Universidad del Valle

Cuadernos de **Administración**
Journal of Management

VOL. 33
Nº 58
May. - Aug.
2017

Print ISSN: 0120-4645 / E-ISSN: 2256-5078 / Short name: cuad.adm. / Pages: 57-76
Facultad de Ciencias de la Administración / Universidad del Valle / Cali - Colombia

Analysis of construction projects stakeholders from corporate social responsibility*

Análisis de stakeholders de proyectos de construcción, desde la responsabilidad social empresarial

Analyse des parties prenantes des projets de construction, de la responsabilité sociale des entreprises

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Article of Scientific and Technological Research,
PUBLINDEX-COLCIENCIAS classification
Submitted: 18/04/2017
Reviewed: 30/05/2017
Accepted: 14/08/2017
Core topic: Administration and Organizations
JEL classification: M14, M11, M10
DOI: 10.25100/cdea.v33i58.4517

Abstract

The aim of the article is to present the Stakeholders' analysis of housing construction projects from a corporate social responsibility approach and based on the application of the Stakeholder Circle methodology, complemented with some matrixes related to risk management, and using the MicMac software of structural analysis model. The proposal is theoretically based on the topics of project management, corporate social responsibility, and stakeholder management. The methodology developed began with consultations to project managers and/or construction companies managers, using a semi-structured interview, along with the performance of documentary analysis; the consolidated stakeholder identification matrix was then constructed; later the risk matrix and response planning, on the basis of which input variables were configured to the structural analysis model, to obtain the Indirect Influence Matrix and the Direct Influence Matrix, in addition to the Displacement Plane; then, according to previous results, the different stakeholders were classified; and finally, actions and strategies were proposed for key stakeholders. The main result is that key stakeholders are: community, company Chairman, project management team, and clients. The main conclusion is related to the importance of establishing actions and strategies for these stakeholders, due to their involvement in the optimization of the system, based on the establishment of permanent challenges, given their high mobility and high dependence.

Keywords: Stakeholder management, Project management, Construction, Corporate social responsibility, Risk management.

Resumen

El objetivo del artículo es presentar el análisis de los s*takeholders* de los proyectos de construcción de vivienda, a partir de un enfoque de responsabilidad social empresarial y con base en la aplicación de la metodología *Stakeholder*

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Circle, complementada con algunas matrices relacionadas con la gestión de riesgos, y con la utilización del software MicMac del modelo de análisis estructural. La propuesta se sustenta teóricamente en los temas de gerencia de proyectos, responsabilidad social empresarial, y gestión de *stakeholders*. La metodología desarrollada inició con la consulta a gerentes de proyectos y/o empresas de construcción, mediante una entrevista semiestructurada, a la par de la realización de análisis documental; a continuación se construyó la matriz consolidada de identificación de *stakeholders*; posteriormente la matriz de riesgos y planificación de la respuesta; con base en las cuales se configuraron las variables de entrada al modelo de análisis estructural, para obtener la Matriz de Influencia Indirecta y la Matriz de Influencia Directa, a más del Plano de Desplazamiento; después, de acuerdo con los resultados anteriores se clasificaron los diferentes *stakeholders*; y, finalmente, se propusieron las acciones y estrategias para los *stakeholders* clave. El principal resultado es que los *stakeholders* clave son: comunidad, presidente de la empresa, equipo directivo del proyecto, y clientes. La principal conclusión se relaciona con la importancia de establecer acciones y estrategias para estos *stakeholders*, debido a su implicación en la optimización del sistema, a partir del establecimiento de retos permanentes, dada su alta motricidad y alta dependencia.

Palabras clave: Gestión de s*takeholders*, Gerencia de proyectos, Construcción, Responsabilidad social empresarial, Gestión de riesgos.

Résumé

L'objectif de cet article est de présenter l'analyse des parties prenantes des projets de construction de logements, basée sur une approche de responsabilité sociale des entreprises et sur l'application de la méthodologie *Stakeholder Circle*, complétée par quelques matrices liées à la gestion des risques, et avec l'utilisation du logiciel *MicMac* du modèle d'analyse structurelle. La proposition est théoriquement basée sur les thèmes de la gestion de projet, de la responsabilité sociale des entreprises et du management des parties prenantes. La méthodologie développée a débuté par la consultation des chefs de projets et / ou des entreprises de construction, par le biais d'un entretien semi-structurée, ainsi que la mise en place d'une analyse documentaire. D'abord, la matrice d'identification des parties prenantes consolidées a été construite; ensuite la matrice des risques et la planification de la réponse; sur la base de laquelle les variables d'entrée ont été configurées pour le modèle d'analyse structurelle, pour obtenir la matrice d'influence Indirecte et la Matrice d'influence Directe, le plan de déplacement; après cela, selon les résultats précédents, les différentes parties prenantes ont été classées; et enfin, des actions et des stratégies pour les principales parties prenantes ont été proposées. Le principal résultat est que les principales parties prenantes sont: la communauté, le président de l'entreprise, l'équipe de gestion de projet et les clients. La conclusion principale a un rapport avec l'importance de mettre en place des actions et des stratégies pour ces parties prenantes, en raison de leur implication dans l'optimisation du système, à partir de la mise en place de défis permanents, à cause de leur haute motricité et haute dépendance.

Mots-clés: Gestion des parties prenantes, Gestion de projet, Construction, Responsabilité sociale des entreprises, Gestion des risques.

1. Introduction

Governability, management of environmental and social impacts, accountability to stakeholders and alliances for strategic development are the main attributes making up Corporate Social Responsibility- CSR- according to Vallaeys, De la Cruz and Sasia (2009). Project management (PM), in turn, bears the responsibility of ensuring that the project's objectives be achieved with quality, within budget, on time and to the client's and other stakeholders' full satisfaction (Gido and Clements, 2012). These, in turn, are any group or individual who may affect or be affected by the achievement of the organization's objectives (Argandoña, 2010).

This way may be affirmed that stakeholders' management is a common element between CSR and PM as they share an orientation towards particular interests and customer satisfaction. Nonetheless, the exercising of the former has been focused on minimizing perils derived from the dissatisfaction of the project's stakeholders' interests. About this, the Project Management Institute (PMI) (2013, p. 390), for instance, suggests that:

> Interested parties management is also centered on continuous communication with interested parties in order to understand their needs and expectations, approaching issues the moment they occurs, managing conflicts of interests and promoting interested parties adequate participation in decision making and the project's activities.

Regarding the sector of construction, in addition to its importance and contributions to national economy (CAMACOL Tolima, 2015; Departamento para la Prosperidad Social (DPS), Programa de las Naciones Unidas para el Desarrollo PNUD, 2013), its business model consists on working by projects which require effective leading, including the responses the sector's companies must provide

in social, environmental and economic terms in order to satisfy its stakeholders' interests with the expected benefits such as improvement on corporate image, costs saving and the reward from its clients.

By the foregoing, knowing who its stakeholders are, what are their rights and interests and what implications and impact they might have on a project turns imperative for the sector's appropriate functioning, in order to plan and execute strategies and actions that allow to satisfy them and minimize the project's hazards.

