

Sudanese Women in Extractive Industries: Engineering Education Point of View

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Abstract

Sudan is located in Northeast Africa with an approximate population of 40.53 million people in a total area of 728,215 square miles. The sex ratio of the total population was 1.020 (1,020 males per 1 000 females). Sudanese women have professionally distinguished themselves in every career level and are well-known in this regard. They are pioneers of the sciences, arts, medicine, engineering and other practical fields. Extractive industry refers to any processes that involve the extraction of raw materials from the earth to be used by consumers. It consists of any operations that remove metals, minerals and aggregates from the earth. The processes include oil and gas extraction, mining, dredging and quarrying. Women were known in the oil and gas engineering in Sudan from the nineties however Sudan was started too late to accept females in mining engineering education compared to other African countries. This study focused on extractive engineering education in Sudan where statistical percentages were founded for females in Oil, Gas, and Mining Engineering. The data has been collected from Sudanese Universities where only four out of about thirty-four public universities and more than twenty private universities have a program in petroleum, gas, or mining engineering. Oil, gas, and mining engineering education were established in 1992 with very few accepted females in oil and gas and no female intake for mining until 2016. Although women have qualities such as; conscientious, an artistic point of view, sensitivity, attention to detail, and emotional intelligence; can lead her to success in any engineering disciplines; the study shows that there is a big gap in gender equality in the extractive engineering education in Sudan where the female percentage in the current mining engineering education enrolment is only 2.4 %, and 7.7% in Petroleum Engineering (bachelor students and graduates) with a total of 6.7% for undergraduates (diploma and bachelor degree). Also, the study shows that; 20% of the postgraduate students in the Sudanese petroleum engineering departments are female.

Keywords

Engineering education, women in engineering, extractive industries, gender equality.

Biography

Dr. Tagwa A. Musa is an Associate Professor of Petroleum Engineering at Sudan University of Science and Technology (SUST)- Khartoum, Sudan and the former dean of College of Petroleum Engineering and Technology at SUST. She is the first Sudanese woman to receive a PhD in petroleum engineering. She has extensive research and teaching experience in addition to significant contribution to academic, practice, research and community service programs both locally and internationally. In 2017 she received the Women in Industry and Academia award from IEOM and in 2019 she received the SPE Regional Service Award for MENA Region. In 2019, she was elected as Global Engineering Dean's Council (GEDC) executive committee member. Dr. Tagwa has a Bachelor with First Class Honors degree from SUST, and a Master's and a PhD from China University of Geosciences (all in petroleum engineering).