PROJECT, DESIGN AND MANAGEMENT

ISSN: 2683-1597

PROJECT DESIGN & MANAGEMENT

How to cite this article:

Latorre, A. (2020). Design of a Management Model in the Preparation and Evaluation of Projects. *Project, Design and Management, 2*(1), 51-70. doi: 10.35992/pdm.v2i1.398

DESIGN OF A MANAGEMENT MODEL IN THE PREPARATION AND EVALUATION OF PROJECTS

Alex latorre
International Iberoamerican University (Chile)
latorre.alex@gmail.com

Abstract. This article presents part of the findings of an investigation aimed at designing a methodology for the elaboration of a management model (MdG), as a basic component in the preparation and evaluation of projects within the scope of the National Investment System of Chile (SNI)). The methodology used was quantifiable qualitative. The research considered the analysis of methodologies and information requirements for the preparation and evaluation of ex ante projects, the review of models in ex post projects, the design of a methodology for the development of a model and the application in a project (case) , which was done through interviews, observations and analysis of documents. The results obtained show that the methodologies for the preparation and evaluation of public (social) investment projects, unlike private projects, do not consider an information module on the organization for the operation, nor do the sectorial information requirements . However, the projects evaluated ex post reveal the importance and usefulness of having an ex ante model for its implementation and operation ex post. And based on a definition of content, a methodology was designed to develop a model that allows planning, monitoring and evaluation of an investment project.

Keywords: design and management, preparation and evaluation of projects, management model.

DISEÑO DE UN MODELO DE GESTIÓN EN LA PREPARACIÓN Y EVALUACIÓN DE PROYECTOS

Resumen. El presente artículo expone parte de los hallazgos de una investigación destinada a diseñar una metodología para la elaboración de un modelo de gestión (MdG), como componente básico en la preparación y evaluación de proyectos en el ámbito del Sistema Nacional de Inversiones de Chile (SNI). La metodología utilizada fue de tipo cualitativa cuantificable. La investigación consideró el análisis de metodologías y requisitos de información para la preparación y evaluación de proyectos ex ante, la revisión de modelos en proyectos ex post, el diseño de una metodología para la elaboración de un modelo y la aplicación en un proyecto (caso), lo cual se realizó a través de entrevistas, observaciones y análisis de documentos. Los resultados obtenidos dan cuenta que las metodologías para la preparación y evaluación de proyectos de inversión pública (sociales), a diferencia de los

proyectos privados, no consideran un módulo de información sobre la organización para la operación, así como tampoco los requisitos de información sectoriales. Sin embargo, los proyectos evaluados ex post revelan la importancia y utilidad de contar con un modelo ex ante para su puesta en marcha y operación ex post. Y a partir de una definición de contenidos, se diseñó una metodología para la elaboración de un modelo que permita la planificación, el seguimiento y la evaluación de un proyecto de inversión.

Palabras clave: diseño y gestión, preparación y evaluación de proyectos, modelo de gestión.

Introduction

Unlike private projects, which have an organizational information module for project operation, public projects lack such information, that is necessary for both ex ante and ex post evaluation. This is why the design of a methodology for the elaboration of a management system (hereafter MS) is proposed as a basic component in the preparation and evaluation of projects within the scope of the NIS (National Investment System).

Consequently, a methodology for the elaboration of a MS is created in order to correct the deficiencies in the design and management of projects. This implies: reviewing the existence of a management information module in the design and ex ante evaluation from a sample of projects; examining the practical application of a theoretical management model from a sample of projects; designing standard indicators for planning and controlling project management; and explaining the operational performance of projects (sample) according to a standard MS.

The findings show that the projects involved in the study, organize the operation of their regular activity considering guidelines that emerge from the Operational Unit responsible for its administration. However, having a formal MS in the pre-investment (ex ante) for its implementation (ex post) would have been a useful guide for its sustainability and proper functioning.

Therefore, the importance of incorporating a MS with its own methodology, contributes to complement the theory of project preparation and evaluation (from the NIS perspective). In practical terms, it represents a contribution to the project management in order to ensure proper functioning and provide the level of service for customers / beneficiaries (ex post).

The aforementioned allows us to conclude that the design of a methodology for the elaboration of a MS goes beyond the NIS, since its contents allow the elaboration of a logical framework matrix and a business model. Furthermore, having considered the application of the model in a typical project (nursery schools), contributes to correct the deficiencies observed in the design and management phases.

As a line of continuity in subsequent studies, within the "relevant objectives" of the Ministry of Social Development of Mexico (2019), there is an opportunity to promote continuous improvement in the system for evaluating social programs and investment initiatives, in order to strengthen their role as a relevant input in decision-making (p. 1).

And within the limitations, following the "strategic products" of the Ministry of Social Development (2019), we can find: the difficulty of introducing changes and implementing innovations to the set of rules; instructions and procedures that govern the public investment process; guiding the formulation, implementation and evaluation of investment initiatives; providing updated methodological instruments; training in matters of social evaluation of

projects; registration of investment initiatives in the integrated project bank and feedback to investment processes through ex post evaluation (p. 2).)

