Editorial: "Digital transformation, innovation and competitiveness: some insights from Asia"

Introduction

Horizon Europe, European Union's key funding program for research and innovation (2021–2027), tackles global challenges and fosters collaboration in research and innovation. With a budget of €95.5bn, it addresses priorities like the green transition, digital transformation and United Nations's sustainable development goals. Horizon Europe supports the development and dissemination of scientific knowledge, the creation of new jobs and the boost of economic growth and competitiveness of companies. The program has three main pillars: excellence science, global challenges and European industrial competitiveness and innovative Europe. It has five mission areas: adaptation to climate change, including societal transformation; cancer; healthy oceans, seas and coastal and inland waters; climate-neutral and smart cities; and soil health and food (European Commission, 2023a, 2023b).

It is important to connect key actors (academics, researchers, businesses, educators and governments) in the new landscape and strengthen regional, national and international cooperation and synergies among researchers and their teams. It is crucial to stimulate the creation of strong scientific networks of researchers, academic and other relevant stakeholders to nurture the development of strategic intellectual capital at different levels (national, regional and international) (Pietsch *et al.*, 2023; Ordóñez de Pablos, 2004a, 2005; Paiva *et al.*, 2020; Prabowo *et al.*, 2023; Ritala *et al.*, 2023; Vătămănescu *et al.*, 2023; Yin *et al.*, 2023). At individual level it is key to design programs to develop new skills, like green skills and digital skills to build competitive human capital in the digital age (Gull and Idrees, 2022; Napathorn, 2022; Schlegel and Kraus, 2023; Zhang *et al.*, 2016; Wright and McMahan, 2011). The fields of knowledge management and intellectual capital provide new knowledge and insights on how companies and nations can build strategic knowledge-based resources, increase economic growth and create sustained competitive advantages (Farajia *et al.*, 2022; Ordóñez de Pablos, 2004b).

Finally, we cannot forget the integration of the gender dimension in the field of research and innovation as well as the engagement of society.

Contents of the issue

The first issue (2024) of *Journal of Science and Technology Policy Management* presents a collection of ten papers that address key issues for companies and governments, like climate change, e-learning, industry 4.0, innovation, start-ups and sustainable chain supply, among others. The discussion covers countries like India, Indonesia, Iran and Pakistan.

The paper titled "*Achieving an agile organisation in an Indonesian telecommunications company: investigation on leadership impact and mediation variables*" (by Susanty Budiharjo and Winarto) states that:

> Agility is an important characteristic that every organisation requires in today's competitive digital era. Telecommunications companies in Indonesia face various types of competition, both from the same industry and new models. This study aims to identify the agility level of telecommunications companies in Indonesia. It also examines the effect of leadership style directly and indirectly through the mediation of employee readiness, innovation culture, technology capability and organisational structure. This study used a non-probability sampling technique. The macro process was used to

Journal of Science and Technology Policy Management
Vol. 15 No. 1, 2024
pp. 1-5

2053-4620
DOI 10.1108/JSTPM-01-2024-222

identify and measure the direct and indirect effects. The results are based on survey data collected from a telecommunications company in Indonesia with a total of 1,073 employees. The results of this study showed that an adaptive leadership style has a direct and significant positive effect on the organisational agility level. Employee readiness, innovation culture, technological capability and organisational structure function as mediators between adaptive leadership style and agility.

The paper titled "*Barriers and facilitators to adoption of e-learning in higher education institutions of Pakistan during COVID-19: perspectives from an emerging economy*" (by Qazi, Sharif and Akhlaq) affirms that:

> Integrating e-learning into higher education institutions (HEIs) is a complex process. Several universities had tried to impart learning online, especially amid the spread of COVID-19. However, they failed miserably due to the many barriers to online learning platforms' delivery and acceptance. This study aims to explore the barriers and facilitators in adopting e-learning in HEIs of Pakistan by taking the perspective of key stakeholders involved in the management and administration of HEIs. The authors recruited participants using purposive and snowball sampling. Interviews were conducted from a variety of participants, including academicians, administrators and information technology (IT) personnel. Data recorded was transcribed into verbatim and then analyzed using thematic analysis. The analysis identified barriers and facilitators to the e-learning implementation. Barriers included lack of resources and training, lack of infrastructure, inadequate e-learning policies, absence of positive mindset among teachers and students and reservations and concerns about e-learning of parents and teachers.

