

The Economic Case for Ergonomics: Beyond Injury Prevention

Kistler Kotschet*

Department of Ergonomics, University of Melbourne, Melbourne, Australia

DESCRIPTION

The economic justification for ergonomic initiatives has traditionally centered on direct cost avoidance through injury prevention. While this approach has secured essential funding for many interventions, it represents an unnecessarily narrow perspective that understates the full economic value of ergonomics. This commentary explains the complete business case for ergonomic investment, arguing that well-designed interventions deliver substantial returns through multiple value channels that extend far beyond workers' compensation savings.

The injury-focused economic model has several limitations as a primary justification framework. First, it positions ergonomics as primarily a risk mitigation strategy rather than a performance enhancement approach, potentially relegating it to compliance-oriented organizational functions with limited strategic influence. Second, it creates vulnerability to short-term cost pressures during economic downturns, precisely when ergonomic support may be most needed due to reduced staffing and increased workloads. Third, it establishes success metrics that can only demonstrate value through negative outcomes (injuries that didn't occur), making program achievements inherently difficult to quantify and communicate.

A more comprehensive economic framework recognizes multiple value streams from ergonomic interventions. Quality improvements represent a significant but often overlooked economic benefit, with research demonstrating that ergonomic deficiencies contribute to error rates across diverse industries. Manufacturing operations with poor ergonomic conditions show defect rates 30%-40% higher than comparable operations with better conditions. Healthcare settings with excessive cognitive demands demonstrate medication error rates correlating directly with measured mental workload. These quality impacts directly affect bottom-line performance through rework costs, warranty claims, and customer retention.

Productivity gains constitute another substantial value stream, operating through several mechanisms. Reduced fatigue from better physical ergonomics enables sustained performance

throughout work periods. Improved cognitive ergonomics reduces information processing time and decision errors. Enhanced organizational ergonomics reduces bottlenecks and coordination failures. Studies across sectors demonstrate productivity improvements ranging from 15%-25% following comprehensive ergonomic interventions, often exceeding the direct cost savings from injury reduction.

Turnover reduction represents a third economic value channel, particularly significant in labor markets with worker shortages or specialized skill requirements. Organizations with superior ergonomic conditions demonstrate retention rates 18%-22% higher than industry averages across multiple sectors, with particularly pronounced effects in physically demanding occupations. When calculated comprehensively-including recruitment, training, reduced productivity during onboarding, and lost institutional knowledge-turnover costs typically range from 50%-200% of annual salary, making retention improvements a substantial economic benefit.

Presenteeism reduction-decreasing productivity losses from employees working while experiencing discomfort or fatigue-provides additional economic returns. Research indicates that presenteeism costs typically exceed direct medical costs by a factor of 2-3, yet these impacts remain largely invisible in traditional accounting systems. Ergonomic interventions that reduce discomfort without necessarily preventing reportable injuries can substantially reduce these hidden productivity drains.

Implementation approaches significantly influence economic outcomes from ergonomic initiatives. Integrated interventions that address physical, cognitive, and organizational factors simultaneously typically demonstrate higher returns than narrowly focused programs. Participatory approaches that engage workers in identifying and prioritizing intervention targets generally yield higher implementation rates and consequently better economic returns. Proactive programs that address ergonomic factors during system design show substantially higher cost-effectiveness ratios compared to reactive interventions implemented after problems emerge.

Correspondence to: Kistler Kotschet, Department of Ergonomics, University of Melbourne, Melbourne, Australia, E-mail: kistler.kotschet06@gmail.com

Received: 03-Mar-2025, Manuscript No. JER-25-37283; **Editor assigned:** 05-Mar-2025, Pre QC No. JER-25-37283 (PQ); **Reviewed:** 19-Mar-2025, QC No. JER-25-37283; **Revised:** 26-Mar-2025, Manuscript No. JER-25-37283 (R); **Published:** 02-Apr-2025, DOI: 10.35248/2165-7556-25.15.420

Citation: Kotschet K (2025). The Economic Case for Ergonomics: Beyond Injury Prevention. J Ergonomics. 15:420.

Copyright: © 2025 Kotschet K. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Several methodological adjustments can help ergonomics professionals better quantify and communicate economic value. Balanced scorecard approaches that track multiple outcome dimensions—including leading indicators like discomfort reports and process measures like implementation completion—provide more comprehensive performance visibility than lagging indicators alone. Return-on-investment calculations should incorporate realistic time horizons that account for both immediate benefits and longer-term impacts on factors like turnover and quality. Economic models should explicitly acknowledge uncertainty through sensitivity analysis rather than presenting single-point estimates that suggest false precision.

CONCLUSION

Organizational positioning significantly affects how economic arguments for ergonomics are received. When positioned exclusively within health and safety functions, ergonomic initiatives often face higher ROI hurdles than operational improvement projects despite potentially comparable returns. More effective positioning connects ergonomics to strategic business priorities including operational excellence, talent retention, and quality management, aligning interventions with existing value metrics rather than requiring separate justification frameworks.