

The Convergence of Digitalization and Internationalization: A Literature Review and Future Research Agenda

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Abstract

The interplay phenomenon of digitalization and internationalization (IDI) is gaining scholarly traction in the recent two decades when digitalization acts as an effective fuel for internationalization and internationalization activities reciprocally cry out for a greater digitalization revolution. Digital companies (DCs), born-digital companies (BDCs), and born-global companies (BGCs) are the new entrants to the literature. Despite burgeoning scholarly interest in this research domain, it is a relatively young research domain with limited scholarly literature. This paper aims to provide a clear picture of this interplay phenomenon and offers useful insights for future research to further enrich the extant literature on digitalization and internationalization. What do we know about the interplay phenomenon of digitalization and internationalization and what else should we investigate further in this domain? This paper reveals that despite the recent mushrooming literature on both digitalization and internationalization themes, there lie great research opportunities in topics related to IDI, and international business theories (IBT) for both large and small multinational enterprises (MNEs) as well as risks associated with digitalization and internationalization. The study contributes to the literature by discussing the gaps in the literature and offering academicians and researchers new research venues to enrich the extant literature in this domain.

Keywords: Digitalization, Internationalization, Multinational Enterprises, International Business Theories

1. Introduction

Digitalization is the most notable technological trend in both societal and commercial spheres in the twenty-first century (Parviainen et al., 2017). In the third wave of digitalization, we are witnessing enormous processing and storing capacities of computers (Legner et al., 2017) powering the extant usage of big data, additive manufacturing, the Internet of Things (IoT), and robotic systems (Strange & Zucchella, 2017). The exchange of a valuable stream of ideas and innovation globally and cross-border transactions are boosted by digitalization (Hennart, 2019; Luo, 2022). Digitalization is one of the key influencers of business evolution (Cortellazzo et al., 2019), has significantly disrupted businesses' modus operandi and the competitive landscape in a plethora of industries (Ozcan & Yakis-Douglas, 2020), threatening the competitive advantages of well-established businesses and providing novel opportunities to new entrants (Cao et al., 2018). Autio (2017) explains that digitalization is reshaping entrepreneurship by shifting the locus of entrepreneurial opportunities in the economy and redefining entrepreneurial practices. Digitalization pushes business transformations, and these business transformations, in return, further drive digitalization evolution (Adomako et al., 2021; Rachinger et al., 2018).

Digitalization is inseparable from digital technologies (DT) (Brennen & Kreiss, 2014). Tekic & Koroteev (2019) purport that business processes, marketing models, and value chains will continue to evolve because of the advancement of powerful DT and infrastructures. Internet, websites, smartphones, content-sharing platforms, social media, e-procurement systems, artificial intelligence (AI), automation technology, cloud-based technology, robotics, 5G technology, and blockchain have enabled businesses to exploit new market opportunities (Vural et al., 2020) besides creating novel challenges (Quinton et al., 2018). The IoT powered by 5G revolutionizes digital connectivity, making factories, offices, and homes smarter (George & Schillebeeckx, 2022). DT applications in an omnichannel

environment break down channels' boundaries by introducing synergetic integration (Ciasullo et al., 2022). Digital platform capabilities enable firms to exchange information and knowledge with external parties and strengthen their network capability (Cenamor et al., 2019). Companies are employing DT to monitor diversified data and satisfy changing market demands in ways such as real-time pollution detection via remote sensing and IoT devices (George & Schillebeeckx, 2022). It is observed that the cost of implementing applications like cloud computing or AI is decreasing (Makarius et al., 2020), and this is likely to further accelerate digitalization adoption.

