

Economics and Business Studies during the pandemic and beyond: new research trends

Emilia Di Lorenzo¹, Gabriella Piscopo², Marilena Sibillo³

Abstract

The research world is racing fast after the pandemic shock. Where is mathematics applied to finance and insurance going? In this paper we try to give an answer to this question, focusing our attention on examining the papers related to quantitative models for insurance sciences. The results will show that the core of research is to address and model problems in which without-barriers sustainability and collective well-being play a central role. The impact of the COVID-19 pandemic, deflagrating in its health and socio-economic implications, has led to a paradigm shift in the scientific research, not only in the medical field, but in all the disciplinary multiplicity. It is interesting to observe the break-even point that indicates a clear dividing line also in mathematical research, especially in mathematics applied to the economic and financial fields.

In our speech we intend to show the developments of research in the field of insurance sciences, since this specific sector has always played a primary role in the economic growth and in protecting individuals and communities.

Before the pandemic, the research in mathematics applied to insurance sciences was focusing on sustainability issues for some years. This is due to the strong connection with the operating reality of the markets. Research cannot ignore the inevitable path towards a sustainable economy; quantitative modelling and research efforts must be geared to a market that requires trillion dollars investments, as expressed in the title of the note from the Joint Ministerial Committee of the Boards of Governors of the Bank and the Fund on the transfer of Real Resources to Developing Countries.

However, the consequences of the COVID-19 pandemic stressed the urgency of strategies aimed at creating more sustainable economies and societies. A research activity, so closely linked to real needs, such as mathematics applied to financial and insurance sciences, inevitably must take such demands into account.

We believe that one of the central themes is to try to answer this question: how to strike a balance among profit, sustainability and protection of social well-being?

We can immediately see contributions in this regard according to several perspectives, that however interact with each other about various themes:

- defining new insurance contracts specifically related to the pandemic (cf. Grundl & Regele (2020); Zhang & Wang (2013); Hainaut (2021));
- modelling stochastic processes necessary for pricing such contracts, with particular regard to processes involving the trend of infected and hospitalized (cf. Feng et al. (2011); Hainaut (2021); Lefèvre & Simon (2017); Gathy & Lefèvre (2009));
- introducing business schemes involving several actors (cf. Di Lorenzo & Sibillo (2020), Legenchuk et al. (2020), Gabor (2019), Grundl & Regele (2020))

¹ Department of Economic and Statistical Sciences, University of Naples Federico II, Italy
diloremi@unina.it

² Department of Economic and Statistical Sciences, University of Naples Federico II, Italy
gabriella.piscopo@unina.it

³ Department of Economics and Statistics, University of Salerno, Italy
msibillo@unisa.it

In order to collect the research products published on the theme of Pandemic in different research fields, the Web of Science (WoS) Core Collection was used. The search was performed the 4th of June 2021, including studies published from 2020 to nowadays, without any other restriction in terms of language of publication or document type. Meta-data have been directly extracted from the electronic database, including type of document, year of publication, source of publication, discipline (WoS research areas), and keywords (WoS keywords plus). Scientific contributions on the topic "Research during the pandemic" have been identified, with a query launched on WoS "Pandemic AND research" restricted to years 2020-2021 and 10.767 items have been obtained.

Figures and graphics show several aspects:

- the proliferation of items in the top 10 most numerous research areas in terms of production on the subject
- the subdivision of items obtained with the query "Pandemic and Research" between different document types, highlighting a proliferation especially of articles
- the main scientific journals that have published the results of the research, with an unexpected important presence of Sustainability
- the scientific production on the general topic of the pandemic for the 10 countries most engaged in this activity

Narrowing the search to the query "Pandemic AND Insurance", 379 Items have been identified and we show the placement in the different research areas.

Finally, a figure has been created searching for the items in which the authors indicated "Pandemic" and "Insurance" as the keywords and building the links with the other keywords linked to them.

There is no doubt that research has turned: it is no longer a matter of changing existing models and techniques, but rather of rethinking new patterns of economic cycles aimed at sustainability and collective well-being.