The paper titled "*A decision support approach for financial policy measures selection*" (by Alizadeh and Amiri) observes that:

> Business research and development (R&D) is of critical importance for innovation and economic growth. The purpose of this study is to present an application of the analytic hierarchy process (AHP) to select the most appropriate policy measure to support the business expenditure on R&D (BERD). AHP method adopts a multi-criteria approach that can be used to analyse and prioritize the policy measures based on pairwise comparisons between several attributes that affect the selection of a policy tool. The model formulated in this study is applied to a real case of supporting decision-makers in some high-tech sectors in Iran. The results highlight the four main financial policy measures implemented in Iran to enhance the BERD; those are, public procurement for R&D, direct subsidies for R&D, grants for R&D and income tax credit for firms have the priority values of 0.280, 0.260, 0.249 and 0.211, respectively.

The paper titled "*Empirical study on consumers' reluctance to mobile payments in a developing economy*" (by Ghosh) studies "the effect of factors that inhibit adoption of mobile payments service in India." Based on the extant literature on mobile payment service and other related literature, factors were identified that drive consumer resistance toward its adoption. It engaged "innovation resistance theory" framework for understanding consumer resistance. The framework addressed five categories of barriers, namely, usage, value, risk, image and tradition that lead to negative perception of innovation, and therefore, induces positive impact on its resistance. In addition, the study considered a few lesser investigated barriers (habitual use of cash, surveillance and technology) for the study, thus extending the existing theoretical framework. Hypotheses were framed, field data were collected and then analyzed using multivariate techniques. Few interesting observations were made from the study. Usage, image and value barriers hindered adoption of mobile payment service. In case of men, usage, value and image were the primary barriers. For women, usage, image, habitual use of cash and technology acted as barriers that curbed mobile payments service adoption. In addition, except risk, tradition and surveillance barriers, relationships of all other constructs with adoption intention were moderated by gender.

The paper titled "*Key performance factors for integration of Industry 4.0 and sustainable supply chains: a perspective of Indian manufacturing industry*" (by Gopal, Kadari, Thakkar and Mawandiya) aims:

> [. . .] to identify the key performance factors that can lead toward sustainability in the Industry 4.0 supply chains of manufacturing industries. Questionnaire is used to collect the data from manufacturing sector to prioritize the factors, which integrates both Industry 4.0 and sustainability. For this, stepwise weight assessment ratio analysis (SWARA) method is used to obtain the weights for criteria and sub-criteria to prioritize the factors. The present study brings the findings about five key performance factors. Social factor needs much attention among all the criteria, followed by ecological, economic, information technology and dynamic capability theory. Further, change management, third-party audits and novel business models are key sub-factors to improve performance of sustainability in Industry 4.0 supply chains. This study prioritized the performance factors of Industry 4.0 and sustainable supply chain in Indian manufacturing sector. These prioritized factors help to improve performance of organizations, which are practicing the Industry 4.0 and sustainability practices. Managers in manufacturing industries can use the SWARA for assessment of weights for the criteria and sub-criteria factors to take appropriate decisions to improve the organizations' performance.

The paper titled "*Understanding the key drivers in using mobile payment among Generation Z*" (by Lisana) presents a quantitative study:

> To examine the determinants that impact the behavioral intention to use mobile payment (m-payment) among Generation Z (Gen Z) customers in Indonesia. The theoretical model comprises seven latent variables: effort expectancy, performance expectancy, social influence, facilitating conditions, promotional activities, perceived security and behavioral intention. In addition, the two moderating factors of education and gender are used to investigate the significant effect of the determinants on intention to adopt m-payment. This study obtained the final data size of 430 respondents. The data analysis is conducted using structural equation modeling. The results substantiate the significance of promotional activities, perceived security, performance expectancy, effort expectancy and social influence, on the behavioral intention to accept m-payment systems. Gender is revealed to significantly moderate two constructs: social influence and promotional activities, on the m-payment usage intention. Meanwhile, education moderates the effect of perceived security on behavioral intention.

