

IDENTIFICATION AND ANALYSIS OF CAUSES FOR PROJECT FAILURE AND FACTORS FOR PROJECT SUCCESS IN THE ASTURIAN CASE

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Abstract

The proposed paper will analyze the causes for project failure and factors for project success based on a study being currently developed among the agents involved in project management within the Asturian field. A survey will be developed and distributed among companies and Governing Bodies of the Principality of Asturias being involved in Project Management. This survey will not only be addressed to Project Managers, but also to stakeholders - clients, contractors and engineering companies being included. This study will manage to identify differences in perception about the success or failure of different projects in different sectors, which range from private to Civil Service.

Keywords: *success factors, failure causes, project management, risk management*

Resumen

La comunicación presenta un análisis de las causas de fracaso y factores de éxito de los proyectos basándose en un estudio que se está llevando a cabo entre los agentes involucrados en la realización de proyectos dentro del entorno asturiano. Para ello se elaboró una encuesta que fue distribuida entre empresas y organismos públicos del Principado de Asturias involucrados en la realización de proyectos. La encuesta no va dirigida solamente a los directores de proyectos, sino a stakeholders en general, específicamente clientes, contratistas y empresas de ingeniería. El estudio identifica diferencias de percepción sobre el éxito o fracaso de los proyectos de diversos agentes y en diferentes sectores, tanto privados como de la AAPP.

Palabras clave: *factores de éxito, causas de fracaso, gestión de proyectos, gestión de riesgos*

1. Introduction

Success and failure are difficult to define and measure, since they mean different things to different people (Thomas & Fernández, 2008). But instead of trying to find a commonly agreed definition and metrics of projects success and failure, this paper aims to show personal perceptions of people involved in Project Management activities. It reports on the results of a conducted survey intended to capture Customers, Project Team Members and

Project Managers' experiences to determine the most frequent and important 'real world' causes and factors for a project to be successful or not within a precise geographical environment, a northern Spanish region.

2. Research methodology

Three types of questionnaires were designed to harvest the receivers' perceptions about failure causes and success factors, having into account 3 different profiles: Project Managers, Project Team Members and Customers/ Final Users. Each type of questionnaire is comprised of 4 parts, asking for:

- General information about what kind of projects have the receivers undertaken, with multiple choice, yes/no and open questions.
- Grade of fulfillment of Project targets regarding cost, time and quality requirements, having into account the receivers' experience, with 7 yes/no questions for each category.
- Rate frequency for different Project failure causes, with multiple choice questions
- Grade of importance of different Project success factors. Respondents must rate each one using a scale from 1 (not important) to 4 (basic) for a Project to be successful

Questions concerning the first 2 parts of the questionnaire are common for each receiver, but Project failure causes and Project success factors are slightly different depending on the receiver's profile. To avoid confidentiality issues and to achieve the higher accuracy in the answers, the questionnaires are anonymous.

A survey has been conducted with the questionnaire being sent until now to 45 people working in Asturias and involved in Project Management activities in both the public and private sector belonging to any of the 3 profiles. 30 responses (66,67%) were received so far, from which a 16,67% identified themselves as Customers/Final Users, a 26,67% as Project Managers, and a 56,67% as Project Team Members. Please note that some of the respondents have taken part in several projects belonging to different project types.

3. Analysis of data and results

3.1 Projects Customer/Final User type

The answers received show that a 67,57% of respondents have been involved with projects in the public sector (25,00% for the European Union, 29,17% for the National Public Administration, 37,50 for the Regional Public Administration and 8,33% for the Local Public Administration), whereas those working for the private sector comprised a 32,43% (20,69% for SMEs, in Spain, those companies with less than 250 employees, and 79,31% for big companies).

Concerning geographical environment, a 13,64% of the respondents have been involved in local projects, a 25,00% in regional projects, a 22,73% in national projects and the rest, 38,64%, in European projects.