> As defined in UNINI (2018), in its text "introduction to projects":
>
> A project is an operation of study and innovation, and the result of that operation. We have to find the thing, service, product or result that is going to be useful, and to organize the actions in advance to achieve it. It is a human activity, whose aim is to achieve a previously established objective and with a defined timetable.
>
> In order to carry out a project in an optimal way, it is required to be able to fully meet its phases, which are design and management. The design phase corresponds to the methodological formulation in order to find the solution to the problem. Besides, the management phase consists of the execution, control and evaluation of the project results.
>
> What we do when we focus on the task of executing a project, is to look for the solution to a problem or need, which generates a conflict. This problem or need in turn affects certain people who want to solve this situation (p. 1-2)

On the other hand, the public investment projects that enter the NIS, follow the preparation and social evaluation of projects methodology that takes into account the problem (opportunity), diagnosis (market study), alternatives (technical study) and evaluation (costs and benefits to society valued in economic terms), and the module on "legal, institutional and organizational aspects" that affects the preparation (design), evaluation (operational costs) and the project management,, is omitted.

As a solution to the problem, the "design of an MS methodology that contributes to the efficiency of project design and management", is considered. The essential points are related to evidence (deficiencies) found in the projects ex-post evaluation (implementation) on what was planned in the ex-ante evaluation. In addition to the methodology, the presentation of projects to the NIS considers sectoral information requirements, which very few sectors mention, some as a "management plan" (without development). This is contrary to the preparation and private evaluation of projects, which considers a management information module (study on legal, institutional and organizational aspects).

The hypotheses (H) and objectives proposed are related to:

H1: Management information is a key module for project design and evaluation. Review the existence of a management information module in the design and ex ante evaluation of a sample of projects.

H2: The development of a MS represents a guide for project implementation. Examine the practical application of a theoretical management model from a sample of projects.

H3: The design of indicators facilitates project management planning and control. To design standard indicators for the planning and control of project management.

H4: The existence of an ex ante MS contributes to the good performance of the ex post project. Explain the operational performance of projects (sample) according to a standard MS.

Method

The methodology used was qualitative and quantifiable. The research considered the analysis of methodologies and information requirements for the preparation and evaluation of

ex ante projects; the review of models in ex post projects; the design of a methodology for the development of a model and the application in a project (case). This was carried out through interviews, observations and analysis of documents.

By means of a qualitative methodology, the measurement and quantification of the data constitutes the procedure used to achieve objectivity in the knowledge process. The search for objectivity and quantification is oriented towards establishing averages based on the study of the characteristics of a large number of subjects. From there, explanatory laws of events are deduced in terms of pointing out causal relationships between social events. The explanations provided are contrasted with current reality so that their agreement with it defines the veracity and objectivity of the knowledge obtained.

According to the results obtained from the "Methodological outline of the research" in UNINI (2018), the "critical" variables identified in the methodology correspond to the following relationship (see table 1):

Table 1

Critical variables identified in the problem

Variable	Methodological criteria	Type	Way of performance	Effect	Methodological phase (relationship)
Insufficient methodological information for the project design (preparation)	Independent ("Deficiency in the projects design and management" - Dependent)	Quantifiable qualitative	Methodologies do not include an analysis of the project organization (management)	Deficiencies in the project design and management	Review of the existence of an information module on the organization as a methodology for the project preparation and evaluation
Insufficient information requirements to complete the project file	Independent ("Deficiency in the projects design and management" - Dependent)	Quantifiable qualitative	Information requirements do not include a project organization (management) model	Deficiencies in the project design and management	Review of the existence of management models as information requirements as part of the project file
No (theoretical) guidance to guide project management in practical terms	Independent ("Deficiency in the projects design and management" - Dependent)	Quantifiable qualitative	"Management model" type guidance has no practical application in those projects that do consider it in theory	Deficiencies in the project design and management	Review of the (practical) application of a (theoretical) management model in "model" projects

Support tools do not consider guidelines for project planning and management control	Independent ("Deficiency in the projects design and management" - Dependent)	Quantifiable qualitative	Absence of indicators makes project planning and management control more difficult	Deficiencies in the project design and management	Design of "standard" indicators for the project management planning and control.

Note: Source: own design based on the instructions given by UNINI (2018).

Work Plan

The development of the research was carried out according to a work plan, which is related to the following phases (F), activities (n°) and months (see table 2):

Table 2

Gantt Chart "Research Calendar"

Gantt Chart (Phases, Activities and Months)													
F1	Review of the existence of an information module on the organization as a methodology for the project preparation and evaluation												
n°	Activities description	1	2	3	4	5	6	7	8	9	10	11	12
1	Identification of project preparation and evaluation methodologies that take into account information about the project organization (management)												
2	(Short) description of the project preparation and evaluation methodologies that take into account information about the project organization (management).												
3	Review of the organizational information (management) for project preparation												
4	Identification of the most frequent errors in project preparation												
5	Review of the organizational information (management) for project evaluation												
6	Identification of the most frequent errors in project evaluation												
7	Determination of the existence (or not) of organizational (management) information in the projects preparation and evaluation												

