01-038

ANALYSIS OF THE RELATIONSHIP BETWEEN CRITICAL SUCCESS FACTORS AND STAKEHOLDERS IN ARCHITECTURAL PROJECTS

Rubio Bañuls, Lara Isabel [(1)]; Capuz Rizo, Salvador [(1)]

[(1)] Universitat Politècnica de València

When a project generates a positive impact on both; clients and organization that develops it, satisfies the requirements and has done an excellent job, the project is considered a success. However, this is not always achieved.
Traditionally, success has been measured by quantitative results, with tools such as the time-cost-scope triangle. Going deeper in the knowledge, it is easy to see that the concept is much more subtle and depends on other factors like Stakeholder perception. As a result of experience and lessons learned, lists of factors emerge, those factors properly addressed, might improve significantly the chances of project success, the so-called Critical Success Factors (CSFs).
The approach of this study has a double motivation. First, based on the literature review, a summary list of 25 critical success factors is drawn up, they are very relevant factors in international architecture projects. On the other hand, understanding the fundamental role of the Stakeholders, a classification of these factors according to the groups with which they are most connected is proposed.

Keywords: success criteria; stakeholders; critical success factor; architectural projects

ANÁLISIS DE LA RELACIÓN ENTRE LOS FACTORES CRÍTICOS DE ÉXITO Y LAS PARTES INTERESADAS EN LOS PROYECTOS DE ARQUITECTURA

Cuando un proyecto genera un impacto positivo tanto en los clientes como en la organización que lo desarrolla, satisfaciendo los requisitos establecidos y realizando un trabajo excelente, el proyecto se considera un éxito. Sin embargo, todo ello no siempre se consigue.
Tradicionalmente el éxito se ha medido con resultados cuantitativos, como por ejemplo el triángulo tiempo-coste-alcance, pero a medida que se profundiza se observa que el concepto es mucho más sutil y que depende de otros factores como es la percepción por parte de las partes interesadas y actores involucrados (Stakeholders).
Fruto de la experiencia, y a modo de lecciones aprendidas, surgen las listas de factores que si se abordan adecuadamente mejoran significativamente las posibilidades de éxito de un proyecto, los denominados Factores críticos de éxito (CSFs).
El planteamiento de este estudio tiene una doble motivación. En primer lugar y basándose en la revisión de la bibliografía, se elabora una lista síntesis de 25 factores críticos de éxito muy relevantes en los proyectos internacionales de arquitectura.
Por otra parte, y entendiendo el papel fundamental de las partes implicadas pertinentes, se propone una clasificación de estos factores en función de los grupos de Stakeholders con los que están más vinculados.

Palabras clave: criterios de éxito; partes interesadas; factor crítico de éxito; proyectos de arquitectura

Correspondencia: Lara Isabel Rubio Bañuls laraisabel.rubio@gmail.com

1. Introduction and objectives.

Originally, success was determined by tangible results, however, as the subject has developed, it has been observed that the concept of success is subtle and depends on factors such as the perception of the relevant stakeholders. With the development of project manager professional competence a series of factors began to be used which, if properly approached, significantly improve the possibilities of success in projects. These are what we call Critical Success Factors (CSFs).

Critical success factors (CSF) are used to support and measure the success of a strategic approach and tactics for implementation of projects intended to ensure the success of the project and support the proper allocation of limited resources. Success factors are inputs to management system which can lead directly or indirectly to project success in an organization. (Lutaaya, 2019)

The motivation of this study is to analyze and understand these factors and their links with the different groups of Stakeholders in each of the project stages, which will provide the Project Manager a realistic management tool adapted to the conditions. Project Managers who can handle these subjective aspects, understanding what success means for each group, will be able to manage the project better and therefore obtain better results.

