Editorial: Science diplomacy and digital transformation for greener, more inclusive and resilient economies and societies

Introduction

The EU's key funding programme for research and innovation (2021–2027) is called Horizon Europe. It has a budget of €95.5bn to address global challenges and priorities as well as foster scientific collaboration in research and innovation. With three core pillars (excellence science, global challenges and European industrial competitiveness and innovative Europe), one of its mission areas is societal transformation. In a rapidly changing world, the development of bilateral cooperation between countries and regions, as well as active dialogue with key actors, is essential to achieve these goals. Nowadays, the EU has bilateral agreements with 19 countries: Algeria, Argentina, Australia, Brazil, Canada, Chile, China, Egypt, India, Japan, Jordan, Korea, Mexico, Morocco, New Zealand, South Africa, Switzerland, Tunisia and the USA (European Commission, 2023a, 2023b).

EU believes science diplomacy must be one of its priorities for societal transformation. In the *First biennial report on the implementation of the global approach to research and innovation* (European Commission, 2023c), science diplomacy is defined as "the direct or indirect use of science, scientific evidence, and scientific cooperation to advance diplomatic goals. This term includes science, technology, engineering, and mathematics, as well as social sciences and humanities" (p. 3).

Outside the EU, what are other countries and regions doing to transform their societies and economies and make them more inclusive and resilient? It is vital to discuss lessons from experiences (successes and failures) around the world, design new S&T policies and strategies to boost competitiveness and economic growth and grasp the benefits of the green and digital transitions. Multilateral dialogue with international partners will be critical to tackle global challenges. It is important to deepen collaboration between world-leading academics and researchers in priority areas – such as climate change, digital transformation, education, energy and health, among others – and create strategic intellectual capital (human capital, relational capital and structural capital) for companies, nations and regions (Iqbal *et al.*, 2022; Lin, 2019; Ordóñez de Pablos, 2004, 2005; Sabah *et al.*, 2019; Vo and Tran, 2022, 2023; Zhao *et al.*, 2014).

To facilitate the digital and green transitions in the post-pandemic scenario, it is crucial to engage in active bilateral and multilateral dialogue to develop policy agendas for science, technology and innovation, invest in human capital, reinforce scientific cooperation and boost collaborative links in order to build a better future for the next generations.

I hope the *Journal of Science and Technology Policy Management* can help to shape this dialogue among relevant stakeholders and pave the way to greener, more inclusive and resilient economies and societies.

Contents of the issue

The second issue (2024) of *Journal of Science and Technology Policy Management* presents a collection of 10 papers that address key issues for companies and governments, like artificial

intelligence, cashless payments, e-learning, fintech, industry 4.0., innovation, innovation policies and smart hospitals, among others. The discussion covers countries like Argentina, Brunei Darussalam, China, Indonesia, Kuwait, Malaysia and Singapore, as well as in ASEAN.

The paper titled "Students' perspectives on using e-learning applications and technology during the COVID-19 pandemic in Indonesian higher education" (by Candra and Jeselin) states that "the e-learning-based approach is critical in keeping the wheels of education turning in the face of the COVID-19 epidemic." In this scenario, analysing the implementation of the e-learning system is required to properly grasp the needs. The purpose of this paper is to demonstrate the relationship between technical system quality, information quality, service quality, educational system quality, support system quality, learner quality, instructor quality, perceived satisfaction, perceived usefulness, e-learning system use and benefits. This study was carried out by giving online questionnaires to students attending private institutions in Indonesia. A total of 593 students participated in the study and provided responses. The structural equation model, which is supported by the program WarpPLS7.0, is used to analyse the data. Maintaining the quality of the technological system, the information system, the learners and the educational system can help achieve the goal of increasing perceived utility. In the meanwhile, factors such as inadequate service quality, educational system quality, support system quality and teacher quality can all pose challenges to perceived levels of satisfaction. To get the most out of e-learning apps, users' expectations about how fun, useful and easy to use they are need to be met."