Digitalization is the fuel to the internationalization engine (Denicolai et al., 2021). Digitalization and internationalization present a mixture of opportunities and challenges for micro, small, and medium enterprises (MSMEs) to move beyond the border of their home countries (Zen & Faizin, 2021). Firms can orchestrate digitalization to improve their global value chain (GVC) in the internationalization process using DT. Internationalization processes of firms have been vastly revolutionized, improving operations efficiency (Luo, 2022; Whitaker et al., 2017), reducing transaction costs and redefining business presence (Wittkop et al., 2018), and shortening distance (Liu et al., 2016). Firms can reach potential customers globally in creative ways (Hervé et al., 2020b). Global data accessibility has significantly improved (Clark et al., 2018), with enhanced integration and sharing of information among partners, suppliers, distributors, and customers (D. Kim et al., 2018). Digital data can improve the global supply chain (Strange & Zucchella, 2017) and enhance production synergies (Jean et al., 2010). Digital platforms can facilitate new entrants to obtain business efficiency (Nambisan, 2017), cost efficiency (Hervé et al., 2020a), and penetrate new markets (Falahat et al., 2020). Companies need to acquire a cohesive understanding of these two themes to grow, sustain and survive in the international arena (A. Ahmed et al., 2021).

2. Literature Review

2.1 Multinational Enterprises (MNEs)

Multinational enterprises (MNEs) are firms that operate in multiple sovereign countries, have a large organizational structure, as well as acquire and trade goods and/or services in multiple markets (George & Schillebeeckx, 2022), and thus, constantly juggle and balance conflicting stakeholders' expectations and interests (Sun et al., 2021). Previously, internationalization is a game privy to big enterprises, but digitalization has reset the rule of the game, giving MSMEs equal opportunities to be MNEs. MSMEs control 96% of the company's market share globally (Yasiukovich et al., 2021), making them one of the key drivers of the world economy and a critical player in maintaining economic health (Zen & Faizin, 2021). MSMEs generally face inadequate time and skills (Freeman et al., 2012; Paul et al., 2017), insufficient foreign market knowledge (Bianchi & Wickramasekera, 2013), and scarcity of financial resources (Paul et al., 2017), making them tougher to exploit multiple growth paths simultaneously (Saemundsson & Candi, 2017). The smaller the firm, the riskier it becomes the victim of this revolution (Sommer, 2015). However, MSMEs enjoy the advantage of minimal bureaucracy which larger companies lack, enabling them to respond swiftly to change (Wang et al., 2017). Despite facing both internal and external difficulties (Leonidou, 2004), MSMEs are hijacked to embark on complex growth paths to strengthen their competitiveness and to keep up with social and technological evolution (Falahat et al., 2020).

The advent of DT gave birth to a novel type of company known as digital companies (DCs) or internet-based companies (Wittkop et al., 2018). DCs have firm-specific advantages in intangible and mainly digital assets which enable them to have a very light foreign-asset presence (Trentini et al., 2022). DCs that experience digitalization on incorporation or soon after incorporation and display a highly digitalized value chain (product or service) (Shaheer, 2020) are known as born-digital companies (BDCs) (Vadana et al., 2020). The gone or going digital companies, another type of DC, are firms that transitioned successfully from traditional enterprises into DCs at a later stage (Trentini et al., 2022). Trentini et al. (2022) submit that there are two categories of DCs. First, the purely DCs that rely almost exclusively on a virtual environment (digital solutions services, search engines, and internet platform) for the delivery of their value-chain (Whatsapp); second, the mixed-mode DCs that integrate offline products and services with digitally enabled business models (Ctrip). In this vein, UNCTAD (2017) classifies DCs into four types based on their business modus operandi: internet platforms (Uber, Airbnb, Grab), digital solutions (Alipay, WeChat pay), e-Commerce (Amazon, Taobao), and digital content (Tik Tok, Facebook). According to UNCTAD (2017), pure DCs are the leaders of the Fourth Industrial Revolution and serve as the agents of transformation in driving traditional companies into digitalization in response to the increased competition (Bolwijn et al., 2018). DCs can harness alternative revenues without making huge investments (Hervé et al., 2020b) and enjoy a higher speed of internationalization (SOI) (Bell & Loane, 2010), due to the high degree of digitalization of their value-chain right from the beginning (Brouthers et al., 2016), but sometimes, they may be prevented from entering a market due to legal

and market-specific requirements (Wentrup, 2016). Besides DCs, firms that offer services and goods to customers using DT and the internet are recognized as digitalized companies (Nambisan, 2017) as their value chain is highly digitalized or enabled by internet infrastructure (Vadana et al., 2020).