Thusly, this paper's aim is to present the analysis of housing projects' stakeholders based on an international scale methodology. Hence, this works offers several contributions: 1. For the housing construction sector, it may understand systematically its different interested parties and thus improve the management of its relationships; 2. Methodological, by applying the set of matrixes and analysis to a particular case; 3. For researchers, academic communities, universities and the general community interested on the subject.

Next on, the reader shall find the applicable theoretical framework with the topics of PM, CSR and stakeholders' management; the methodology employed thereafter, then the results and their discussion; and, finally, conclusions and related recommendations.

2. Theoretical Framework

2.1. Project Management

Projects have their own characteristics that make them different to permanent organizations. These characteristics are incorporated to the management of projects which "recognizes the reach, cost and time of a project to three great opportunities of attaining an advantage for the success of the projects" (Torres and Torres, 2014, p. 9).

Reach refers to deliverables required by the customer or owner of the project, which to a great extent mean their satisfaction; besides, it "leads to complying with required costs and time" (Torres and Torres, 2014, p. 9). These correspond to those commitments to budget and duration agreed upon with the client or the owner of the project.

In order to meet this challenge is imperative the participation of a project manager who "performs the same tasks as other managers" (Gray and Larson, 2009, p. 8): he plans, programs, coordinates and controls; but bearing special characteristics derived from the peculiarities of projects like the administration of normal non-repetitive tasks with (generally multidisciplinary) teams formed as a response to the projects' requirements, by means of ad-hoc efforts with a defined life cycle, that end when performance objectives are successfully met (Cleland, 2001).

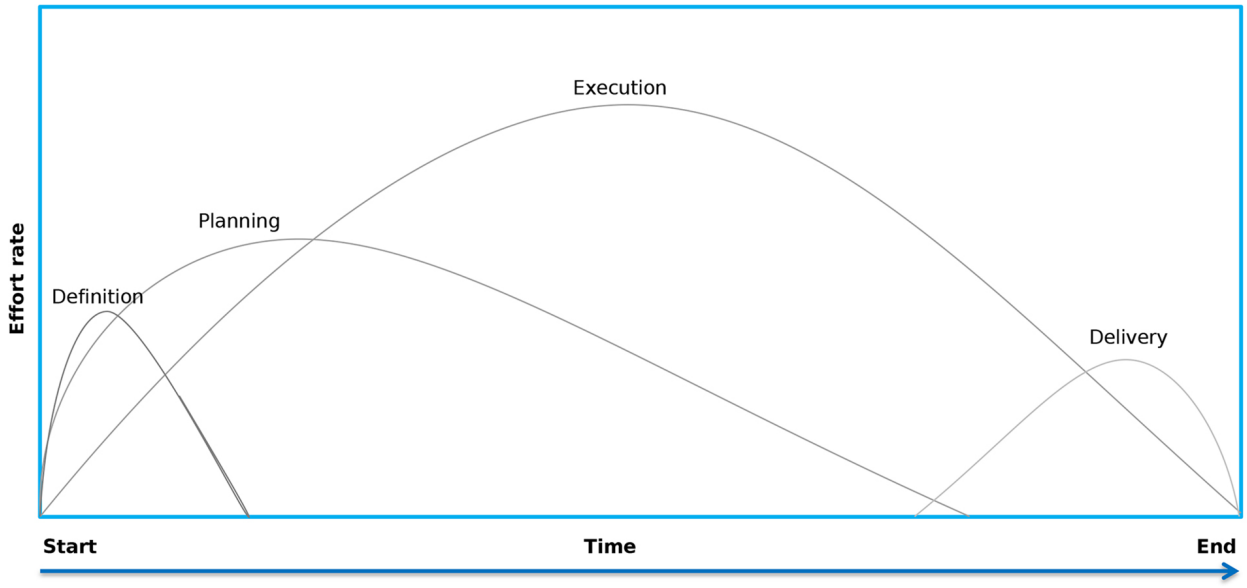
Arboleda (2013, p. 13), in the same vein, associates project management to the different stages of the administrative process when stating that "it is the application of techniques, tools and procedures to planning, directing, coordinating and controlling of pre-stablished goals of reach, cost, time and quality of the project at hand", which is in agreement with Gido and Clements (2012, p. 14) who propose that "the administration of projects is the planning, organizing, coordinating, directing and controlling of resources in order to meet the projects objectives".

In the PMI's (2013, p. 5) concept "leading projects is the application of knowledge, skills, tools and techniques to the project's activities in order to fulfil the requirements thereof", which agrees with the ISO 21500 (Icontec, 2014) guideline which proposes applying methods, tools, techniques and competencies to a project, and includes the application of several stages of the project's life cycle performed by means of processes.

Gido and Clements (2012) incorporate the concept of process, pointing to it having two grand stages: "firstly, stablishing a plan and then carrying it out to achieve the project's goals" (p.15), which has been integrated into the project's life cycle (Figure 1).

The different stages of a project demand different rates of effort from management and its project team. As can be seen, the first stage defines specifications and aims, and stablishes the tasks to be carried and those responsible for them. The second stage increases the effort and develops plans related to different variables of the process. Through

Figure 1. Cycle of the project



Source: Gray & Larson (2009, p. 7).

the third stage, efforts (mental and physical) reach their top level: the product is elaborated, measurements are carried out and adjustments performed; during the fourth stage, effort decreases: the product is delivered to the client and resources are deployed.

Miranda grants this concept a broader connotation by proposing it as an organizational and executive model, according to the following statement:

Because of the magnitude of the investments, multiple and diverse interests moving, the amount of contractors and sub-contractors participating in it who determine frequent and confusing conflicts, because of the expectations created in potential users or consumers and the need to leave proprietors satisfied, for the execution stage is imperative to design and articulate into it an organizational and executive model of special relevance known as Project Management or Project Administration (Miranda, 2012, p. 15).

Project management has been permeated by organizational theories and administrative philosophies, incorporating topics like roles and responsibilities, organizational structures, delegation and corporate profitability (Kerzner, 2013), aside from juridical aspects, personal skills, software and specific technical recognition (Roessler, 2015).

At the same time, standards such as the Project Management Body of Knowledge (PMBOK) and Project In Controlled Environment (PRINCE2)[1] have risen, geared towards stablishing practices that permit to normalize project leading and organize in different categories the different activities carried out to successfully undertake a project. These are the most used standards around the world, the first one in the USA and America and the second one in England and Europe.

2.2 Corporate Social Responsibility

CSR is a concept that has evolved though time based on the views from different authors: Atehortúa (2008) opines that there's little discussion on the subject; in turn, Hoffman (2007) and Frederick (1994) agree that modern CSR arises from 1920; by the 1970s, Friedman proposed (Bower, 1995) that businesses only have one social responsibility: employing its resources and undertaking activities routed to augmenting its profits; an economic conception centered on the com-

[1] Other standards include: APMBOK, BS 6079, ISO 21500, ICB, P2M, NCSPM, PM CDF, SAQA, ECITB (Montes, Gimena & Díez, 2013).