F2	Review of the existence of management models as information requirements as part of the project file	
1	Identification of information requirements for projects that take into account organizational (management) information of the project	
2	(Short) description of the information requirements for projects that take into account organizational (management) information of the project	
3	Review of the organizational (management) information requirement for project preparation	
4	Identification of the most frequent errors in project preparation	
5	Review of the organizational information (management) requirement for project evaluation	
6	Identification of the most frequent errors in project evaluation	
7	Determination of the existence (or not) of organizational (management) information of projects in the information requirements	
F3	Review of the (practical) application of a (theoretical) MS in "model" projects	
1	Identification of projects that have completed the ex-post evaluation or have been visited in the field	
2	Description of the main deviations and results obtained	
3	Review of organizational (management) information in the ex-post evaluation	
4	Description of ex-post evaluation findings	
5	Review of organizational (management) information in the ex-ante evaluation	
6	Description of the lessons learned for the ex-ante evaluation	
7	Recognizing the usefulness (or not) of a theoretical MS in practical terms	
F4	Design of "standard" indicators for the project management planning and control.	

1	Description of the main contents found about the projects (ex-ante) organization (management)	
2	Description of the main contents on the projects' organization (management) learned in the ex-post evaluation	
3	Relationship of ex-ante and ex-post content with the theory of project organization	
4	Review of methods about project management planning and control	
5	Definition of a model that brings together content and management indicators	
6	Testing of the model from a pilot project	
7	Conclusion about the proposed MS design	

Note: Source: own design based on the instructions given by UNINI (2018).

Regarding the research questions, objectives and hypotheses, the work plan is concatenated through the following relationship (see table 3):

Table 3

Questions, objectives, and hypothesis relationship with the work plan

Questions	Objectives	Hypothesis	Work plan
1. Is a management information module identified and analyzed in the project ex-ante design and evaluation?	1. Review the existence of a management information module in the design and ex ante evaluation of a sample of projects.	1. H1: Management information is a key module for project design and evaluation.	F1: Review of the existence of an information module on the organization as a methodology for the project preparation and evaluation F2: Review of the existence of management models as information requirements as part of the project file
2. Is there a theoretical and practical application of a MS project?	2. Examine the practical application of a theoretical management model	2. H2: The development of a MS represents a guide for	F3: Review of the (practical) application of a (theoretical) MS in "model" projects

	from a sample of projects.	project implementation.	
3. Are indicators or variables established for the project management planning and control?	3. To design standard indicators for the project management planning and control.	3. H3: The design of indicators facilitates project management planning and control .	F4: Design of "standard" indicators for the project management planning and control.
4. Does the existence of a standard management model facilitate effective performance of the project's operational unit?	4. Explain the operational performance of projects (sample) according to a standard MS.	4. H4: The existence of an ex ante MS contributes to the good performance of the ex post project.	F3: Review of the (practical) application of a (theoretical) MS in "model" projects

Note: *Source: own design based on the project development.*

Results

The NIS is the technical institutional and legal framework within which the public investment process takes place. It is made up of the public investment policy; the institutions that participate in the process; the internal and inter-institutional administrative channels; the laws, regulations, orders, etc., that govern it; the methodological tools to identify, formulate, evaluate, execute, administer, follow up and operate projects; the technical staff and the public investment decision-making process.

The NIS includes the states of pre-investment, investment and operation, looking for their rationality in order to maintain a continuous flow of projects with different degrees of maturity.

A public investment project responds to a decision on the use of resources with one or more of the objectives to increase, maintain or improve the production of goods or the provision of services.

The path of any project is generally materialized in a physical work, which constitutes its life cycle. There are three successive stages: pre-investment, investment and operation. In the first one, the project is prepared and evaluated in order to determine if it is convenient to execute it. In the second one, in the case it is carried out, the design or detailed engineering project is done, as well as the work construction of the work. Finally, in the operation stage, the finished work is started, according to what was projected, which will generate during its useful life the net benefits estimated in the pre-investment stage.

Figure 1 shows the phases, stages and timing of project preparation and evaluation according to its life cycle.

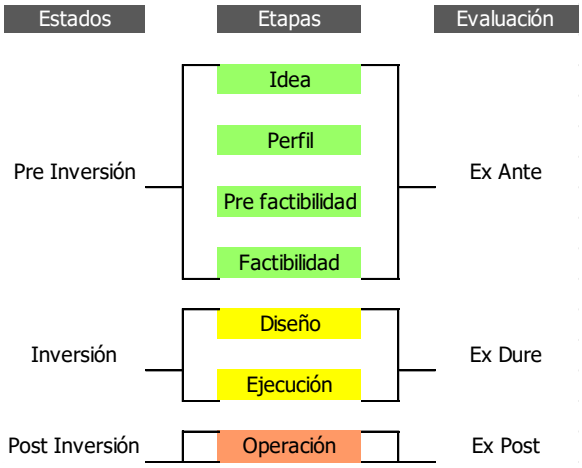

Figure 1. Project Preparation and Evaluation according to its Life Cycle

Note: Source: own design based on literature review.

