Business Systems

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Book Series

BOOK OF ABSTRACTS

SEVENTH BUSINESS SYSTEMS LABORATORY INTERNATIONAL SYMPOSIUM 2020

SOCIO ECONOMIC ECOSYSTEMS

CHALLENGES FOR SUSTAINABLE DEVELOPMENT IN THE DIGITAL ERA

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SOCIO-ECONOMIC ECOSYSTEMS:

Challenges for Sustainable Development in the Digital Era

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The book series "Business Systems" publishes research and essays, coming from the scientific and consulting activity of the members of the nonprofit scientific organization Business Systems Laboratory (Italy) as well as from invited well-known scientists in the business systems field.

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The Business Systems Laboratory International Symposia aim to address the global economic and social challenges of our times by systemic perspectives; shedding light on the various interactions between natural social and economic systems. The challenges and the opportunities faced in our times require cutting edge research and practices in social science.

This multidisciplinary perspective includes a wide range of fields such as: management, psychology, economics, engineering and sociology.

The Symposium is designed to create a friendly atmosphere among senior scholars, PhD students, researchers and business practitioners.

The Symposium 2020 will consider how Socio-economical Ecosystems can be developed and managed to foster Sustainable Development by considering the challenges and opportunities of digital tools.

With this premise the Symposium 2020 focuses on the epistemological, theoretical, methodological, technical and practical contributions that can represent advancements in theory and practice for sustainable well-being in the global era in and by different perspectives.

While focusing on Systemic methodology the Symposium is also open to all scientific approaches in order to foster constructive debates and confrontations to create new paths of research and practice.

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Rethinking the System of Research Assessment in Higher Education in the Digital Era

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ABSTRACT

Around the world specific methods are employed to evaluate the quantity and quality of universities' research output. Because of increased competition between institutions research assessment plays useful role in giving incentives to increase quality of research. As scientific literature suggests research output is a function of resources spent and the microeconomic incentive structure [1]. Countries that perform well and introduced the system of research assessment have methods to evaluate research output. They strengthened their systems by introducing improved incentives. Evaluations are important as incentives and et the same time l they provide data on the research activity within a country. If there is no transparent and objective way of examining research activity. Without such data it is not possible to see whether the research system is functioning and how it can be improved [1]. Nowadays in institutions of higher education that have scientists from many fields assessing the research performance requires from evaluators the aggregation of the performance measures of the various fields. Two methods of aggregation are applied that are based on: (a) the performance of the individual scientists or (b) the performance of the scientific fields present in the institution [2]. The choice depends on context and the objectives. The two methods creates differences in performance scores as well as rankings. Many countries have introduced evaluations of university research that reflects global demands for greater accountability. These countries also introduced

the system of performance based funding of research projects. The examination the advantages and disadvantages of performance-based funding in comparison with other approaches to funding indicates disputable results that can be interpreted in various manner. Despite the fact that research assessment systems has been working successfully for decades researchers have found that on the one hand initial benefits may outweigh the costs but on the other hand over time such a system seems to produce diminishing returns [3]. This raises important questions about continued use of existing practice and highlights the need for rethinking of systems of research assessment.

In modern globalized word in digital era research evaluations generally must be guided by discipline-specific criteria and by policy incentives. The process itself, methods and standards being applied whether they are bibliometrics based or peer review based or a mix of these must be chosen in line with the purpose of the evaluation. The choice of an appropriate evaluation method must coincide with the objective of the evaluation and must take into account the diversity between disciplines. The evaluation must be based on intended academic, economic, societal, or a combination of these impact of the research. The simplicity of the evaluation procedure must be considered and the evaluation criteria are developed and communicated to all stakeholders in advance. Evaluation committee must be comprised of sufficient experts that adequately assess the quality of research. Smart choice of evaluation indicators must be make and holistic approach to peer review must be adopted [4].

The biggest challenge of research assessment in modern era is that assessment systems must reflect the qualities that Open Science requires from modern researchers. Existing research assessment practices do not reward researchers for making research outcomes openly available mostly due to the competitive pressure put on them by assessment procedures. This leads to frequent collateral damage in the form of over-publication, fragmentation and even, occasionally, fraud.The digital era on the one hand, created opportunities for the dissemination of research results but on the other hand digitalisation reinforced the "belief" of objectivity in numbers, reducing research quality to a few quantitative indicators, which naturally results in false assumption [5]. Many juries and commissions still use simplistic and misleading approach and evaluate researchers on the basis of the sum of the 'journal impact factors' attributed to each of their published articles [6] . To stimulate the openness in research commitment to the San Francisco Declaration on Research Assessment [7] and to the Leiden Manifesto [8] must be

encouraged. Multiple criteria evaluation with each criterion carrying different weights must thus prevail taking into the consideration of the research field and the nature of the assessment (individual, team or project). "Proxy" assessment tools like the journal impact factor should not be considered as a direct measure for research quality[5].

The European Commission's Expert Group on Altmetrics developed a useful framework (see Table 1) in which metrics are categorised according to what they measure [9]. At first stage conventional metrics measure research output and collaborations based on information derived from journal publications. This is the dominant category of metrics now used. Second step is usage-based metrics and alternative metrics attempt to broaden the scope of conventional metrics. On the third stage alternative metrics aspire to measure social outreach. Lastly, next-generation metrics are yet to be developed and provide more accurate, transparent and responsible tools for research evaluation [5].

Table 1 – Basic overview and categorisation of metrics by the European Commission Expert Group on Altmetrics

	Measure	Based on	Examples
Conventional metrics	Research output	Number of publications and number of citations, based on bibliometric databases, e.g. Web of Science, Scopus, Google Scholar	Journal Impact Factor (JIF), h-index, field normalised citation index, Eigenfactor, SCImago Journal Rank (SJR), Source Normalized Impact per Paper (SNIP), CiteScore, etc.
	Collaborations	Co-authorship	Leiden Ranking, etc.
Usage-based metrics	Usage, i.e. uptake and attention	Number of views or downloads of an item	Usage Impact Factor (UIF), Libcitations, etc.
Alternative metrics	Social outreach	Social media (Twitter, blogs, etc.) and scientific social networks (ResearchGate, Mendeley, etc.)	Altmetric.com, PLUMx, ImpactStory, Bookmetrix, Datacite, etc.
Next-generation metrics	Yet to be developed "open metrics" going beyond alternative metrics		

Revisiting research assessment procedures is a shared responsibility and requires a concerted approach uniting major actors such as researchers and universities, research funding organizations, policymakers and non-governmental organizations. In this process leading role can be played by The European University Association (EUA) since it is the representative organization of universities and national rectors' conferences in 48 European countries. EUA plays a crucial role in the Bologna Process and in influencing European Union policies on higher education, research and innovation. The Expert Group and EUA Secretariat developed the EUA

Roadmap on Research Assessment in the Transition to Open Science and launched an Expert Subgroup on Research Assessment in 2018 [10]. International collaborations through various networks and non-governmental organizations such as EUA should make considerable contribution to gather and share information, to initiate dialogue between key actors, to formulate good practice and make policy recommendations for the next step in revising the system of research assessment.

Keywords: *Research Assessment, Higher Education Conventional Metrics, Usaged-Based Metrics, Alternative Metrics, Next Generation Metrics.*

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