



Important Parameters for Increased Productivity in Bridge Design and Production

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Abstract

There is great potential for increased productivity in the production of bridges in terms of optimizing material use, time and cost for design and production. Hence, the environmental impact and cost can be optimized. To find out how standardisation of parts of bridges and which parameters are of most importance for increased productivity in the production of bridges, a quantitative study was performed on the Swedish bridge construction industry. The questionnaire received 151 responses. The results show in which aspects and parameters the industry's three major actors – engineers, contractors, and clients – see greatest potential in order to increase the productivity. By standardising parts in bridges, there is great potential in making the construction of bridges more productive.

Keywords: bridge building; bridge design; efficiency increase; productivity

1 Introduction

The construction industry in Sweden is behind in becoming more productive [1]. Wodalski et al., [2] even mention that it is documented that the productivity in the construction industry has decreased since the 1960s. Some estimations indicate that the construction industry in Sweden has a cost increase which is twice as high as other

industries for the last 20 years [3]. Because of the increased cost of many projects, every project needs to work on reducing their costs [4]. However, the actual productivity is hard to measure [3, 5]. For example, the bridges that are constructed today are designed to carry higher loads than bridges built in the 60s. This increase in load carrying capacity will increase the amount of material which often leads to increased building