

## Digitalization Capabilities, Digital Entrepreneurship, and Digitalization A Proposed Interwoven Dynamic in the context of Exporting

Ayça Kübra Hızarcı<sup>1 2</sup>

### ABSTRACT

As a popular strategy of internationalization, the critical contribution of exporting to countries is indisputable in today's ever-changing phase of globalization. Exporting is in an accelerating momentum by virtue of cutting-edge technological developments. Given the gained prominence of exporting, the never-ending and ever-growing nature of technologies has received burgeoning interest from scholars. The transition from traditional markets to digital markets expose firms to adopt new technologies, new resources, and new capabilities through which firms can achieve superior performance. Among these capabilities, digital capabilities and digital strategic orientations including digital entrepreneurship are of importance for firms to survive in the sphere of digitalization. Drawing from the literature, this study proposes the interwoven dynamics between Digitalization Capabilities, Digital Entrepreneurship, and Digitalization in the context of exporting. By doing so, fruitful insights are demonstrated for future studies and practical implications.

**Keywords:** Digitalization, Digitalization Capabilities, Digital Entrepreneurship, Export

## Dijitalleşme Yetenekleri, Dijital Girişimcilik ve Dijitalleştirme İhracat Bağlamında Önerilen Birbirine Bağlı Dinamikler

### ÖZET

Uluslararasılaşmanın popüler bir stratejisi olarak, ülkelere ihracatın kritik katkısı, küreselleşmenin günümüzün sürekli değişen aşamasında tartışılmazdır. İhracat, son teknolojik gelişmeler sayesinde hızlanan bir ivme içindedir. İhracatın kazanılan önemi göz önüne alındığında, teknolojilerin hiç bitmeyen ve sürekli büyüyen doğası bilim insanları arasında giderek artan bir ilgi görmektedir. Geleneksel pazarlardan dijital pazarlara geçiş, firmaları üstün performans elde edebilecekleri yeni teknolojileri, yeni kaynakları ve yeni yetenekleri benimsemeye maruz

<sup>1</sup> Contact: ayca.hizarci@deu.edu.tr

<sup>2</sup> Dokuz Eylül University, Faculty of Business, International Trade and Business Department, ORCID: 0000-0002-8386-9136.

bırakmaktadır. Bu yetenekler arasında, dijital girişimcilik de dahil olmak üzere dijital yetenekler ve dijital stratejik yönelimler, firmaların dijitalleşme alanında hayatta kalabilmeleri için önemlidir. Literatürden yola çıkarak, bu çalışma ihracat bağlamında Dijitalleşme Yetenekleri, Dijital Girişimcilik ve Dijitalleşme arasındaki iç içe geçmiş dinamikleri önermektedir. Bunu yaparak, gelecekteki çalışmalar ve pratik çıkarımlar için verimli içgörüler önerilmektedir.

**Anahtar Kelimeler:** *Dijitalleşme, Dijitalleşme Kabiliyetleri, Dijital Girişimcilik, İhracat*

## 1. INTRODUCTION

Today`s propelling transformative power of technological developments is reshaping the global business arena with uncharted possibilities. The globalized landscape of business has been under evolution with the advancements caused by Industry 4.0 that reflects the sharpest paradigm revolution in production process dominated heavily by machines (Oztemel & Gursev, 2018). By the emergence of cutting-edge digital technological developments including blockchain, e-commerce, and artificial intelligence, firms are driven to compete in globalized markets with ever-growing level of digitalization (Verhoef, Broekhuizen, Bart, Bhattacharya, Dong, Fabian & Haenlein, 2021). These cutting-edge amendments promote flexibility in customized production processes of high quality products with more efficient operations, which fastens the developments of industries worldwide (Schlick, 2014).