The paper titled "*Weather index insurance viability in mitigation of climate change impact risk: a systematic review and future agenda*" (by Singh) analyzes:

> Studies on weather index-insurance as a tool to manage the climate change impact risk on farmers and to explore the study gaps in the currently existing literature by using a systematic literature review. This study analyzed and reviewed the 374 articles on weather index insurance (WII) based on a systematic literature search on Web of Science and Scopus databases by using the systematic literature review method. WII studies shifted their focus on growing and emerging areas of climate change impact risk. The finding shows that the impact of climate change risk significantly influenced the viability of WII in terms of pricing and design of WII. Therefore, the cost of WII premium increases due to the uncertainty of climate change impact that enhances the probability of losses related to insured weather risks. However, WII has emerged as a risk management tool of climate insurance for vulnerable agrarian communities. The efficacy of WII has been significantly influenced by repetitive environmental disasters and climate change phenomena.

The paper titled "*The effect of cultural orientations (performance and sociality) on country innovation: a trajectories analysis perspective*" (by Ramirrez-Urraya, Escandon-Barbosa and Salas) examines:

> The effects of cultural orientations (performance and sociality) on the trajectories of innovation inputs and their results in different countries worldwide between 2011 and 2021. As a technique

for data analysis, one of the spatial Bayesian models and Gray forecasting methods is used. This technique is adequate to achieve the objectives of the investigation because it allows analyzing how the variables move in time ranges and allow the generation of forecasts. This model also allows knowing if there are spills, which investing in a country can positively affect countries with geographical proximity. The databases used were the Global Innovation Index with data from 131 nations and the Globe Project with data from 157 countries between 2011 and 2021. The variables analyzed are institutions, human capital, research infrastructure, market sophistication and business sophistication. On the other hand, regarding moderations of cultural orientations, The Globe Project developed two factors: performance orientation (high degree of masculinity, avoidance of ambiguity, power distance and future orientation) and humane orientation (high-level of femininity, institutional and societal collectivism).

The paper titled "*Determinant factors of lean startup-based incubation metrics on post-incubation start-up viability: case-based study*" (by Tritoasmoro, Ciptomulyono, Dhewanto and Taufik) explores:

> [. . .] the effect of business incubation metrics based on an adaptation of the lean start-up (LS) framework on start-up survival after incubation. This study also analyzes the obstacles in implementing the LS framework as incubation metrics. This study uses mixed methods. Quantitative research using multiple linear regression was applied to the data of 30 start-ups incubated at Bandung Techno Park for the 2014–2017 period and survival tracking data after the incubation. A qualitative approach to complete the explanatory work was conducted through in-depth interviews with 12 respondents, including start-up graduates from the incubation program, program managers and mentors. This study confirms that several LS incubation metrics significantly affect start-up sustainability after incubation. In addition, this study also explains several problems in applying the LS discipline that needs attention to increase incubation success.

The paper titled "*Measuring research efficiency and its determining factors for Indonesian R&D institutions: does scientific publication make a difference?*" (by Afriana and Khoirunurrofik) affirms that:

> The outcomes of public research institutions (PRIs), also known as research and development (R&D) institutions, in developing countries, including Indonesia, are still dubious. This study aims to measure the efficiency of R&D institutions using the case of the Indonesian Institute of Sciences, with and without an assessment of the role of scientific publication. A panel data envelopment analysis (DEA) model is used to estimate the research efficiency of Indonesian R&D institutions during the period 2016–2019 based on the relationship between intellectual property (IP), research budgets and number of active researchers. The Tobit model is subsequently applied to analyze the factors that affect efficiency. The DEA analysis shows an average efficiency value of 0.361, implying that 42% of the decision-making units (DMUs) have above-average efficiency scores. When scientific publication is added as an output variable, the efficiency increases to an average of 0.545, resulting in 53% of the DMUs with above-average efficiency. The main implication is that scientific publications can increase the output of R&D institutions in Indonesia. This study recommends strengthening the research group establishment led by research professors along with setting acceptable high output targets. Researcher competence must be improved together with support for research collaboration among the different fields of science. Scientific publications should be considered part of IP measurement along with the type of mandate of each PRI.

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