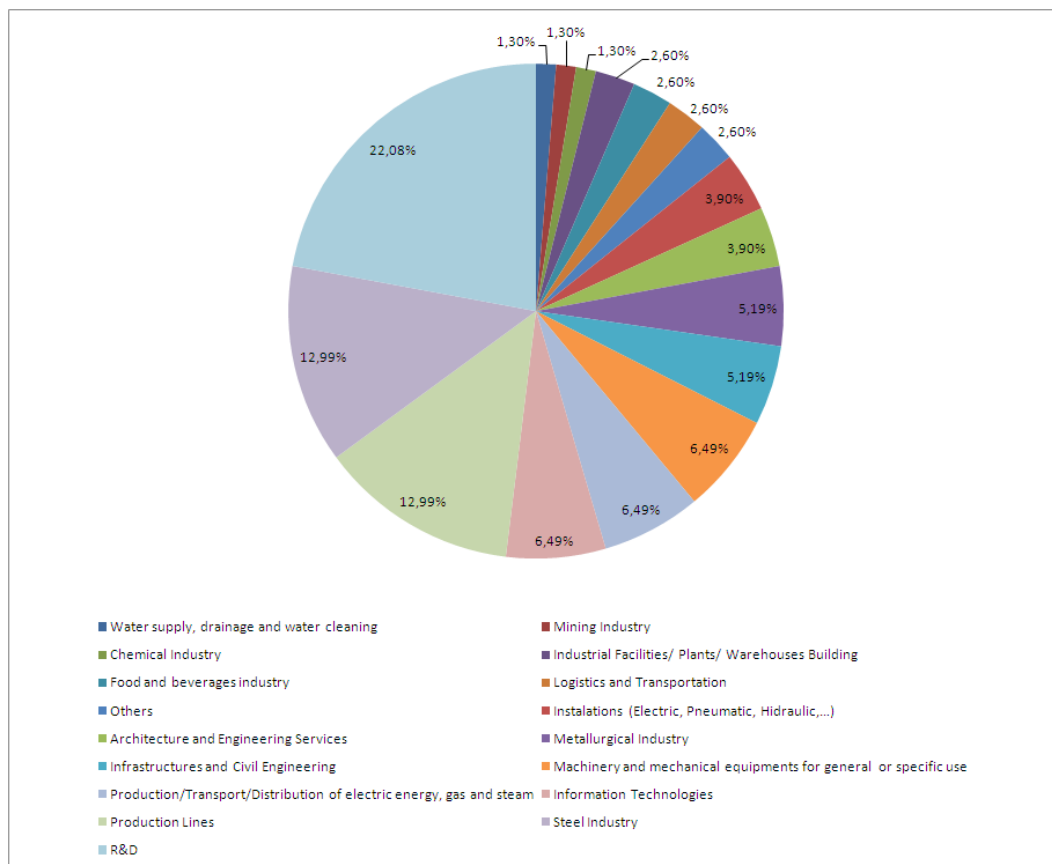
3.2 Percentage of working time devoted to Project activities during last 12 months

Customers/ Final Users have devoted a 34% of effective time to Project activities, Project Team Members a 67,76% and Project Managers a 61, 25%

3.3 Project types

According to the responses received, projects undertaken by respondents were classified into 17 different categories. (Water supply, drainage and water cleaning, Mining Industry, Chemical Industry, Industrial Facilities/ Plants/ Warehouses Building, Food and beverages Industry, Logistics and Transportation, Installations (Electric, Pneumatic, Hydraulic,...), Architecture and Engineering Services, Metallurgical Industry, Infrastructures and Civil Engineering, Machinery and mechanical equipments for general or specific use, Production/Transport/Distribution of electric energy, gas and steam, Information Technologies, Production Lines, Steel Industry, R&D and Others). It is remarkable that the highest percentage by far corresponds to R&D projects, as Figure 1 shows.

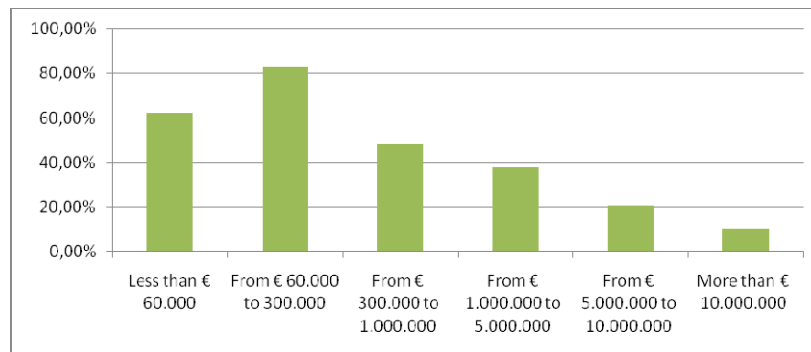
Figure 1: Project Types



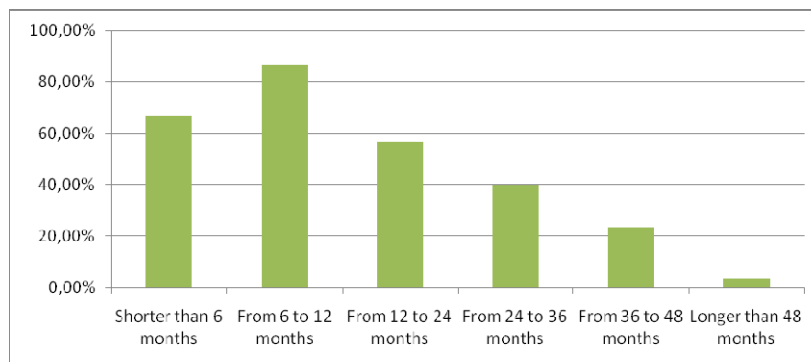
3.4 Project complexity

In order to classify the projects in which the respondents were involved, several yes/no questions were posed, concerning the following subjects:

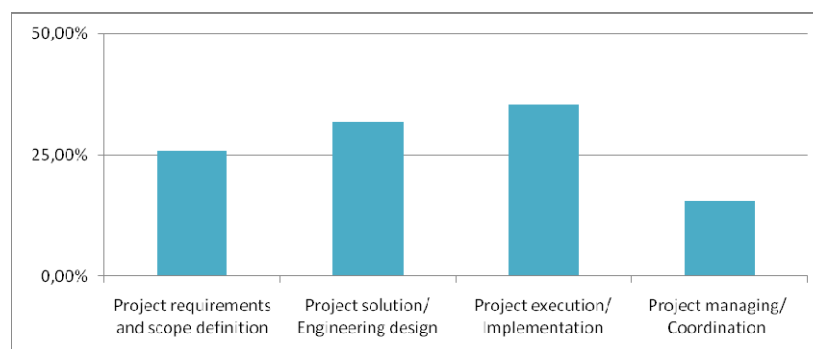
- **Technical Complexity.** A 53,33% of the respondents have taken part in low technical complexity projects, an 86,67% in medium technical complexity projects and an 80,00% in high technical complexity projects.
- **Budget range,** divided into 6 categories. As Figure 2 shows, most of the respondents have been involved in projects with a budget from .€ 60.000 to 300.000 (82,76%) or less than € 60.000 (62,07%). Only 3 respondents (10,34%) have taken part in more than € 10.000.000 projects.

Figure 2: Projects budget range

- Time duration, divided into 6 categories. There are some similarities to budget range, since most of the respondents were involved in projects of short duration (66,67% in projects shorter than 6 months, and 86,67% in projects from 6 to 12 months). Only one respondent was involved in a project longer than 48 months (Figure 3)

Figure 3: Projects time duration

- Outsourcing. Respondents were asked if outsourcing was or not allowed in their projects. A 73,33% have responded yes, from which a 66,67% were involved in projects with just one contractor, and a 60,00% with several contractors.
- Project parts externally and internally developed. Four different Project activities were established. Respondents were involved in projects in which Project requirements and scope definition were externally developed in a 25,86%, Project solution/ Engineering design in a 31,90%, Project execution/ Implementation in a 35,34% and Project managing/ Coordination in a 15,52% (Figure 4).

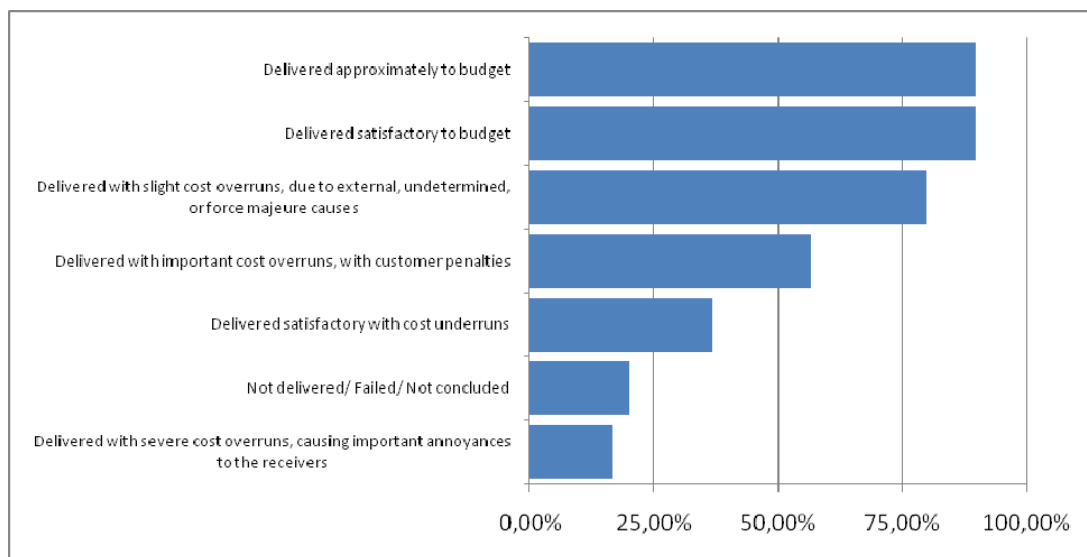
Figure 4: Project parts externally developed

3.5 Grade of fulfillment of Project targets regarding Cost, Time and Quality

For each one of the 3 dimensions of the Project triangle (Cost, Time and Quality), 7 different categories of projects were established. Respondents were asked to classify the projects in which they were involved within those categories (yes/no answer). A final question asking if they considered that initial Cost, Time and Quality estimations are usually fulfilled was also posed.