Digital technologies reflect the extent of the amendments in transformation of traditional understanding of business models in value creation (Calderon-Monge & Ribeiro-Soriano, 2024; Ritter & Pedersen, 2020; Verhoef, Reinartz & Krafft, 2010). Additionally, the wake of the COVID-19 pandemic in international business landscape accelerated the seismic shift which is considered as the triggering cornerstone of digitalization. Moreover, these fused realms of the pandemic and technological developments consolidated digitalization altered the traditional understanding of business ecosystem by engagement of e-commerce, e-marketing, e-business, and etc. Digital technologies pose new opportunities for firms operating overseas (Herve, Schmitt & Baldegger, 2021a). Operationalization of digital technologies by digitalization capabilities can determine firms` internationalization process and strategy (Meyer, Li & Brouthers, 2023). Digital tools like websites or platforms can drive firms to expand their market share in international markets as global digitalized applications can foster the interrelations between exporters and importers (Baykov & Ershov, 2023). Under the umbrella of digitalization, firms can boost their speed of internationalization which can ensure the achievement of competitive advantage with export ratio. In this vein, firms can expand their market share through digitalized mechanisms for their export operations such as e-commerce that is considered as a cost-effective means of superior performance (Pergelova, Simeonova-Ganeva & Yordanova, 2019). In this vein, integration of digitalization into internationalization has become the epitome of recent studies and given rise to the megatrend by forming the global landscape and generating opportunities for firms to explore and exploit. Therefore, international trade is in a highly growing momentum through the technological advancement of digitalization. Accordingly, the transition from traditional business markets to digital markets drive firms

to employ new technologies in terms of resources and capabilities in order to survive and maintain. In contrast to conventional costly brick and mortar exporting operations, digital exporting encapsulates less costly transactions in the process of value creation (Schu, Morschett & Swoboda, 2016). Notwithstanding the aforementioned gains, the combination of the ever-increasing level of uncertainty and complexity exposes firms to adapt to the hyper-fast nature of digitalized global markets (Ghobadian, Talavera, Bhattacharya, Kumar, Garza-Reyes & O'regan, 2020), which can aggravate firms to gain and sustain superior firm performance (Lindskov, Sund, Dreyer & Yu, 2021). Especially, the demanding nature of integration of digital technologies can raise some issues in terms of tracking the developments that can culminate in operational inability and poor firm performance (Kotarba, 1998). Of note, firms undertake agile business functions through vital structural and operational transitions in order to keep up with the breakthrough alterations caused by digital transformation (Verhoef et al., 2010). Accordingly, in the realm of digitalization, firms are exposed to generate digital business competencies in order to compete and benefit from opportunities. In this vein, firms can expand their market share through digitalized mechanisms for their export operations such as e-commerce that is considered as a cost-effective means of superior performance (Pergelova et al., 2019). Despite the advantages of digital exporting, firms can suffer from inadequate capabilities and resources, which forms the fundamental barrier for their engagement of digital business functions (Schu et al., 2016) in other words, catching up the speed of breakthrough digital industrial shifts and technological advancements is one of the core challenges faced by firms operating across markets (Schwab, 2017) and necessitates digital firm capabilities in international markets. According to Tolstoy et al. (2021), internationalization through e-commerce development is contingent upon both external and internal environment. Relatedly, technological and knowledge-based capabilities, and human resources are the vital elements of integration of digitalization into their business models (Davenport & Redman, 2020; Verhoef et al., 2021).

As aforementioned, firms can expand their international operations worldwide by virtue of digital technologies (Herve et al., 2021a-b, 2022). In this sense, the extent of the operationalization of digital technologies reflects the digital capabilities of a firm. Essentially, digital instruments and capabilities are viewed as the ultimate trigger of internationalization (Matarazzo, Penco & Profumo, 2020; Meyer, Li & Brouthers, 2023). Exporting as the most common strategy of internationalization is of importance for economic development. By virtue of digitalization, exporting firms are under fundamental digital transformation in terms of technologies and resources through which firms produce services and products for customers from overseas markets (Brouthers, Chen & Shaheer, 2022; Firk, Oehmichen & Wolff, 2021; Hanelt, Bohnsack, Marz & Antunes Marante, 2021; Katsikeas, Leonidou & Zeriti, 2020; Meyer et al., 2023). In similar vein, this transformation amplifies challenges regarding complexity and uncertainty level of global markets in which firms compete with their digital resources, digital capabilities, and digital strategies (Jean & Kim, 2021; Tolstoy, Nordman, Hånell & Özbek, 2021). While digital resources are the indication of the extent of information technologies that turn digital resources into targeted

outcomes (Barney, Ketchen & Wright, 2021; Gregory, Wagner, Tumbas & Drechsler, 2019), digital strategies are composed of digital business functions to explore and exploit resources and capabilities for the achievement of superior performance (Elia, Giuffrida, Mariani & Bresciani, 2021; Gregory et al., 2019; Hanelt et al., 2021; Wang, 2020). This digital transformation is viewed as a means of cost-effectiveness by firms operating across borders. Relatedly, firms engage in “digital exporting” by operationalization of e-commerce or similar digital methods to expand their international operations (Pergelova et al., 2019). Despite the burgeoning interest devoted to digital export, there is still a knowledge gap in terms of the antecedents of digital export. Thus, relying on the resource-based view and shedding light on the complicated nature of digitalization in the context of international business, this study proposes a theoretical framework highlighting the role of digital capabilities and digital entrepreneurship on export performance.