Digitalization broke down the invisible walls of internationalization for MSMEs (Hervé et al., 2020b), creating a dual path for the internationalization process: the long process or the rapid process (Zen & Faizin, 2021). Firms that embark on internationalization within three years from inception (Rennie, 1993) are known as born-global companies (BGCs) (Hughes et al., 2019). BGCs are also known as global start-ups, international new ventures (Martin et al., 2020), born international SMEs (Kundu & Katz, 2003), early international firms (F. U. Ahmed & Brennan, 2019), and rapidly internationalizing firms (Ayadi-Frikha, 2014) in literature. BGCs rely on innovative technology and creative business model to create a new market niche (Tanev, 2017). According to Neubert (2017), BGCs usually begin their international operations through upstream activities before going into downstream activities. Cavusgil & Knight (2015) discover that BGCs begin when export sales constitute more than 25% of total sales. Limited resources normally did not prevent BGCs from exploring opportunities abroad (Lee et al., 2019), but they make use of the external network of alliances to help them achieve international success (Hughes et al., 2019). Lee et al. (2019) summarize the key success factors for early and rapid internationalization as the business environment (Hagen & Zucchella, 2014), the entrepreneur (Falihat et al., 2018), and the organization (Øyna & Alon, 2018).

2.2 Digitalization and MNEs

Digitalization covers a wide area, consisting of many facets of the social and commercial landscape (Hagberg et al., 2016). In the literature, the terms digitalization, digitization, and digital transformation are sometimes used interchangeably (Eling & Lehmann, 2018; Reis et al., 2018). There is only a handful of articles that distinguish them (Reis et al., 2020) even though each term embodied a different concept (Bockschecker et al., 2018). Digitalization is the sociotechnical process of transforming or developing new organizational processes, business models, or commercial value-chain activities via the use of digital platforms, technology, algorithms, and data to increase revenue and profitability (Autio et al., 2021; L. Chen et al., 2019; Clerk, 2017; Saarikko et al., 2020; Soto-Acosta, 2020). It connotes the use of DT to produce and share value within an organization, economy, and society (Hervé et al., 2020a). Digitalization breeds digital business models which are scalable internationally (Holand et al., 2019; Zhang et al., 2015). Autio et al. (2021) view digitalization as a general-purpose technology that displays three fundamental characteristics: reprogramability, infrastructural elementality, and intangibility. These characteristics are reshaping how MNEs organize for value creation, capture, and delivery (Baskerville et al., 2020). On the other hand, digital transformation refers to how businesses use DT to turn information, business processes, and product offerings into digital form (Westerman et al., 2014) to improve corporate operations and customer experiences, or to build new business lines and processes (A. Ahmed et al., 2021), and is often represented as a teleological journey leading to a predetermined destination (Ekman et al., 2020). Digital transformation has the potential to help with the creation of new distribution channels, customer value creation, business model innovation, and product development (Zen & Faizin, 2021). Many businesses and top management set digital transformation as the organization's strategic goal (Woo et al., 2014). Ross et al. (2017) articulate two phases in digital transformation: becoming digitized and becoming digital. The first phase deals with optimizing operations and standardizing business processes via technologies and the second phase deals with defining a new value proposition through DT (Hervé et al., 2020b). Therefore, digitalization can be an organizational project, but digital transformation is a business strategy involving all aspects of the organization and can include multiple digitalization initiatives (Bloomberg, 2018). The transformation of analog data into digital language is known as digitization (Reis et al., 2020).

Digitalization impacts firms in many ways, including ease of doing business to improve firms' overall competitiveness (Lee & Falihat, 2019; Ritter & Pedersen, 2020). At the strategic level, digitalization is hijacking companies to radically review and change their business strategy as well as corporate culture and structure (Schmitt & Baldegger, 2020), to compete successfully in the current vigorous market with ever-changing consumers behaviors (Salloum et al., 2018). Regardless of internationalization, firms need to deal with the increasing digital disruptions and threats from new entrants while working to fulfill the multiplex demands of digitally savvy customers (Ozcan & Yakis-Douglas, 2020). For example, China's instant noodle sales were badly affected by online food delivery companies (Atkinson, 2017). Digitalization forces firms to rethink their engagement models with their internal stakeholders, partners, suppliers, distributors, and customers so that they can better create and deliver values (Autio, 2017). While the adoption of DT and platforms is commonly challenged by internal psychological barriers (Amankwah-Amoah et al., 2021), a good understanding of the benefits and limitations of digitalization is pertinent to the speed and quality of decision-making processes (Lee et al., 2019). Organizational structures and corporate strategy are expected to be radically altered by DT, generating upheaval (Müllner & Filatotchev, 2018) and MNEs need to