The paper titled "A strategic framework to analyse the East Asian miracle within triple helix model – lessons for Kuwait" (by Arman and Al-Qudsi) develops "a framework that combines the triple helix model with competitive strategies concepts to capture and guide any innovation-led national development strategies. This paper adopted a methodological framework based on existing methods and guidelines, the most commonly reported approach for developing a methodological framework. The review of fundamental approaches to achieving fast and sustained economic development, triple helix model and competitive strategies helped develop the methodological framework. The framework was validated and tested using the case studies approach on Korea, Taiwan and Singapore. Kuwait aims to create an innovative environment to benefit from the innovation strategies anchored by the East Asian miracle economies and how they used the triple helix actors at different developmental stages. First, Kuwait's research institutes and universities need to design interactive programs and activities with industry and community to help innovate solutions to current and prospective challenges. Second, the government needs to provide a competitive business environment and effective policies. Thirdly, the Kuwait industry must be encouraged to innovate and infuse modern technology practices."

The paper titled "The bane of P2P lending: credit scoring governance on the ASEAN fintech triumvirate" (by Rosdini, Wahyuni and Sari) analyses "credit scoring regulations, governance, variables and methods used by peer-to-peer (P2P) lending platforms in key players of the Association of Southeast Asian Nations (ASEAN) region's P2P, Indonesia, Malaysia and Singapore. This study explores the P2P Lending characteristics of the three countries using qualitative literature review, interview, focus group discussion and desk research. This study concludes that the credit scoring variables used by the countries' companies are almost the same. Key drivers of the differences are countries' regulations, management/business core value and credit scoring data processing methods. Ultimately, this research provides a comprehensive view for investors, businesses and researchers on the topic of ASEAN credit scoring governance and will help them navigate the complexities

and improve their awareness on the importance of credit scoring governance in P2P lending companies."

The paper titled "Customer acceptance of online delivery platform during the COVID-19 pandemic: the case of Brunei Darussalam" (by Almunawar and Anshari) states that "as a result of the COVID-19 pandemic, numerous businesses have migrated to an online delivery platform (ODP) to survive and reconnect with their customers. This study aims to focus on how the public perceives ODP. It examined the acceptance of digital platforms for delivering daily necessities, especially food, in Brunei Darussalam during the COVID-19 pandemic. The online survey collected 350 valid samples, and the online questions were distributed using a snowball sampling method, with the questionnaire's softcopy prepared in Qualtrics and sent via email and social media as hyperlinks. In 2021, we sent out the questionnaire link via email, WhatsApp and Facebook to people and organizations for about six months. According to the findings of the study, product quality is a critical factor that consumers consider while making online purchases of different products. The COVID-19 condition positively affects customer acceptance, performance, effort and product quality. This research indicates that service quality, online habits and trust do not influence customer acceptance of an ODP."

The paper titled "Social effects of joint R&D: the role of learning and accumulation of capacities" (by Verre, Milesi and Petelski) affirms that "joint research is pointed out by the literature as a potentially virtuous cooperation scheme to generate learning in the public sphere and beneficial effects in society. The purpose of this study, based on the Argentine experience in the COVID-19 pandemic, is to analyse the network of capacities, relationships and effects generated, over time, by a series of projects financed by the State in 2010, to clarify the link between learning effects and social effects. A qualitative methodology focused on the multiple case study method was used. Each case covers joint R&D projects financed 10 years ago by the state that subsequently led to different solutions for COVID-19. The work identifies a public learning process that integrates both industry's contributions and the intellectual dimension of economic benefits and their translation into specific capabilities; conceptualizes the capacities accumulation process as a multiplier of social effects (direct and indirect) that emerge as knowledge is reused; identifies the articulation between different schemes as a condition for learning effects and social effects to manifest over time."

The paper titled "Social media marketing activities on brand equity and purchase intention among Chinese smartphone consumers during COVID-19" (by Shuyi, Mamun and Naznen) observes that "the world has been forced to implement movement restriction strategy because of the COVID-19 pandemic, and industries have to embrace online technologies and social media marketing activities (SMMAs) to continue their business operations. Considering the aftermath of COVID-19 on the business world, this study aims to explore the determining elements of SMMAs and analyse how these factors affect brand equity (BE), relationship equity (RE) and purchase intention (PI) among smartphone consumers in China. Five constructs of SMMAs, namely, entertainment (EN), interactivity (IN), trendiness (TR), customisation (CU) and electronic word-of-mouth (WM), were examined to examine the effects of SMMAs on BE and RE. Subsequently, the mediation effects of BE and RE on the relationships of all constructs of SMMAs with PI were analysed. An online survey was conducted with the participation of 347 Chinese consumers who used social media platform managed by the smartphone brands as their marketing activities during COVID-19. The data were analysed via structural equation modelling using SmartPLS. This study's result showed the significant and positive influence of CU, TR and WM on BE and the strong and positive influence of CU, IN and TR on RE. Furthermore, BE was found to fully

mediate the relationships of CU, TR and WM with PI, while RE was found to mediate the relationships of TR and CU with PI. The performance and impact factor analysis revealed RE as the most important factor for PI, followed by BE, CU and TR."