### **1.1. Digital Capabilities & Digital Entrepreneurship & Export Performance**

Drawing from the resource-based view, firm capabilities are the representation of unique and inimitable resources and business activities necessary for goal achievement (Barney, 1991, 2001; Wernerfelt, 1984). In other words, as a capacity reflection of repetitive value creation process, firm capabilities are the competencies and proficiencies required to operationalize any business function to achieve desired outcome (Helfat & Lieberman, 2002; Sabnis, Chatterjee, Grewal & Lilien, 2013; Winter, 2003). Accordingly, firm capabilities are viewed as organizational abilities that ensure firms explore and exploit resources to gain a competitive advantage, which can be informational, tangible, and intangible form. Digitalization is the indication of the extent of digital technology adoption that led to the ground-breaking metamorphosis of business nature (Brennen & Kreiss', 2016). Digitalization has interpenetrated into firm capabilities by transforming the business models in which new value co-creation, manufacturing and operational processes, customer interactions, advanced product and service functionalities take place (Nylén & Holmström, 2015; Porter & Heppelmann, 2014). In this vein, firms are exposed to develop digital capabilities in order to undertake the aforementioned business practices. By virtue of advanced digitalization capabilities, firms build greater new functionality, achieve efficiency and effectiveness that fosters the values of output (Porter & Heppelmann, 2014). In particular, firms utilize digital resources while building digital capabilities.

Additionally, the accelerating omnipresence of communication and information technology triggers the adoption of digital capabilities in order to gain and sustain superior firm performance in the era of digitalization. Digital capabilities are of importance for firms to reform their organizational strategy in order to meet digitalized market demands (Usai, Fiano, Petruzzelli, Paoloni, Briamonte & Orlando, 2021; Chen & Lin, 2021). As indicated by Laplume et al. (2016), application of digital technologies into business functions can induce firms to expand their market scope and reach out more customers overseas markets. In this regard, firms that build digital technologies can boost their digital export operations such as e-commerce. Moreover, digital technologies can foster traditional export performance as well (Elia et al., 2021; Wang, 2020). Especially, born-globals that utilize

the Internet can attenuate export barriers in their across-border operations and reach for more customers worldwide. Additionally, through internet firms can eliminate physical supply chain players so that they can reduce export costs (Luu, 2023; Wang, 2020), which in turn, can boost export performance. Concordantly, digital technology enables firms to reach vital information related to new markets by which firms can build digital capabilities and decrease the costs accompanied by traditional business functions. Importantly, digital capabilities can ensure firms cultivate the quality of products and services that can help firms outperform their rivals and achieve business excellence (Ciampi, Demi, Magrini, Marzi & Papa, 2021). As aforementioned, the transformative nature of digital technologies force firms to adapt to the circumstances of dynamic online environments which necessitate firms to engage in adoption of digital capabilities as a part of their strategic orientations that can incite in engagement of altering the way of doing business including e-commerce (Leeflang, Verhoef, Dahlström & Freundt, 2014; Prasad, Ramamurthy & Naidu, 2001).

In essence, small and medium sized firms can suffer from lacking adequate resources, internationalization is more sporadic and local ties are of importance for knowledge flow (Kalinic & Forza, 2012). In this vein, the Internet plays a crucial role in reduction of these kinds of liabilities as it mediates the customers and firms around the world (Gabrielsson & Gabrielsson, 2011). Relatedly, firms that benefit from the Internet as a supply chain process can achieve greater export performance (Wang, 2020). As Wang et al. (2020) state that firms' entrepreneurial orientation can explore and exploit more business opportunities that can drive firms to build and improve digital capabilities through which firms can expand their international operations. By the sake of digital capabilities, firms can reach not only information but also communication networks as the core source of strategic resources that facilitate firms to increase the number of potential markets across borders and export digitally through e-commerce channels. Especially, owning these technologies can unearth the opportunities in the marketplace and exploit them through digitalized entrepreneurial functions that primarily prioritize business co-operation with nonphysical presence. Consequently, firms undertake business practices overseas markets without huge physical upfront capital investments and infrastructure.