adapt to these changes quickly (Hazlehurst & Brouthers, 2018). Firms are enduring intensive pressure to go digital due to the increasing competitiveness caused by digitalization and globalization (Reis et al., 2018). Ozcan & Yakis-Douglas (2020) argue that additive, collaborative, and open strategies can empower MNEs to deal with such immense changes. Safar et al. (2018) argue that firms' readiness in adapting to the new technological environment is critical in ensuring competitiveness and capturing new markets.

Internationalization through the internet and digital innovation is getting more popular and has shown mixed results (Zen & Faizin, 2021). Zen & Faizin (2021) claim that the internet has a positive influence on SOI. Many MSMEs utilize the internet as an effective internationalization media, enabling them to connect with suppliers, manufacturers, and consumers (Balabanis, 2000). Deng et al. (2022) argue that advanced digital infrastructure is an enabler of internationalization. However, the findings by Brieger et al. (2022) suggest that digital entrepreneurs prefer to focus on growing the home market when there is a good domestic digital infrastructure. While MSMEs want to embrace digitalization, lack of resources, limited awareness of social and technological changes (Strotmann, 2007), limited DT and skills, and inappropriate strategy are some of the reasons they miss out on digital transformation opportunities (Von et al., 2017). MNEs want to use digitalization to transform their global business processes to enhance competitiveness and profitability (Mithas et al., 2009), but many MSMEs are unable to adopt the digital internationalization approach because their business models were not designed to scale in that way (Bailetti & Tanev, 2020; Westerlund, 2020). Business model scalability is fundamental to internationalization for MSMEs (Durmaz & İlhan, 2015) and scalability represents the ability to grow rapidly without constraints caused by the business model (M. Lund & Nielsen, 2018). Nonetheless, many SMEs have issues with their business models when it comes to value generation, delivery, and capture during the internationalization process (Reim et al., 2022). By having digital infrastructures enabled GVC and an ecosystem integrating digital strategy, MSMEs can develop new international value propositions to compete in the international arena (Schmitt & Baldegger, 2020). MNEs can also capitalize on digitalization for the transformation of their subsidiaries to form a more efficient network to support global operations (Z. Lu, 2022). MNEs need to appropriately consider and balance the benefits and risks of the internationalization process (Ozcan & Yakis-Douglas, 2020). There is extant literature on the commercial implications of digitalization, such as speeding up knowledge creation (Foss & Pedersen, 2004), integration of knowledge management systems internally and externally (Alberti-Alhtaybat et al., 2019), lower information asymmetries and transactional costs (Yamin & Sinkovics, 2006), and redefining customer relationships and supplier integration (D. Kim et al., 2018). Firms can also benefit through expanding network connectivity and enhancing the value chain (Strange & Zucchella, 2017), removing new market boundaries (W. Chen & Kamal, 2016; Watson et al., 2018), and new business model creation (Frank et al., 2019). As such, many scholars are devoting their intellectual efforts to understanding digitalization and internationalization as a collective activity (Schmitt & Baldegger, 2020). While digitalization offers new competitive advantages, Bürgin & Mayer (2020) argue that the competitive advantage coming from digitalization alone is usually temporal.