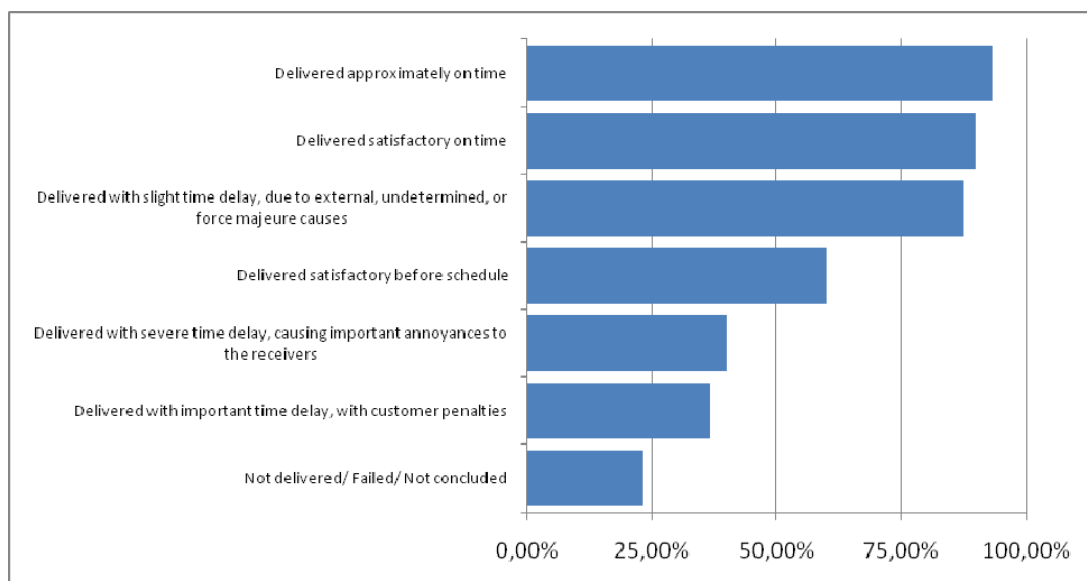
1. Concerning Cost, respondents have undertaken projects with the results showed in Figure 5.

Figure 5: Projects evaluation (concerning Cost)



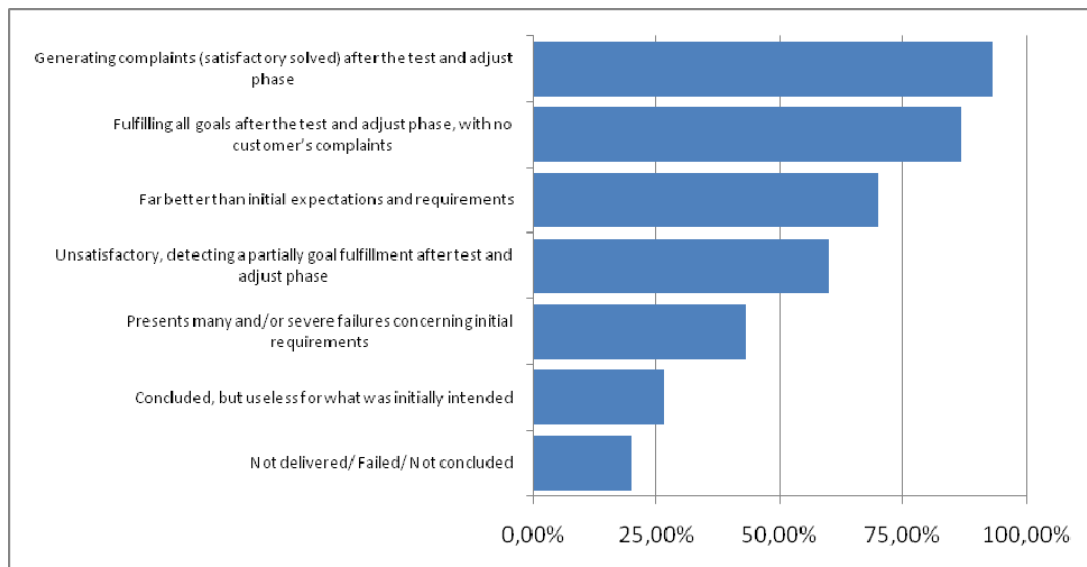
2. Concerning Time, respondents have undertaken projects with the results showed in Figure 6.

