

## An Empirical Study of the Impacts of Big Data on Firm Performance

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**Abstract :** In the present time, data to a data-driven knowledge-based economy is the same as oil to the industrial age hundreds of years ago. Data is everywhere in vast volumes! Big data analytics is expected to help firms not only efficiently improve performance but also completely transform how they should run their business. However, employing the emergent technology successfully is not easy, and assessing the roles of big data in improving firm performance is even much harder. There was a lack of studies that have examined the impacts of big data analytics on organizational performance. This study aimed to fill the gap. The present study suggested using firms' intellectual capital as a proxy for big data in evaluating its impact on organizational performance. The present study employed the Value Added Intellectual Coefficient method to measure firm intellectual capital, via its three main components: human capital efficiency, structural capital efficiency, and capital employed efficiency, and then used the structural equation modeling technique to model the data and test the models. The financial fundamental and market data of 100 randomly selected publicly listed firms were collected. The results of the tests showed that only human capital efficiency had a significant positive impact on firm profitability, which highlighted the prominent human role in the impact of big data technology.

**Keywords :** big data, big data analytics, intellectual capital, organizational performance, value added intellectual coefficient

**Conference Title :** ICIMSE 2017 : International Conference on Information Management Systems Engineering

**Conference Location :** Paris, France

**Conference Dates :** July 20-21, 2017