium enterprises in some countries of the region.

[2] A definition of the principles of 'good practices' in the BDS is set out in Gibson (2001). The reader can also consult an analysis outline of the BDS markets in Golmark (1996) and a revision of outstanding experiences in Levitsky (Ed.) (2000) and García-Tabuenca, Levitsky and Mikkelsen (Ed.) (2001). Another basic text about intervention principles in BDS markets is that of the ILO (1997).

the private sector, brought together in the 'Donor Committee on Small Enterprise Development'.

The objective of the present piece of work is to establish, among a group of projects and through multivariate techniques, a selection project that allows to choose those with the best performance and to establish the factors and variables characterising successful cases. This way, we can offer a methodology for the evaluation analysis of business development projects. New ideas and approaches for the promotion politics of business services should emerge from the extraction of common models and behaviours among the cases with best performance.

The paper is structured as follows: In section 2, the sample group is analysed and we present the database with the identification of the most important variables for this piece of research. In section 3, we explain the analysis methodology, as well as the identification of characteristics defining the best projects. Lastly, conclusions and final comments are set out in section 4.

2. Target population, database description and important variables

For this paper, we have started from a portfolio of 177 projects aimed at the private sector (*business development services*), approved by the Inter-American Development Bank between 1995 and 2002. The observations corresponded to 22 Latin-American countries and to a 'Regional' subgroup (projects oriented to a specific group of countries).

After applying a series of filters (the projects should have met a minimum execution percentage of 20% and the beneficiaries had to withstand part of the cost of the services received), the final database was made up by 85 projects.

For the production of the database, two kinds of informative media were used:

a) Documental:

Project Documents, monitoring and evaluation documents by the IADB specialists who are responsible for the local coordination of the projects ('PPMR' or *Project Performance Monitoring Report*[3]).

b) Survey:

It was carried out *ad hoc* for this piece of research. It was aimed at the two persons responsible for each of the projects: the director or person in charge of the Executing Unit (UE), that is, the Coordinator (or manager) of the project, and the local IADB Specialist (E), who is responsible for the project supervision and monitoring on behalf of the Bank.

The variables to be used were set up considering the three stages of the business project development: i) design, ii) execution, and iii) results. Therefore, 92 variables were obtained, out of which only 15 were used due to their relevance and response index.
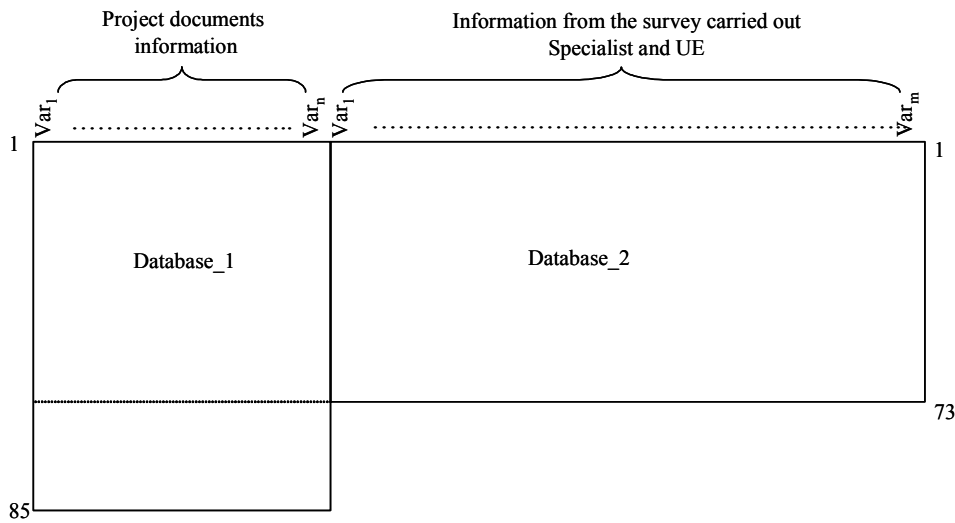
The information obtained from the survey on each observation (project) comes from two different sources: from the person responsible for the institution in charge of executing the programme (Executing Unit) and from the IADB Specialist. The amount of electronic questionnaires distributed among twenty Latin-American countries was 170, corresponding to the 85 projects making up the universe of study. The percentage of response was 78% (67 out of 85) by the IADB Specialist, and 68% (58 out of 85) by the Executing Units.

Figure 1 illustrates the definite constitution of the database. The left-hand side represents the information produced from the project documents for the 85 observations (not always available for all the cases). The information generated by the survey is shown in the right-hand side of the figure and, as you can see, the database is incomplete not only because of the unfinished questionnaires, but also because no answers were obtained from a part of the group surveyed.

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[3] PPMR are documents of standardised electronic format, with some features of logical framework, in which IADB Specialists must dump the most important data for the monitoring of those projects they are responsible for.

