

Measuring Strategic Big Data Management On Investments, Particularly On University Investments

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In the changing environment of the 21st century, universities should develop very innovative ecosystems by doing right investments on human capital, research and development, buildings, laboratories, dorms, and other facilities on the campus while decreasing their costs and expenses in order to increase scientific and technological oriented innovations and outputs. For that reason, most of them are looking toward Big Data Management (BDM), which is a very new and dynamic subject to conduct properly and to make right decisions at the universities. Data analytics and data mining have increased and attracted the attention of most of the leaders, managers, administrators, researchers, and even educators who try to make massive data-related investments and decisions. More importantly, since the funding of higher education has become important issues for most of the governments and higher education management, the importance of BDM will increase in higher education much more than ever before. However, not all the universities are so successful in managing their small or medium-sized data. In this research, how universities are investing by improving their data was analyzed in three different universities in Istanbul. More strategically, how data analytics and mining can make changes and transformation higher education institutions by investing right resources under the promise of Big Data Management was critically studied. In this study, the impacts of big data mining and management on higher education institutions' sustainable funding, financing, planning, success, research and development, and innovation were critically studied. By taking into account the perceptions and the experiences of the experienced experts (6), faculty members (12), managers (4), and technical people (12), who were charged in using data analytics and mining at two state and one private universities, the investment of the universities had analyzed in order to understand critically the effects of the BDM. In the study, the phenomenological analysis was used by asking thirty-one research questions in the semi-structured interviews. While taking into account the observations of the researchers, the collected data of this study were systematically studied in data analysis software-program NVivo 10. The results showed that a few number of the investments had correctly done by using data mining and data analysis. As the participants had mentioned that the data would not have done anything if the higher education management had not taken into account and applied. So, according to the participants (75%), the university management understanding and policies should be changed in order to take in consideration the results of the big data. Even though a great amount of data had produced through the systems of the universities, the analysis, the segmentation, and the selected attention of the data had become dependent on the higher education management. The participants (28%), who were active in planning, funding, and investing, agreed that the investments done according to the results of the big data had better educational, financial, socio-economic, cultural, technological, environmental, and even individual benefits and outcomes. In conclusion, although a little data mining and analysis has properly used in making right investments, the universities are highly convinced on the positive effects of the BDM in their short-term and long-term investments in order to increase their impacts.

keywords: higher education institutions, universities, big data management, data mining, sustainable growth and development, quality assurance, funding of the universities, strategic planning of higher education, strategic model for higher education.