

Open laboratories for everyone wishing to experiment with the future

Saku J. Mäkinen¹

¹Tampere University of Technology, Tampere, Finland

*Corresponding author: saku.makinen@tuni.fi

Yet another six months have passed and the coronavirus disease 2019 (COVID-19) pandemic is still making our experimental explorations difficult if not impossible in real-life settings.

However, as it has been shown in the scientific community at large, we as investigators are clever in finding ways to fulfil our curiosity and we endure in our quest for creating new knowledge and contributing to our understanding of experimental innovations.

In this issue of the *CERN IdeaSquare Journal of Experimental Innovation* (CIJ), we have once again a vastly heterogeneous set catered to our readers.

Please do enjoy the smorgasbord ranging from work wellbeing to robotics to fake news.

Ciampaglia *et al.* (2021), in their article entitled '*Improving food value chain through sustainability scores*' draw our attention towards Food Value Chains and their sustainability. They find with a survey that consumers would indeed be interested in finding out about the sustainability of their choices of food products. At the same time, however, they are confused with the various certificates and the amount of information available. Hence, the Authors suggest a platform for product information that would deliver summary information in an easily understandable way. They further outline interesting avenues for future research.

In '*Designing services for employees' wellbeing: principles for an improved employee experience*', Vignoli *et al.* (2021) look into service design and find seven design principles that can be used to re-focus wellbeing service design processes at workplaces. Their design principles are further useful in monitoring developments in time and in contextually changing conditions involving personal, organisational, and environmental factors that influence wellbeing and service use and satisfaction.

With '*Contrasting information disorder by leveraging people's biases and pains: innovating in the post-truth era*', Pino *et al.* (2021) venture into the ever-growing land of disinformation and fake news. The authors present a prototype or idea for an app utilizing emotional reactions and parameters in shifting through user's news feeds. This way the app could suggest strategies for the user to fight the information disorder and potentially detect disinformation and fake news.

In '*Experimenting with Open Innovation in Science (OIS) practices: A novel approach to co-developing research proposals*', Beck *et al.* (2021) have devised a collaborative effort in which scientific research project proposals are designed together with the users of the results of these projects. Among the significant challenges that this type of co-development introduces in the process, they also find that this type of collaboration has significant potential to produce problem-centric and problem-inspired proposals and contributions spanning across the participants' disciplines.

In their article entitled '*The effect of interdisciplinary teamwork on creativity through knowledge heterogeneity and synthesis in a technological domain*', Mulder *et al.* (2021) explore interdisciplinary teamwork and creativity and especially whether the interdisciplinary nature of the team influences the ideas produced in the teamwork. They find, among others, that interdisciplinary teams are viewed as more efficient in producing ideas, i.e. more ideas, than the monodisciplinary teams.

While Gerstenberg and Steinert (2021), in '*A quantitative experiment setup for testing the effect of desirable difficulties on teaching robotics*', fail to provide support for the positive effects of desirable difficulties on learning, they do present a standardised, effective explorative research procedure to further our understanding of the influence of desirable difficulties in learning and overall, in challenge and problem solving among the most effective and motivating ones in a virtual environment.

Colombelli, Panelli, and Paolucci (2021), in their article '*The implications of entrepreneurship education on the careers of PhDs: evidence from the challenge based learning approach*', were interested in the effects on the academic and business outcomes of involving PhD students in entrepreneurial and innovative education programs. Comparing the performance of 73 PhDs who attended Innovation for Change (I4C), a CBI-like program offered by Collège des Ingénieurs, CERN IdeaSquare, and the Politecnico di Torino, with 73 who did not, they showed that the program had an impact on academic performance in terms of number and quality of publications for the PhDs who attended the course. The main explaining factor seems to be the researchers' change of mindset, which widens their ability to understand problems from multiple perspectives.



The papers presented in this issue have multiple implications for Universities wishing to innovate their offering to respond to new and pressing societal challenges; for policymakers that have the responsibility to promote more impactful open science and open innovation activities; for researchers interested in improving and fostering challenge-based innovation programs to improve our planet; and for all designers involved in the fuzzy front-end phase of innovation.

CERN IdeaSquare and CBI-like programs are an open laboratory for everyone wishing to experiment with the future.

REFERENCES

- Campaglia, A., et al., 2021, Improving food value chain through sustainability scores, CERN IdeaSquare Journal of Experimental Innovation, 5(2): pp. 3-8, <https://doi.org/10.23726/cij.2021.1057>
- Vignoli, M., et al., 2021, Designing services for employees' wellbeing: principles for an improved employee experience, CERN IdeaSquare Journal of Experimental Innovation, 5(2): pp. 9-17, <https://doi.org/10.23726/cij.2021.997>
- Pino P., et al., 2021, Contrasting information disorder by leveraging people's biases and pains: innovating in the post-truth era, CERN IdeaSquare Journal of Experimental Innovation, 5(2): pp. 18-27, <https://doi.org/10.23726/cij.2021.1053>
- Beck, S., et al., 2021, Experimenting with Open Innovation in Science (OIS) practices: A novel approach to co-developing research proposals, CERN IdeaSquare Journal of Experimental Innovation, 5(2): pp. 28-49, <https://doi.org/10.23726/cij.2021.1328>
- Mulder, J., et al., 2021, The effect of interdisciplinary teamwork on creativity through knowledge heterogeneity and synthesis in a technological domain, CERN IdeaSquare Journal of Experimental Innovation, 5(2): pp. 50-55, <https://doi.org/10.23726/cij.2021.1309>
- Gerstenberg, A., et al., 2021, A quantitative experiment setup for testing the effect of desirable difficulties on teaching robotics, CERN IdeaSquare Journal of Experimental Innovation, 5(2): pp. 56-60, <https://doi.org/10.23726/cij.2021.1077>