Figure 1

Project documents information   Information from the survey carried out Specialist and UE

Var_1 .... Var_n Var_1 .... Var_m

1 ┌──────────────────────┬─────────────────────────────────────┐ 1

| Database_1 | Database_2 |

73

85 └──────────────────────┴

Given the particularities of the database and the problems originated, the selection of variables used in the analysis was mainly based on the criterion of maximisation of the number of observations. The processes were subjected to trial and error tests, in order to maximise the information and the number of variables used. Regarding this, we could mention that one of the challenges of this piece of work was the scarce availability of variables of the projects results, which it meant initially an important restriction for the analysis.

Table 1 includes a description of the main characteristics of variables used in the analysis: seven of them come from the base_1, and nine from the base_2. As it is shown in the table, the last ones have two values: one corresponding to the IADB (E) and another one to the person responsible for the Executing Unit (UE).

The average cost of the projects was 25.388 million US$, although the distribution presented great disparities.

As regards the design of the programme, the results indicate that in more than half of the cases, there was previous precise knowledge about the market where we were going to intervene (54% for the demand, and 51% for the supply). The definition of the market size was between good and regular in the 62% of the programmes, and the target population was well-defined in most of the cases (86%).

Commercial strategy appeared as budget item in the 64% of the programmes, and individual and collective assistance would be given in the 68% of them.

The information obtained from the survey shows that institutional relevance of the UE was 'sufficient' or 'very important' for the 77% of the IADB Specialists and 93% of the UE Coordinators. The survey met the expectations set up for the programme design according to the 64% of the IADB Specialists and the 88% of the UE Coordinators.

Despite the fact that more than the 50% of the answers agrees that the UEs underwent 'sufficient' or 'very substantial' evolution on the institutional capacity, opinions are more dispersed than in previous cases. The 57% of the IADB Specialists considers that between 'many' and 'sufficient' evolution took place, against the 75% pointed out by the UE Coordinators. According to the 40% of the IADB heads, there was 'some' or 'little' evolution, against the 25% declared by the UE Coordinators.

Table 1. Description of the variables used in the analysis

		N		Measure	Average	Median	Mode	Standard deviation
		Valid	Lost					
DESIGN VARIABLES (project doc.)								
Total cost of the programme		85	0	Scalar (US$)	25387.58	2445	600	102540
Knowledge of demand market		85	0		2.44	3	3	.68
Knowledge of supply market		85	0	Ordinal:	2.33	3	3	.76
Definition of the market size		85	0	1 = bad-defined	2.18	2	2	.74
Definition of the target population		85	0	2 = regular	2.84	3	3	.43
Determination of the commercial strategy		85	0	3 = well-defined	2.51	3	3	.72
Type of assistance forseen		85	0	Nominal: 1 = individual 2 = collective 3 = both		3	3	
SURVEY VARIABLES								
Institutional relevance of the UE	E	69	16		4.01	4	4	.88
	UE	60	25		4.45	5	5	.62
Performance of the UE regarding its capacity to develop the programme	E	68	17		3.74	4	4	1.06
	UE	60	25		4.37	5	5	.74
Evolution of the institutional capacity of the UE during the programme	E	68	17		3.56	4	4	1.11
	UE	60	25		4.07	4	4	.84
Learning of the UE during the programme: SE market knowledge	E	68	17	Ordinal:	3.88	4	4	.95
	UE	60	25	1 = null	4.22	4	4	.67
Learning of the UE during the programme: mediation capacity	E	68	17	2 = a little	3.78	4	4	.99
	UE	58	27	3 = some	4.19	4	5	.80
Learning of the UE during the programme: project management	E	69	16	4 = sufficient	3.87	4	4	.94
	UE	60	25	5 = a lot	4.38	4.5	5	.71
Learning of the UE during the programme: earning capacity	E	66	19		3.23	3	3	1.12
	UE	57	28		3.82	4	4	.89
Autonomy degree of the technical head of the UE	E	67	18		3.94	4	5	.97
	UE	58	27		4.03	4	4	.82
Quality of the UE Information System	E	67	18		3.27	4	4	1.19
	UE	59	26		3.86	4	4	.71

For 2 out of 3 IADB Specialists and for 3 out of 4 UE Coordinators, the technical head of the UE enjoyed 'a lot' or 'sufficient' autonomy within the decision-making on the projects. The 51% of the IADB Specialists assessed the quality of the information system between 'regular' and 'high'; for the 52% of the UE head, it was 'high' or 'very high'.

Regarding the degree of learning, the IADB Specialists as well as the UE coordinators pointed out that, on average, the UE learnt 'sufficiently'. Distributions were relatively homogenous. All the characteristics studied presented an average assessment of 4 ('sufficient learning'), except for the earning capacity (IADB), and we could say that there are almost no difference with the rest of assessments.

Moreover, differences of average answers between the Specialist and the Executing Unit are statistically significant, as it can be appreciated in table 2, which proves the different perspectives regarding the perception of the programmes.