Table 1. CSR Generations

Generation	Characteristic	Description
First	Low level and short termed.	Based on Philanthropy and voluntarism and short-term risk management (contention of one or several stakeholders' reactions).
Second	Strategic CSR in companies.	Presents a competitive sustainability approach, efficacious dialog models and response to social actors, value chains and SMEs, and social standards.
Third	Formulation of a new model ingrained throughout the national economy.	Based on standards and multi-stakeholders alliances, development of institutions for CSR, active defense and promoting of CSR, and public CSR policies for SMEs.

Source: Author own elaboration

pany's shareholders. To it, Carroll (1979) adds society's expectations in the legal, ethical and discretional fields.

Freeman (1984), in contrast to Friedman's statement, underlines that companies also have responsibilities with all the individuals that affect or who are affected by the activities it carries out to achieve its objectives. Thus, the concept of CSR, through time, has been framed into the following generations and characteristics (Table 1).

CSR centers, then, on an organization's decisions and doings, which is why it's worth retaking what the *Centro Colombiano de Responsabilidad Social* (CCSR) (2008) expressed as it affirms that a company is socially responsible when its actions are aimed at satisfying the requirements of all its interest groups, as well as taking care of and preserving the environment.

But, how could such organizational actions be understood? About this, Cadbury (2006) has defined three levels of corporate social responsibility, to wit:

> **Primary level** is that where the company commits to fulfilling its basic responsibilities of remunerating its employees, paying suppliers and reimbursing received loans, remunerating its shareholders, etc. **In the secondary level,** companies must concern themselves with the environmental impacts produced by their activity and avoid environmental damage. Not only do minimum requirements need to be fulfilled, something more mist be attained. Finally, **the tertiary level** is where a company must ask itself about how to positively influence the society it operates in (p. 12)

On the other hand, Carroll (1991) stablished the concept of the CSR pyramid (Figure 2) where he proposes four types of responsibilities that businessmen must possess: economic, juridical, ethic and philanthropic.

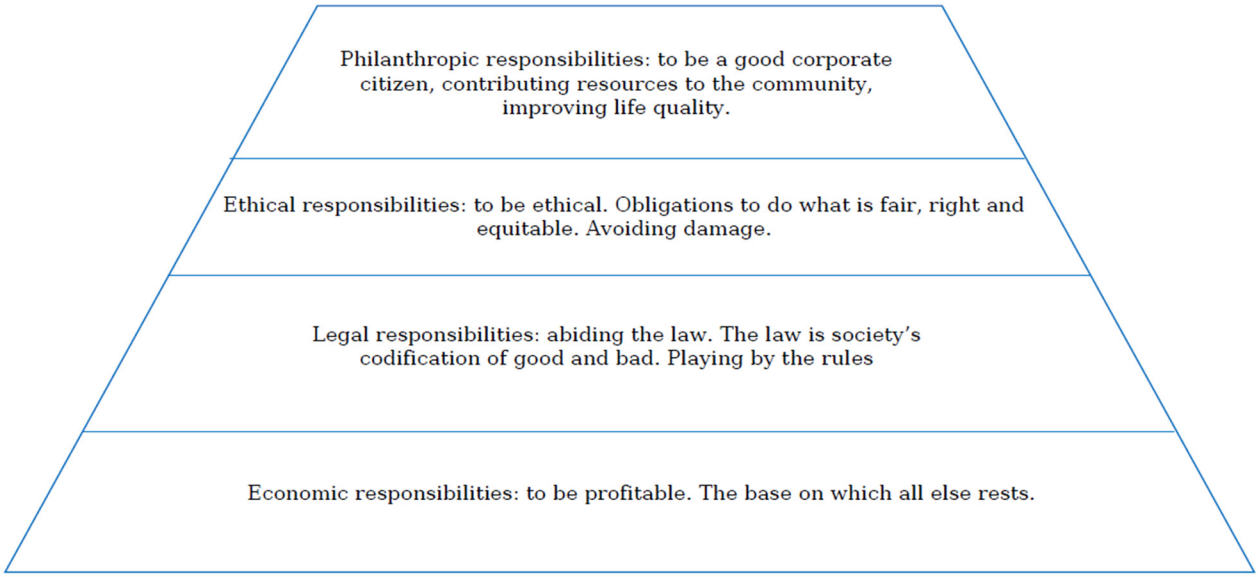
Finally, Acuña, Araque, Rosero, Rubio and Uribe (2014) conclude that CSR is a set of activities or actions a company carries out in order to respond to its stakeholders and, at the same time, present results not only in the economic or financial scope but in the social and environmental fields.

2.3 Stakeholders' management

Introducing the concept of stakeholders mainly served to break the dominant thesis that companies exist to maximize benefits, or better yet, to maximize value for the proprietary (Argandoña, 2010).

Stakeholders are "those groups without whose support an organization would cease to exist" (Friedman and Miles, 2006, p. 4). They have specific interest in the organization and exercise power over it to satisfy them (Johnson, Scholes and Whittington, 2014). This term "refers to an individual or group that makes part of an organization or has a bet or interest in it" (Duque, 2009, p. 29). The same author makes a compilation of the term over time, pointing to the debate that arose from its appearance (Friedman and Miles, 2006; Wolfe and Putler, 2002); the expression

Figure 2. CSR pyramid



Source: Author's own elaboration, from Carroll (1991).

of four points of view about his theory (Donaldson and Dunfee, 1994; Freeman, 1994; Donaldson and Preston, 1995; Friedman and Miles, 2006; Hendry, 2001); the identification of eight stakeholders for a business organization (Friedlander and Pickle, 1968); the classification of internal and external ones (Bounds, Yorks, Adams and Ranney, 1994); the balance between stakeholders (Anderson, 1982); the customer as the main stakeholder (Daft, 1992); the stakeholder graphic model (Freeman, 1984; Fassin, 2008); among others.

The *Instituto de Estudios Superiores de la Empresa (IESE)* (2002) classifies stakeholders into three levels: consubstantial, contractual and contextual. The first ones are those stakeholders without which a company's existence would be impossible; contractual stakeholders correspond to those with whom the company has some sort of formal contract; the contextual ones are those who perform a role in achieving the organization's credibility and the acceptance of its activities. Figure 3 elaborates on these levels.

