

The organizational Factors Influencing the Implementation of Big Data in Universities

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ABSTRACT

This research is the first-year study of a planned two-year research (two phases). The first phase of this research aims to discover: 1) forms of Big Data implementation, 2) patterns of Big Data adoption, 3) the utilization of Big Data for decision-making, 4) organizational factors influencing the implementation of Big Data, and 5) organizational factors affecting the quality of decision-making.

The research method employs a sequential exploratory mixed-methods design. Thus, in the first year, the research begins with qualitative research. The research takes place at three PTNBH status universities, two of which are located in Surabaya and one in Malang (coded as PTN A, PTN B, and C as per the institution's request). In the qualitative research stage, data sources include individuals, events, documents, and artifacts (both physical and digital objects). Data is obtained through interviews with 14 individuals involved as managers and users of Big Data outputs. Additionally, document studies are conducted on websites and relevant documents to meet the research needs. Observations are made in the work situations of Big Data managers.

Prominent findings in the first year include: (1) the primary method of implementing big data is through integrating internal and external information systems, aiming to automate data management and create a single reference data, (2) in the adoption of Big Data, a significant and strategic move made by universities is the restructuring of data governance, forming role divisions based on data governance principles. Furthermore, the Big Data analysis model is still predominantly descriptive, supporting performance accountability, although efforts are made to conduct data analysis using predictive models, (3) the implementation of Big Data has proven and acknowledged positive impacts on the rhythm and decision-making approaches of leaders, as well as the emergence of a data-driven culture and discipline in data updating, (4) various organizational factors support the implementation of Big Data in terms of human resources, culture, leadership, strategy, technology, and structure, (5) regarding the quality of decision-making, influencing aspects are found in human resources, leadership, technology, and culture. From these two dimensions, there are four sub-factors intersecting with the implementation of Big Data and the quality of decision-making, namely data literacy, data management workflow design, performance expectations, and market culture.

Kata Kunci: higher education, big data, decision making