Table 2. Contrast Statistics[a]

	Kolmogorov-Smirnov Z	Asymptotic significance (bilateral)
Quality of the UE Information System	3.508	0
Institutional relevance of the UE	3.481	0
UE performance as regards its capacity to carry out the programme	3.575	0
Evolution of the UE institutional capacity during the programme	2.989	0
UE learning during the programme: SE market knowledge	3.503	0
UE learning during the programme: projects management	3.702	0
UE learning during the programme: intermediation capacity	2.873	0
UE learning during the programme: earning capacity	3.237	0
Degree of autonomy of the UE technical head (UE)	2.232	0

[a] Cluster variable: information source (E or UE)

In short, general results indicate that 'institutional relevance', 'performance of objectives related to expectations' and 'evolution of institutional capacity', as well as 'sustainability of the entities' in charge of executing the programmes, played an important role. The 'UE learning' has been 'very considerable' in all matters. Finally, in

most of the cases, we consider that the UE technical head acts in an autonomous way in the decision-making affecting the beneficiaries of the programmes.

3. Analysis methodology and empirical contrast

In this section, we present the methodology used for the evaluation of the target projects. We have worked with the two above-mentioned types of information. The process followed is organised in three stages. In the first one, we use a *logit binomial* regression based on the information taken from the project documents (base_1) in connection with the final or intermediate estate of the project (evaluation report in the last case). In the second stage, a factorial analysis of main components is made on 15 items relative to the information from six design variables and nine variables obtained through the survey (the ones obtained from the E and the UE), regarding their importance and maintenance of the highest number of projects for the analysis. Finally, a cluster analysis has been carried out by the Ward method about the factorial punctuations obtained.

1st stage

The regression used measures the probability of a project to have a good performance. The dependent variable "result" takes values 0/1, and it is constructed from data of results extracted from the monitoring reports of the project. It takes value 1 when the degree of execution and performance of objectives reaches values 3 or 4 (assessment is made in a scale from 1 to 4) and the available information justifying that assessment takes value 3 (the validity of that information is assessed in a scale from 1 to 3). It takes value 0 in the rest of possible alternatives. The following is the econometric model used:

$$Result(0|1) = \beta o + \beta_1 Lnctepto + \beta_2 Lnctepto^2 + \beta_3\, dummy\_Conomdo + \beta_4\, dummy\_ECial. + \mu$$

[1]

Where *Lnctepto* is the logarithm of the foreseen cost of the project, *Conomdo* is a dummy variable that includes the knowledge level of the demand and supply market in two levels, and *Ecial* is a dummy variable measuring the definition level of the project commercial strategy in two levels.

Table 3 shows the results obtained.

Table 3

Explicative variables	Logit binomial model Prob(Result=1)	
	β	E.T
Constant	-27.94	(8.756)**
Lnctepto (β1)	5.782	(1.900)**
Lnctepto2 (β2)	-0.301	(0.102)**
dummy_Conomdo1	1.270	(0.549)*
dummy_ECial2	1.106	(0.558)*
Cox and Snell R2	0.221	
-2 log likelihood	95.18 (p<0.05)	
Correct predictions	76.5%	

Significance levels: **p < 0.001   * p < 0.05
(1) omitted variables dummy_Conomdo = 0 and dummy_ECial = 0

Coefficients of *Lnctepto* and *Lnctepto*^{2} (β_1 y β_2), positive and negative respectively, and their statistical significance of 99% show the quadratic performance of the investment cost of projects included in the IADB portfolio. The peak ($\beta_1/2\beta_2$) where the decreasing effect is produced is 14.764 million US$. Therefore, projects with a foreseen amount lower than this quantity have more probabilities of being successful.

Graph 1 shows the distribution of frequencies of the investment level of projects analysed. Results to be reached in the following stages of the analysis keep the coherence of the methodology followed from the initial stage in connection with the higher size of investment of the project, and even to a first classification of them through the remains of the *logit* model planned.

On the other hand, positive and statistically significant sign of coefficients of dummies variables *market knowledge and commercial strategy,* in relationship to omitted categories, indicates that a better definition of demand and supply market, as well as of the commercial strategy to be implemented in the design stage of the projects, will help them to get better results.
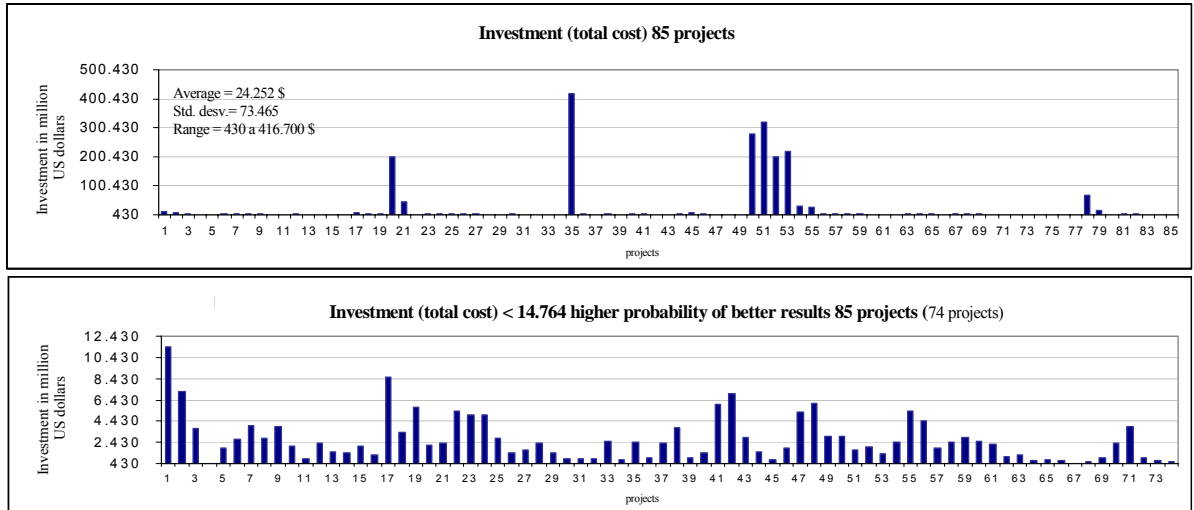
Graph 1