In this regard, it is advisable to first consider the analysis in purely technical terms and then to move on to the economic terms. Both analyses make possible to qualify the project alternatives or options and, as a result, to choose the one that is most suitable according to the existing conditions.

In order to determine the socio-economic profitability of a project, the following elements are required: estimates of investment amounts and operating costs, an investment schedule and approximate figures for the income that the project would generate during its useful life. With such background, the project is evaluated economically, determining the degree of goodness of each of its alternatives selected in the profile stage, to compare and sort them according to their profitability. Therefore, it is established which ones deserve a more in-depth study and which ones are discarded.

In this regard, Table 4 shows a comparative table about the projects preparation and evaluation according to their purpose: private and social. There is a close relationship in both approaches (private and social): the opportunity and the problem, the market study and the diagnosis, the technical, legal, institutional, organizational study and alternatives, and the private-financial and socio-economic evaluation. In both cases, the private and social evaluation, collects the income information and market study benefits and diagnosis respectively, while the expenditures and costs of the technical, legal, institutional, organizational study and the alternatives respectively. It should be noted that despite the importance of the organizational study (MS) for the preparation and the evaluation of the project for its operational sustainability, it is only mentioned in the private approach.

Table 4

Preparación y Evaluación de Proyectos según su Finalidad (cuadro comparativo)

	Private project		Social project	
	Information module	Contents	Information module	Contents
Project preparation	Summary and conclusions	Business opportunity	Summary and conclusions	Problem Identification
	Market study	Demand analysis	Diagnosis of the present situation	Area of study and influence
		Supply analysis		Target population identification
		Trade system analysis		Demand, supply and deficit
	Technical study	Size, productive process, location	Alternatives identification	Optimization of the present situation
		Works, supplies, investments and production		Configuration of alternatives
	Legal, institutional and **organizational** aspects	Legal framework, institutional analysis, **organization**		Size, technology and location
Project evaluation	Private and financial evaluation	Estimation of income	Socio-economic evaluation	Estimation of benefits
		Estimation of expenditure		Estimation of cost
		Cash flow, indicators of profitability (NPV, IRR)		Net social profits flows, indicators of cost-benefit or cost-efficiency
	Financial study	Alternatives to financing, financial instruments		Sensitivity analysis

Note: Source: own design based on literature review.

According to the results obtained from the application (practice) review of a MS (theoretical) in model projects, it is possible to say that this model represents a guide for launching and operation. In addition, the existence of an ex ante MS contributes to the good

performance of the ex post project. This can be illustrated in Figure 2, where the role of the MS in the design, evaluation and sustainability of the project (setting in progress) is represented.

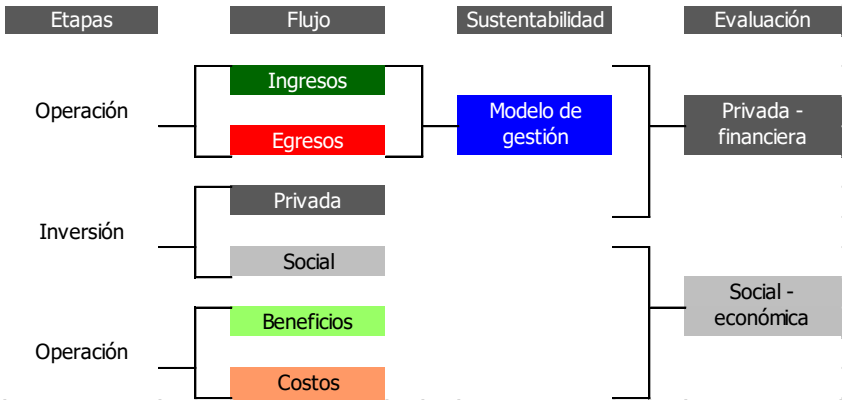

Figure 2. MS for the project design, evaluation and sustainability

Note: Source: own design based on the data review and the result obtained

Unlike private project evaluation, whose indicators, criteria and results are based on the income and expenditure projected over time, regarding investment and operation, updated to the present value (cash flows). On the other hand, social evaluation does so on the basis of benefits and costs, taking into account the externalities, the adjustment of shadow prices and the omission of taxes and subsidies (net social benefit flow). The MS, explained in some way in the private evaluation within the module on legal, institutional and organizational aspects for NIS projects, is equally relevant when it comes to providing guarantees on financial sustainability, that is to say, knowing a priori (ex ante) what level of organization and income is expected in order to respond to financial commitments important to ensure the project operation, by the managing body.

Management information (and errors) in: project preparation-evaluation methodologies and information requirements depending on the sector.

Together, Figure 3 shows the Management (nº) Information (and errors) found in the project preparation and evaluation and the information requirements by sector. In general terms, it can be seen that unlike private projects, where there is a module of information on legal, institutional and organizational aspects, both in the methodologies of project preparation and evaluation and in the information requirements for design and execution, the organization for operation (management) is disjointed and not very uniform in each of the economic sectors of investment.