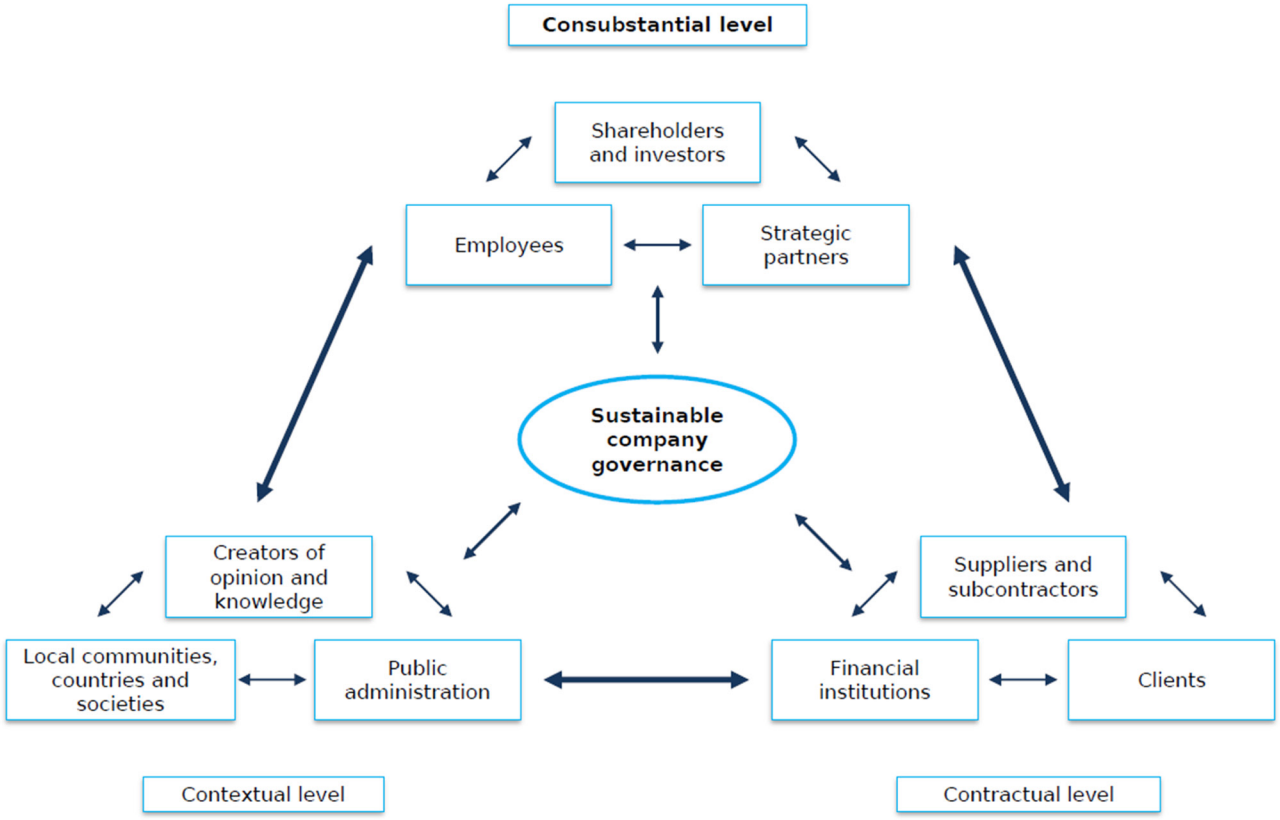
Kerzner (2001) classifies stakeholders into three categories: financial (shareholders, financial institutions or capital suppliers, and creditors), product/market (clients, suppliers, competitors, unions, governmental agencies and local government committees) and organizational (official executives, board of directors, employees in general, and administrators). He also adds that efforts must be geared to the best interests of all the stakeholders of the organization, not only to some of them since "all companies have interested parties" (Kerzner, 2013, p. 1.108).

Navarro (2008), in turn, stablishes a classification into two large groups: internal ones, linked directly to the company or organization, whether as shareholders, partners, heads, unions, workers, strategic partners, etc. And external ones; groups of interest not organically linked to the company such as authorities, pressure groups, NGO, competitors, consumers, etc.

Now, regarding projects, it's imperative to recognize that these "often have a lot of interested parties, several of them carrying contradictory objectives"[2] (Morris, 2009, p. 141), but their correct management must be routed to delivering satisfaction to customers/sponsors (Morris, 2009; Morris, 2013), and fulfilling or exceeding the strategic goals set forth (Morris, Patel and Warne, 2000).

[2] Managing interested parties is key in project management; their correct identification and influence over them is decisive for the project's success (Chung & Crawford, 2016).

Figure 3. Classification of stakeholders



Source: IESE (2002, p. 9).

The important thing about defining who an organization's stakeholders are, is that it is the first step for it to identify the each one's main interests. If these are not known, it wouldn't be possible to implement CSR because its essence is developing a set of practices in order to achieve stakeholder satisfaction.

3. Method

This paper is based on an explicative[3] and descriptive[4] research with a mixed research approach. Nevertheless, for this paper's purposes, we only turned to the qualitative approach since this research produces descriptive data: people's own words, either written or spoken, and observable behaviors" (Rodríguez, Gómez and Gil, 1996, p. 33). This is how "the qualitative paradigm is associated to interpretative epistemology, centered on the individual subject and the discovering of meaning, motives and the intentions of its actions (Cea, 2001, p. 46). This type of research includes images, narrations or verbalizations from the actors (Pereira, 2011); but ultimately, its design is open and flexible in order to adjust to the subject under study and the conditions surrounding it (Salgado, 2007). The design employed was phenomenological, which in the words of Hernández, Fernández and Baptista, 2014 has the "principal purpose of exploring, describing and understanding people's experiences with regard to a phenomenon and discovering common elements in such experiences" (p. 493), which paves the way to carrying out the analysis on construction projects stakeholders.

With the purpose of obtaining information, semi-structured interviews were used as the primary instrument of recollection;

[3] Centered on explaining why a certain phenomenon occurs and under what conditions, or why two or more variables are related" (Hernández *et al.*, 2014, p. 95).

[4] "Seeks to specify important properties and characteristics from any phenomenon under analysis".

Table 2. Structure of the guide of the interview applied

Blocks of inquiry	Matters of inquiry
The company or project	A brief review of the company and/or project; antiquity, business purpose, amount of workers, amount of developed projects, others.
Relationship with stakeholders	Handling of relationships with groups of interest: shareholders, clients, suppliers, workers, financial sector, State, community, environment, others; most common inconveniences that arise with these groups, and the consequences of such inconveniences for the company and/or project.
Corporate social responsibility- CSR	Knowing and developing of CSR practices in the company and/or project, ascription to CSR standards: Global Compact, GRI, ISO 26000, SA 8000, AA 1000, others. CSR responsibility within the company: functional area, position in the company or project. Publishing of CSR reports: individual report, report integrated to the company/s/project's management report.

Source: Author's own elaboration

these were applied to managers from the construction sector. This instrument contributes to attaining a greater understanding of people's meanings and experiences, a key aspect for the qualitative approach (Hernández *et al.*, 2014). Documentary analysis was employed as a complimentary technique in order to expand the information that served as the basis to carry out the proposal. This kind of analysis is geared towards "knowing what other scientific peers have done or are doing in their specific fields (…) and, lastly, to knowing the fullness of relevant information that exist about a specific subject" (Vickery, quoted by Peña and Pirela, 2007, p. 58).

The stages followed in developing this paper begin with documenting references on the topics contained in the theoretical framework; subsequently follows the designing, testing and applying of a semi-structured interview to construction companies and/or housing construction projects managers. Then, the methodology proposed by Bourne (2013) was employed with the adaptations applicable to this case and the application of the structural analysis model (Godet, 1993) so as to prioritize stakeholders, which (methodology and model) will be detailed in the next section.

4. Results

With the purpose of deepening in the knowledge of the sector and the way in which housing companies and construction projects relate to their stakeholders and approach was made with managers housing construction sector or housing construction project managers by using the semi-structured interview technique[5]. The interview's guide structure will be presented in Table 2.

A pilot test was carried out, based on which was added the affair of inquiring about the consequences of the inconveniences that take place with stakeholders. The sample to apply the interview was defined by the convenience and judgement method, taking into account the interviewees meeting the previously defined role as well as counting with at least four years of experience in construction activities. The interviewees' companies are between 4 and 37 years old; in most cases they have capitalized on the experience of some of their partners, who have been in the sector for a longer time, generally entailed to a large related company.