2nd stage

Factorial analysis by an extraction method of Main Components is made based on the 15 variables selected from the experience of the research team members in management and evaluation of projects, and on the objective of maximisation of the number of observations pursued. With this method, we try to obtain a new group of variables (factors), lower in number than the original variables, which allow a clearer interpretation and a more precise sense of the projects. Establishment of the number of factors to be retained is in a sense arbitrary and at the discretion of the researcher (Rummel, 1970). Nevertheless, we must point out that there are some criteria useful to decide the number of significant factors (Stewart, 1981), as well as to retain factors with characteristic root or eigenvalue higher than 1, chosen for this piece of research.

The results obtained after having applied the *Bartlett test (1950)*[4], that rejects the null hypothesis of "no significant correlation" (p=0.0000), and the KMO measure of sampling adequacy, which takes values between 0.735 and 0.552 respectively (for the analysis applied to E and UE variables), show that in both cases, the factorial analysis is appropriate. Moreover, proportions of explained variance of each of the items, expressed through the communalities, are suitable because they explain more than the 50% of the answers' variability given by those surveyed, with only a few exceptions.

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[4] Bartlett Test: determinant of the correlation matrix = 0.024401 *chi-square* with 351 degrees of freedom = 4838.8051 (p = 0.0000)

According to the above-mentioned criteria and the results included in table 4, we have got four factors with eigenvalue higher than 1, with an explicative power of 64.73% of the explained variance for the case of the IADB Specialist; and five factors with 65.41% of the explained variance for UE.

Interpretation of those factors has been carried out according to the variables with the highest influence on them. Although sometimes that task is easy, given the sample size, the criterion followed has been to consider saturation values higher than 0.70 (Hair *et al* 1999), obtained after having executed the Varimax rotation, whose purpose is only to help interpret the results.

As for the analysis of reliability of the scales, we must mention that the *Cronbach's alpha* is 0.87 for the Specialist and 0.69 for the Executing Unit, so it is considered that both are reliable.

The factors obtained are described below:

Criterion of the Specialist:

 - The first factor, with an explained variance percentage of 34.17%, is related to the variables regarding the management characteristics of the Executing Unit, more specifically, to the capacity to tackle the project according to its design, evolution and sustainability. In a negative sense, it is related to the demand knowledge, with a very reduced charge. This factor can be identified as "***Competence and skills of the UE***".

- The second factor, with a 13.67% of the explained variance, is associated to the design variables of the project, market size and knowledge of demand and supply market. On the contrary and to a lower extent, it does to the learning as for earning capacity. Therefore, that factor can be identified as ***"Design factor"***.

- The third factor, with a 9.63% of the explained variance, is associated to the collective and individual assistances, and to the intermediation capacity above all. Given the training criterion of the variable *assistances*, in which the highest value refers to projects with both types of services, this factor can be identified as ***"Reach factor"***.

- Finally, the fourth factor, with a 7.25% of the explained variance, is related to the commercial strategy and particularly to the learning on project management, so this factor can be identified as ***"Planning factor".***

Criterion of the Executing Unit:

- The first factor, with a 24.89% of the explained variance, is related to the variables related to the characteristics of the Executing Unit management; more specifically, to the capacity to tackle the project according to its design, evolution and sustainability. In a negative sense, it is related to the demand knowledge, with a very-reduced charge. This factor can be identified as "***Competence and skills of the UE***".

-The second factor, with a 14.52% of the explained variance, is associated to the learning on the Executing Unit intermediation capacity in the market, and especially to the knowledge of the target population it is aimed at; therefore, we can identify this factor as ***"Intermediation skills in the market"***.

-The third factor, with a 10.46% of the explained variance, is related to the design variables, especially to the knowledge of supply and market size, and to the learning of the project management above all, so this factor can be identified as ***"Supply market factor"***.

- The fourth factor, with a 8.08% of the explained variance, is related to the knowledge of supply market and also to the autonomy level, so the factor can be identified as ***"Decentralised management"***.

-Finally, the fifth factor, with a 7.44% of the explained variance, is associated to the collective and individual assistances, and particularly to the UE institutional relevance. Given the training criterion of the variable *assistances*, in which the highest value refers to projects with both types of services, this factor can be identified as ***"Reach factor"***.