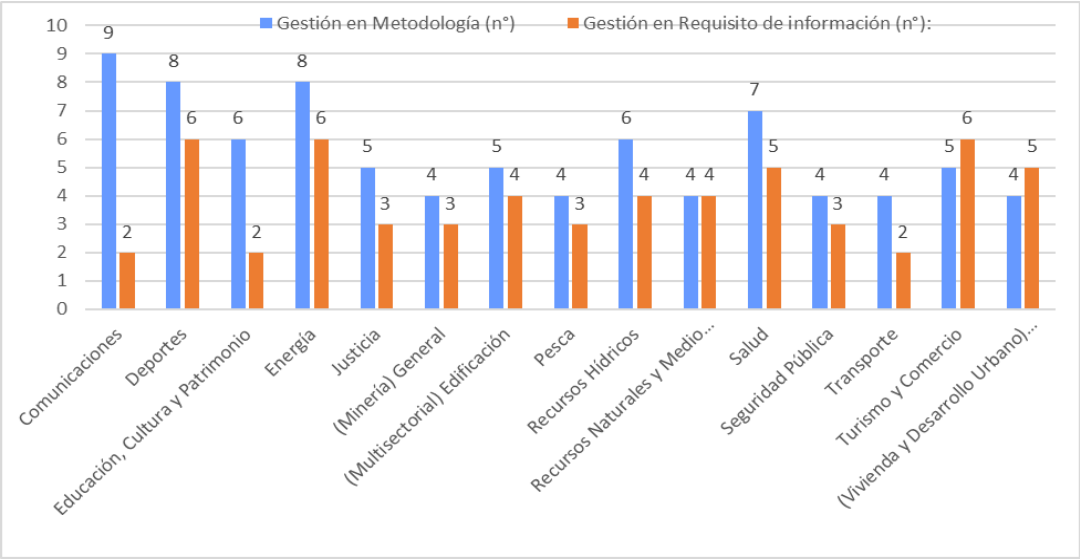

Figure 3. Management (nº) information (and errors) in project preparation-evaluation methodologies and information requirements depending on the sector

Note: Source: own design based on the projects preparation-evaluation and design-execution of each section

Figure 4 shows the relationship between management (rating) information (and errors) found in project preparation-evaluation methodologies and information requirements by sector (ex-ante). The results correspond to what is expected: the higher the rating (n°) of Information (and errors) in the methodologies, the higher the rating in the information requirements. There is an average degree of association between the variables, 44% measured by the statistical correlation coefficient "r". And under the assumption of a normal performance of the variables, 20% of the information found is explained by the errors found, measured by the statistical coefficient of determination "R2". The other 80% of the information found in the information requirements is due to other reasons (different from the methodological ones).

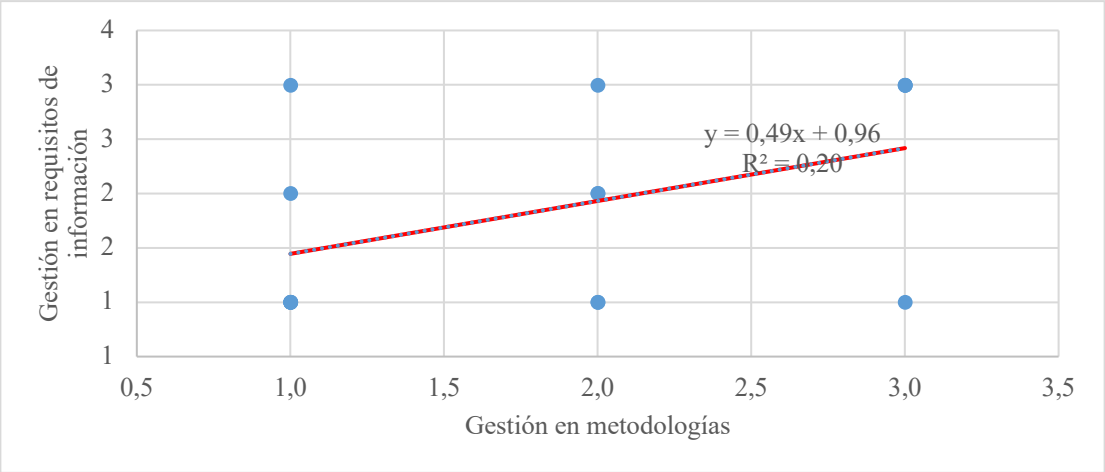

Figure 4. Relationship between management information (and errors) in project preparation-evaluation methodologies and information requirements depending on the sector

Note: Source: own design based on the projects preparation-evaluation and information requirements of each section

Development of an MS from ex-ante and ex-post evaluation

According to the review of literature, previous research and results of the investigation, a relevant methodology is designed for the elaboration of a MS; for the organization of the project operation, with a series of modules and contents, applied particularly to the NIS projects, in its design (architecture and engineering) and execution (construction) stages. And in general to all investment projects, which have a "compact" information module, and in the cases where other objectives are also sought, such as project planning, monitoring and evaluation for their management control, or for the design and innovation of a new business, by means of a model, are part of the results obtained.

