

ABSTRACT

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Nowadays the big companies, specially the ones competing on the international level, aim at getting the ISO 9001. On the contrary, for small and medium-sized companies the set up and implementation of ISO 9001 seems to require a big effort which customers are not demanding. Therefore, the only way of quality control is the desing checking with or without established processes, being the most common one the application without process.

In general terms, worldwide experience in construction demonstrates that 40% of the problems are due to the project, because of either wrong decisions or omissions. So actions to improve the quality of the projects and, finally, the quality of the works, become necessary.

In this sense, it is necessary to develop a new system to evaluate the quality of the projects, following a process for all kind of civil engineering projects, to check the design with the highest guarantees. To show the practical employment of this system, road projects are used as an example.

The origin of the used methodology is the Delphi Method, normally used for multicriteria analysis of alternatives to the projects in the projects quality assessment. In fact, this study is the first one introducing and developing this system.

This method allows the assessment system to be: open, clear, simple, exact, reliable and objective. So this system achieves results which are difficult not to agree with and with the highest guarantees.

The methodology used to develop the system of projects assessment is established after analysing the elements which participate in its application.

Therefore, on the basis of the pattern which makes possible the system's implementation, the following elements must be defined:

- A list of parameters which are indicators of the quality of road projects.
The parameters that compose the list of this study are included in: "Document nº 1 Memoria i Annexes"; "Document nº 2 Plànols"; and aspects relative to the presentation. Other contents have been excluded by tutor's decision.
- The specific weight of the quality parameters is given by a numeric value which represents the more or less importance of one parameter in comparison with the other ones of the list.

This means that for obtaining the specific weight of each parameter the following tasks must be fulfilled:

- Preparation and making surveys to experts.
To get that aim a survey is made to eight experts who have a wide experience on road works and who participate in different laboral environments within that area, such as: public administration – engineering – construction.
- Analysis and treatment of the survey data to get the specific weights in the most objective way.

So, after compiling the survey data, the statistic functions that allow to summarize the data objectively and the ones that permit to measure the guarantee of the calculated specific weights are searched. Finally the selected functions are applied to the data and the results are analysed.

Therefore, the Arithmetic Average is proposed for calculating the specific weight and the Average Deviation to measure its guarantee; and a process for obtaining the specific weights is defined. As a conclusion, for analysing the data a pattern which is valid for future studies has been established.

Finally, after having accomplished all the development tasks of this quality assessment system, the pattern which allows its application to any real case of road construction project is obtained.