As the revamping and transformative dynamic nature of global landscape, digital capabilities ensure firms to lubricate entrepreneurship adoption by catalyzing new value creation, which led the emergence of digital entrepreneurship. In the similar sense, having digital platforms triggers greater exposure for firms' products and services (Aloulou, Alsadi, Ayadi & Alaskar, 2024) such as e-bay, amazon, Alibaba, and etc. As a result, this fundamental shift raised the necessity of further conceptual emergence of digital entrepreneurship (Zahra, Liu & Si, 2023). In this vein, digital entrepreneurship as a strategic orientation indicates the extent to which firms explore the opportunities through the application of digital tools with information technologies (Davidson & Vaast, 2010). This new formation of entrepreneurship has altered the concept of entrepreneurial performance (Kraus, Burtscher, Vallaster & Angerer, 2018) that reflects the level of implementation of firms' objectives. Through the realm of digital entrepreneurship, firms

has the potential to create breakthrough digital artifacts as disruptive market players by exploiting and exploring business opportunities in global arena (Dong, 2019). By doing so, firms can augment their performance (Aguilera, Federo, Pascual-Fuster & Crespi-Cladera, 2023; Lammers, Rashid, Kratzer & Voinov, 2022).

Given the barriers and failures in operationalization of digitalization, revealing the drivers of success is a paramount subject. Thus, this conceptual study elucidates the potential boosting power of digital capabilities on digital entrepreneurship, digital and traditional export performance. By doing so, this study aims to comprehensively investigate the aforementioned interrelations that are the means of success achievement. The integration of digitalization into firms' entrepreneurship strengthens the communication channel that connects international stakeholders and makes the knowledge accessible by virtue of digital mechanisms. Therefore, the perceived risk regarding international operations can be reduced, which in turn can amplify the volume and speed of internationalization including exporting. Concordantly, digital capabilities can be seen as a source of improvement in both digital entrepreneurship and export performance.

As can be understood digitalized capabilities can promote digital exporting and overall export performance as a way of internationalization (Dethine, Enjolras & Monticolo, 2020). Application of digitalization capabilities into business functions and strategies can attenuate the perceived risk embedded in global operations since it facilitates the accessibility and transparency of not only goods and services but also the other players in the supply chain, which can drive firms to expand their operations worldwide and cultivate both digital and traditional exporting. Digital technologies has altered the formation of understanding entrepreneurship as a strategic orientation, which led the emergence of digital entrepreneurship that has fundamentally different than traditional understanding of entrepreneurship in terms of processes (Guimarães, Reis & Charrua-Santos, 2023; Trischler & Li-Ying, 2023). All in all, digital entrepreneurship reflects the emergence of disruptive potential of new digital integration into business practices of value creation (Kraus, Palmer, Kailer, Kallinger & Spitzer, 2019).

This breakthrough transformation enables firms to generate new digital operations cost-effectively to explore and exploit opportunities in global landscape (Wegner, Silveira, Marconatto & Mitrega, 2024), which can mirror to the extent of export ratio and related export performance. Consequently, firms can improve their digital entrepreneur orientation that improves firm's overall export ratio including digital and traditional export performance.

Based on the aforementioned statements the proposals as follows.

- P1:** Digital Capabilities foster firms' digital entrepreneurial orientation.
- P2:** Digital Entrepreneurial Orientation boosts firms' digital and traditional exporting.
- P3:** Digital Capabilities have an impact on traditional and digital exporting.
- P4:** Digital Entrepreneurial Orientation mediates the relationship between digital capabilities and firm overall export performance (traditional and digital).