Table 5 below summarizes what has been explained above, regarding the business model itself, considering the chapters and information modules, sections and contents, required according to the project investment, that is to say, design or execution. In addition, as a contribution to other instruments associated with control and business, the item (nº) related to the project logical framework matrix for management control is also indicated, as well as the business model, respectively.

Table 5

Information and contents modules for the elaboration of a MS

Chapter	Information modules	Section	Contents	Stage	MC	BM
1	Project management scope	1.1	Identification of the Unit in charge of its administration	Design		
		1.2	Management (in operation) scope and limitations	Design		

		1.3	Description of the infrastructure and equipment Implementation	Execution		
		1.4	Use and functionality description	Execution		
2	Management quality	2.1	Value (benefits, solution, satisfaction) proposition	Design		1
		2.2	Objectives: purpose and products (goods and services)	Design	1	
		2.3	Indicators, means and assumptions	Execution	2	
		2.4	Activities and key responsibles (in the operation)	Execution	3	6
3	Management organization	3.1	Organization model	Design		
		3.2	Identification of key personnel, positions and functions	Design		
		3.3	Beneficiaries (users), relations (personal?) and channels (web?)	Execution		2, 3, 4
		3.4	Alliances and key partners	Execution		8
4	Management resources	4.1	Description of resources for operation (personnel, consumer goods and services)	Design		7
		4.2	Management resources description	Design		
		4.3	Operation and maintenance commitments (quantification)	Execution		
5	Management income statement	5.1	Income sources	Design		5
		5.2	Costs structure	Design	4	9
		5.3	Cash flow (in "regular" operation)	Execution		
6	Risk management	6.1	Timeline of key activities (in operation)	Design	5	
		6.2	Identification of unfavorable scenarios (in the operation)	Execution		
		6.3	Identification of proactive or preventive actions	Execution	6	

Note: Source: own design based on literature review and on the research results.

Figure 5 below summarizes the above, in terms of the logical framework matrix, for a later evaluation and management control. The objectives developed as part of the MS are what the logical framework matrix recognizes as the first matrix column (1) of objectives through which the structure is solved analytically in terms of its intervention strategy. In addition, the

indicators, means and assumptions (2) can then be immediately organized into objectives, depending on their purpose and outputs. The indicators will serve to measure the project performance in its implementation and operation, in terms of the achievements sought by the project.

At the lower level, the activities and key responsibles (3), defined in the MS. Although they are not sufficiently disaggregated, since they are the main ones, but at least represent a first approximation to then define their valorization and the time foreseen for their realization, that is to say a budget (4) and a schedule of activities (5), which will allow the monitoring of the project and management control. In addition, the table is complemented by proactive and preventive actions (6), regarding the assumptions, critical success factors and contingency measures for unfavorable situations.

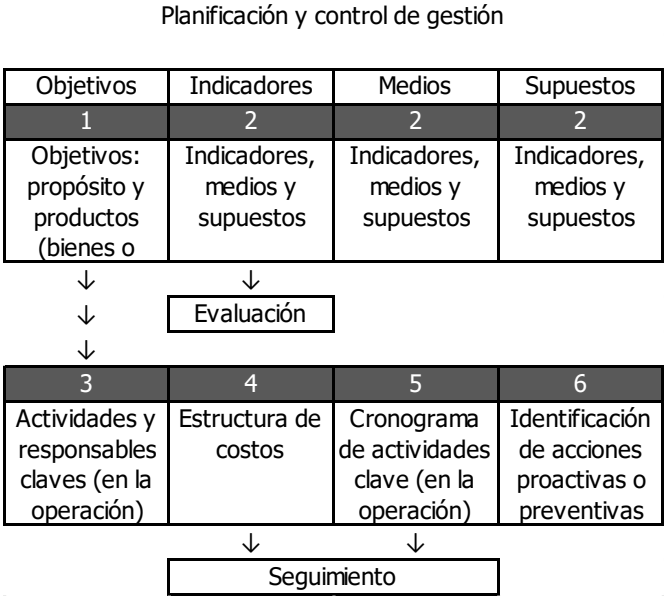

Figure 5. Information modules for the elaboration of a logical framework matrix

Note: Source: own design based on literature review and on the research results.

Figure 6 below summarizes the above, in terms of the business model. The value proposal (1), which considers benefits to give satisfaction to users and solution to the problem. Besides, the business model recognizes it as "supply". On the other hand, the benefits, relationships and channels (1, 2 and 3) correspond to the "customer" quadrant. In addition, the activities (6), resources (7) and alliances (8) is what is organized in the infrastructure quadrant. And finally the economic quadrant, made up of the variables (contents) income (5) and costs (9).

