

Information technologies, innovation and human capital: insights for competitive advantage

Introduction

Emerging technologies such as artificial intelligence, big data and internet of the things have huge potential to develop innovative solutions for the global health, social and economic disruption caused by the COVID-19 outbreak in 2020. Companies and governments need to use information technologies to respond to these challenges and opportunities as well as to new ones (Chui *et al.*, 2017; Del Vecchio, 2018; European Commission, 2021; Lytras *et al.*, 2009; Kumar *et al.*, 2021; Ordóñez De Pablos *et al.*, 2021).

It is important that valuable information and knowledge is shared among citizens, companies, research centers and governments across the world. Sharing information requires adequate infrastructures such as e-government infrastructures and research e-infrastructures. Knowledge management strategies and tools will be key elements in the growing digital economy (Ordóñez De Pablos and Edvinsson, 2014, 2020; Turulja *et al.*, 2021). Companies and countries, with the support of digital technologies, need to use intellectual capital metrics to measure its knowledge-based resources: human capital, relational capital and structural capital (Lytras and Ordóñez De Pablos, 2008; Ordóñez De Pablos, 2004, 2005; Papa *et al.*, 2021). Countries and regions must invest heavily in education and information technologies for education, develop long term relations with relevant stakeholders and invest in digital infrastructures. Information technologies, circular economy and green technologies will contribute to the creation of new jobs, boost productivity and accelerate economic recovery in the world.

Contents of the issue

In the last issue of the year, *Journal of Science and Technology Policy Management* presents an outstanding collection of seven papers that contribute to our understanding of entrepreneurship, innovation, information technologies and green practices in the growing digital economy.

The first paper, titled “*Cooperation and novelty innovation: A study for Argentina*” (by Carolina Pasciaroni and Andrea Barbero) studies “the influence of cooperation on the degree of novelty of technological innovations introduced by industrial firms in Argentina. This influence is analysed from three perspectives: cooperation by partner type [business partners or scientific and technological centres (S&T) partners]; cooperation by number of partner types, from no cooperation to cooperation with two partner types; and cooperation by goals pursued by firms”.

The second paper, titled “*Early COVID-19 outbreak and individuals’ mask attitudes and purchase intentions: A cohesive care*” (by Naimatullah Shah, Muhammad Shafique Kalwar and Bahadur Ali Soomro) analyzes “individuals’ attitudes and intentions towards mask purchase in Pakistan at an initial outbreak of COVID-19. The study is quantitatively based on the cross-sectional data. The data are collected through a survey questionnaire. Convenience sampling strategy is used to target the individuals of Pakistan. At the first, 650 questionnaires were distributed. In return, the authors received 321 raw samples with the response rate of 53.5%. Finally, 316 useful samples are proceeded to infer the final results. The structural equation model’s results demonstrate a positive and significant effect of fear of complication of COVID-19,



knowledge about COVID-19 and health consciousness on attitudes towards the mask. Further, attitudes towards mask are found to be the robust analyst of mask purchase intention”.

The third paper, titled “*Developing a conceptual model to implement Green Lean practices in Indian manufacturing industries using ISM-MICMAC approach*” (by Charanjit Singh, Davinder Singh and Jaimal Singh Khamba) discusses that “lean and green strategies are good options to increase the environmental and operational performance of manufacturing industries. The purpose of this paper is to identify the critical success factors (CSFs) to implement green lean practices (GLPs) in manufacturing industries through the review of the literature and to develop a conceptual model after analysing the fundamental facilitating factors by using ISM-MICMAC approach. This study may provide a useful input for academicians and managers of industries to differentiate between independent and dependent CSFs and their mutual relationships which would help them to focus on those key CSFs that are most significant to implement GLPs”.

The fourth paper, titled “*Influence of high-performance work systems on intrapreneurial behaviour*” (by Muhammad Farrukh, Mohammad Saud Khan, Ali Raza and Imran Ahmed Shahzad”) affirms that “in the past, a plethora of studies has investigated the organizational and individual outcomes of high-performance work systems (HPWS). However, less is known about the mechanism through which HPWS impacts employees’ behaviour, particularly intrapreneurial behaviour (IB). Drawing on the social exchange theory, this study aims to fill this gap by investigating the mediation effect of perceived organizational support (POS) on HPWS-IB linkages. Despite an increasing number of studies on the role of human resource management (HRM) practices in enhancing innovation and creativity, there has not been enough research on how HPWS affects IB at the individual level in the presence of POS. Thus, this research is the first of its kind to investigate the mediating role of POS in HPWS-IB linkages in the Malaysian context”.

The fifth paper, titled “*Developing a catch-up model of technology: a grounded theory approach*” (by Fatemeh Saghafi, Ali Mohaghar and Monireh Kashiha) states that “Catch-up is a process during which the countries that are behind the technological borders try to reduce their technological gaps. For a company or country in the catch-up process, a suitable level of technological capabilities and absorption capacity is necessary as a fixed advance requirement. This paper aims to develop a catch-up model of technology. This study reviewed 90 published articles in the field of business management in Q1 and Q2 journals from the very beginning to the year of 2018 so that a framework can be presented for a catch-up. This framework has been obtained according to the process of grounded theory and by combining the previous studies”.

The sixth paper, titled “*Determinants of innovative development on the example of Kazakhstan*” (by Maral Nabieva, Shaken Turmakhanbetova, Nurgul Shamisheva, Kenzhegul Khassenova, Kulyash Baigabulova and Aliya Rakayeva) stated that “although many studies explored the drivers of innovative development and the innovation performance of different countries, very few studies looked at the association of the country’s GII score with the qualitative indicators of innovation performance. The purpose of this paper is to contribute such an investigation by looking at the Republic of Kazakhstan (79th in 2019 GII ranking). The study found that the Kazakhstan’s GII score was reliant on variables, such as the percentage of innovative organizations, the value of innovative goods and services as a share of GDP, R&D spending and the cost of innovative goods and

services. At the same time, the number of R&D institutions, innovation grants and number of R&D staff had no substantial impact on the GII score of Kazakhstan”.

The last paper of the issue is “*Understanding the determinants of online pharmacy adoption: A two-staged SEM-Neural network analysis approach*”. Its authors, Md. Mahiuddin Sabbir, Mazharul Islam and Samir Das, study “the determinants of online pharmacy or epharmacy adoption among young consumers in Bangladesh using an extended unified theory of acceptance and use of technology (UTAUT) model. A structured Google Docs questionnaire was sent out to 420 respondents using messenger service; 285 useable responses were finally extracted. Data were empirically validated using the two-staged structural equation model (SEM)-neural network analysis approach. The originality of the current study relates to the two-fold contributions of this study. First, while this study extended the classical UTAUT model by incorporating perceived risk, perceived trust, personal innovativeness and health literacy, the inclusion of the following two variables is fresh within the extant online pharmacy literature. Second, by using a two-staged SEM-neural network analysis approach, this study advances the past studies on e-commerce adoption in pharmaceutical settings and provides a general understanding of the customers of developing countries”.

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