OPEN ACCESS Freely available online

Journal of Ergonomics

ISSN: 2165-7556

Commentary

Factors of Multilevel Ergonomics in Physics

Abiola Akala*

Department of Industrial Engineering, University of Ilorin, P.M.B, Ilorin, Nigeria

DESCRIPTION

The need for improved ergonomic performance in items is a result of rising living standards. As a result, while making selections about modern products especially complicated ones, the ergonomic evaluation has emerged as a major factor. This research offered numerous ways for assessing multiple factors and data format of goods and constructed a complete evaluation and decision making system in an effort to address the issue that the methods for ergonomic assessment and decision making are one-sided and discrete. In this system, the information provided by soft hardware and experts was computed individually to provide preliminary scores, and the preliminary scores were processed to obtain the final findings for the decision-making using the AHP-GRA technique.

The items are always changing to keep up with societal advancement. Early in the design process, designers devote practically all of their focus on realizing the functions, and a product's functionality or capacity is the most crucial factor in determining whether the product is excellent or not. Users' attention has been attracted more and more to the ergonomic component in recent years, and products now need to be more personable in order to satisfy customers.

As a result, the designers must work extensively on ergonomics from all perspectives, and the ergonomic component might be challenging. It is never easy for the decision-makers to compare several plans to determine which one is better during the development process since there are too many things to take into account. Many businesses and institutes, like Motion Analysis, Tekscan, and Applied Science Laboratories, have been building gear and software to imitate real-world usage scenarios and gather data. When utilizing the product, this equipment provides a wealth of information about the human body and may sometimes be used to gauge how ergonomically sound it is.

On the other hand, the decision-makers and designers frequently have a strong understanding of the product's ergonomic performance and they consistently evaluate the suggestions using their experiences. The data from a single piece of equipment can only reflect a few parameters in the first ergonomic assessment solution, while the latter ergonomic evaluation solution incorporates subjective components and is insufficiently accurate. In general, there are two categories of data used to evaluate ergonomics: accurate data and fuzzy data. The precise data is obtained utilizing technology that can measure specific physiological indicators of the human body, such as the Eye-Track System, the Pressure Scan System, the EMG, and the BioNex, as well as software that can replicate the use situation of items like Jack, Ramsis, and Delmia. The experts that provide the fuzzy data are always knowledgeable about the product. The two types of data must be processed separately because of their stark differences. In order to state the evaluation method, this study created an ergonomic evaluation tree. This research will enhance the current approach to obtain the soft hardware's The results of each piece of software or hardware, as well as for the experts, will be derived from the fuzzy data using the fuzzy evaluation approach. The scores will then be added together to determine the ranking of all possible proposals and decisions.

Numerous studies have been conducted to evaluate the specialists who contribute to decision-making, and the MADM was found to be the most alluring. Numerous mathematical techniques, such the AWA (addition weighted average), OWA (order weighted average), and TOPSIS, were also proposed to support the MADM. Depending on the type of data that is processed, the MADM can be separated into accurate MADM and fuzzy MADM. Due to the ergonomics' intricacy and unpredictability, even experts frequently struggle to provide a correct assessment. As a result, the fuzzy MADM will be used in this study to continue the evaluation.'

The evaluation of a product's ergonomics, which takes into account factors like subjective experience, comfort, reaching zones, and other factors, is difficult, and many alternative methodologies can be used. From a broad perspective, this study offered a thorough approach that can integrate nearly all the soft hardware associated with ergonomics and the experts to assist in resolving the challenge of choosing between many options. This approach is more thorough and practical than more conventional ones, and it can enhance and hasten the decision-making process for ergonomic evaluation in product development.

Correspondence to: Abiola Akala, Department of Industrial Engineering, University of Ilorin, P.M.B, Ilorin, Nigeria, E-mail: akalaabiola123@gmail.com

Received: 10-Aug-2022, Manuscript No. JER-22-16355; **Editor assigned:** 15-Aug-2022, Pre QC No. JER-22-16355(PQ); **Reviewed:** 23-Aug-2022, QC No. JER-22-216355;**Revised:**09-Sep2022, Manuscript No. JER-22-16355(R); **Published:** 16-Sep-2022, DOI:10.35248/2165-7556.22.12.326.

Citation: Akala A (2022) Factors of Multilevel Ergonomics in Physics . J Ergonomics.12:326.