The paper titled "Toward a model for assessing smart hospital readiness within the Industry 4.0 paradigm" (by Ronaghi) states that "the fourth industrial revolution and digital transformation have caused paradigm changes in the procedures of goods production and services through disruptive technologies, and they have formed new methods for business models. Health and medicine fields have been under the effect of these technology advancements. The concept of smart hospital is formed according to these technological transformations. The aim of this research, other than explanation of smart hospital components, is to present a model for evaluating a hospital readiness for becoming a smart hospital. This research is an applied one, and has been carried out in three phases and according to design science research. Based on the previous studies, in the first phase, the components and technologies effecting a smart hospital are recognized. In the second phase, the extracted components are prioritized using type-2 fuzzy analytic hierarchical process based on the opinion of experts; later, the readiness model is designed. In the third phase, the presented model would be tested in a hospital. The research results showed that the technologies of internet of things, robotics, artificial intelligence, radio-frequency identification as well as augmented and virtual reality had the most prominence in a smart hospital."

The paper titled "Modelling the intention and adoption of cashless payment methods among the young adults in Malaysia" (by Munikrishnan, Mamun, Xin, Chian and Naznen) affirms that "cashless payment is gradually replacing physical currency in almost every financial transaction across the world. Even though cashless payment methods have been available in Malaysia since a decade ago, their usage has remained relatively low in comparison to other countries. This study aims to analyse the elements that affect the Malaysian youth's adoption intention and actual use of cashless payment by extending the unified theory of acceptance and use of technology (UTAUT) model with two key factors (perceived security [PS] and lifestyle compatibility [LC]). Data were gathered online from 364 Malaysian youths and processed using partial least squares structural equation modelling. The findings revealed that performance expectancy (PE), LC and PS had a positive and substantial effect on the intention to use cashless payment (ICP). In contrast, effort expectancy (EE) and social influence did not have any considerable influence on ICP. Furthermore, ICP had substantial mediating effects between the adoption of cashless payment (ACP) and PE, LC and PS. In the analysis of the moderating effect of age, gender, experience and voluntariness, only experience had moderating effects on the associations between PE and ICP and between FC and ACP."

The paper titled "Adoption of artificial intelligence in financial services: a policy framework" (by Kumari, Kaur and Swami) states that "a crucial contemporary policy question for financial service organizations of being resilient across the globe calls for rethinking and renovating by adopting and adapting to the technologies of artificial intelligence (AI). The purpose of this study is to propose a policy framework for adoption of AI in the finance sector by exploring the driving factors through systems approach. Based on literature review and discussions with experts from both industry and academia, nine enablers were shortlisted, which were used in the questionnaire survey to determine ranks of enablers. Further, the study developed the interpretive structural model (ISM) with the help of experts. The ISM digraph developed with the help of the experts, resulted in the enablers like anticipated profitability, contactless solutions, credit risk management and software vendor support as dependent factors and stood at the top of the ISM. On the other hand, factors like availability of the data, technical infrastructure and funds are the most driving factors, which lie on the bottom of the ISM."

Finally, the paper titled "Innovation policy and public funding to stimulate innovation in knowledge intensive companies: the influence of human and social capital" (by Câmara, Buarque, Pinto, Ribeiro and Soares) studies "public policies for innovation, more specifically on analyzing variables that may affect the development of technological and innovative projects in knowledge-intensive companies. The authors studied capitals potentially important for these companies in the development of innovative projects. Specifically, the authors sought to understand the importance of human capital and how it reflects in technical and scientific knowledge of the project team and of social capital and how it reflects the connection and social relationship among different team members. The results presented that the degree of efficiency of the public funding program depends on how much the teams of the benefited projects have accumulated knowledge, skills and technical capacities – the so-called teams' human capital."

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