2.3 Internationalization and MNEs

The emergence of digitalization has triggered firms to expedite their international opportunities seeking ventures to retain their competitive advantages (Hervé et al., 2020a). Internationalization is the business activity where companies expand beyond the border of their home country into host countries (Pellegrino & McNaughton, 2017), after weighing related costs and benefits (Coase, 1937). Internationalization is an essential business expansion strategy (J. W. Lu & Beamish, 2004), as it brings new opportunities to open new markets, acquire new customers, build up economies of scale and scope, implement risks diversification, develop new capabilities (Elango, 2004), acquire new learnings, and achieve cost efficiency (J. U. Kim & Aguilera, 2015). Internationalization also offers growth acceleration to improve the profitability of the company (Zen & Faizin, 2021). Bergamaschi et al. (2021) argue that internationalization can take the form of two distinct dimensions, first focusing on the market sphere which involves developing new host countries (Zahra & George, 2017), and second, focusing on the production sphere which is related to global sourcing and supply chain (Rask, 2014). There are several modes of internationalization: importing, exporting, foreign investment, setting up subsidiaries, licensing, franchising, and others (Dethine et al., 2020). Besides digitalization, Hitt et al. (2021) identify that internationalization strategies are likely to be influenced by factors like democratic decline, growing government size, nationalism, and deglobalization.

Previously, internationalization is a gradual process, where the company will develop its domestic market before expanding to other international markets (Zen & Faizin, 2021). However, the emergence of digitalization creates new opportunities for firms to accelerate their international expansion (Joensuu-Salo et al., 2018), particularly MSMEs (North et al., 2019; Stallkamp & Schotter, 2021). Digital disruptions (Autio, 2017) liberated companies physically and culturally compared to traditional ventures (Luo et al., 2005), creating international growth

opportunities for MSMEs (Joensuu-Salo et al., 2018). Zen & Faizin (2021) argue that digitalization is indivisible from internationalization opportunities. The internet facilitates innovative ways of doing business internationally for new and existing firms (Wittkop et al., 2018). Hervé et al. (2022) submit that MSMEs' internationalization is substantially influenced by entrepreneurs' judgment, especially in seizing opportunities presented by DT. Entrepreneurially orientated firms are found to be more likely in adopting active internationalization websites to capture internationalization opportunities (Ipsmiller et al., 2022). Traditional entrepreneurs do not share the same personality traits as digital entrepreneurs (Seow, 2022). Even among digital entrepreneurs, those inexperienced digital entrepreneurs are likely to experience more decision-making challenges pursuing internationalization due to a lack of experience, knowledge, and networks (Gabrielsson et al., 2022). The degree of understanding a market and establishing local networks can also accelerate SOI (Neubert, 2016). In some instances, digital business models are difficult to share between home and host countries due to regulatory differences (Pollman & Barry, 2016). All these have contributed to the rapid development of internationalization literature in recent years (Zen & Faizin, 2021). In a variety of ways, digitalization is reshaping international business and presenting a new frontier for international business study (Hennart, 2019; Luo, 2022).

3. Discussion and Future Research Agenda

3.1 Interplay between Digitalization and Internationalization

The stream of research that studies the interplay relationship between digitalization and internationalization (IDI) started with Lovelock & Yip (1996) (Gilson et al., 2015). Bergamaschi et al. (2021) identify four development stages of IDI: (1) IDI interaction with inter-organizational aspects (1996–2004), (2) the balance of internationalization perceived risk and returns under the influence of digitalization (2005–2009), (3) internationalization alternatives and digital advancement interaction with IDI (2010–2014), and (4) IDI interaction with intra-organizational aspects (2015–2019). In the last decade, IDI has gained scholars' traction in various areas, such as MNEs' approach to digitalization (Mikaléf & Pateli, 2017; Özcan et al., 2018; Schu et al., 2016), technological innovation moderating international orientation (Bagheri et al., 2019; Bettiol et al., 2020; Cassetta et al., 2020; Hagsten & Kotnik, 2017; Hannibal & Knight, 2018; Strange & Zucchella, 2017), and digitalization moderating success of internationalization (Cheng & Yang, 2017; Luo & Bu, 2016; Mathews et al., 2016; Peña-Vinces et al., 2012). Researchers have also investigated the degree of digital transformation moderating entrepreneurial orientation and internationalization intensity (Hervé et al., 2020a), international growth contributed by internet marketing capabilities (Mathews et al., 2016), digital platform companies and internationalization (Ojala et al., 2018; Stallkamp & Schotter, 2021), and digitalization and firms' export practices (Dethine et al., 2020; Enjolras et al., 2019). Internationally-oriented firms respond to digitalization differently compared to domestically-oriented firms (Khanagha et al., 2018; Westerlund, 2020). It is noted that internationalization strategies enjoy substantial benefits from digitalization (W. Chen & Kamal, 2016; Lee & Falahat, 2019; Mozas-Moral et al., 2016; Paniagua et al., 2017; Watson et al., 2018). However, scholars only started to acknowledge that digitalization is a key variable for international competitiveness in the past decade (Ghobakhloo, 2020; Kutnjak et al., 2019), but not in earlier literature (Bergamaschi et al., 2021). Despite these scholarly efforts, IDI is still a relatively new research domain that needs scholarly attention to analyze its methodological and theoretical background, depict its proceedings and evolutions, and identify future research agendas (Bergamaschi et al., 2021).