## **2. CONCLUSION AND FUTURE RECOMMENDATIONS**

The emergence of digital economy forms new business models in which new advanced technologies are applied to value creation process such as the Internet, machine learning, and artificial intelligence. In this vein, firms are exposed to adapt to these technologies in order to undertake their business operations. International firms from all industry types are comprehending the significance of digital transformation on the sustainable firm performance. Therefore, business functions need to be modified into the digital environment. According to Gale and Aarons (2018), firms that embraced and integrated digital revolution into their strategies and structures can reduce their cost, boost innovation, and gain competitive advantage. In other words, firms that adapt to digitalization undertake breakthrough shifts in their supply-chain practices by their digital resources and capabilities. Therein, by the virtue of digital capabilities, firms can unleash the potential advancements of technological development which can be the ultimate source of digital entrepreneurship and superior performance in international markets. Relatedly, firms that build and develop digital firm capabilities are capable of exploiting and exploring digital infrastructures, challenge the barriers due to never-ending but ever-lasting rapid and breakthrough alterations, and cope with the requirements of external and internal environments (Xu, Zhong & Li, 2022; Xu, Li, Dong & Guo 2023).

In the context of international business, these digital transformations shaped the process and structure of international operations worldwide (Alcacer, Cantwell & Piscitello, 2016). The integration of digital capabilities into business models help firms build and develop agility and adaptation to the fundamental shifts, which in turn promotes the emergence of digital entrepreneurial nature that correspondingly accelerates the extent of scope and scale across borders. In essence, through the lens of industrial revolution, emergence of digital ecosystem boosts the technological improvement of export products (Liang & Tan, 2024). Building on these statements, digital capabilities are of importance for firms to develop strategic orientations based on the structural shifts and sustainable firm performance, particularly in international operations (Alfalla-Luque, Machuca & Marin-Garcia, 2018; Aslam, Blome, Roscoe & Azhar, 2018; Ivanov, 2022; Choi, Dolgui & Ivanov, 2022). As can be understood, digital capabilities enable firms to expand their operations overseas through digital entrepreneurship, which indicates the interwoven nature and role of digital capabilities on internationalization efforts. While international entrepreneurship has been associated with internationalization including exporting, digitalization has been also combined with digital entrepreneurship and digital exporting.

The ongoing transformation and ever-evolving nature of global landscape expose firms to build digital capabilities in order to survive in global dynamic shifts. The cutting-edge technological developments have the potential to reshape the operationalization of business activities. Especially, the ripple impact of digitalization altered not only the individual firms but also the value-chains in the entire industries of world markets. By virtue of technological developments, the value-creation processes have been overhauled

fundamentally with many new formations of digitalization by which firms are empowered to explore and cultivate the immense potential benefits of technological advancements. The mounting interest toward digital transformation gave rise to the emergence of digital entrepreneurship and the strategy with a highly innovative nature to be able to maneuver flexibly in the global arena. All these substantial alterations not only revolutionized the business functions but also the capabilities needed to operationalize them effectively and achieve competitive advantage.

Despite the breakthrough technological developments, the incompatibility between developed and emerging markets in terms of infrastructure and different regulations still exists, which hampers the availability of access to digital technologies of firms from emerging markets. Therefore, the extent of exploration and exploitation of digital technologies changes not only based on the industry but also the locational origin of the firms. In terms of industries, the extent of digitalization integration is greater in high-tech industries compared to low-tech industries. In addition, service-oriented firms are exposed to engage in digital technologies more than manufacturing firms. Based on the aforementioned statements, adoption of digital technologies varies among firms that reflects the differentiation of intensity of digital capability development, which in turn, accelerates firm export performance. In the literature, it is widely accepted that achievement of superior performance heavily depends on the extent of development and operationalization of digital technologies and capabilities in the reign of technological world. The level of grasping technological advancements reflects the ability of firms to explore and exploit opportunities through their digital technologies in order to provide and benefit digital solutions. In this vein, future studies can investigate the role of industry type, cultural factors, and country economic development level in building digital capabilities by addressing the role of digital entrepreneurship in digital and traditional export performance that can provide insightful approaches in terms of theoretical and practical implications. Besides, by doing so, the operationalization of digitalization into firm capabilities and export performance can be indicated which can also guide exporting firms to maneuver their strategic direction whilst operating across markets.

### **Research and Publication Ethics Statement**

All processes of the article have been conducted in compliance with the research and publication ethics principles of the Manisa Celal Bayar University Journal of Social Sciences.

### **Authors' Contribution Statement**

The entire article was written solely by the author.

### **Conflict of Interest Statement**

The author has no conflict of interest with any person or institution.



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