



## Cost of not security in civil engineering construction

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### **ABSTRACT**

The present minor thesis tries to establish an evaluation method for prevention and security at civil engineering assuming as basis the fulfilment of the different normatives, which exist in this subject.

To begin with all the elements that affect at construction are defined being aware of the great number of tasks that construction offers. Taking into account the different normatives actually proceeding, the requirements of the different agents that construction includes are established.

It is also included an statistic study of the laboral accidents in Spain where the lacks and restrictions of this sector in front of the rest of the economical activities are seen clearly, including the different proposal made to improve the prevention in this area.

Another important point of view is the evaluation of costs since is one of the basic variables in the final review of the results. The costs will be removed according to direct and indirect costs where the first ones will be defined by means of estimations which will be more or less closed to real costs. This initial estimation will be then the starting point in order to set up the total costs per accident. In this section a big emphasis has been made on the division between private and public costs that an accident to a standard worker could happen. This division of costs will help to appreciate the real cost for the private area, which is at last the one who must look after the main solutions in order to improve prevention.

The development of an evaluation method for prevention has attempted to get close to the multicriterial analysis method where the different factors that can affect prevention are discussed and a weight is applied according to the importance given. There has been two priorities in order to establish the weight of each factor, at first those prevention activities which really introduce an improvement on safety either if they are or not included in the different normatives. At second place, we've valued the fact of demonstrating a clear conscience of prevention above the strictly forced limits. This method allows also the personal qualification of all the factors analysed by giving an evaluation between 0 and 5.

Subsequently, an analysis of the results has been carried out in order to see the relation between the different accidental coefficients and the security qualification given by the evaluation method. We've attempted to make a global study of all the samples and later divide them into the different types of construction living out of study, when necessary, the singular samples which are radically different from the rest, as will be seen. Afterwards, the results analysis has studied the ratio between the approximate costs and the security qualification given by the method. One more time, costs have been separated between private and public costs looking after a clear conclusion at this respect.

Finally, the conclusions show which are the main advances made by this minor thesis and the different answers or solutions are proposed in order to improve prevention at construction sector.