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RESEARCH AREA: COMMUNITY

TITLE: SAHARA - Simulation of Behavioural and Economic Scenarios within a Pandemic

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UNIVPM Research Group: 040018_R.SCIENT.A_2019_GALLEGATI_MAURO Economia dell'interazione tra agenti eterogenei

Research activity description: The outbreak of the novel coronavirus disease COVID-19 emerged at the beginning of 2020. Since then humanity has been facing a huge global challenge, which is not restricted to specific regions, but spreads across the world faster than ever leading to both a societal and economic disruption. This new global challenge has immense complexity, and thus it is currently not fully understood how this new strain spreads, and what impact it will eventually have with respect to mental and physical health of individuals, healthcare systems, the labour market, and economy.

Given the multidisciplinary nature of this research, the project is organised in four main areas. The Social Interactions Models Work Package (WP) analyses how people move and interact, causing the spread of the virus and identifying social interactions. The Political and Economic Models WP analyses the characteristics and responses to former crises from the political perspective and proposes economic models to understand how the citizens are affected, how the economy (in general) is affected and which kind of measurements may be applicable. The Epidemiologic Studies WP focus on different determinants and factors influencing the behaviour of the virus, such as the effect of the climate, ecological determinants, socio-economic, population characteristics, and analyses which interventions/measures are useful.



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The Social and Health Models WP takes care of analysing effects related to mental health because of the COVID and the policies applied (i.e. lockdowns). It also analyses the behaviour in Social Networks, and analyses measures applicable in the health system (i.e. digital twins of hospitals).

As lead beneficiary of the Political and Economic Model WP, the Polytechnic University of Marche will coordinate the actions aimed at modelling the political and economic consequences of the COVID-19 crisis. The models will divide the economic analysis into two layers, a low level one looking at how this situation affected the day to day work life of the citizens, and the macro layer, studying how bigger forces, companies and governments reacted economically to the abrupt changes that rose from this pandemic. Lastly, there will be a model dedicated to investigating how the global governments reacted to the current situation and how different decisions and policies impacted the containment of the disease.

Collaborators: Coord. Universitaet Stuttgart (DE), Atos Spain Sa (ES), Brunel University London (UK), International Institute for Applied Systems Analysis (AT), Crisisplan (NL), University Clinic of Psychiatry Skopje (MK), Poznan Supercomputing and Networking Center (PL), School for Advanced Studies Lucca (IT), Fraunhofer Ipa (DE), University of Salzburg (AT), Institut Mines Télécom (FR), University of Tartu (EE), International Association of Public Transport (BE), Universitat Politecnica de Catalunya (ES), Consiglio Nazionale delle Ricerche (IT), Empresa Municipal de Transportes de Madrid (ES), Department of Health (UK).