This 2019 joint research survey reveals that; Clearly, organizations globally continue to find it difficult to deliver projects that meet all objectives around the iron triangle of time, cost, and scope, along with achieving stakeholder satisfaction. […] 19% of organizations deliver successful project, at least most of the time. 58% of organizations feel that project success rates, in relation to achieving Stakeholders satisfaction, have improved over the past two years. 44% of organizations are likely to deliver projects that meet original goal and business intent. 30% of organizations are likely to deliver projects that re on time. (Sexton, Foley, & Wagner, 2019)

2. Success and Critical Success Factors (CSFs).

Project delivery systems determine the sequencing of design, procurement, and construction, and define the roles and responsibilities of the parties involved in a project. (Esmaeili, Pellicer, & Molenaar, 2014) This is mainly why in each project there may be different organizations involved and that is why it is important to clarify at this point that it will be the organization in which the project is carried out that will be the first one interested in the success of the project.

The challenge is to find the most appropriate methodology to achieve success in the projects using CSF lists. The definition and evaluation of the success of the Project is therefore a strategic management concept, and the efforts of the Project must be aligned with the objectives of the organization in order to be successful. (Phelan, 2005)

2.1. Success definition.

Originally the definition of success in projects was based on the famous "iron triangle" of time, cost, and quality. In the years 1972-1973 Martin Barnes, referring to his professional experience, explained how this original nomenclature was not precise enough.

“I realized quite soon after I published my paper on the triangle and people started using it that it was wrong for the third corner to be called ‘quality’. From the client’s point of view, it is the performance that’s important – does it do the job? That corner should be called ‘performance’ because what you want from a completed project is that it does what it was supposed to do. I’ve been trying to tell people this for years, but I can’t get them to change it!” (Association for Project Management, 2010)

The Chaos report 2015 also refers to this widening of the concept, introducing more premises in its definition of success, which implies a change from previous versions:

“We coded the new CHAOS database with six individual attributes of success: On Time, On Budget, On Target, On Goal, Value, and Satisfaction. […] The Traditional Resolution of On Time, On Budget, and On Target clearly supports the goals of Project management, but not the customer or user of the product or project. The reason we consider this to be the best definition is that it combines the project management process and the end results of a project.” (The Standish Group International, 2015)

The breadth of the term and its different perceptions make it difficult to reach a consensus on the definition of success in projects.

The author, Kate Davis, published in 2013 a study based on a thorough review of the literature on Project Management and project success. Through this study she proved very clearly that there is no unique definition of project success.

The analysis justifies the need to examine and improve the perceived importance of success factors, The evidence was found, where, in the twenty nine articles that she analyzed, there were twenty two different definitions of ‘project success’; ten articles stated that there were issues with multiple perceived definitions of project success and seven noted ambiguity in defining success (Davis, 2013)

2.2. Evolution of success concept and the CSFs.

In the early definitions of success, a very technical and goal-oriented approach is observed. With the evolution of the concept and more experience in the field of Project Management, people and their perception of the success of projects are becoming more important.

1970s. Davis (2013), wrote that 70s success literature focused on the operational side, tools and techniques and omitted focus on communication with customers. Project managers often focused on technical aspects of a project and it is a lack of emphasis on examining communication with customers (Jugdev & Muller, 2005)

1980s. At the beginning of the 1980s, an early definition of the critical success factors appeared, when it became evident that the reasons for the success of projects needed to be rationalized.

Critical success factors (CSFs) in the context of project management were first defined by Rockart (1982) as the limited number of factors that should be satisfied to ensure successful completion of a project. These studies gained attention, because identifying CSFs helps practitioners allocate their limited resources to a manageable number of factors that contribute to project success there is lack of consensus among researchers regarding the most critical factors, and there is little consistency in their definition and use of language. (Esmaeili, Pellicer, & Molenaar, 2014)

In the literature, there appeared the first lists of critical factors, one of the earliest and most representative is that of the authors Pinto and Slevin between 1987-1989.

1990s.The concepts are already established, there is much more experience in project management and in dealing with these types of factors. Several authors propose categorized lists, bringing them together so that groups can be identified

This founds implies that success factors were being reproduced from others already found and that there was a lack of new factors, the author suggested a gap to create a more up to date list of success factors, instead of merely testing current success factors. (Davis, 2013)

21st century. In these years the Stakeholders are already big protagonists, success is seen from different perspectives and the relations between groups seem to be decisive.

