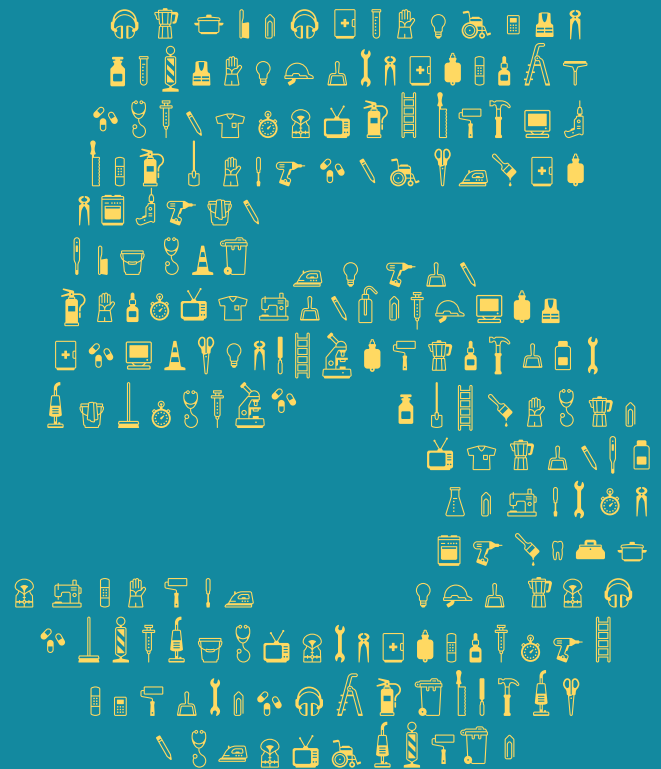


# ERGONOMIA

ORGANO UFFICIALE DELLA S.I.E. - SOCIETÀ ITALIANA DI ERGONOMIA

N.25 - 2022



- EDUCATION, SUSTAINABILITY, AND HUMAN FACTORS AND ERGONOMICS
- SUSTAINABLE WORKPLACE: AN INTEGRATED APPROACH TO INDUSTRIAL ERGONOMICS AND SERVICE DESIGN
- DEVELOPMENT OF A HELP COMMUNITY FOR THE CANCER PATIENT

- ERGONOMIC INTERFACES FOR SUSTAINABLE HUMAN-MACHINE-ENVIRONMENT SYSTEMS
- ERGONOMICS AND SUSTAINABILITY IN HIGHER EDUCATION
- SYSTEMIC LINK FROM (MICRO) ERGONOMICS TO SUSTAINABLE DEVELOPMENT

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# EDITORIAL

ERMINIA ATTAIANESE AND EMILIO ROSSI



## **Sustainable Ergonomics and Ergonomics for Sustainability: Feeding the scientific discussion through international viewpoints**

Sustainability and Ergonomics are two of the most important subjects to consider when it comes the creation of a wealthy, inclusive and productive modern society. Both are crucial for creating effective workplaces and solutions for finding ways to make people's lives better and healthier. Sustainability focuses on reducing environmental impacts while also considering economic and social factors to generate prosperity and wealth; therefore, one of the Sustainability's key aims is the creation of a balance between environmental impact and economic growth within a socially cohesive perspective. On the other hand, Ergonomics – or Human Factors – focuses on improving the design of artefacts (i.e., products, services, systems of solutions, built environments, etc.) fitting people's demands for comfort and health. Thus, Ergonomics looks at how people perform actions and interact with each other within given environments, in order to increase health, safety, comfort, usability, and user experience, and without missing systems and processes' efficacy and efficiency.

Since 2008, when the Human Factors and Sustainable Development Technical Committee was established by the International Ergonomics Association (IEA), the community working in the HFE field gradually increased the interest in this topic. But studies made in the last thirty years demonstrate that

there is a great interest in converging these disciplinary areas, to explore potential synergies and virtuous conditions able to support the creation of better living solutions that meet the contemporary trends of present and future society. For example, the efficiency of a workplace or the pleasantness of an industrial product becomes an important determinant of its success when placed in a sustainable perspective; also, the adequacy of products and environments with respect to the variability of the user and its context of use is an important driver for their sustainable life cycle. This means that the HFE research community is asked to fully embrace the new instances and issues expressed by Sustainability to conceive new conditions for prosperity and inclusion.

