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Effective mining safety work practices in the Fourth Industrial Revolution: a case study of Debswana

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ABSTRACT

It is now globally recognized that the Fourth Industrial Revolution (4IR) represents a fundamental change in the way we live, work and relate to one another, it is a new chapter in human development enabled by extraordinary technological advances. These advances are merging the physical, digital and biological worlds in ways that create both promise and potential. It is inevitable that, as with any revolution the fourth-industrial revolution will effect change in desirable and undesirable ways.

The purpose of the study was to investigate and obtain insights on the effective mining safety work practices in the fourth industrial revolution in Debswana Diamond Mining Company Jwaneng. From the study results, Debswana Jwaneng Mine is faring well with regards to the adoption of the latest technologies. However, the results also noted a need for improved change management as a means of enhancing employee engagement and communication, which have been noted to play a crucial role in the success of adoption of 4IR. Consequently, the study notes the need for a more inclusive approach to 4IR adoption which seek to enhance the mine's preparedness at an individual and organizational level.

Data for the study was collected using a questionnaire which was administered to various stakeholders (76) at Debswana Mining Company such as employees, project managers, and Executive committee members. The subsequent data collected were analyzed through the use of Ordinary Least Squares (OLS), Binary Logistic Regression as well as qualitative analysis (thematic). Ethical issues were also observed to ensure participants remain anonymous.

Keywords: Fourth Industrial Revolution, Internet of Things, Mining, Safety work practices