Figure 6: Projects evaluation (concerning Time)



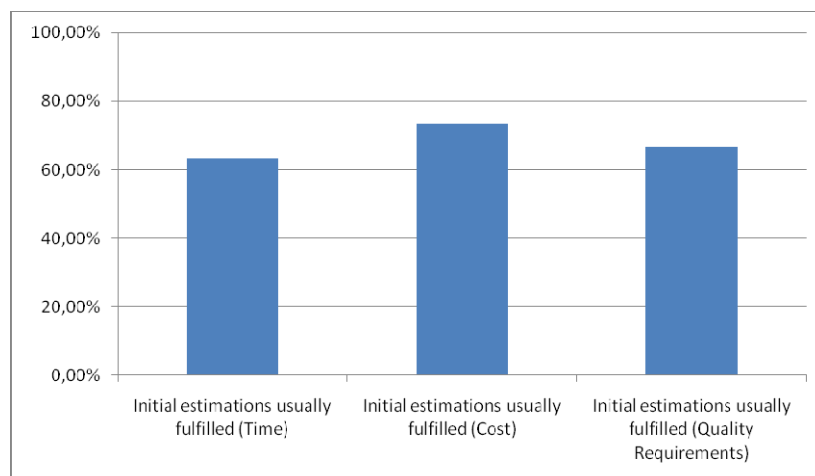
3. Concerning Quality requirements, respondents have undertaken projects with the results showed in Figure 7.

Figure 7: Projects evaluation (concerning Quality requirements)



4. The results for the final question for this part of the questionnaire are showed in Figure 8.

Figure 8: Projects general evaluation (Time, Cost and Quality requirements)



3.6 Probability of occurrence (%) of project failure causes

Depending on the respondents' profile, different failure causes were proposed. The complete list is as follows.

- Competitors (Project Team Members and Project Managers)
- Continuous or dramatic changes to initial requirements
- Customer's requirements inaccurate, incomplete or not defined (Project Team Members and Project Managers)
- Disagreements or conflicts of interest among different departments

- Inaccurate cost estimations
- Inaccurate time estimations
- Inadequate management of suppliers and procurement
- Lack of Management support (Project Team Members and Project Managers)
- Lack of previous identification of relevant rules and legislation
- Not or badly defined specifications at the time the Project Team starts to work (Customers/ Final Users)
- Political, social, economic or legal changes
- Project Manager's lack of commitment (Project Team Members and Customers/ Final Users)
- Project Manager's lack of communication skills (Project Team Members and Customers/ Final Users)
- Project Manager's lack of competence (Project Team Members and Customers/ Final Users)
- Project Manager's lack of vision (Project Team Members and Customers/ Final Users)
- Project requirements inadequately documented (Project Team Members and Project Managers)
- Project staff changes
- Project Team's lack of competence (Project Team Members and Customers/ Final Users)
- Project Team's misunderstandings related to Customer/User's wishes or needs (Customers/ Final Users)
- Projects Team's lack of commitment (Project Team Members and Customers/ Final Users)
- Public opinion opposition to project
- Quality checks not or badly performed
- Too much complex or new technology
- Unexpected events with no effective response possible
- Unrealistic customer's expectations (Project Team Members and Project Managers)
- Wrong number of people assigned to the project