As IDI is becoming more diversified, interconnected, and complicated, digitalization must be studied scientifically in international research disciplines (Kraus et al., 2018). Bergamaschi et al. (2021) submit that a preliminary review of the current literature reveals a lack of comprehensive and analytical examination of IDI as most literature mainly focuses on specific areas of digitalization (such as AI, social media and networking, cloud computing, big data and analytics, the internet, mobility, and pervasive computing) and internationalization (from production to markets), which only offer a partial picture of the domain. For example, Eduardsen & Ivang (2016) conducted research on internet-enabled internationalization, but such research only focuses on one side of IDI and while Mendes (2021) investigates both themes of IDI, the study is limited to country focus. Hervé et al. (2020b) conducted a thorough investigation on IDI, but the paper is only limited to five pieces of scientific literature. As digitalization and internationalization become more interlaced, the issue arises as to whether digitalization is changing borders to the point where new, borderless internationalization models must be devised (Schmitt & Baldegger, 2020). There were theoretical model attempts in recent years, such as the effect of digitalization on a firm's internationalization and international marketing (Vadana et al., 2020) and organizational decision-making framework (A. Ahmed et al., 2021), these conceptual models, however, lack of empirical support. Bergamaschi et al. (2021) argue that most IDI research

is time-variant, based on the data available, and phenomena-driven, as opposed to deriving from rigorous theorizing processes. With the ongoing development in both digitalization and internationalization, there is a need for a theoretical framework on IDI as the traditional cause-effect approach no longer suffices in explaining the dynamic intertwinement relationship of digitalization and internationalization (Bergamaschi et al., 2021). There are huge research opportunities in the development of theoretical models which can effectively explain the dynamic nature of IDI.

A popular research theme of IDI is the moderation of digitalization with SOI (Hennart, 2014; Neubert, 2018; Ziyae et al., 2014). Hennart (2014) argues that due to niche market focus, DCs can embark on a rapid internationalization mode. Lean BGCs can utilize digitalization to create knowledge and networks faster and thus, achieve a speedier internationalization process (Lee et al., 2019). Lee et al. (2019) propose a conceptual model using digitalization as the moderator for international business competencies (a prerequisite condition) and SOI. Speed is only meaningful if the business model is scalable. Digitalization and internationalization are interconnected with business model scalability (Stallkamp & Schotter, 2021), but the dynamic interaction of the trio is still underdeveloped (Zhang et al., 2015). Westerlund (2020) submits that internal resources, networks and partnerships, and managing customer and supplier relations found in business model theory (Gupta & Bose, 2019), are important factors in digital scaling. The role of value-chain digitalization (part of the business model) in internationalization is worth exploring (Vadana et al., 2020). To date, scalability only received scant attention and this gives rise to future research agenda. On the methodological aspect, there is a recent call for future research to adopt a combination of qualitative and quantitative methods as they can offer more convincing findings (Bergamaschi et al., 2021; Hervé et al., 2020b).