We know that great project leaders deliver great projects," said Tony Meggs, Chief Executive, Infrastructure and Projects Authority (IPA). "Part of being a great project leader is being an actively engaged sponsor as it helps ensure stakeholders are aligned and the vision is communicated effectively. (PMI, Success in Disruptive Times, 2018)

3. Stakeholders and their relationship with the project.

In IPMA ICB v3, success is defined as; the appreciation of the results of project management by the parties involved. ICB v4 goes one step further, defining the equivalent competence, the project design where it is explained: During the course of any project, the relative importance of the success factors and criteria may change, depending on the contextual or social aspects and the dynamics of the project itself. Therefore, the Project Manager regularly reviews and assesses the validity and relative importance of the success criteria and, where necessary, makes corresponding changes in the approach to achieving success. (AEIPRO, 2018)

At this point in the analysis, the subjectivity of the concept of success and its immediate relationship to the perception of the parties is evident. Consequently, the people involved in a project in some way take a position of high relevance.

The success measurement is no longer seen from a simply technical and objective point of view, many other factors have come into play and what is even more important, they are changing factors and often difficult to anticipate.

There are numerous authors who have discussed Stakeholders and their relationships with projects, however, (Davis, 2013) in his study determines that, even when there is literature that suggests that stakeholders may have different perceptions of what makes the Project successful, the perception of the Project's success by different stakeholders is poor. This suggests that current theories are not being translated into practice.

Another aspect to consider is that Project Managers usually have little formal power over Stakeholders outside the organization. To be more effective, they must work and develop ongoing relationships with Project Stakeholders, and sometimes even with potential Project Stakeholders. (Bourne, 2006)

Project success is a widespread topic in PM literature even so, its definition remains elusive. Some authors argue that the success of a project needs to be divided into two separate concepts: (1) project management success, which is related to the traditional concepts of cost, schedule and quality (the well-known iron triangle); and (2) project success, which is concerned on stakeholders' satisfaction and the achievement of company strategic goals. (Hermano, López-Paredes, Martín-Cruz, & Pajares, 2013)

3.1 Definitions.

Some of the most relevant definitions of the project management methodology are those included in the manuals:

ISO 21500 defines Stakeholders as "interested persons, groups or organizations, who may affect, be affected by or perceive that they may be affected by aspects of the project." (ISO 21500: 2012)

According to the PMBOK Guide, "A stakeholder is an individual, group, or organization who may affect, be affected by or perceive itself to be affected by a decision, activity, or outcome of a project." (PMI, PMBOK GUIDE, 2017)

Stakeholders usually also have personal interests and ambitions and will try to use their influence to adjust the processes and/or results of the project to their interests. These actions may help or frustrate the project. Understanding and being able to influence and use these informal personal interests and the resulting policy is essential to ensure the success of the project. (AEIPRO, 2018)

A classic definition of the concept of "Stakeholders" is any group or individual that can affect or be affected by the achievement of the company's objectives. (Freeman, 2010)

3.2 Who are the key Stakeholder groups?

To start talking about Stakeholders we should start from the premise that it is important for the Project manager to handle the Stakeholders expectations. (Bourne, 2006)

The correct identification of Stakeholder groups, which is a key issue in project management, will help in the consecution of objectives and in the accomplishment of expectations.

This order of priorities and interests is not static and will change with the project's course, so the identification and classification of groups will be repeated as often as necessary.

“The process of identifying, prioritizing and engaging Project Stakeholders should occur at least once during each Project phase, and that Project managers should adjust their engagement and communication strategies to ensure that they understand, manage, and meet the needs and expectations of current key Stakeholders”. (Bourne, 2006 p.5)

A further relevant aspect that defines Stakeholders and what becomes crucial in project management is to evaluate the influence that these groups have on the project, and where this influence is most decisive for the right progress of the project. It is necessary to define appropriate responses that involves many elements, such the stakeholders who require more information about the Project to mitigate their opposition, and the stakeholders who perform key and relevant functions. (Bourne, 2006)

3.3 Stakeholders' relationship with the project.

In terms of relations with the parties, it is obvious that effective communication is very important. The success of the project could be directly linked to the relations between all the groups.