Results are shown in Figures 17, 18, and 19

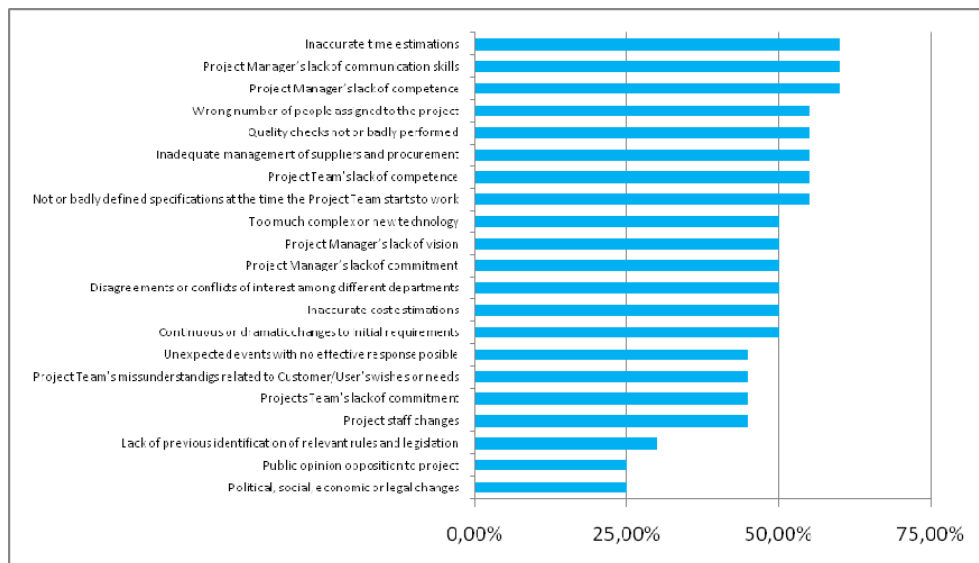
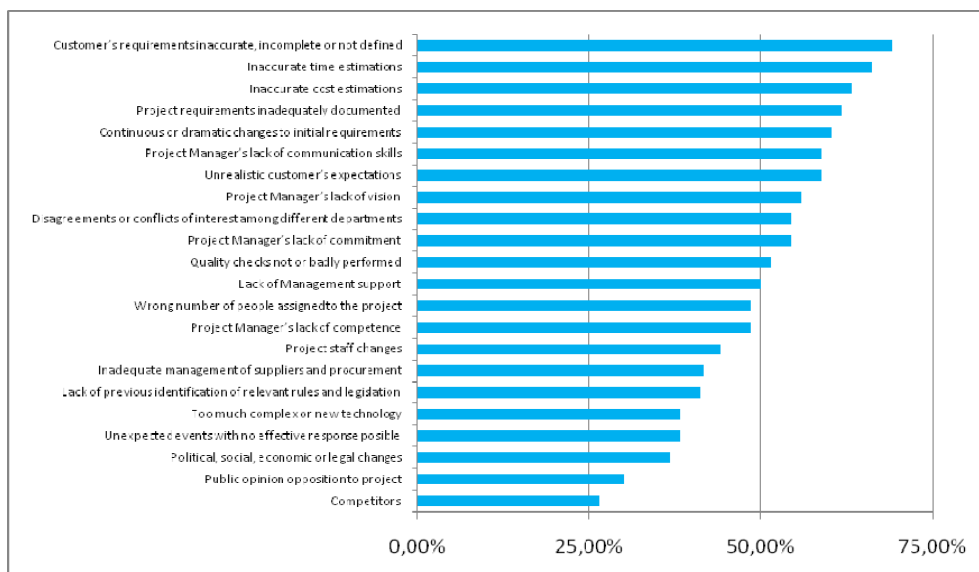
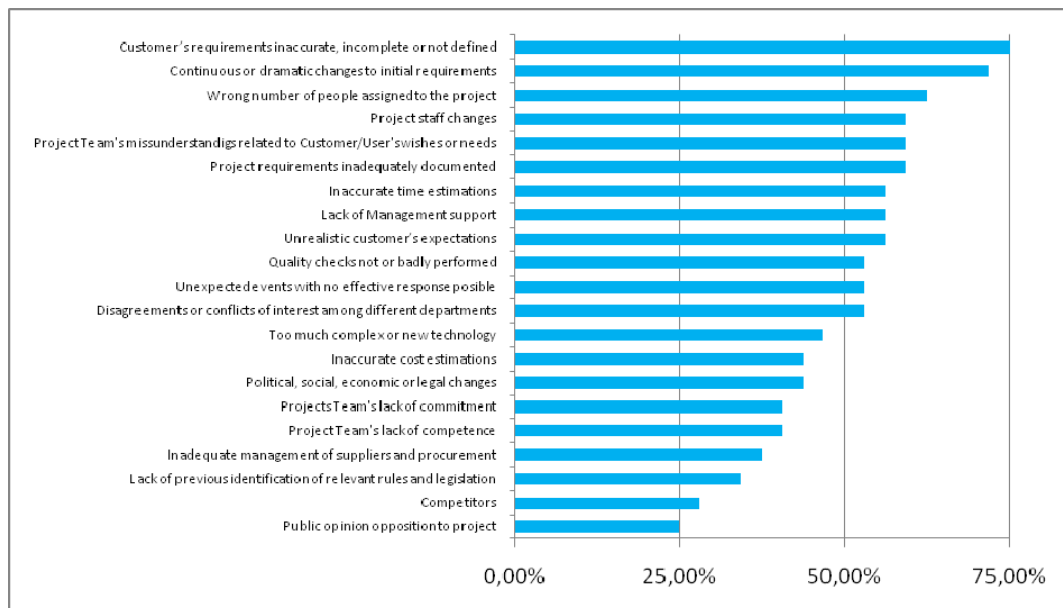
Figure 17: Probability of occurrence of project failure causes (Customers/Final Users)**Figure 18: Probability of occurrence of project failure causes (Project Team Members)**

Figure 19: Probability of occurrence of project failure causes (Project Managers)

3.7 Project success factors evaluation

The same list of success factors for the 3 respondents' profiles was included in the questionnaire, except for one, as follows.

