

## ERGONOMICS AND ANTHROPOMETRICS CONSIDERATIONS IN THE DESIGN OF OFFICE CHAIR FOR WORKERS IN KUMASI TECHNICAL UNIVERSITY IN GHANA

**George Adu<sup>+</sup>**  
Faculty of Built & Natural  
Environment  
Kumasi Technical University

**GHANA**  
george.adu2000@yahoo.com

**Sylvia Adu**  
Faculty of Forest Resources  
Technology  
Kwame Nkrumah University of  
Science & Technology

**GHANA**  
slyadu2000@yahoo.com

**Paul Inkum**  
Faculty of Built & Natural  
Environment  
Kumasi Technical University

**GHANA**  
pauink68@gmail.com

### ABSTRACT

Ergonomics is about 'fit': the fit between people, the things they do, the objects they use and the environments they work in. Sitting at work on a comfortable seat advances the comfort, health, well-being and safety of the person who uses the chair. The objective of the study was to define sizes for the production of a new office chair for office workers. A total of 84 administrative staff whose anthropometric data were collected participated in the study. The dimensions of the chair were derived from the percentiles (5<sup>th</sup>, 50<sup>th</sup> and 95<sup>th</sup>) conversion of the participants' anthropometric data. In addition to the proposed dimensions from the ergonomics design, backward tilt of the seat surface of 20° to the horizontal, to prevent buttocks sliding forward and a lumbar support of the back rest inclined at 102° to the seat surface were applied in the design. Confirmation of fitness of the new office chair to the body measurements of the workers through evaluation exercise was carried out in the offices of the administration block.

**Keywords:** Ergonomics design, anthropometry, chair, Kumasi Technical University, Ghana.