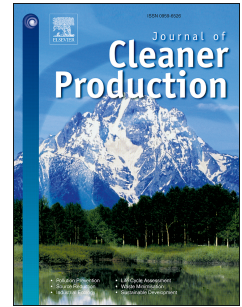


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**A Utility Measure of Attitudes to Lower-Emissions Production in Construction**

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**Abstract**

The construction industry is a large contributor to global emissions, though it is becoming more aligned with sustainability practices. Historically, the industry has focused on cost, production and time, but now adds emissions to this list. Industry attitudes to emissions have been the subject of a number of surveys, but these necessarily only give qualitative information. This paper takes a quite different tack and establishes, for the first time, quantitative measures of industry attitude. Both the qualitative and quantitative approaches have a perception basis. The paper's approach is through the medium of utility and utility functions. The paper takes a number of industry scenarios and establishes the attitude of industry personnel to lower-emissions production. Generally, it is found that construction personnel are risk averse to emissions, but to differing degrees. Here, risk is used in the sense of the magnitude and likelihood of an outcome involving emissions. The implications of this are demonstrated through an earthmoving operation, where the emissions-production results for differing degrees of risk aversion are highlighted. The paper is original in terms of offering a different view of emissions, and unique in its approach. By analysing the utility functions obtained, industry's attitude toward carbon emissions can be better understood. And flowing from this, more effective and efficient methods for reducing carbon emissions can be created.

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