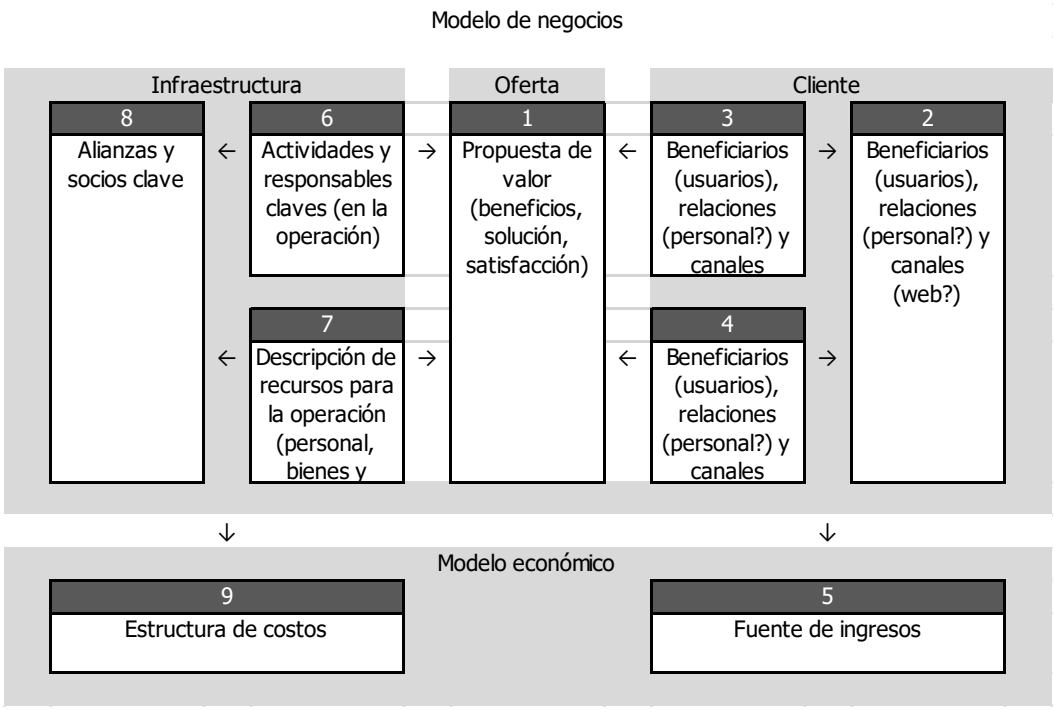

Figure 6. Information modules for the development of a business model

Note: Source: own design based on literature review and on the research results.

Discussion and conclusions

Application of the methodology for the elaboration of a MS in a model project

In order to choose a project where the MS could be calibrated (tested), a representative "exemplary" project in the field of NIS was used. To this end, a project recently initiated by the Ministry of Social Development (2019) was taken into consideration. It is called the "Bulletin of Good Practices in the Formulation of Investment Projects". Its first copy considered eight nursery schools among 16 representative projects in the country in the education sector.

> The Education Sector is made up of various sub-sectors. However, in this edition, you will be able to consult good practices used in the formulation and evaluation of Preschool Education projects, which play a main role in the early stimulation of the population, and in Basic and Secondary Education. This not only provide continuity to the previous one, but also tries to ensure that the process of transmitting knowledge to students is carried out in an optimal manner. The greatest difficulty of these initiatives does not lie in the alternatives' evaluation, but in the project formulation. This is mainly evident when estimating the area of influence, defining the population and calculating the deficit that justifies the intervention. Nevertheless, it is also possible to consult in this edition some good practices referred to the alternatives' evaluation, such as the measurement of relocation costs, the development of management models that determine more accurately the costs, or the analysis of possible locations. The objective of this publication is to contribute to improve the education projects formulation, in the above-mentioned sub-sectors, by those institutions that present initiatives to the S.N.I., through the good practices stated by the analysts of each region in their projects, which can be consulted by the formulators (p. 2)

In this sense, taking advantage of the recent construction and implementation (2018-19) of two establishments "presidential goal" of the National Board of Kindergartens (JUNJI, Junta Nacional de Jardines Infantiles)[1], of Chile, it was determined to test the model in two projects: "Kindergarten Continente Blanco" and "Kindergarten Cumbres Patagónicas.

In this way, the information is elaborated in a logical and sequential way, and will be organized in six groups (information modules): Project management scope (M1), Quality of management (M2), Organization in management (M3), Management resources (M4), Management state of results (M5) and Risk management (M6).

Firstly, although the Project management scope (M1) is derived from the project preparation and evaluation at profile level, it is useful for the experts (JUNJI and Kindergarten) to formalize it in a document (MS) that allows the identification of the organization responsible for the operation of the project, its scope and limitations. This information (ex ante) does not present observations or divergences in the implementation (ex post).

Secondly, the Quality of management (m2) agree that to develop a good management, it is important to always have in mind the services (products) generated by the Kindergarten, in order to fulfill the needs of the educational community (kindergartens, establishment staff, parents and representatives), and consequently to solve the problem that gave rise to the investment project.

Thirdly, the Organization in the management (M3), although in the educational structures the roles are quite formal, in practice the culture and organizational atmosphere can mark a style in their actions. Therefore, having some procedures written set would facilitate the organization of work and relations with the various individuals involved in the project management. For the section "Alliances and key partners", no ex ante information was found. It is suggested to complement it with suppliers and contributing entities, such as: Regional Ministerial Secretariat of Education, Subsecretariat of Nursery Education, Superintendence of Education through the Intendancy of Nursery Education, JUNAEB, contractors and suppliers through the Public Procurement Law.

