

Chapter 8

The Impact of Digitalization on Innovation: Evidence From Eurozone Countries

Funda Hatice Sezgin

Istanbul University-Cerrahpasa, Turkey

ABSTRACT

Today, the relationship between science and technology is one of mutual interaction, with technology developing on the basis of science, and developing technology opening up new fields of science, which in turn play a driving role in new technologies and innovative activities. The decisive role of science and technology in the process of economic development increases day by day and it is seen that all countries are in an increasingly intense search for science and technology policy. In the rapidly globalizing world economy, countries' conscious efforts and policy-making searches are intensifying on scientific and technological advances, which are among the main factors determining the competitive advantage of nations. In this study, the impact of digitalization on innovation for Euro Area countries is determined using panel regression. As a result of the analysis, it was determined that digitalization indicators have a statistically significant positive relationship on innovation.

INTRODUCTION

Changing world conditions with globalization have caused countries to focus on various marketing, innovation and digitalization efforts to sustain their competitive position, while the current competitive race has reached a more challenging level with the development of technology.

The introduction of the Internet into our lives and its use in every field from communication to trade has abstracted the concept of borders from the concept of borders and transformed the restricted market areas into a global marketplace (Gerguri-Rashiti et al., 2017). This has led to increased diversity and alternatives for both suppliers and customers. On the other hand, competition conditions have become tougher and customer demands have become more variable and diverse. Under all these conditions, businesses found the solution in sustainable and innovative approaches in order to meet the rapidly changing

DOI: 10.4018/978-1-6684-6620-9.ch008

demands of customers and not to fall behind in the competitive race in the market by developing existing competencies and resources without losing their advantages (Giesen et al., 2010:18).

The concept of innovation should be considered not only as a physical or qualitative change, development or improvement of a product, but also as a means of process improvement (Rogers, 2008). The improvements we have made in the way we do business in order to facilitate business processes by establishing a new and different working system in the flow in which we carry out our business processes are examples of minimal innovation efforts carried out on an individual basis. On a larger scale, streamlining processes is not the only benefit (Chandrashekar & Bala Subrahmanya, 2017). In addition to this benefit; creating added value for the customer provides significant benefits for businesses in terms of efficiency, effectiveness, performance improvement and profitability.

Therefore, having an innovative approach will provide businesses with vision, competitive advantage and customer satisfaction and loyalty in the long term. In the Industry 4.0 era, digitalization and innovation resources are integrated, creating new needs for customers and new sources of inspiration and production for businesses (Huang et al., 2015). The concept of digitalization has added a virtual innovation dimension to the understanding of innovation as tangible revisions to products, services and processes (Loukis, 2017).

Today, in addition to the development and widespread use of the Internet, concepts such as cloud technologies, artificial intelligence, Internet of Things, augmented and virtual reality are emerging along with technological developments. This process has placed computers and automation even more at the heart of production processes, ushering in a new era in manufacturing, also called Industry 4.0. In recent years, a holistic transformation process has begun. This process is called digital transformation. Digital transformation, which is brought about by the changes resulting from the application of digital technologies in all areas of society, is actually the transformation of the business world in the context of renewing business strategy or digital strategy, models, processes, products, marketing approach and goals by adopting digital technologies. The transformation phase means that digital uses enable new kinds of innovation and creativity in a given field, rather than simply enhancing and supporting traditional methods. The aim of this study is to determine the impact of selected digital transformation indicators on innovation for 15 Eurozone countries using panel regression analysis.

DIGITAL TRANSFORMATION

Digitalization incorporates technological resources into business processes and facilitates business processes by making these data and records available to everyone using digitization tools (Galindo-Martín et al., 2019). Digitalization is effective not only in production processes but also in the planning of value-adding activities in new product design and marketing (Iqbal, 2018).

Today, although not all businesses are experiencing a digital transformation, digitalization efforts are being carried out in different dimensions in the business processes of most companies. With digitalization, businesses can offer more opportunities to their customers (Morabito, 2016). Digitalization has enabled businesses to create different innovative business and process structures by integrating their innovative ideas into their existing business strategies, thus providing flexibility to both businesses and employees in terms of space, time, time and resource use (Vial, 2019).

Innovation in the digital sense refers to the improvement and development of existing products, processes or business models by using technological resources as a tool or target within or between

10 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:
www.igi-global.com/chapter/the-impact-of-digitalization-on-innovation/316043

Related Content

E-Governance Adoption: Identification of Success Factors from Teachers' Perspectives in Greece

Ioannis Karavasilis, Kostas Zafiropoulos and Vasiliki Vrana (2012). *Social Development and High Technology Industries: Strategies and Applications* (pp. 99-117).

www.irma-international.org/chapter/governance-adoption-identification-success-factors/58716

Exploring Social Aspects Influence on Change in Network Relationships: A Case Study of Digital Innovation

Jesper Svensson and Carina Ihlström Eriksson (2012). *International Journal of Social and Organizational Dynamics in IT* (pp. 14-33).

www.irma-international.org/article/exploring-social-aspects-influence-change/76383

Smart Hydroponic Monitoring System Using IoT

Shaminder Kaur, Lipika Gupta, Tripti Sharma, Shilpi Birla and Neeraj Kumar (2023). *Perspectives on Social Welfare Applications' Optimization and Enhanced Computer Applications* (pp. 285-297).

www.irma-international.org/chapter/smart-hydroponic-monitoring-system-using-iot/328011

Risks and Rewards: Good Citizenship and Technologically Proficient Faculty

Scott R. Sechrist and Dorothy E. Finnegan (2006). *Cases on the Human Side of Information Technology* (pp. 146-162).

www.irma-international.org/chapter/risks-rewards-good-citizenship-technologically/6483

Critical Systems Thinking and Information Technology: Some Summary Reflections, Doubts, and Hopes through Critical Thinking Critically Considered, and Through Hypersystems¹

Kristo Ivanov (2011). *Information and Communication Technologies, Society and Human Beings: Theory and Framework (Festschrift in honor of Gunilla Bradley)* (pp. 493-515).

www.irma-international.org/chapter/critical-systems-thinking-information-technology/45316