The development of the analysis is grounded in the interviews' second block of inquiry, whose results allowed to identify stakeholders and their interests, as well as additional risks associated to the planning of their response. The foregoing based of the statement made by Biodiversa (2013, p. 2): "to identify stakeholders is necessary to consider all people, or groups, affected by, having influence on, or having an interest in" the organization.

[5] "Semi-structured interviews are based on a guide of affairs or questions and the interviewer has the freedom to introduce additional questions to emphasize concepts or to obtain greater information" (Hernández,*et ál.*, 2014, p. 403).

Table 3. Impact assessment scale

Category	Values	Details
Catastrophic	5	A risk whose materialization directly influences on the fulfilling of the mission, patrimonial loss or total image decay, additionally to leaving fully out of order or for an important period of time programs or services delivered to institutions.
Severe	4	A risk whose materialization would damage patrimony, image or the achievement of social objectives significantly. Besides, an important amount of time would be required from upper management to investigate and correct damages.
Moderate	3	A risk whose materialization would cause in important loss of patrimony or significant image deterioration. Besides, an important amount of time would be required from upper management to investigate and correct damages.
Minor	2	A risk that causes damage to patrimony and image. It can be righted in the short term and does not affect the fulfillment of strategic objectives.
Insignificant	1	A risk with small or null effect on the organization.

Source: Díaz (2016, p. 48).

The process carried out takes into consideration the first three steps stablished in the Stakeholder Circle methodology proposed by Bourne (2013), it was complimented with matrixes aimed at systematizing the related information and fed by the usage of the MicMac[6] operational software from the structural analysis model designed by Godet (2001). Thusly, the identification, prioritization and visualization of housing construction projects stakeholders is carried out.

This line of thinking agrees with Morris and Baddache (2012, p. 9) who state that "stakeholder mapping is a collaborative research process of debate and discussion drawn from multiple perspectives in order to determine a key list of stakeholders through the full scope of them" for which four stages must be executed: identify, analyze, map out and prioritize. The first one lists groups, organizations and relevant people; the second one understands the stakeholder's perspective and relevance; the third stage visualizes relationships with objectives and other stakeholders; and the fourth stage classifies the stakeholder's relevance and identities problems.

Next on, the identification of stakeholders will be presented (Table 3), prior assessment of the impact (Table 4) for which the interests and rights of each one, the implications of their dissatisfaction, the impact on the project and the source of contact have been defined.

As evidenced, most stakeholders would generate high impact on the project, except the company's CEO whom by his role has the power to postpone or close up a project, generating a catastrophic impact. Likewise, the directive team is differentiated whom by the characteristics of its tasks and interests as a group, would generate a minor impact on the project.

Based on the results of the identification matrix, proceeds the elaboration of the risk and response planning matrix (Table 5), which is part of prioritization (Bourne, 2013) or the stage of identification suggested by Morris and Baddache (2012). In this case, the type of stakeholder is added (internal or external, following the classification suggested by Navarro, 2008), the objective derived from his interests, and the proposal of actions and strategies to face them and in two-way satisfy said interests.

With the purpose of prioritizing stakeholders (Bourne, 2013; Morris and Baddache, 2012) a structural analysis was carried out[7], incorporating the dependency/influence re-

[6] Matrix of Crossed Impact Multiplication Applied to a Classification.

Table 4. Consolidated matrix of identification of housing construction projects

Identification	Interests	Rights	implications	Impact	Contact
Clients	Obtaining a dwelling with specifications and delivery time as promised.	To request and receive timely information. Having expectations guaranteed.	Not receiving the dwelling if it does not meet expectations. Legal actions.	Severe	Data bases of current and potential clients.
Community	Not getting affected and to attain benefits.	To request and receive timely information. Timely responses to complaints and claims. Having its environmental rights guaranteed.	Construction site paralysis and/or closure, according to the degree of the impact.	Severe	Community leaders of the project's zone of influence.
Suppliers	Ensuring permanence and timely payment, and having clear rules.	Complying with legal conditions as agreed upon. Mutual respect of the code of ethics.	Not supplying goods and services. Making guarantees enforceable and filing lawsuits.	Severe	Data base of suppliers.
Operational and technical team	Attaining permanence, wellbeing and timely payment.	Complying with and guaranteeing work environment conditions. To request and timely respond to complaints and petitions.	Stopping or taking on "turtle operation".	Severe	Supervisors and/or coordinators.
Directive team	Obtaining effective results in terms of project quality and time; and recognition.	Advice, monitoring and following up. Being taken into account in the decision-making process.	Stopping construction site and/or documenting claims before the competent instances.	Minor	Project manager
CEO	Ensuring profitability, solvency, repurchase, prestige and recognition.	To demand responses and periodic reports. Making decisions to redirect resources with global vision according to the project's advancement.	To postpone or close up the project, according to the decision's degree of impact.	Catastrophic	CEO
Curatorship	Guaranteeing legal, technical and normative compliance.	Performing normative follow ups. Inspecting according to what was approved.	Close up the construction site and sanction.	Moderate	Curatorship
Financial entities	Allocating and recuperating resources, and strengthening its corporate image.	Make debt enforceable if financial expectations aren't met.	Not guaranteeing financing to the project and the company in the long term.	Severe	Financial Manager or sub-manager of operations.
Government	Contributing to solving the population's housing needs and to improving life quality.	Requiring information. Controlling according to its competences. Defining policies benefiting access to housing offers with better guarantees.	Close up and sanction.	Moderate	Competent authorities.

Source: Author's own elaboration

Table 5. Risk and response planning matrix

Identification	Type	Objectives	Interests	Impact	Action	Strategy
Clients	External	Obtaining a dwelling with the specifications and time agreed upon.	Obtaining a dwelling with the specifications and time agreed upon.	Severe	Agile execution of procedures to know the customer's requirements.	Following up on the construction's execution and its capacity to satisfy customers' requirements.
Community	External	Obtaining benefits and avoid getting affected.	Not getting affected and obtaining benefits.	Severe	Permanent involvement of actors from the community in the process of building housing plans.	Carrying to out workshops with the community's participation and absorbing local labor when profiles are met. Conforming citizen oversights of social control.
Suppliers	External	Guaranteeing permanence, timely payment and clear rules.	Ensuring permanence, timely payment and clear rules.	Severe	Designing acquisition plans with emphasis on variables such as time, payments, among others.	Permanent, direct and close communication with suppliers. Following up and monitoring acquisition plans and the logistics required for its operation.
Technical and directive team	Internal	Guaranteeing permanence and timely payment.	Obtaining permanence, wellbeing and timely payments.	Severe	Effective selection process. Developing and personnel management plan.	Defining a communication protocol. Performing periodic meetings, activities and events for personnel maintenance and improvement.
Directive Team	Internal	To obtain effective results in terms of project quality and time, and, therefore, recognition.	Obtaining effective results in terms of project quality and time, and, therefore, recognition.	Minor	Developing a project management plan. Defining an investment plan that guarantees financial closure.	Performing periodic meetings to plan and follow up on the project's development, and publishing partial and final results.
CEO	Internal	Guaranteeing profitability, solvency, repurchase, prestige and recognition.	Ensuring profitability, solvency, repurchase, prestige and recognition.	Catastrophic	Periodic request of verbal and written report regarding the project's advancement.	Developing maintenance and improvement actions as applicable.
Curatorship	External	Ensuring legal, technical and normative compliance.	Guaranteeing legal, technical and normative compliance.	Moderate	Issuing construction licenses; prior fulfillment of legal, technical and normative requirements.	Detailed review of the documents delivered by the project. Follow up reports to improvement plans and/or technical complimentary requirements.

