

Editorial: “Fostering dialogue on digital technologies and services, competitiveness and growth”

Introduction

Advanced and emerging digital technologies bring opportunities and risks that governments and companies need to address now. In the case of the European Union (EU), the Digital Decade Policy Programme 2030 proposes objectives and targets for the digital transformation in Europe, empowering businesses and citizens for a digital and green future (European Commission, 2023a, 2023b). In particular, the new EU funding programme, the Digital Europe Programme (DIGITAL), with four multiannual work programmes supports projects in several key capacity areas: artificial computing, advanced digital skills, cybersecurity, supercomputing and the wide use of digital technologies for private and professional lives (European Commission, 2023c). On the contrary, the EU funding programme for research and innovation, Horizon Europe, funds research in technologies like 6G artificial intelligence, big data, next generation internet and others. It has a special interest in green and digital transitions (European Commission, 2023d).

In response to the global trends, it is critical to promote scientific research, exchange and dialogue among relevant stakeholders about the crucial role of talent, digital tools and services for boosting competitiveness, creating new jobs, promoting green growth and prosperity and supporting inclusion (access to internet, digital skills, etc.) in the digital era (Almunawar and Anshari, 2023; Elia *et al.*, 2023; Labra Gayo *et al.*, 2010; Ordóñez de Pablos, 2004a, 2004b, 2005, 2022; Sharma *et al.*, 2022; Zhang *et al.*, 2016, 2023). Therefore, we must open up discussion among companies, citizens and administrations about the digital transition and how these strategic technologies critical for the future of countries and regions can be supported. What are the priorities? What synergies can we find? How governments and businesses tackle digital challenges and risks in the post-pandemic scenario? How do they use strategic organizational resources and innovative digital tools to compete in the global market? This issue aims to stimulate scientific debate and provide some insights and experiences from Asia and other countries.

Contents of the issue

The sixth issue (2023) of *Journal of Science and Technology Policy Management* presents a collection of eight papers that address key issues for companies and governments, like big data, digital twins, information technologies, fintech and mobile financial services, among others. The discussion covers countries like Bangladesh, Ghana, India, Indonesia, Jordan, Malaysia, Pakistan and UAE.

The paper titled “Enhancing e-government with a digital twin for innovation management” (by Anshari, and Hamdan) proposes that “the implementation of digital twin in e-government services will become the future of public service delivery. It has a great promise for significantly optimizing e-government service delivery in public services because digital twin can be leveraged to achieve value co-creation, which can be turned for innovation and new knowledge creation. The purpose of this study is to fill a knowledge gap in the domain of e-government with digital twin enabled. This study examined the concept of digital twins in the context of e-government for innovation management. This research



applied exploratory research discussing a dynamic and interpretive model that examines the main factors to consider when developing digital twins for the Fourth Industrial Revolution's integration of e-government services. This study begins with a thorough assessment and then evaluates the results to propose a model that would be used as a benchmark for future research. Secondary data was gathered from a variety of previously published primary research sources, including peer-reviewed journals, case studies, periodicals, newspapers and books".

The paper titled "An Era of Digitalization: Mobile Banking adoption in India" (by Sharma and Khurana) analyses and identifies "the critical factors that can explain the intention of customers to adopt mobile banking services (MBSs) in an emerging country like India. Further, this study analyzes the difference in mobile banking adoption between males and females. This study uses a self-structured questionnaire to collect data on a sample of 143 respondents. On the contrary, qualitative research was conducted to test the reliability of results from the past literature by a hypothetical study. This study identified four components, perceived ease of use, perceived usefulness, compatibility and perceived risk, using principal component analysis and confirmatory factor analysis, significantly influencing the intention to adopt MBS in India. However, the Chi-square test reflected a negligible percentage difference in MBS among males and females. The findings of this study have significant implications for both bankers and practitioners, as they can redesign their strategies by incorporating the parameters suggested in the study for better market penetration in the mobile banking industry".

The paper titled "Mobile financial services and household welfare in a developing economy: boon and bane" (by Ahmad and Wongsurawat) studies "whether the introduction of innovative financial products increases welfare for low-income households working in the manufacturing sector. Specifically, the authors measure the impact of mobile financial services (MFSs) on economic opportunities and wellbeing of garment factory workers in Bangladesh. The study is based on Amartya Sen's Capabilities Approach. Close to 400 textile factory workers were interviewed about their experience using Bangladesh's most popular MFS, and how their household welfare has changed over time. Results were tabulated and analyzed with simple statistical tools. While there remains an abundance of friction in the system, financial innovation still assisted low-income households in savings, and expedited and secured their fund transfers. The introduction of the new technology, especially when it is made mandatory, seems to have disempowered married women by reducing their financial independence from their husbands. This study should help policy makers and international bodies in their efforts to design and support the inclusive growth of mobile financial technology".