Appropriate vehicles of communication such Project meetings, control and monitoring, Project plans and reports, informal discussion, and formal presentations to client or other Stakeholders are very important. “Maintaining ongoing relationships in the form of active communication systems will also provide Project managers with the necessary early warning systems they need to recognize the danger signals indicating that trouble possibly exists among senior Stakeholders. (Bourne, 2006 p.3)

It is therefore essential to know the degree of involvement of these in each phase of project development and to be able to understand their needs.

3.4 The subjective perception of success.

Besides considering who the Stakeholders are and their relationship with the project, a third aspect to be considered is the subjective and different perception of each group of Stakeholders and the accomplishment of their own expectations.

Each group has a different relationship to the project, and they have different ways of measuring whether the project is successful or not. This perception is very significant, as it can have important consequences for the organization.

4. Critical success factors lists.

In the analyzed literature, there appear to be numerous proposals of CSFs lists, in different types, with the objective of extracting a synthesis list as complete as possible as a basis for this article, some of the most representative ones have been analyzed.

One of the first and most representative is that of the authors Pinto and Slevin between 1987-1989. This is a list of 10 factors, quite general and therefore applicable to different types of projects.

Fortune and White (2005) in their article suggest a list of 26 factors based on the analysis of 63 publications on success factors in the projects, their methodology is to organize them according to coincidences, from more to less appearances in the analyzed bibliography.

The three most cited factors founded in the literature review are: the importance of a project receiving support from senior management; having clear and realistic objectives; and producing an efficient plan. However, although 81% of the publications include at least one of these three factors, only 17% cite all three. (Fortune & White, 2006)

This lack of agreement indicates that there does not seem to be a consensus among researchers and authors on the factors that influence the success of projects.

The author Kate Davis proposes a list of 9 success factors that are somewhat more generic, but which allow for the creation of an amplification or the generation of groups of factors within these, so they are also interesting for the study.

A third case analyzed in the bibliography are the authors, Hermano, López-Paredes, Martín-Cruz, and Pajares (2012), who based their review on critical success factors and Project Management methodologies, seek to create a reference list for projects in the field of international development, based on the concept of Critical Success Factor defined by Project Management Book of Knowledge (PMBOK®) and International Project Management Association competence Baseline (ICB®).

“While success factors have evolved over time, the tree factors identified two decades ago still play significant roles in ensuring Project success in manufacturing sector. These tree factors are top management support, clear Project mission and competency of the Project team.” (Kuen, Zailani, & Fernado, 2009 p.025)

4.1 Critical success factor lists, in construction projects.

In the specific case of architectural and construction projects, the correct classification of factors is essential, since many Stakeholders and numerous external conditioning factors appear.

On the one hand, in construction the most common is to have several teams of professionals who must work in coordination during the different phases of the project. Each one of them will establish its own objectives, and these must be in line with those of the rest of the teams, in terms of organization, order of priorities, budgets, etc.

In construction projects the success depends a lot on the effective collaboration of multiple specialized teams, each of which will contribute with their own capacities, experience, know-how and skills for the realization of the whole project. But they will also provide their own objectives, goals and management styles, which do not necessarily have to be complementary. What can cause problems in the development of the project (Chen, Chen, Lu, & Liu, 2012)

It is normal to find a Project where each team member coming from different backgrounds might pursue different or even contradictory objectives for the same project. “For example, a contractor may consider construction speed and profitability as the most important measures

of success, while an owner may emphasize on-budget completion or quality of construction. These conflicting views of success can result in poor overall project performance if expectations are not communicated." (Esmaeili, Pellicer, & Molenaar, 2014 p.459)

On the other hand, in large construction projects many external factors appear at the same time and can be very relevant for the achievement or not of success. In the analyzed lists factors related to the project manager are considered, but they seem to ignore the external factors of the project. For example, for construction projects, weather conditions can be considered as a critical factor for completing the project on time. (Belassi & Tukel, 1996) Hence, when a classification of success factors is proposed for construction projects, it is necessary to add the category concerning factors external to the project.

"Knowing the constraints will eliminate predicted work which can bring about greater risks to the company´s success. Knowing critical success factors in the operation of the business can strengthen management strategy" (Gudiene, Banaitis, Banaitiene, & Lopes, 2013 p.393)

5. CSF classification for construction projects.

About the classification of factors, (Turner & Muller, 2005) explained that CSFs can be organized in 2 groups; In one hand the factors directly linked to successful Project management and in the other hand factors leading to successful projects. Under successful Project management, they identified six factors that help to achieve the Project schedule, and two more which help ensure it is completed withing Budget. They identified four more that help ensure the Project success in the general concept.