Table 5. Risk and response planning matrix (continuation)

Identification	Type	Objectives	Interests	Impact	Action	Strategy
Financial entities	External	Recuperating allocated resources and improve corporate image.	Allocating and recuperating resources and improve corporate image.	Severe	Studying credit applications.	Advisory and permanent accompaniment to the project.
Government	External	Contributing to solving the population's housing needs and to improving life quality.	Contributing to solving the population's housing needs and to improving life quality.	Moderate	Issuing norms related to construction activities.	Consulting, inspecting and watching over the construction sector. Incentives to diminish quantitative housing deficit.

Source: Author's own elaboration

Table 6. Configuration of the model's input variables

Name	Short name	Description
Clients	Cl	Current and potential buyers interested in housing solutions.
Community	Com	Neighbors of the construction project.
Suppliers	Prov	Those supplying raw materials, materials and services to the project.
Technical and operative Team	EqOpT	Human talent linked to the project in technical and operative activities.
Directive team	EdDir	Human talent linked to project in activities of direction.
CEO	Pres	The organization's CEO.
Curatorship	Cur	Organism in charge of issuing construction licenses.
Financial entities	EntF	Institutions in charge of financing the project.
Government	Gob	Directioner of the state apparatus of national, departmental or municipal order.

Source: Author's own elaboration

lationship of said interested parties. Table 6 presents the configuration of the input variables entered into the MicMac.

Its goal is to show the structure if the relationships between the qualitative variables, whether quantifiable or not, characterizing a system (Godet, 1993). Said relationships are qualified in terms of influence (motivity) and dependency.

To carry out the structural analysis, different stakeholders were taken and their dependency/influence relationship was stablished. The scale of assessment is the following: 0: there is no influence; 1: low; 2: medium; and 3: high. Table 7 displays the scores given, where the analysis goes from the column towards the line, with the question: to what extent does each stakeholder in the column influence the behavior of the stakeholder in the line?

Based on the foregoing scores, the Direct Influence Matrix (DIM) was obtained (Figure 4), which provides the state of the stakeholders' relationships in the short term. In this matrix, influence is represented on the axis of the ordinate, and the dependency on the abscissa's.

Following Garza and Cortez (2011), elements presenting high dependency and high influence, situated in the upper right quadrant, are called *key variables;* those located in the upper left quadrant, displaying high in-

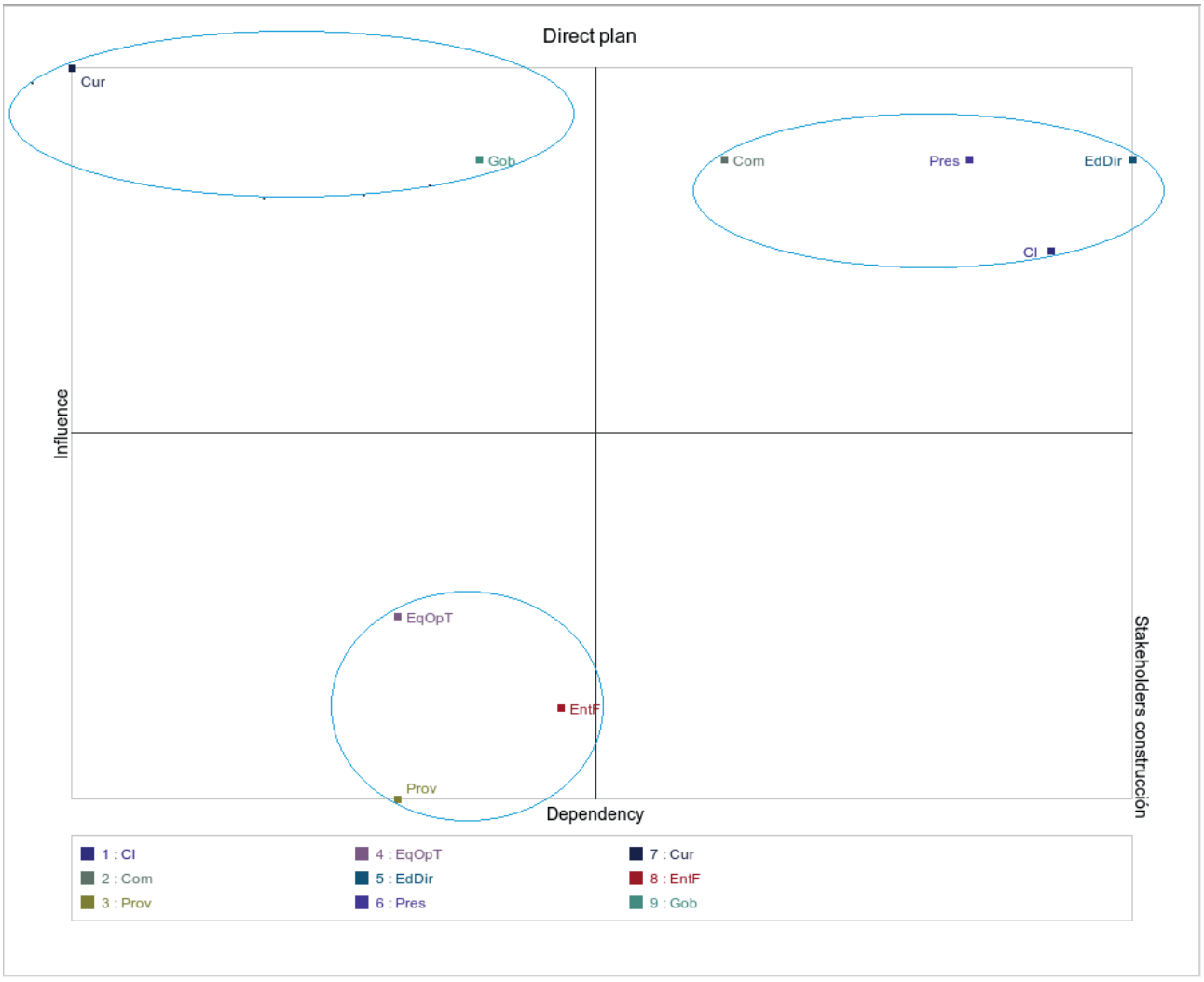
[7] Its goal is to show the structure if the relationships between the qualitative variables, whether quantifiable or not, characterizing a system (Godet, 1993). Said relationships are qualified in terms of influence (motivity) and dependency.