The paper titled "Cloud-based big data framework towards strengthening disaster risk reduction: Systematic mapping" (by Mahrin, Subbarao, Chuprat and Abu Bakar) states that "cloud computing promises dependable services offered through next-generation data centres based on virtualization technologies for computation, network and storage. Big Data Applications have been made viable by cloud computing technologies due to the tremendous expansion of data. Disaster management is one of the areas where big data applications are rapidly being deployed. This study looks at how big data is being used in conjunction with cloud computing to increase disaster risk reduction (DRR). This paper aims to explore and review the existing framework for big data used in disaster management and to provide an insightful view of how cloud-based big data platform toward DRR is applied. A systematic mapping study is conducted to answer four research questions with papers related to Big Data Analytics, cloud computing and disaster management ranging from the year 2013 to 2019. A total of 26 papers were finalised after going through

five steps of systematic mapping. This study shows that a very famous platform selected by researchers is central processing unit based processing, namely, Apache Hadoop. Apache Spark which uses memory processing requires a big capacity of memory, therefore this is less preferred in the world of research”.

The paper titled “Role of fintech in credit risk management: an analysis of Islamic banks in Indonesia, Malaysia, UAE and Pakistan” (by Shah, Fianto, Sheikh, Sukmana, Kayani and Bin Ridzuan) studies “the effect of fintech on pre- and post-financing credit risks faced by the Islamic banks. This research uses primary data for fintech awareness and adoption and secondary data of various financial and economic variables from 2009 to 2021. It uses baseline regression to identify moderation of fintech controlling gross domestic products, size, return on assets and leverage. The findings are confirmed using robustness against key variable bias. It also uses a dynamic panel two-stage generalized method of moments for endogeneity. The study finds that the fintech awareness and adoption are not the same across all Islamic countries. The Asia Pacific region is far ahead of the other two regions where Indonesia is ahead in terms of fintech awareness and adoption, and Malaysia is ahead in terms of reaping its benefits in credit risk management. Fintech affects prefinancing credit risk significantly more than postfinancing credit risk. Also, the study finds that Islamic banks suffer from the problem of ‘Adverse selection under Shariah compliance’. This research invites regulators to introduce fintech in Islamic banks on war footing. Similar studies can be conducted on the role of other risks such as operational and market risks. Fintech will also help in improving the risk profile and stability of Islamic banks against systemic risks and financial crises”.

The paper titled “Multi-dimensional framework of the information behaviour of SMEs on emerging information communication” (by Eze, Chinedu-Eze, Awa and Asiyanbola) focuses on the state of art of the research on information behaviour. It argues that “regardless of the scholarly surge on information behaviour using numerous models and extended ones, gaps still exist on the development of more pragmatic frameworks that explain and/or predict the information behaviour across different fragmented environmental situations. Therefore, this paper extends technology-organization-environment (T-O-E) framework and synthesizes different research positions into a multi-dimensional framework that assists small and medium enterprises (SMEs) to understand their information behaviour and to make informed decisions on the adoption of emerging information communication technology (EICT). This study deployed an inductive approach; data were generated from unstructured and semi-structured interviews with 20 participants drawn purposively from Luton directories. This study developed a more integrated framework underpinned by T-O-E framework, which helped to identify how EICT adoption is critically shaped by perceived information need, information sources selection and the factors determining information source selection”.

The paper titled “E-banking services and the satisfaction of customers in the Jordanian banks” (by Tahtamouni) analyses “the main points in the dimensions of the quality of the electronic services to be considered in the future to adapt to future transactions and how to benefit from them. This study relies on the developments and to cope with them so that the banks and customers shift from dealing in the traditional way to the electronic method, which has become a cause of the gap in understanding customers for electronic banking use of the descriptive-analytical approach. A questionnaire was used as a source for collecting data and information about the study variables. It was distributed to three Jordanian banks, and the number of participants was 170. This study uses two primary sources for collecting data and information: secondary sources that relate to the theoretical aspect and preliminary sources related to the analytical aspect of the study subject. The results showed that the impact of e-banking quality dimensions of the study (ease of use, time, confidentiality and

security) was high, which required the bank to maintain its high levels and monitor them from time to time”.

The last paper of the issues, titled “Cashless economy – the nexus of COVID-19 and E-wallet usage intentions: a multi-group analysis between formal and informal sector workers in Ghana” (by Amankwa, Amissah and Okoampa-Larbi) develops “a conceptual model that bridges gaps in the current research by combining constructs from the health belief model (HBM) and theory of planned behaviour (TPB). Furthermore, the researchers applied the constructed model to analyse the determinants of workers’ intentions to use e-wallet payment options for business transactions rather than physical currency during the ongoing COVID-19 pandemic. Finally, the paper examines whether there are any significant variations in the usage intentions of Ghanaian workers in the formal and informal sectors. The non-probability convenience sampling technique was used to compile the primary respondents among Ghanaian users of e-wallets. Based on constructs derived from the HBM and TPB, an online survey involving the use of a questionnaire was administered to collect quantitative data from 285 formal and informal sector workers in Ghana. Data collected was analysed using the partial least squares-structural equation modelling approach involving the measurement, structural model tests, hypothesis tests and multi-group analysis (MGA) tests. This study reveals that workers’ attitudes, subjective norms and perceived susceptibility as the main determinants of intentions to use e-wallets, as the analysis of data lends support to hypotheses involving these constructs. Perceived behavioural control was however not supported by the data analysis as a determinant of workers’ intention. Finally, there were no significant differences between e-wallet usage intentions of formal and informal sector workers in Ghana”.

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