Table 4. Rotated factor matrix of the Specialist and the Executing Unit

items	IADB SPECIALIST					EXECUTING UNIT					
	Communality	Factor_1	Factor_2	Factor_3	Factor_4	Communality	Factor_1	Factor_2	Factor_3	Factor_4	Factor_5
Knowledge on Demand market	0.5697	-0.2168	0.7188	-	-	0.7779	-	-	0.8740	-	-
Knowledge on Supply market	0.5879	-	0.7175	-	-	0.6745	-0.1298	-	-	0.7285	-
Market size	0.6793	-	0.8160	-	-	0.8015	-	-	0.8664	-	-
Target population	0.409	-	-	-	-	0.5005	-	-0.1471	-	-	-
Collective Individual Assistances	0.8127	-	-	0.8989	-	0.7621	-	-	-	-	0.8699
Commercial Strategy	0.7119	-	-0.1498	-	0.8042	0.4034	-	-	-	-	-
Institutional relevance_E	0.6081	0.7722	-	-0.1014	-						
Capacity according to design_E	0.7236	0.8436	-	-	-						
Evolution inst capacity and	0.6824	0.8200	-	-	-						
sust_E	0.5151	0.7088	-	-	-						
SE Market knowledge E	0.6560	0.7749	-	-	-0.1388						
Project Management_E	0.6286	0.7303	-	-	-						
Intermediation Capacity_E	0.6880	0.7168	-0.264	-	-						
Earning Capacity_E	0.5273	-	-	-	-						
Autonomy level_E	0.6859	0.7902	-	-	-						
Quality of information system _E											
Institutional relevance_UE						0.5995	0.7086	-	-	-	-0.1930
Capacity according to design_UE						0.7200	0.7494	-	-	-	-
Evolution inst capacity and						0.6937	0.7548	-	-	-	-
sust_UE						0.8041	-	-	-	-	-
SE Market knowledge UE						0.6968	-	-	-0.2812	-	-
Project Management_ UE						0.6020	-	0.7996	-	-	-
Intermediation Capacity_UE						0.6824	-	-	-	-	-
Earning Capacity_ UE						0.6390	-	-	-	-0.5486	-
Autonomy level_UE						0.4547	-	-	-	-	-
Information system quality _UE											
% Explained variance		34.17	13.67	9.63	7.25		24.89	14.52	10.46	8.08	7.44
% Accumulated explained var.		34.17	47.84	57.47	64.73		24.89	39.42	49.88	57.97	65.41
Eigenvalue		5.125	2.051	1.445	1.088		3.734	2.179	1.569	1.212	1.11
KMO measure	0.735					0.552					
Significance Bartlett test	0.0000					0.0000					
(Cronbach's alpha)	0.81					0.69					

Once the factors of the Specialist and the Executing Unit have been identified, according to the methodology suggested by Johnson (1998), it would be possible to carry out an evaluation of the project in connection with the first two components obtained in the above-mentioned analysis (for the E and the UE). The same author states that the projects with high values in the fifteen original variables considered for the analysis will also have high qualifications for the three main components and vice versa. With reference in graphs 2 and 3, the best projects are those situated in the top-right corner[5]. Therefore, according to the criteria of the Specialist, the best-performed projects would be those included in table 5, and the best of the Executing Unit are those of table 6.

We could mentioned as a characteristic of the projects assessed and selected, that none of the best projects has reached an level of investment higher than the maximum value determined, according to the first stage results. Only the ID = 1 is near, with an amount of US$ 11,383. An important difference of the results of both analysis, among others, is that most of the projects have a high level of performance from the Specialist point of view, and it happens quite the opposite with the ones selected by the UE.

In graphs 4 and 5, the projects related to the scope of the three main factors of the Specialist and the Executing Unit are represented.

Table 5. "Best projects" according to the Specialist

| ID	IADB Code	Name of the Programme	Country
65	106	Assistance for small rural producers-FAA	Argentina
1	36	Programa red de centros de servicios empresariales	Argentina
4	109	Trade promotion and business development	Belize
22	132	Voucher training for microenterprises	Ecuador
26	182	Sistema de gestión de los recursos humanos	Argentina
58	203	Servicios de asesoría y formación técnica para la microempresa	Colombia

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[5] The results obtained with this research methodology are obviously not different to the one carried out to the IADB (method for the reduction of cases) by the members of this research team.