Table 7. Matrix of relationships between housing construction projects stakeholders

Stakeholder	Cl	Com	Prov	EqOpT	EdDir	Pres	Cur	EntF	Gob
Cl	0	1	2	1	3	2	0	2	1
Com	3	0	1	1	3	2	1	0	2
Prov	2	1	0	0	2	1	0	0	0
EqOpT	0	0	1	0	3	3	0	0	1
EdDir	2	2	1	3	0	2	0	2	1
Pres	1	2	1	2	2	0	0	3	2
Cur	3	3	0	0	2	2	0	2	2
EntF	3	0	1	0	1	2	0	0	0
Gob	2	3	1	1	1	1	3	1	0

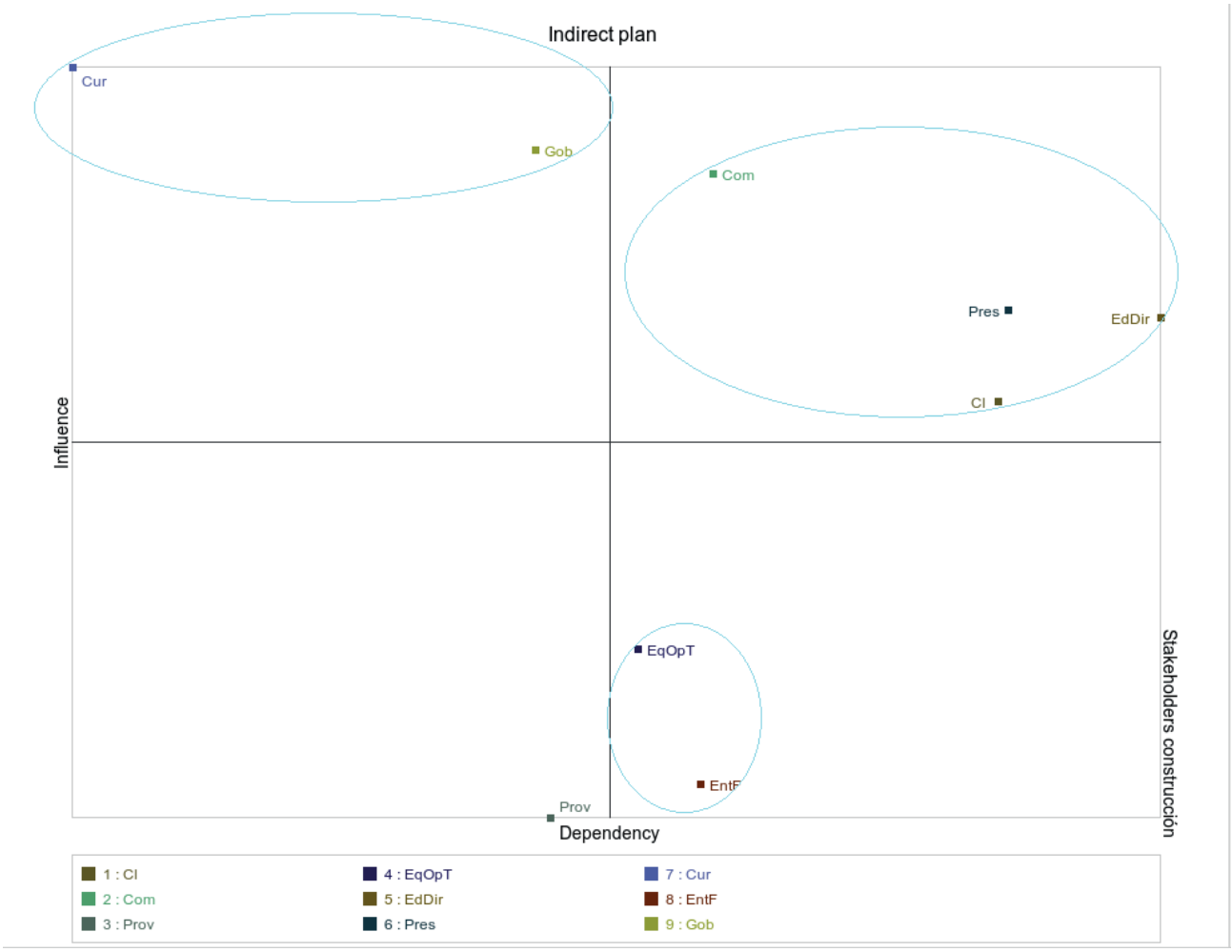
Source: author's own elaboration resulting from the MicMac software.

Figure 4. DIM housing construction projects stakeholders



Source: author's own elaboration resulting from the MicMac software.

Figure 5. IIM housing construction projects stakeholders



Source: author's own elaboration resulting from the MicMac software.

fluence and low dependency, are deemed *determining variables*; those having high dependency and low influence located in the lower right quadrant are known as *resulting variables*; and those resulting in the lower left quadrant, with low dependency and low influence, receive the name of *autonomous variables.*

According to the previous figure, the stakeholders observed to have the greatest dependency/influence relationship (key stakeholders) are: the community, the company's CEO, the directive team and customers.

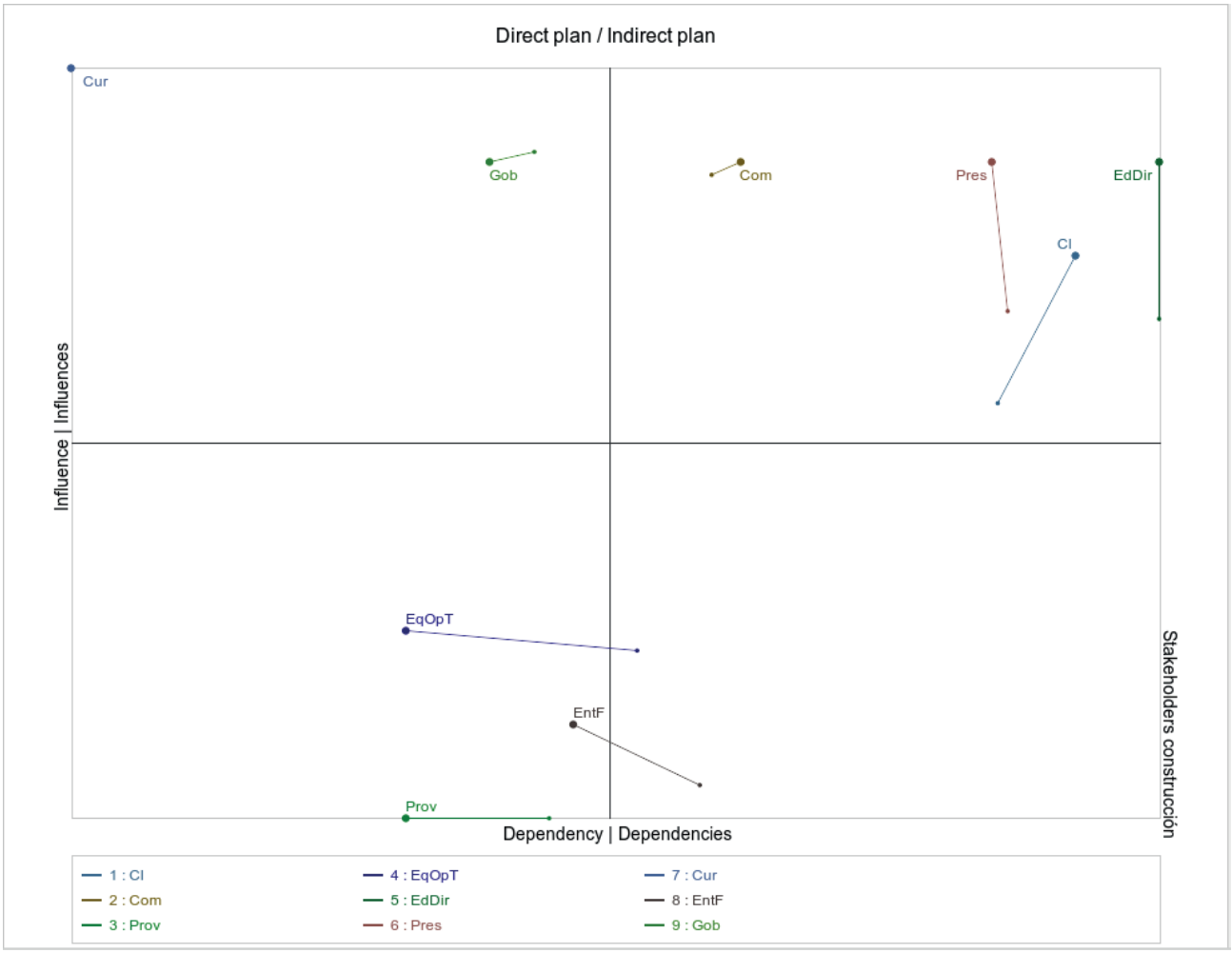
Next, the long-term analysis will be carried out, which is obtained from the Indirect Influence Matrix (IIM). When running the application with the data established in Table 7, the number of recommended iterations to reach stability is found to be four for a size 9 matrix, and a measurement of influences to 100% and dependencies to 100%. This is observed in Figure 5.