- Adequate project and phases' planning
- Change acceptance
- Clear vision and goals
- Clear, complete and correct specification of project's requirements
- Control of schedule compliance
- Customer/ Final User continuous involvement (not posed to Customer/Final User's profile)
- Elaboration of contingency plans, to forecast potential risks and scenarios
- Frequent and fluent communication among all stakeholders
- Management support to the project and its goals
- Minimal bureaucracy
- Performing of quality checks in all project phases
- Project Manager's commitment
- Project Manager's competence
- Project Team's commitment
- Project Team's competence
- Project's financing guaranteed

- Realistic and reachable goals and expectations
- Realistic cost and time estimations
- Suitable number of people assigned to the project

Figures 20, 21 and 22 show the results.

Figure 20: Project success factors evaluation (Customers/Final Users)

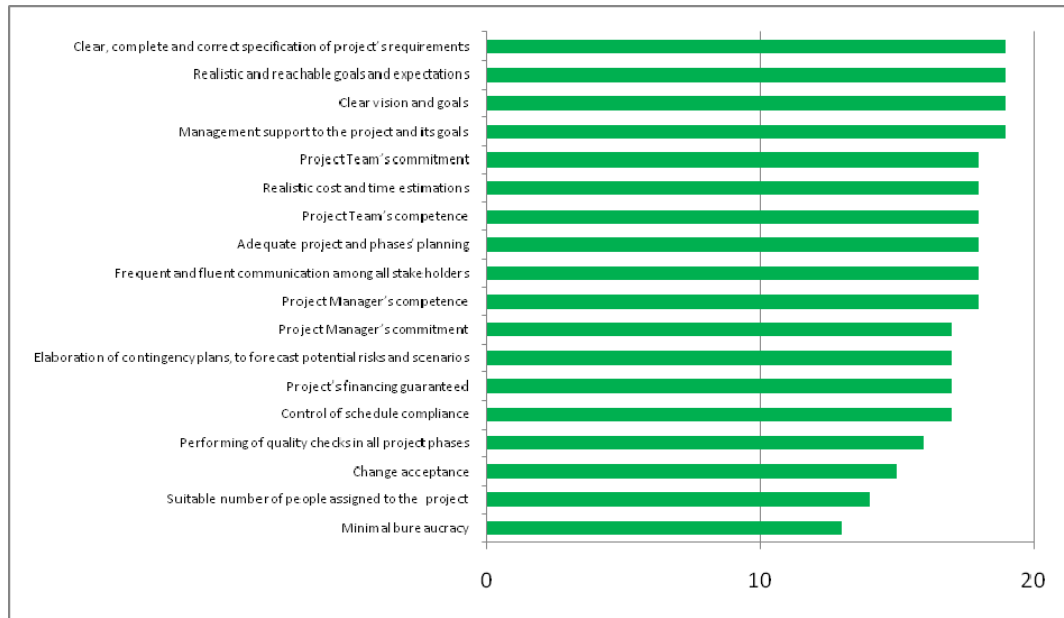


Figure 21: Project success factors evaluation (Project Team Members)