**Table 6. "Best projects" according to the Executing Unit**

| ID	IADB Code	Name of the Programme	Country
58	203	Servicios de asesoría y formación técnica para la microempresa	Colombia
71	207	Programa de asistencia técnica para agricultura en el Valle del Cauca	Colombia
9	172	Fortalecimiento de pequeños comerciantes	Uruguay
40	385	Gestión ambiental de tecnologías limpias	Colombia
19	367	Desarrollo de la capacidad empresarial	Regional

Graph 2. Representation of the projects according to the Specialist
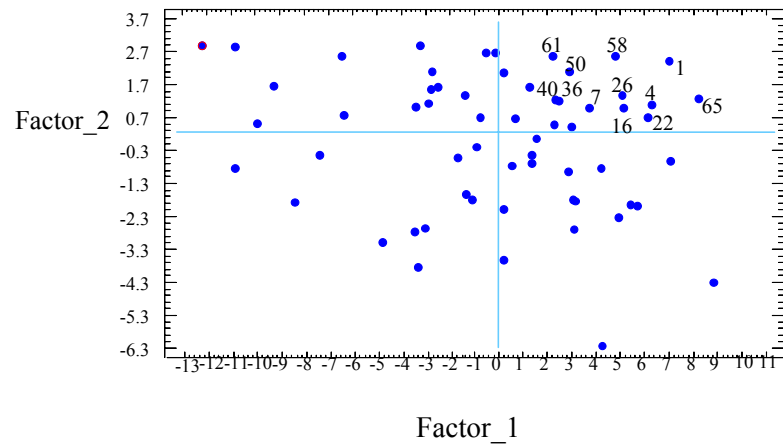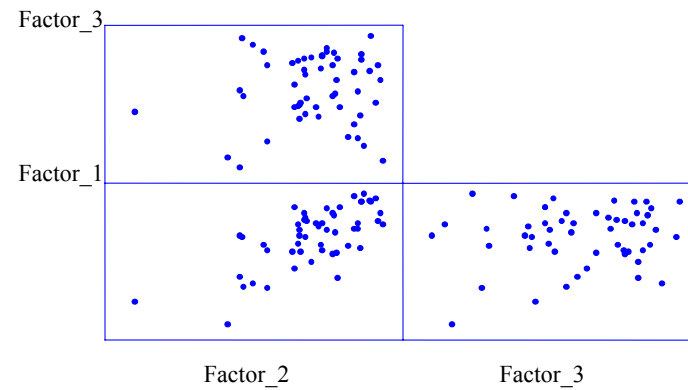

Graph 3. Representation of the projects according to the Executing Unit
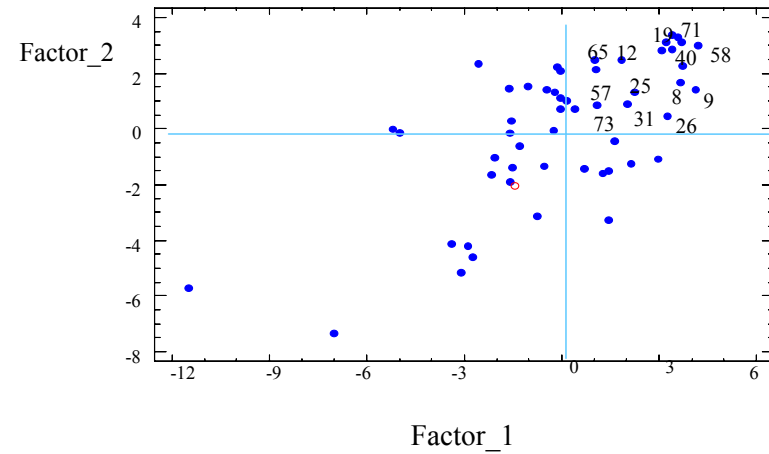
Graph 4. Coordinated plans acc to the Specialist
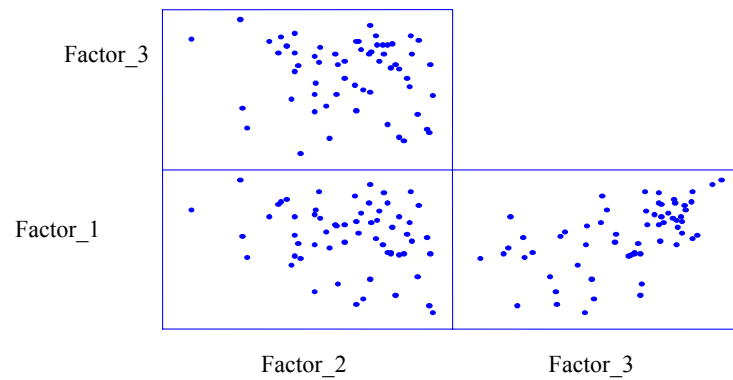
**Graph 5. Coordinated plans acc to the Executing Unit**

3rd stage

In order to complete the methodology followed, we have conducted a cluster analysis by the Ward method of the factors obtained within the 2nd stage, in order to gather the projects and to obtain the typology shown by those with the best performance, against the rest of programmes. Similarly, we executed that analysis for the Specialist as well as for the Executing Unit.

As a result, figure 2 shows the dendrogram of both analyses, with three groups for each of them. The projects inside the broken-lined square correspond to those with the best performance.