As can be seen in this figure, priority stakeholders are still the same ones found in the DIM; namely, in the long term the dependency/influence relationships between these stakeholders are kept.

Finally, it is important to observe how different stakeholders move, from the short (DIM) to the long term (IIM), according to the dynamic of the structural analysis performed based on MicMac. This situation is shown in the Displacement Plane (DP) (Figure 6).

It is possible to appreciate that despi-

Figure 6. DP of housing construction projects stakeholders' structural analysis



Source: author's own elaboration resulting from the MicMac software.

te there being displacements with regards to the dependency/influence of different analyzed stakeholders, in the case of the four that were prioritized, deemed as key (a little less than half of the total), they hold the same quadrant, which shows high dependency and high influence.

According to the characteristics of the structural analysis (Deusto, n.d.), the stakeholders found to be determinant are the curatorship and the government; namely, the legal-normative system that must be complied with prior to initiating the housing construction project's execution. In turn, autonomous stakeholders are the operative and technical work team, financial entities and suppliers, who perform specific roles within a project as mentioned.

Key variables' characteristics is that they have high motivity and are very dependent, they might disturb the system's normal behavior, have high instability and must continuously bear the change of the system towards an optimal level (Garza and Cortez, 2011). By the foregoing, it is important to establish specific actions and strategies for this set of stakeholders (Table 8).

5. Discussion

According to the inquiry performed, it is possible to interpret that companies and projects in the construction sector, in general terms, classify within the first generation of CSR according to Freeman's (1984) statements, since its characteristics point

Table 8. Actions and strategies for key stakeholders

Key stakeholder	Action	Strategy
Community	Permanent involvement of community actors in the process of building housing plans. Permanent communication with members of the community.	Performing workshops with the participation of the community and absorbing local labor when the required profiles are met. Conforming citizen oversights of social control.
Company's CEO	Periodic delivery of oral and written reports regarding the project's advancement.	Performing actions of maintenance and improvement, as applicable, prior joint assessment of the project's advancements.
Project's directive team	Developing the project's management plan. Defining an investment plan that guarantees financial closure.	Performing periodic planning and follow-up meetings to the project's development and publishing partial and final results.
Clients	Executing procedures in an agile manner to get to know a client's requirements. Permanent communication with clients.	Permanent follow up to the site's execution and its capacity to satisfy the client's requirements. Incorporating the client's reasonable inquiries into the construction site.

Source: Author's own elaboration

to low-scale development with a short-term vision; it is based on actions of philanthropy carried out to contain the reaction of one or several stakeholders, based on short-term risk management.

The stakeholders identified for construction projects are: clients, community, suppliers, operative and technical team, directive team, CEO, curatorship, financial entities and the government. According to the methodology employed, key stakeholders are: community, CEO, directive team and clients.

These key stakeholders result from the short and long term analysis, and despite there being displacements in the dependency/influence relationships of each one of them, they all remain in the key variables quadrant (High dependency and high influence).

In the classification stablished by Navarro (2008), key stakeholders fall within the categories of external (community and clients) and internal (CEO and directive team). If the IESE's (2002) classification is followed, three levels are found: consubstantial (CEO and directive team), contextual (community) and contractual (clients). Regarding Kerzner's (2001), there are product/market (clients) and organizational (CEO and project's directive team); the community doesn't match any of his categories clearly.

Regarding the rest, the following classification was found: determining stakeholders, curatorship and government; autonomous, operative and technical work team, financial entities and suppliers with regards to the short term analysis. In the long-term analysis, determining stakeholders are kept, but there are modifications in the other two cases: suppliers appear as autonomous; and operative and technical team and financial entities as result. This means, there are displacements for the operative and technical team, and financial entities.

6. Conclusions and recommendations

One of the main elements linking PM to CSR is stakeholder management, which turns evident in the literature applicable to both topics. From this common element, it is possible to set a proposition to maximize the satisfaction of these interested parties (CSR) and diminish the risk rate for the project (PM).

Identifying its stakeholders, as well as understanding their interests, is fundamental for the housing construction sector and, specifically, the management of its projects, to optimize the management of its interested parties with the purpose of meeting its objectives in terms of reach, budget, schedule and quality, on one hand; and have them completely satisfied with the purpose of improving its corporate image, save on costs, and improve repurchase index from its clients, on the other hand.

The utilization of the structural analysis methodology and the MicMac software, taken from prospective, allows to find (prioritize) construction projects' key stakeholders, in the short term (by means of the Direct Influence Matrix-DIM) as well as in the long term (Indirect Influence Matrix-IIM) and to review its consistency (by means of the Displacement Plane-DP). Hence, the utilization of this software is recommended in order to advance stakeholder analysis.

It is important to stablish specific actions and strategies in order to manage each key stakeholder, since their high mobility and high dependency character might cause disturbances to the system's balance, and due to high instability they require permanent challenges that contribute to optimizing the system they are a part of; in this case, a housing construction project.

Carrying out future studies is recommended so as to allow the incorporation, by using the methodology employed, of multistakeholders analysis which enables the reviewing of relationships, not only from the sector to each stakeholder, but also those that jointly spawn between the sector and them.

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¿How to quote this article?

Uribe Macías, M. E. (2017). Analysis of construction projects stakeholders from corporate social responsibility. C*uadernos de Administración, 33*(58), 57-76. DOI: 10.25100/cdea.v33i58.4517.