Ergonomics as a tool to evaluate and improve workforce sustainability.

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1. Ergonomics, Sustainability and the Forestry Sector

This paper explores the relationship between sustainability and ergonomics, taking as example the Chilean forestry sector, thereby relating the three key concepts: sustainability, the forestry sector and ergonomics.

The first relationship this paper explores is that between sustainability and forestry. In that sense, after reviewing the literature concerning the current situation of the workforce in the forestry sector, it is possible to determine the existence of elements such as a) an aging workforce, b) incremental occupational health (OH) problems and C) a lack of interest in working in these sectors that threaten the sustainability of the workforce in the forestry sector (Meyer & Tappin, 2014). However, the current reality of the Chilean forestry sector is unknown due to a lack of information.

The second relationship this research explores is that between the forestry sector and ergonomics, since the main source of the problems of sustainability in the forestry sector are associated with poor working conditions (Garland, 2008). Accordingly, the extensive literature review proves that an ergonomic approach is helpful and appropriate in determining the problems associated with working conditions. Additionally, the ergonomic approach provides further information related to working conditions, the organizations’ problems as well as the needs of workers which could be helpful in creating a sustainable workforce (Genaidy et al., 2009). Therefore the ergonomic approach could be an influential tool to support business strategies (Dui & Neumann, 2009) and very useful for organizations that are working under the umbrella of the sustainability principles (Bolis et al., 2014; Klaus J Zink, 2008). Genaidy et al (2009) explain that it is necessary to incorporate ergonomic approaches in order to find the root causes for organizational problems that have an impact on people’s performance and on the system’s sustainability (Genaidy et al., 2009). Thus, if the organizations could ensure ideal working conditions for their workers, the organizations would likewise ensure sustainable growth from themselves (Genaidy et al., 2005). In that sense, organizations can significantly benefit from the assistance of an ergonomic approach, since there exists a natural synergy between sustainability and ergonomics, with the aim of understanding and optimizing the outcomes of human system interactions (Haslam & Waterson, 2013). In the same path, Zink, (2013), adds that ergonomics can provide supporting evidence on issues of workforce sustainability, identifying the factors that lead to an integrated vision of performance and health from a long-term perspective, which goes beyond legal issues and benefits not only the management but the workers as well, and hence for society (Klaus J. Zink & Fischer, 2013).
2. Objective

The objective of this paper is to provide theoretical and practical information about the contribution of ergonomics to the sustainability of the workforce. To specifically prove that the ergonomics approach is useful in evaluating and improving the sustainability of the workforce, taking the forestry sector as an example.

3. Methodology

This exploratory study scans the relationship between working conditions and workers. The initial stage, phase 1, quantitative design, consisted of simple random sampling (n=345 workers). The specific method employed is a questionnaire called the Demand-Energizer instrument (DEI) (Genaidy et al., 2007).

The DEI is a bottom-up approach with the purpose of identifying elements in the work environment that affect the sustainability of the workforce. After an initial analysis of the results of phase 1, phase 2 began: qualitative design- simple random sampling, (n=47) respondents of phase 1. The method used, is semi-structured face-to-face interviews. The output explores and improves understanding of the root causes of the variables that are impacting on the relationship between workers and working conditions. Additionally, the results allow us to know which and in what way the association between working conditions and the elements such as OH present problems and market attraction.

4. Findings and discussion

As a result of the application of the DEI instrument, the most critical work element mentioned by the workers was the perception of the relationship between risks and benefits when working in the forestry sector, with a 52.9% of the workers mentioning this as a very critical element. That means that under a health and safety point of view the risks are higher than the benefits when working in this sector. The second element, described by 47.2% of the workers as “critical”, was the physical environment. This element is related to the exposure to noise, vibrations, low and high temperatures, to name the main ones. The third of the critical elements were the physical aspects of the work and the economics aspects, with a 44.4% and 35.7% of the workers respectively mentioned as a critical issue element.

As a result of the interview, workers identify an association, between working condition and the increasing number of occupational health, the lower wellbeing of the workers, the decreasing interest to work in the forestry sector and problems associated with the productivity in general.

The findings provided by this paper - under a theoretical and practical point of view - show the advantages that could be obtained when ergonomics and sustainability work together. In that sense, this paper could be an important contribution in the incipient relationship between ergonomics and sustainability, especially regarding the topics related with working conditions, aspects that have been regularly neglected by organizations, scholars and stakeholders in general.

The results of this research prove that the sustainability of the Chilean forestry workforce is threatened and that the working conditions have an impact not only on the health and safety of the workers, but also on the welfare of the workers and the market attractions the productivity of the system.

It was also shown that the ergonomic approach is very useful in showing how elements in the working conditions have an impact on the workers and that could be a useful tool to use under the parachute of the sustainability strategies.

5. Conclusion

This research provides information from a theoretical and practical viewpoint to continue further investigation related with social sustainability, ergonomics and the forestry sector.

Understanding the relationship between people and their work and the factors that are interfering with this relationship will allow improvement on sustainability not only for the workers themselves, but for the organisations and society as well.
Therefore, the outcome of this research could help to establish the basic steps towards building a sustainable workforce giving consideration to competitive performance and working conditions in a long-term perspective, based on the ergonomics approach.

References


