

The Digital Entrepreneurship Ecosystem in Europe: Evidence from the Digital Platform Economy Index

Erastian Wibisono^{1,2,*}

¹*Doctoral School of Regional Policy and Economics, Faculty of Business and Economics, University of Pecs, Hungary*

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**Corresponding author, e-mail: wibisono.tian@gmail.com*

Extended Abstract

When the IT Revolution (ITR) emerged in the 1970s while the adoption of digital technology by new companies began in the 1980s, more venture capital flowed to the US than to Europe (Gompers & Lerner, 2001). By the end of 2020, US-owned giant companies dominate more than 70% of digital-based technology companies globally, while Europe only accounts for 3% (Acs et al., 2021). Digital technology affects economic activity by reducing transaction costs and ultimately leads to efficiencies in trade. This efficiency occurs from the search process to the verification process, where a platform facilitates one or more matches between agents and end-users (Goldfarb & Tucker, 2019; Jullien, 2012). The digital economy literature has examined how digital technology affects economic activity but has not examined how digital technology affects the platform economy.

The digital platform economy was first introduced by Kenney & Zysman (2016), who explained the nature of the digital platform economy in economic and social activities and the changes caused by it. The presence of the digital platform economy opens up many business opportunities. Meanwhile, Acs et al (2020) introduced a framework that combines a digital economy, and a platform economy focused on its economic structure, further study of the framework proposed by Sussan & Acs (2017) and reconfigured by Song (2019) and utilizing the National Entrepreneurial Methodology (Szerb et al., 2014). This study addresses the role of digital platforms in creating trade efficiencies through reducing transaction costs, how this affects corporate organizations, and how these factors form a platform-based ecosystem. This framework

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presents the measurement of the Digital Entrepreneurial Ecosystem (DEE) into a Digital Platform Economy (DPE) index based on four main frameworks, namely Digital Multiside Platform (DMSP), User Citizenship (UC), Digital Technology Entrepreneurship (DTE), and Digital Technology Infrastructure (DTI).

In a platform economy, the role of a platform-based ecosystem is critical, which distinguishes it from a managed economy. The literature on the entrepreneurial ecosystem is growing, but it addresses regional or local issues rather than global issues (Stam, 2015). However, if this entrepreneurial ecosystem is coupled with a platform-based ecosystem where the role of digital technology is paramount, then we are talking about a global issue that involves users and agents in a vast world digital community (Sussan & Acs, 2017). The government is not involved in developing or maintaining this ecosystem like a managed economy. However, within this ecosystem, there is a platform organization that plays a role in governance, and there are platform owners or platform entrepreneurs who make rules and behavior for agents and users in it.

Sussan & Acs (2017) first observed a gap in the entrepreneurship literature in the digital era. They propose a platform-based ecosystem framework known as the Digital Entrepreneurial Ecosystem (DEE), which combines two critical pieces of literature on the entrepreneurial and digital ecosystems. This framework divides the entities in the platform-based ecosystem into two groups, namely biotic entities (agents and users) and abiotic entities (technology and institutions), which are further reconfigured and refined by Song (2019) by adding a multi-side platform which in DEE it regulates economic and social activities of the biotic entity.

The concept of a digital entrepreneurship ecosystem has developed in recent years (Elia et al., 2020; Nambisan et al., 2017; Sahut et al., 2021). However, empirical studies measuring the entrepreneurial ecosystem are still relatively lagging. Empirical studies in the form of case studies may be carried out by looking at the strengths and weaknesses in the ecosystem structure (Isenberg, 2010; Spigel, 2017). According to Szerb et al. (2020), measuring the entrepreneurial ecosystem with specific composite indicators provides benefits in at least three ways: observing the relative development of one unit to another, identifying the strengths and weaknesses

of the ecosystem based on a benchmark, and proposing more solid policy suggestions based on more precise steps.

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In this study of the entrepreneurial and digital ecosystems, the DPEIndex established by Acs et al. (2020) focuses on two groups of biotic and abiotic entities instead of on the business development stage as Autio et al. (2018, 2019). Therefore the DPE index can identify the development of digital entrepreneurship systemically. In addition, the DPE index also positions the platform in its central position so that the measurement does not only favor one side of the user or only the digital technology side.

In the 2020 DPE Index, the Digital Platform Economy (DPE) is measured and structured at the country level. The four main frameworks are called sub-indices, where each sub-index consists of three essential elements representing both the group of biotic and abiotic entities that make up the twelve pillars. Each pillar has two components: the entrepreneurial side and the digitalization side; then there are 24 variables.

In Acs et al. (2020), the DPE Index displays the state of digitalization and entrepreneurship in 116 countries. In particular, his paper also analyzes the initial conditions of platformization in European Union countries. They questioned why platform-based companies in European Union countries had not produced multi-billion dollar companies like in the US while many new and start-up companies are emerging and growing but still small and tend to be less scalable (Naudé, 2016). It is then linked to its GDP per capita, which indeed shows a strong relationship with the DPE index.

There are interesting findings in the ranking of these countries. Strong Scandinavia countries such as Sweden, Finland, and Denmark sit in the top 10 countries with the highest DPE index scores along with other strong countries in continental Europe such as Norway and Switzerland. Only the Netherlands is included in this group while large, developed, innovative and high-income countries such as Germany, France and Austria are in the second 10 group and along with Estonia, which has a GDP per capita far below them. Germany, France, and Austria may have high GDP per capita values and are not much different from Sweden, Denmark, and Finland, but the last three countries lose out in population and output. It seems there is an assumption that the size of the country has a role to play in this.

Referring to the Acs et al. (2020), our study aims to dig deeper into the digitalization and entrepreneurial circumstances of the three European Union countries (Germany, France, and Austria). The strong link between the DPE index and development is the first consideration when examining the beginning conditions of the link between the DPE index and development in the three countries that are economically, politically, and socioculturally linked. The DPE

index measures the Digital Entrepreneurship Ecosystem (DEE) in the country. Whether the DEE performance or the high DPE index scores in the three nations reveal a logic consistent with the DPE index's high correlation with development. As a result, the country's position above or below the trend line is called into question. What circumstances, if any, could cause a country with a lower income than others to be above the trend line?

We use the same relevant data as Acs et al. (2020), namely the 2020 DPE Index and 2017 GDP per capita, and refer to GEI computation (Szerb et al., 2014). This research will look into the pillars of the Digital Entrepreneurship Ecosystem (DEE) framework, which represents both the entrepreneurship and digital ecosystems in a balanced manner. It will offer policy recommendations for developing a better DPE from an entrepreneurship and digitalization standpoint.

Our research contributes to a growing body of knowledge in entrepreneurship, digitalization, and the emerging new digital platform economy (DPE). We emphasize the issue of platformization in European Union countries, looking into the factors that contribute to the development of a digital entrepreneurship ecosystem in their country based on the balance of the digital and entrepreneurial ecosystems, and also how countries with similar economic, political, and socio-cultural characteristics could perhaps differ in terms of developing a digital entrepreneurial ecosystem.

Keyword:

Entrepreneurship; Digitalization; Ecosystem; Digital Economy; Platform Economy; Europe

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