

Including Local Economic and Anthropometric Parameters in the Design of an Stand up Wheelchair

Authors : Urrutia Fernando, López Jessica, Sánchez Carlos, San Antonio Thalía

Abstract : Ecuador, as a signatory country of the convention of the rights of persons with disabilities (CRPD) has, in the recent years, strengthened the structures and legal framework required to protect this minority comprised of 13.2% of its total population. However, the reality is that this group has disproportionately low earnings and low educational attainment in comparison with the general population. The main struggles, to promote job placement of wheelchairs users, are environmental discrimination caused by accessibility in structures and transportation, this mainly due to the cost, for private and public entities, of performing the reasonable accommodation they require. It is widely known that product development and production is needed to support effective implementation of the CRPD and that walking and standing are the major life activities, in this context the objective of this investigation is to promote job placement of wheelchair user in the province of Tungurahua by means of the design, production and marketing of a customized stand up wheelchair. Exploratory interviews and measurements were performed in a representative sample of working age wheelchairs users that develop their disability after achieving their physical maturity and that are capable of performing professional activities with their upper limbs, this in order to detect the user's preference and determine the local economic and anthropometric parameters to be included in the wheelchair design. The findings reveal factors that uniquely impact quality of life and development for people with a mobility disability within the context of the province, first that transportation is a big issue since public buses does not have accessibility for wheelchair users and the absence of curb cuts and the presence of trash bins over the sidewalks among other hinders an economic independent mobility, second that the proposal based in the idea of modifying the wheelchairs to make it able to overcome certain obstacles helps people in wheelchair to improve their independent living and by reducing the costs of modification for the employer could improve their chances of finding work.

Keywords : anthropometrics, job placement, stand up wheelchair, user centered design

Conference Title : ICEE 2015 : International Conference on Ergonomics Engineering

Conference Location : New York, United States

Conference Dates : June 04-05, 2015