One of the main advantages of grouping the factors in this fashion is that although it might be difficult to identify the success factors specific to certain industries or organizations, it might be easier to identify whether the success or failure is related to the project manager and/or to the project and/or to external factors. (Belassi & Tukel, 1996)

When organizing by categories, it is possible to obtain a very detailed list, which covers the whole spectrum of factors influencing the success of construction projects. The model suggested by the authors consists of 7 groups of critical success factors; it is also relevant that the variables within each group are interrelated. Because it is also proved that a variable in one group can influence a variable in the others. (Gudiene, Banaitis, Banaitiene, & Lopes, 2013)

In summary, the correct identification of Stakeholders, as explained above, is fundamental, and even more so in construction projects where numerous teams with different tasks and objectives are involved and it is important that they work coordinated with each other.

6. Analysis outcomes.

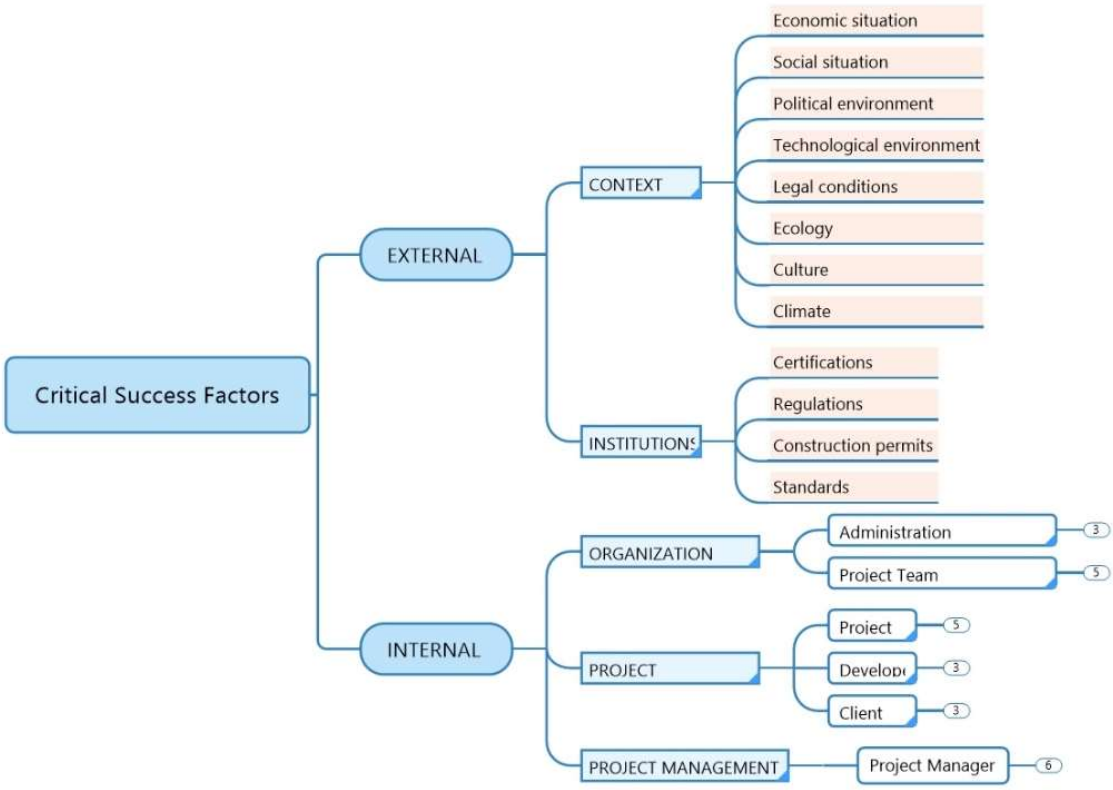
The purpose of these first results is to create a clear structure of critical success factors that, if used at the end of the project, can help to shape the learned lessons, and if managed from the earliest project stages, can provide an action guide to the project managers in order to identify crucial aspects for the project success. Preliminary study on Critical Success Factors (CSFs) and the relationship between various attributes are essentially needed in identifying the project success. The important critical success factors will have direct impact on a construction project. (Ramlee et al. 2016)