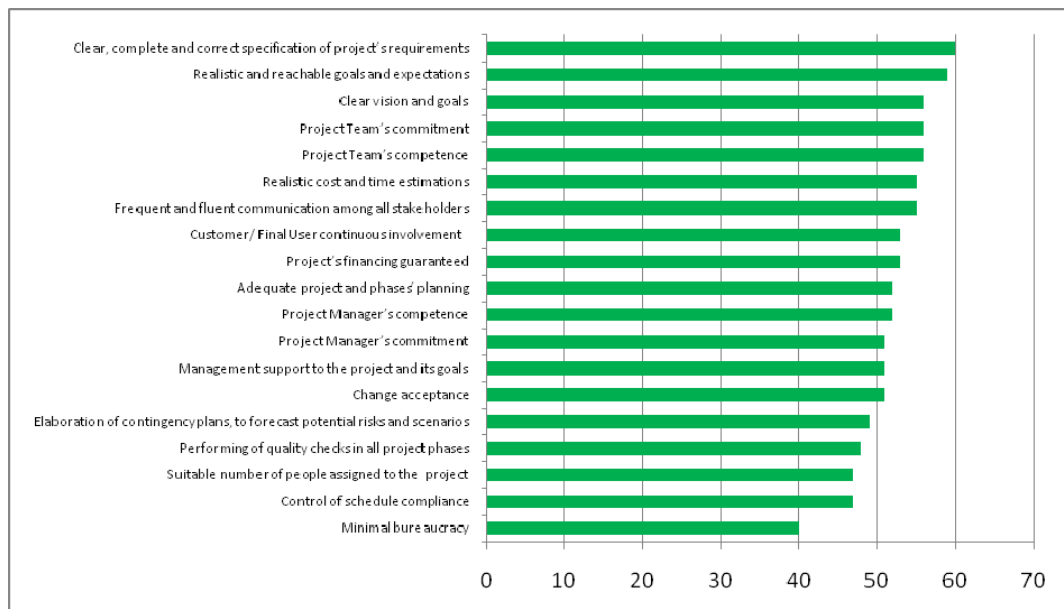
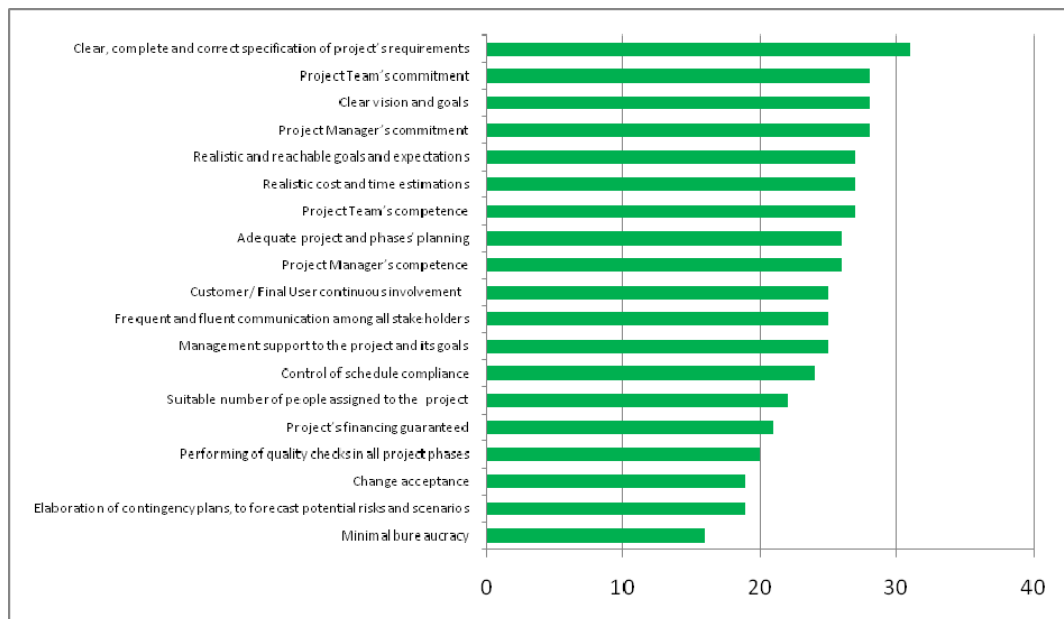


Figure 22: Project success factors evaluation (Project Managers)

4. Conclusions

Having into account the responses received, conclusions can be classified into 3 different categories.

- Grade of fulfillment of Project targets regarding Cost, Time, and Quality. According to the results, most of the projects undertaken by the respondents are on time, on budget and to specifications. According to their experience, respondents consider that the most problematic target to reach is to end the project on time (initially estimations usually fulfilled in a 63,33%). At the same time, cost estimations are usually met in a 73,33% and quality requirements in a 66,67%.
- Probability of occurrence of Project failure causes. The results show that several project failure causes are common for 2 or the 3 respondents' profiles. For example, inaccurate time estimations and quality checks not or badly performed are two project failure causes the respondents consider frequent (probability of occurrence higher than 50%) in any of the profiles (Customer/Final User, Project Team Member and Project Manager). Project Manager's lack of communications skills is a frequent failure cause for Customers and Project Team Members, and wrong number of people assigned to the project is usually confronted by Customers and Project Managers. Customers' requirements inaccurate, incomplete or not defined, continuous or dramatic changes to initial requirements, project requirements inadequately documented, unrealistic customer's expectations and disagreements or conflicts of interest among different departments are frequent failure causes for Project Team Members and Project Managers. On the opposite, public opinion opposed to project is the most unusual cause of Project failure.
- Project success factors evaluation. It is remarkable that clear, complete and correct specification of project's requirements is the most valued success factor for Customers/Final Users, Project Team Members and Project Managers. In the same way, 7 of the 10 most valued success factors are common for the 3 profiles. The other 6 are realistic and reachable goals and expectations, clear vision and goals, Project Team's commitment, realistic cost and time estimations, Project Team's

competence and adequate project and phases' planning. Customer/ Final User continuous involvement is highly evaluated by Project Team Members and Project Managers. On the other side, minimal bureaucracy is the less important success factor for the 3 profiles.

The survey is not closed yet, therefore these results may vary. Once completed, it is intended to carry out a similar study in a wider geographical environment, including several Spanish regions, in order to compare the results and extract general conclusions applicable to any project's typology.

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