Figure 2
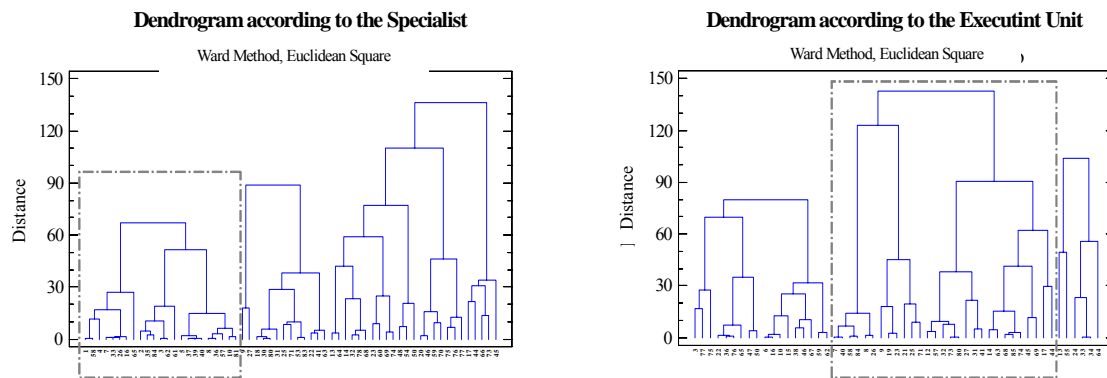
Differentiation of the groups as regards the Specialist can be more clearly appreciated in table 7.

Table 7

Factors	Cluster_Specialist			Value of F	Significance
	Group_1	Group_2	Group_3		
Factor_1 (Competence)	1.84	4.20	-3.87	24.12	0.0000
Factor_2 (Design)	1.47	-2.06	-0.28	20.59	0.0000
Factor_3 (Scope)	0.13	1.50	-0.90	10.15	0.0001
Factor_4 (Planning)	1.00	0.95	-1.41	37.84	0.0000
Number of projects	23	13	25		

Group 1 is made up by 23 projects, distributed among 15 countries, with a higher representativeness in Argentina (4 projects) and Colombia (4 projects), followed by

Mexico (2 projects). As for the sector in which the projects operate, more than the 50% are multisectorial and the rest is divided into industry (4 projects), tourism (2 projects), being the remaining part very heterogeneous. Services rendered are linked to technical assistance (8 projects), innovation, technology and quality (5 projects).

G*roup 2* is composed by 13 projects, distributed among 8 countries, with a higher representativeness in Argentina (3 projects) and Colombia (2 projects). As for the sector in which the projects operate, they characterise by being heterogeneous: multisectorial (4 projects), commerce (2 projects), farming (2 projects), being the remaining part very diverse. As regards the services rendered, about the 50% are related to training, and the rest is technical assistance (2 projects) and innovation (2 projects).

Group 3 is made up by 25 projects, distributed among 14 countries, with a higher representativeness in Bolivia (4 projects), and Argentina, Ecuador, Guatemala, Mexico and Peru, with 2 projects each, and the rest is dispersed. As for the sector in which the projects operate, they are divided between multisectorial and farming, with 10 projects, and the rest is dispersed. Services rendered are concentrated in technical assistance (8 projects), training (7 projects) and development of new enterprises (3 projects).

Results indicate that group 1 is "the best one", followed by group 2 ("medium" performance) and lastly, group 3 ("worst" performance). In order to verify these results, we analyse those variables indicative of the performance of the 61 classified programmes, not included in the previous analysis due to the fact of not having information for all the observations.

An analysis of the previous cost of the projects shows that the average cost of group 1 is six times lower than the average cost of group 2 and seven times lower that group 3. The "repetition index of services demand" is a result variable, indicative of the good performance of the projects. In this case, the average repetition index[6] is of 75% for "the best" programmes, 73% for the "medium" programmes and 47% for the "worst" ones, which clearly corresponds to the qualification obtained from the cluster analysis.

Differentiation of the groups as regards the Executing Unit is more clearly shown in table 8.

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[6] The variable "repetition index" has been corrected by the execution percentage of each programme in order to compare the information.

Table 8

	Cluster_Executing Unit			Value of F	Significance
	Group_1	Group_2	Group_3		
Factor_1 (Competence)	-0.66	1.54	-5.50	28.94	0.0000
Factor_2 (Intermediation Cap.)	-0.66	1.34	-4.50	29.91	0.0000
Factor_3 (Supply Market Knowl.)	1.63	-0.62	-1.89	21.11	0.0000
Factor_4 (Decentralised management)	1.16	-0.89	0.81	11.82	0.0000
Factor_5	0.36	-0.32	0.48	1.53	0.2269
Number of projects	18	29	6		

Group 1 is made up by 18 projects distributed among 10 countries, with a higher representativeness in Bolivia (4 projects) followed by Costa Rica (3 projects). As for the sector in which they operate, they are divided into multisectorial and farming, with 6 and 5 respectively, and the rest is disseminated. Services rendered are training (6 projects) and technical assistance and innovation (4 projects for each activity). *Group 2* is made up by 29 projects distributed among 15 countries, with a higher representativeness in Colombia (4 projects) followed by Argentina and Guatemala (3 projects by country), and the rest is distributed among Bolivia and El Salvador (2 projects), and the remaining countries. In connection with the sector in which the projects operate, more than the 50% corresponds to multisectorial and farming (6 projects), and the rest is dispersed. As for services rendered, they are mainly distributed between technical assistance and training (9 projects for each activity), and the rest is disseminated.