6.1. Project taxonomy

As a result of this study, it is proposed to organize the critical success factors, in three levels of detail, firstly internal and external CSFs. External factors are those impacting business which is beyond the control of a company´s management. (Gudiene, Banaitis, Banaitiene, & Lopes, 2013) These factors are crucial for the successful development of the project but do not depend directly on the company's performance. Internal factors are those within the control of an organization´s management. Such factors reflect the organization´s status and performance capability on a project. (Gudiene, Banaitis, Banaitiene, & Lopes, 2013)

At a second level of detail, each group of factors is classified by their influences; with regard to the external factors, the institutional ones; they depend mainly on the country or countries in which the Project is carried out and all the regulations, laws and other requirements that the Project must fulfil, they are fundamental for the success of the Project. And on the other hand, there are the context factors, including all those factors that depend on the project context: economic, political, social, cultural, ecological, and technological.

Figure 1: Suggested classification of critical success factors. With external CSFs list.



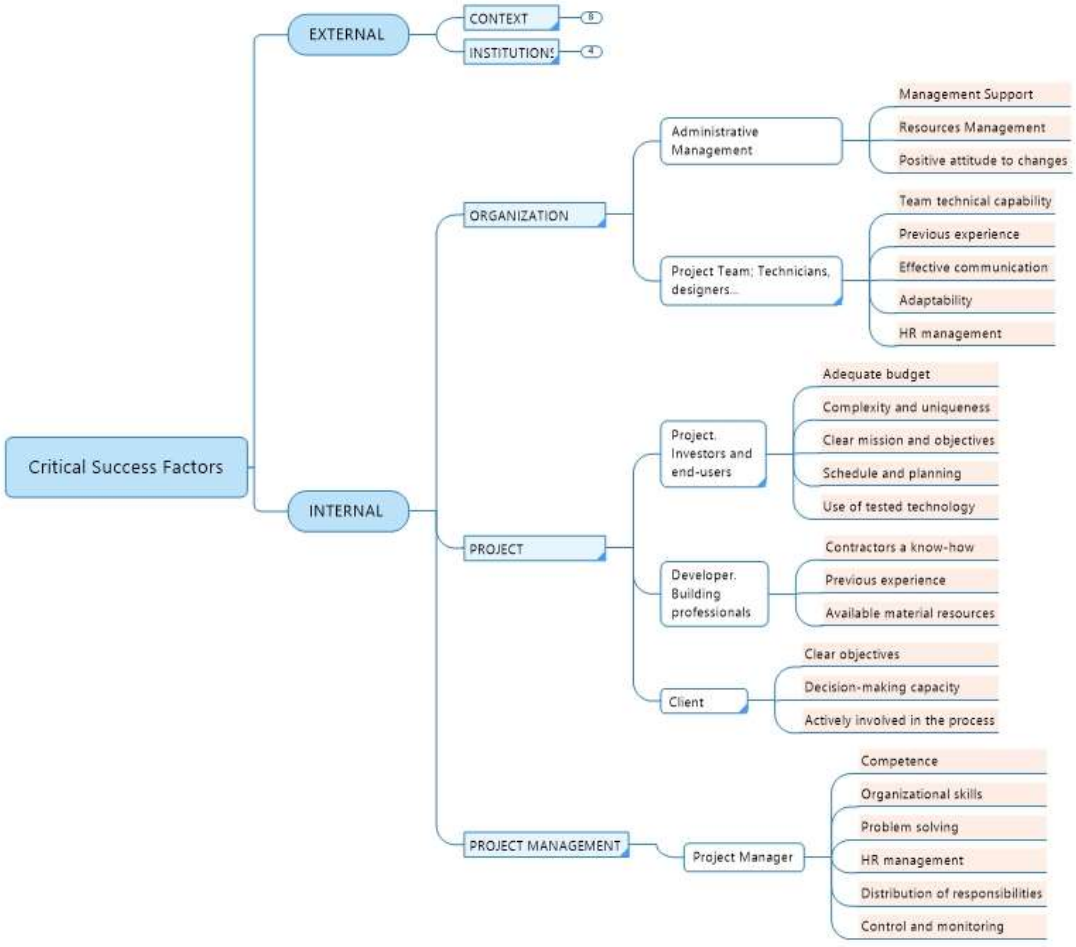
Note: Primary classification of CSFs with the list of external factors. Made by the authors.

