Focus

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Innovative Paradigms for Enhancing Healthcare Service Performance

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The healthcare sector, defined in general as the industry that "… provides goods and services to treat patients with curative, preventive, rehabilitative or palliative care" (Taneja *et al.*, 2017), has been under huge pressure in recent years: population ageing, financial constraints, wellbeing evolution, and so on (Lega *et al.*, 2018; Grenier *et al.*, 2019). Nevertheless, the Covid-19 pandemic has had an unimaginable impact on the global health system, highlighting even more sharply all the current and prospective difficulties of the healthcare industry (Berawi, 2020; Farooq, Ali, 2020; Muthuraman, Al Haziazi, 2020).

In this regard, it should be mentioned that all the activities, services, and performances connected to healthcare have the characteristics of a long-term existence, because they are naturally connected to human health but at the same time they are constantly innovating (Schiavone, Simoni, 2019), because people's expectations about health are continuously influenced by the evolution of

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the macro-environment (Schiavone *et al.*, 2020b) and the demographic-social-cultural system in particular (a constant increase in average life expectancy, a common tendency to prolong specific habits, and a vast recourse to innovative products like nutraceuticals, for example). This combination has, over time, required the adoption of increasingly responsible and interdisciplinary perspectives (Lega *et al.*, 2018).

Nowadays the economy that is connected to health and healthcare needs an ever more entrepreneurial and managerial approach (as happens in the following selected articles) when focusing on major orientations regarding patients/consumers' requirements and a systemic approach to ICT-based solutions respectively, because there is the need to guarantee the best performance of the healthcare industry, not only for current, but also for future generations, adequately combining the professional quality of the healthcare service with its economic sustainability (Festa *et al.*, 2020). Thus, adopting a managerial perspective for governing and handling the services of this industry is not only possible, but also desirable, naturally with the necessary and appropriate contextualization (Lega *et al.*, 2018).

In fact, although exposed to never-ending transformations, healthcare remains centered on the main essence of its nature, *i.e.* the human focus. All the technologies that are currently available, and most of all those that will be available in the future, will have to deal with the human dimension (Festa *et al.*, 2018; Laurenza *et al.*, 2018; Kraus *et al.*, 2021) such as, for example, the ability of healthcare operators to use healthcare technology (Teti, Festa, 2009; Lepore *et al.*, 2018) and the capacity of healthcare patients to accept healthcare technology (Cuomo *et al.*, 2020; Ćwiklicki *et al.*, 2020; Baudier *et al.*, 2021); both are involved, although from different points of view, but with a unique goal, in (co)creating ever greater customer satisfaction (Battard, Liarte, 2019; Schiavone *et al.*, 2020).

This Special Issue of the *Journal of Innovation Economics & Management*[1] is specifically focused on exploring, detecting, and investigating new challenges in the economics and management of innovation in the healthcare sector, which naturally affect many

1. Some of the papers were presented at the RNI Forum Innovation IX & Summer School entitled "Innovation for Health, Innovation for Life" (Parthenope University, Naples, Italy, 17-18-19 July 2019).

topics, but particularly the aforementioned orientation to patients/consumers (from the demand side) and a systemic approach to ICT (from the supply side). All the papers that have been selected have the merit of focusing simultaneously on both these issues, and in all of them, even when analyzing very innovative themes, the human essence of the healthcare service has constantly emerged.

The article by Octavio Escobar, Daniele Leone, Pasqualina Malafronte and Stefania Mele ("The Effect of Telemedicine on Patients' Wellbeing: A Systematic Review") provides a structured investigation on how telemedicine influences patients' wellbeing and their satisfaction. Through a bibliometric method, the study has quantitatively analyzed the scientific outputs of the last twenty years, with two research perspectives that have emerged: the acceptance of telemedicine for different stakeholders, and the importance and challenges of using the Internet in healthcare. Finally, the authors have provided an interesting conceptualization for managing telemedicine in healthcare organizations, with a fruitful impact on the overall health ecosystem.