Group 3 counts only on 6 projects, mainly distributed between Panama and Peru, being the multisectorial sector the one where they operate and training and development of new enterprises the services rendered.

The results indicate that group 2 is "the best one", followed by group 1 ("medium" performance), and finally group 3 ("worst" performance).

If we analyse the average cost by groups, we can observe that the cost of "the best ones" is four times lower that "the medium ones" and two thirds of "the worst ones". The best programmes present, as in the case of the Specialist, an average cost lower than the rest of the groups; however, in this case, the relationship is not so direct because the average

cost of those with medium performance is almost three times higher that the worst programmes'.

The results variable "repetition index of services demand", as in the case of the Specialist, has the expected performance in connection with the classification obtained. The "best" programmes show an average repetition index of 109%, the "medium ones" of 106%, and the "worst ones" of 9%. In the last case, the ANOVA analysis indicates that there are important differences on averages between groups, which strengthen what has been observed from the descriptive analysis.

4. Discussion and conclusions

In this paper, we suggest a method for the evaluation and selection of development projects. For its validation, we have used the project portfolio of Business Development Services of the Inter-American Development Bank. By means of the <<groups of multivariate techniques>> used in this piece of research, among which we can find those most commonly used in the scientific-academic and empirical fields [(see for example (Hair *et al*, 1999), (Johnson, 1998), (Peña, 2002) or (Levy and Varela 2003)], we have developed an analysis methodology with rigor and under certain suppositions on the basis of the experience of the researchers working in matters related to projects evaluation.

In that sense, we want to give this section of discussion and final conclusions of the paper over to extract the implications for the evaluation and selection of projects arising from it, better than to the detailed analysis of them, which has been solved in the wider-ranging work explained in the introduction.

It is evident that the project managers (local Executing Unit) and the supervisors (local Bank Specialist) "do not derive and equal zero" in order to know the decisions to be taken or the deviations that have to be corrected. However, the authors of this Paper think that the factor of having a methodology, either simplified or complicated, to be able to simulate and extract the lessons learned for future actions and decisions, will be useful for the orientation on decisions of such economic importance, as it is the case of the programmes portfolio analysed in this piece of work.

Having this objective in mind, the first step is to identify real situations in which the methodology suggested has a function to perform. We must consider that we almost have no result variables about the projects, which at first means an important restriction for the analysis. In this sense, and with the information available, we have suggested an initial model establishing that the possibility of the project success depends on the quadratic function of the investment budget. That implies that the inclusion of small projects has certain guarantees of success (also big ones to a lower extent) and that using the methodology suggested we could determine the critical point of maximum investment, where decreasing yield appears in the investment. Therefore, market definition and planning in the projects design play an important role for the correct execution.

Factorial analysis application has allowed reducing the initial information and refining it in order to understand the criteria for the execution and control of the UE and the Specialist. Although some conflicting positions exist, which was shown in the descriptive analysis and corroborated afterwards (different solutions are reached), there are coincidences in the valuation of some projects when all of those selected by both parts are considered within the efficiency zone of the selection (top right quadrant).

Application of *clusters* for the Specialist as well as for the UE implies a step ahead in the analysis, providing that there is coherence between the factorial analysis and the latter. As we can see in tables 9 and 10, the projects selected from the factorial analysis are also part of the best-performance group, obtained from the cluster analysis (except for one of them). The descriptive analysis of the *output* variables clearly reasserts the results obtained from the cluster analysis, which at the same time reinforces the global results of this paper.

Table 9. Verification from the cluster analysis of projects selected by factorial analysis (according to the Specialist)

ID	IADB Code	Name of the Programme	Country	Cluster Analysis
65	106	Assistance for small rural producers-FAA	Argentina	YES
1	36	Programa red de centros de servicios empresariales	Argentina	YES
4	109	Trade promotion and business development	Belize	YES
22	132	Voucher training for microenterprises	Ecuador	NO
26	182	Sistema de gestión de los recursos humanos	Argentina	YES
58	203	Servicios de asesoría y formación técnica para la microempresa	Colombia	YES

Table 10. Verification from the cluster analysis of projects selected by factorial analysis (according to the Executing Unit)

ID	IADB Code	Name of the Programme	Country	Cluster Analysis
58	203	Servicios de asesoría y formación técnica para la microempresa	Colombia	YES
71	207	Programa de asistencia técnica para agricultura en el Valle del Cauca	Colombia	YES
9	172	Fortalecimiento de pequeños comerciantes	Uruguay	YES
40	385	Gestión ambiental de tecnologías limpias	Colombia	YES
19	367	Desarrollo de la capacidad empresarial	Regional	YES

The extent of this piece of research could be aimed at the idea of obtaining more and better result variables, in order to be able to assess the projects performance, to get a more precise definition of the variables defining the design of them and, above all, the validation of this methodology suggested from a series of projects. This way, we could analyse the stability of the methodology based on the problems that could arise from the database adequacy.

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