Following this second level of classification, the internal CSFs are organized in 3 groups, those influenced by the organization in charge of the Project Development, those influenced by the characteristics of the Project itself and a third group with the factors related to the management by Project Manager.

Organization. Factors related to the operation and implication with the project, distribution of available resources, etc. They are essential for decision making, with great relevance in the initial stages of the project. Project. They define the project's main characteristics. They are determined at the beginning of the project and can accept certain modifications during the process. Project Management. They include all aspects of Project Management, from the project management team to the used methodology.

The third level of classification proposed in the taxonomy of CSFs is the one that attends to the principal groups of influential Stakeholders. For its compilation, we have sought out the main groups of stakeholders in architectural projects, although this is a proposal since the diversity of the projects makes it impossible to find a list that contains all of them.

Figure 2: Classification of critical success factors. With internal CSFs list.



Note: Primary classification of CSFs with developed list of internal factors. Made by the authors.

6.2. Synthesis list of 25 key success factors.

As a suggested summary list, there are 25 CSFs from the category of internal factors to the organization, that can be managed by Project Managers to improve project performance. The choice of this group, internal factors, is based upon the control that can be applied to them in order to obtain satisfactory results for all parties involved, although knowledge of the other factors outside the organization cannot be ignored, as they are very relevant.

Table 1: Suggested critical success factors list.

INTERNAL CSFs	CLASIFICATION	STAKEHOLDERS	CSFs LIST
ORGANIZATION	Management	Administrative management	Management Support
			Resources Management
			Positive attitude to changes
	Project Team	Team of technicians and experts who design the project	Team technical capability
			Previous experience
			Effective communication
			Adaptability
			HR Management
PROJECT	Project	Project developer	Adequate budget
			Complexity and uniqueness
			Clear misssion and objectives
			Schedule and planning
			Use of tested technology
	Developer	Professional team in charge of the realization of the project.	Contractors know-how
			Previous experience
			Available material resources
	Client	Customer and end users	Clear objectives
			Decision making capacity
			Actively involved in the process
MANAGEMENT	Project Manager	Project Manager Team	Competence
			Organizational skills
			Problem solving
			HR management
			Distribution of responsibilities
			Control and monitoring

Management Support (Pinto & Slevin, 1989), Resources Management (Fortune & White, 2006), Positive attitude to changes (Fortune & White, 2006), Team technical capability (Fortune & White, 2006), Previous experience (Gudiene, Banaitis, Banaitiene, & Lopes, 2013), Effective communication (Pinto & Slevin, 1989), Adaptability, HR Management, Adequate budget (Davis, 2013), Complexity and uniqueness, Clear mission and objectives(Pinto & Slevin, 1989), Schedule and planning (Pinto & Slevin 1989), Use of tested technology (Fortune & White, 2006), Contractors know-how (Fortune & White, 2006), Previous experience (Fortune & White, 2006), Available material resources, Clear objectives (Gudiene, Banaitis, Banaitiene, & Lopes, 2013), Decision making capacity (Gudiene, Banaitis, Banaitiene, & Lopes, 2013), Actively involved in the process (Fortune & White, 2006), Competence (Davis, 2013), Organizational skills (Gudiene, Banaitis, Banaitiene, & Lopes, 2013), Problem solving(Pinto & Slevin, 1989), HR management, Distribution of responsibilities (Gudiene, Banaitis, Banaitiene, & Lopes, 2013), Control and monitoring(Pinto & Slevin, 1989)

7. Conclusions.

Project management is a wide field, with innumerable variables to consider, the correct use of different tools, resources and methodologies by the Project Managers seems evident. However, there is still a long way to go, in terms of the interrelationship of some aspects over others, in this case we have tried to relate the success of the projects, with the people who perceive it.