Fourthly, the management resources (M4) are fundamental in order to guarantee the financial sustainability of the project. Although the resources are contributed by the supporter (JUNJI) to the Kindergarten(s), through current transfers to cover the resources necessary for the project operation and maintenance, such as personnel expenses and consumer goods and services, these must be measured and valued. In the ex-post evaluation, the resources for maintenance correspond to the Regional Educational Spaces Construction and Maintenance Unit (Unidad de Construcción y Mantención de Espacios Educativos Regional), through a Maintenance Plan prepared based on the diagnosis of the premises, requesting annual resources that are authorized by the same institutional area at the central level, which are executed through maintenance service contracts subjected to the provisions of the Public Procurement Law and rendered according to institutional provisions.

Fifthly, we find the Management state of results (M5). The income is assumed to be equivalent to the inertial budget of regular operating expenses (Allocations through the Public Sector Budget Law). These are not identified, quantified or valued based on an income budget, for the construction of an operating cash flow. No evidence was found in the pre-investment (ex-ante evaluation). It is recommended to make an effort to identify scenarios with deficit or surplus.

[1]The Presidential Goal states "More Nursery Schools and Kindergartens for Chile", a program to increase coverage in nursery education as part of the Educational Reform, which will allow 70,000 new places to be installed in the first level of education.

Finally, for Risk Management (M6), no information was found in the pre-investment (ex-ante) and due to some negative situations presented in the launching and first year of operation, key activities, essential for success, have been missed. In addition, it has been necessary to act in a reactive way (instead of preventing) in case of an emergency. For this last part, the importance (and usefulness) of having some contingency (or emergency) fund to draw on in case of unfavorable scenarios, such as minor repairs and delays in payment of basic service providers, is recognized.

Conclusion

The findings show that the projects involved in the study, organize the operation of their regular activity considering guidelines that emerge from the Operational Unit responsible for its administration. However, having a formal MS in the pre-investment (ex ante) for its implementation (ex post) would have been a useful guide for its sustainability and proper functioning.

Therefore, the importance of incorporating a MS with its own methodology, contributes to complement the theory of project preparation and evaluation (from the NIS perspective). In practical terms, it represents a contribution to the project management in order to ensure proper functioning and provide the level of service for customers / beneficiaries (ex post).

The aforementioned allows us to conclude that the design of a methodology for the elaboration of a MS goes beyond the NIS, since its contents allow the elaboration of a logical framework matrix and a business model. Furthermore, having considered the application of the model in a model project (nursery schools), contributes to correct the deficiencies observed in the design and management phases.

Applying the model in a model project (kindergarten) that brings together content and management indicators, requires the design of a methodology that makes possible to foresee and document the way in which the operating unit (JUNJI) will carry out the project administration (organization for the operation), which makes possible, at the same time, to maintain its operation and financing over time (sustainability). To this end, a general information methodology (standard) is designed to be broad and flexible enough to represent reality and to be able to adapt to any project.

Although much of the information can be transferred in a "MS" document, the information that is absent is the one that is related to the ex post evaluation and management control. This is typified as "Indicators, means and assumptions" (this information is inherent to the logical framework matrix, method that is not required for the projects in the NIS). As a result of the ex-post evaluation, the following indicators for outputs were obtained:

- Educational service offered: 188 places (according to the project).
- Recruitment of staff: 33 staff members (1 director, 1 administrator, 7 classroom teachers, 21 technicians, 3 assistants).
- Facilities: 7 activity rooms, changing rooms, rooms of hygienic habits, playgrounds, multipurpose room, breastfeeding room, offices, kitchens, dining room, warehouses and toilets.
- Area built: 1.127 m2 built, received and delivered to the administrator.
- 33 female public workers hired.
- 142 nursery schools registered (until November 2019) (registration under new institutional arrangements).
- 7 activity rooms, multipurpose room, kitchen, dining room, warehouse and toilets
- 1.127 m2 built.
- Personnel recruitment and induction: JUNJI Personnel Management Vice president.

- Dissemination campaign to complete the registration according to the number of places: Educational Unit with the support of the Vice president of Communications and Citizenship JUNJI
- Construction of infrastructure and complementary works: Unit of Construction and Maintenance of Educational Spaces JUNJI
- Basic services facilities (water, electricity, gas): Unit of Construction and Maintenance of Educational Spaces JUNJI

In short, the lack of an information formal module the organization for the project operation, through the methodologies of project preparation and evaluation (ex ante) or, through the sectoral information requirements, justify the installation of a MS as a basic component for the project planning, monitoring and evaluation. These represent a guarantee for the financial sustainability of the operation, through the generation of goods and services and the obtaining of the economic-social benefits in the search for a response and satisfaction of the problem-solution.

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Date received: 14/01/2020
Date reviewed: 07/02/2020
Date accepted: 15 /05/2020