

# Ergonomics in the informal work-systems of developing countries; need not luxury

Adedoyin A. Adeleye

University of Ibadan, Nigeria

---

## SUMMARY

In most industrially developing countries, artisans/tradesmen in the Informal work-systems are significant drivers of the economic life. Some simple, intuitive participatory ergonomics interventions hold great potentials to make a big difference, even if sometimes subtle, in this work milieu. The application of such interventions would increase the practitioners' productivity and income.

## KEYWORDS

Ergonomics Interventions, Developing countries, informal work systems

---

## Introduction

This is a narrative overview of the need for the applications of ergonomic principles in the informal work-systems of the industrially developing countries (IDCs). Comparatively, the principles of Ergonomics are well studied in the advanced technological work-systems of the world's developed countries, in contrast with the less-technological IDCs. Indeed, the informal work-systems where artisans of diverse professions hold sway is a major feature of the economic activities of the latter. It might, therefore, be presumed that Ergonomic principles do not have a place in the IDCs, especially since there's dearth of trained Ergonomists therein. The author of this report is a budding Ergonomist with an on-going interest in the work-systems of tradesmen /artisans in Nigeria. The fact on ground even at this very initial phase of the project shows how as part of a top-down technological development, Africa is increasingly becoming a modern continent which comes with its Ergonomics issues, and that for these artisans.

In Nigeria, for example, schools, food packaging factories, outfit-making and estate development are on the rise. Interestingly, estate developers employ diverse artisans including brick layers, welders, masons, tilers, plumbers, and painters who carry out their work manually. For about a decade now, the Ergonomic study of some of these artisans' work-systems, and some white-collar work-systems as well, has engaged our professional attention because, they are major players in their nations' economic activities and there's no established occupational health care system for their needs.

## Custom Tailors

Some immediate Ergonomic issues discovered calling for a re-design of some their tools /work-systems included the fact that these artisans cut fabrics with manual scissors and operate their sewing machines manually with leg pedals. The former task results in hand contusions over time

while the latter forces them into postural imbalance of hyper-flexion of the neck and trunk. (Adeleye and Akanbi 2015; Adeleye et.al., 2020).

### **Welders**

Equipped with a heavy grinding machine (about 5Kg) or tongs and electrode, Welders work in 90<sup>0</sup> trunk-forward inclination for hours because the floor acts as their work top. They sometimes squat (fully or half-way) grinding or welding. They engage in trunk-twisting postures and hyper-abduction of the lower limbs for good balancing. They weld or grind without appropriate eye and ear protectors.

### **Painters and Brick layers**

Their tasks involve heavy manual lifting, working with a combination of arm hyper-abduction, neck hyper-extension and trunk hyper-flexion postures for a very long period of time.

### **Professional Load Carriers**

From lack of mechanical load lifters, manual load carriers repetitively, and for several uninterrupted hours of the day sometimes, hoist about 50-100kg loads per person on the head or shoulder over significant distances in factories, warehouses and markets.

### **White Collar Job workers**

These are office workers, mostly in the public governmental-paid employment. Although an average office worker, in this respect, is not engaged in manual labour, nevertheless, they carry out tasks using inappropriate chair and table heights, and on personal or desktop computers in awkward postures of neck and trunk for long hours without relaxation.

In another light, virtually all the workers mentioned above possess mobile phones as communication devices which they constantly operate in the course of their daily tasks. They do this in flexed neck-posture for prolonged periods of time.

All said, it goes without gainsaying, that all these artisans grind out these their ponderous daily tasks with scant attention, if any, to ergonomic principles. They simply just adapt themselves to their tools and unregulated work-systems instead of the other way round as should be, Figure 1.



Figure 1: Artisans' awkward postures at different workstations

The work-related Musculo-Skeletal Disorders developed over time in these work practices could be alleviated by the informal applications of practical Ergonomics support tools and low-cost improvement guides. The artisans should be informally taught (in their local language) occupational

hazards, usage of task checklists, ergonomic risk factors and be informally trained for immediate solutions to the risk factors for safer and healthier informal work-systems.

### **Reference**

Adeleye AA, Alabdulkarim SA, Nussbauam MA. (2020). Impacts of different fabric scissor designs on physical demands and performance in simulated fabric cutting tasks. *Appl Ergon.* 89: 103219