The article by Patricia Baudier, Chantal Ammi and Galina Kondrateva ("The Acceptability of Telemedicine Cabins by the Students") focuses on healthcare resilience, threatened by financial restrictions, the lack of medical staff, and the emergence of the Covid-19 pandemic, and supported by innovative technological solutions, such as the Telemedicine Cabin. The acceptance of individual healthcare technologies is directly linked to the trust that patients may have toward these innovative solutions, and in this vein the research has analyzed the impact of the three dimensions of trusting beliefs (Benevolence, Integrity, and Competence) and the two variables of the Technology Acceptance Model (Perceived Usefulness and Ease-of-Use) on the intention to use Telemedicine Cabins. Furthermore, a specific output of the investigation has concerned the measurement of the impact of perceived personalization on trusting belief constructs and the influence of Perceived Ease-of-Use on Perceived Usefulness.

The article by Quentin Oget ("When Economic Promises Shape Innovation and Networks: A Structural Analysis of Technological Innovation in the Silver Economy") is about the 'silver economy' and the role played by technological innovations in this new economic meta-market. Adopting an innovative perspective, this new space has been studied as a whole, starting from Regulation

Theory to investigate the institutional arrangements allowing the existence and functioning of this economy. Two main theories are the pillars of this research: the fictional expectations by Jens Beckert and the techno-scientific promises by Pierre-Benoit Joly. Economic promises are the institutional arrangements supporting the creation of the silver economy, activating networks that are enabled by technological innovation. The study demonstrates that while researchers and policy makers broadly agree that technologies are major solutions for ageing problems, empirical data analysis shows that they are indeed relatively minor. Nonetheless, these innovations reinforce the economic promises upon which the silver economy is based.

The article by Marcos Lima, Roberto Abramovich and Michel Dalmas ("Perceptions of Telediagnostics Technology in Brazil: A Case of Active Innovation Resistance?") aims to shed light on the attitudes of Brazilian physicians, nurses, and other healthcare professionals toward innovation in tele-medicine. The authors have revisited the Innovation Decision Model introduced by Talke and Heidenreich to identify functional barriers (value, complexity, triability, compatibility, co-dependence, communicability, visibility, amenability, and long-term realization) and psychological barriers (norm, image, usage, information, and personal-economic-and-social risks) associated with Brazilian healthcare professionals' attitudes toward innovations in tele-diagnostics. They realized that the overall attitude of medical professionals toward this technology is very positive. Complexity, co-dependence, and compatibility are the strongest functional barriers to adoption, most likely due to the technical difficulties of installing and maintaining the necessary devices while, as concerns psychological barriers, 'perceived information asymmetry' has emerged as the main obstacle to adopting tele-diagnostics, most of all because of insufficient information about the consequences of using these tools. The authors have realized that the main reasons why professional operators welcome tele-diagnostics technologies are quicker access to results and better control of the process, although there are still strong concerns in the medical community concerning data security. As potential implications, policy makers and solution providers must concentrate on more user-friendly devices and interfaces to reduce technological and psychological barriers, at the same time adopting impactful training and public awareness campaigns to decrease the aforementioned 'information asymmetry'.

The article by Gabriele De Luca ("Modelling Societal Knowledge in the Health Sector: Machine Learning and Google Trends") is dedicated to investigating the relationship between social learning and language, in connection to the diffusion of medical knowledge among the population. Analyzing social cognition and the knowledge society, the research has proposed and developed a computational model that replicates the process of knowledge acquisition in the medical sector through language, performed by a homogenous population of native speakers of that language, through a machine learning model based on emerging associations between concepts as represented by related words in the medical vocabulary, and as measured by the joint variation in the frequency of usage by a population that uses that vocabulary. The implications of such computational models are relevant for studying the effectiveness of public health campaigns, even more notably to facilitate the learning process required to contrast with the ongoing pandemic.

The variety of the topics under investigation demonstrates how vast the impact of innovation in the healthcare sector is, and how complicated the study of its intrinsic interdisciplinary competencies has become, especially when technology has broadened its application, not only to the medical area of healthcare organizations (radiology information systems, laboratory information systems, electronic medical records, electronic patient records, and so on), but also to the managerial area (with an ever greater adoption of business intelligence, decision support systems, expert systems, neural networks, and artificial intelligence, in general). In this respect, common evidence emerging from all the research that has been developed in this Special Issue is that a managerial approach to the multiple dimensions of the healthcare system (not only curing in the strict sense, but also planning, organizing, implementing, and controlling the efficacy and efficiency of the various resources) is nowadays more necessary and opportune than ever, as the Covid-19 pandemic has, furthermore, highlighted, from a clinical and from an economic point of view, with continuous, constant, and engaged focus on the patient/customer.

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