As if it were a project breakdown structure, this proposal is intended, firstly, to break down the wide concept of project success, secondly, to divide it into smaller parts, which are the CSFs, and finally, and in order to be more accurate, to relate them with the different groups of Stakeholders. Consequently, by applying them either at the beginning of the projects or as a checklist throughout the development of it, they can be very helpful for the Project Managers when it comes to achieving their goals.

8. References

AEIPRO. (2018). ICB v4. Bases para la Competencia Individual. In A. A. Proyectos, *ICB v4. Bases para la Competencia Individual* (pp. 103, 175). Valencia: AEIPRO.

Association for Project Management. (2010). In M. Barnes, *A History of the Association for project management 1972-2010.*

Belassi, W., & Tukel, O. I. (1996). A new framework for determining critical success/failure factors in projects. *International Journal of Project Management, 14/3*, 141-151.

Bony, J. D. (2010). Project management and national culture: A Dutch-French case study. *International Journal of Project Management, 28*, 173-182.

Bourne, L. (2006). Project Relationships and the Stakeholders circle. *PMI Research Conference 2006* (pp. 1-17). Centre Mont-Royal, Montreal, Canada: Mosaic.

Chen, W. T., Chen, T.-T., Lu, C., & Liu, S.-S. (2012). Analyzing relationships among success variables of construction partnering using structural equation modeling: A case study of Taiwan's Construction Industry. *Journal of civil engineering and management, 18(6)*.

Davis, K. (2013). Different stakeholder groups and theis perceptions of project success. *International Journal of Project Management, 32*, 189-201.

Esmaeili, B., Pellicer, E., & Molenaar, K. R. (2014). Critical success factors for construction projects. *18th International Congres on Project Management and Engineering*, (pp. 458-468). Alcañiz.

Fortune, J., & White, D. (2006). Framing of project critical success factors by a systems model. *International journal of project management (24)*, 53-65.

Freeman, R. (2010). Strategic Management; a Stakeholder approach. In R. Freeman, *Strategic Management; a Stakeholder approach.* New York: Cambridge University Press.

Gudiene, N., Banaitis, A., Banaitiene, N., & Lopes, J. (2013). Developement os a Conceptual Criticaal Success Factors Model for Construction projects: a Case of Lithuania. *Procedia Engineering. MBMST 2013*, 392-397.

Hermano, V., López-Paredes, A., Martín-Cruz, N., & Pajares, J. (2013). How to manage internationaldevelopement (ID) project successfully. Is the PMD Pro 1 Guide going in the right direction? *International Journal of Project Management, 31*, 22-30.

Jugdev, K., & Muller, R. (2005). A retrospective look at our evolving understanding of project success. *Project management Journal, 36.4*, 19-31.

Kuen, C. W., Zailani, S., & Fernado, Y. (2009). critical factors influencing the project success amongst manufacturing companies in Malaysia. *African Journal of Business Management Vol.3 (1)*, 016-027.

Lutaaya, S. (2019). *Project Success, and critical sucess factors.* Kampala, Uganda: Makerere University.

Phelan, T. M. (2005). The impact of Effectiveness and Efficiency on Project Success. *A Unifying Discipline for Melting the Boundaries Technology Management:, Portland, OR, USA,*, 381-391.

PMI. (2017). *PMBOK GUIDE.* Pennsylvania: Project Management Institute, Inc.

PMI. (2018). *Success in Disruptive Times.* Philadelphia: PMIs Pulse of the profession. 10th Global Project Management Survey.

Ramlee, N. et al. (2016). Critical success factors for construction project. *INTERNATIONAL CONFERENCE ON ADVANCED SCIENCE, ENGINEERING AND TECHNOLOGY (ICASET)*, 030011

Sexton, P., Foley, E., & Wagner, R. (2019). *The future os project management: Global Outlook 2019 (Sumary Report).* Australia: KPMG, AIPM and IPMA.

The Standish Group International, I. (2015). *Chaos report .*

Turner, R. J., & Muller, R. (2005). The project manager´s leadership style as a succes factor on projects: A literature review. *Project Management Journal*, 49-61.

Communication aligned with the Sustainable Development Objectives