

## **TITLE OF DIPLOMA THESIS**

The application of Blockchain for the prevention and the avoidance of time and costs overruns in the construction projects in the procurement phase

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## **ABSTRACT**

In the construction industry, projects often experience failures that lead to contract cost overruns and schedule delays. These deviations from the contract mainly occur due to the ever-increasing complexity of the projects. To minimize the occurrence of these failures it is important to study new ways of predicting and dealing with them. This research aims to study emerging technologies and their integration in construction projects. More specifically, the application of Blockchain technology and smart contracts to predict and deal with exceedances from the contract stage was explored. To draw better conclusions the research was carried out in two stages. The first stage focused on the literature that does not include the term "Blockchain" and the second on the literature that does include it. Through the VOSviewer software, a bibliometric analysis of the existing literature was carried out and the bibliometric maps were created. The critical analysis of the international research, through the utilization of the elements of the bibliometric maps, led to the extraction of important conclusions. The most common causes of overruns in construction projects were spotted, ways to deal with and predict them were proposed and the benefits of adopting Blockchain technology were identified.

## **KEYWORDS**

Construction industry, contract, time overrun, cost overrun, Blockchain