Do financial incentives for mine workers increase the number of safety incidents?

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ABSTRACT

The safety of mine workers is not only determined by safe work procedures and engineering but ultimately lies on the choices and behaviours of the workers. Behavioural economics demonstrates that individuals are not entirely rational agents and are liable to biases and fallacies. This presentation proposes a field study to investigate whether financial incentives increase the number of safety breaches by mine workers.

Prospect Theory provides a framework to explain such behaviour. Prospect Theory incorporates two fundamental concepts that shape human decision-making. Firstly, individuals do not assess decisions based on absolute values but rather by comparing the gains and losses relative to a reference point. The proposed value function demonstrates that individuals are more averse to losses than they are driven by equivalent gains, indicating a tendency toward loss aversion.

A review of the current literature and industry practice will be presented. There is limited research specific to the mining industry, however, there is plenty of literature in relation to general occupational behaviours. This literature review will guide the discussion in relation to applying behavioural economics principles to the mining industry.

The proposed field study will feature a dual approach, a field experiment to test whether there is a statistical difference between work crews that have incentives and control crews with no incentives. Additionally, a concurrent laboratory experiment will be conducted to identify any discrepancies in the field experiment. The results from the study, if conducted, can inform industry, government, and regulatory bodies to further enhance the safety of mine workers.