From the scientific point of view, the area of intersection between Sustainability and Ergonomics opens up an interesting and relatively less explored scenario of opportunities useful to rethink the current productive and living systems. This trend is also echoed by important organisations such as United Nations, which is putting significant efforts in stimulating cultural and scientific debates around the objectives to achieve in the near future, to mitigate the poverty, to contrast inequalities, and to advance a responsive growth while taking into account people, socio-economic conditions, and the ecological equilibrium of the planet. Accordingly, relevant issues to consider include, but not limited to: (i) digitalisation, innovation, competitiveness, culture and tourism, (ii) green revolution and ecological transition, (iii) sustainable mobility, including products, services and infrastructure, (iv) education and research for a sustainable transition, (v) inclusion and cohesion, (vi) health and wellbeing, and (vii) creative manufacturing and new working practices. With the aim to start a first and solid discussion around these topics by contributing with cultural insights developed by scholars working in the field of Ergonomics, the number 25 of the *Rivista Italiana di Ergonomia* intends to reflect on the synergies and future opportunities for a common ground between Ergonomics and Sustainability: “*Sustainable Ergonomics – Ergonomics for Sustainability*”. In doing so, for the first time in its history, the journal opens up at international debates by gathering high-quality contributions made by international experts in the field to feed a fruitful discussion on this topic. For the journal, this is a pivotal effort demonstrating the will of its editors to move from a local dimension to a global

one by offering a multidisciplinary contribution through a selection of high-quality international works.

Six contributions compose this first international volume.

The work proposed by Thatcher and entitled '*Education, sustainability, and human factors and ergonomics*' introduces interesting suggestions for the core skills and core contents that should be included in educational programmes to prepare future (and current) researchers and professionals to address the multiple crises referred to collectively as "Sustainability".

The article '*Sustainable workplace: An integrated approach to industrial ergonomics and service design*' proposed by Sadeghi Naeini et al. discusses the relationship between Ergonomics and Sustainability on the context of a holistic service

system toward quality of working life; this is made through a bibliometric analysis of "Ergonomics" and "Sustainability" keywords searched among studies published in the last five years. Iacono et al. propose an interesting interdisciplinary study entitled '*New digital health challenges: Development of a help community for the cancer patient*' aimed at presenting a patient-centered, sustainable and innovative platform, a new digital solution respondent to the need of bringing people and treatments closer, bridging the physical and relational distance usually affecting cancer patients. With the study '*Ergonomic interventions for the design of sustainable work systems*', Rao discusses the transformation of work systems due to digitization and digitalization; in this work, considerations on the evolving role of ergonomic interventions aimed at designing the interfaces for ensuring the sustainability of human-machine

interactions are made. The work proposed by Rodea Chávez et al. entitled '*Systemic link from (micro) ergonomics to sustainable development: Follow-up to common objectives*' discusses the need to develop an instrument to guide towards good sustainable practices that are connected with design cultures.

Finally, the work proposed by García Parra et al. and entitled '*Ergonomics and sustainability: A proposal for an integrated transversality in higher education*' introduces an interesting analysis on how a transversal approach linking "Sustainability" and "Ergonomics" could be incorporated into teaching curricula in HE.

## **ERMINIA ATTAIANESE**

Full time Associate Professor in Architecture Technology at the University of Naples Federico II, Italy. President of CREE Centre for Registration of European Ergonomist, she is also Chair of the Technical Committee "Ergonomics in Design for All", of International Ergonomics Association (IEA). Her research interest and areas of expertise relate to human-centred design of systems, particularly referred to ergonomics of the built environment, buildings and systems accessibility, safety and usability, human diversities, and social and environmental issues in sustainability perspective applied to the design of buildings, indoor and outdoor spaces.

## **EMILIO ROSSI**

Tenure Track Assistant Professor in Design at the Department of Architecture, "Gabriele D'Annunzio" University of Chieti-Pescara, Italy. His research interests and areas of expertise relate to Design Research, Design for Social Inclusion and Design for Sustainability, with a focus on the development of methodological innovations for products and product-service systems, and the investigation of disciplinary and interdisciplinary relations between inclusive/human-centred domains and sustainable socio-technical systems. On these themes, he collaborates with important associations, societies, and technical committees such as AHFE, DRS, IEA, and LeNS.