3.2 Theoretical Challenge

Scholarly studies on internationalization started in the 1970s with greater emphasis on large MNEs (Perea et al., 2019), but in the recent twenty years, literature on MSMEs internationalization has been mushrooming due to digitalization (Joensuu-Salo et al., 2018). International business theories (IBT) were generally developed through many years of empirical studies on large MNEs (Wittkop et al., 2018) and they offer explanations and enable the prediction of international expansion (Buckley & Casson, 1976). Olejnik & Swoboda (2012) conclude that there are three patterns of the internationalization process: (1) the gradual internationalization (the stage model), (2) the radical internationalization patterns (BGCs), and (3) the radical but belated internationalization patterns (born-again global). The innovation model (Bilkey & Tesar, 1977) and the Uppsala model (Johanson & Vahlne, 1977) are empirically proven IBT purporting that internationalization is a linear and sequential process where MNEs gradually and incrementally expand to foreign markets (Zen & Faizin, 2021). The former views internationalization as a new product adoption process, but the latter stresses psychological distance and the learning process (Dethine et al., 2020). In the radical model, firms see the world as one single market without differentiating home or host countries and attempt to establish a competitive advantage to address multiple markets at once (Zen & Faizin, 2021). In the stage model, the internationalization process is commonly driven by the network (Johanson & Vahlne, 2009), but for the radical model, they are marked by a fast increase, decrease, and re-increasing commitment to international markets (Dominguez & Mayrhofer, 2017). In the third pattern, the firms could be operating domestically for a long time and go international of a sudden caused of certain significant events or things, such as ownership or management changes, or resource availability (Zen & Faizin, 2021). In another study, scholars identify three internationalization processes and call them the step-by-step process (similar to the stage model), the network approach, and the economic approach (Dethine et al., 2020). According to Dethine et al. (2020), the network approach leverages international trade relations to explore new markets (Johanson & Mattsson, 2015). In this vein, the network approach is a form of the stage model (Johanson & Vahlne, 2009). Lastly, the economic approach, in line with the resource-based theory (Barney, 1991), focuses on internal resources and capabilities to expand internationally (Dethine et al., 2020).

According to the Uppsala model, MNEs utilize an established network to develop a new market (Vahlne & Johanson, 2017) through four market-oriented stages: (1) evaluation and selection, (2) preparation; (3) entry, and (4) growth and development (Neubert, 2013). Even though the Uppsala model has been widely used for several decades, its universal relativity is gradually declining (Knight & Liesch, 2016; Welch et al., 2016). Scholars challenge the stage model by researching alternative internationalization models (N. E. Coviello & McAuley, 1999; Gankema et al., 1997; J. W. Lu & Beamish, 2001; McAuley, 2010; Nummela et al., 2006; Oviatt & McDougall, 1995; Ruzzier et al., 2006). It is argued that the stage theory is also not appropriate to explain the increasing emergence of rapid internationalization enabled by digitalization (Hervé et al., 2020b). We have seen scholarly efforts to expand the Uppsala model to accommodate the rapid internationalization phenomenon (N. Coviello et al., 2017; Vahlne & Johanson, 2017), and extend IBT to encompass iBusiness (Brouthers et al., 2016). Somehow, the scientific community still feels that IBT did not successfully adapt to the opportunities and challenges that exist in the digital

environments (Hervé et al., 2020b). Hervé et al. (2020b) argue that future research can focus on developing new theoretical models that are better suited to the present international landscape. Interestingly, even though IBT has been recently challenged and undermined by the increasing anecdotal evidence of digitalization-driven internationalization, there is relatively little literature examining how IBT has been challenged by digitalization (Autio et al., 2021). Scholars can explore future studies on this topic.

3.3 Rapid Internationalization Phenomenon

Although large and small MNEs experience a very similar internationalization process (Oviatt & McDougall, 1995), small MNEs experience a stronger impact than large MNEs (Ruzzier et al., 2006). MSMEs can gain more from international scalability compared to domestic scalability (Abdi & Aulakh, 2018) and usually perform better than those that operate domestically only (Zen & Faizin, 2021). Thus, we are seeing more MSMEs embarking on internationalization activities in recent years. Unlike large MNEs, most MSMEs focus on the short-term (Moeuf et al., 2018) and struggle to develop effective international strategies because it is a rather complex and disruptive exercise (Dethine et al., 2020). In a study, Bogavac et al. (2021) argue that dynamic capabilities (Teece et al., 1997) and market orientation (Armario et al., 2008) support MSMEs' internationalization objectives. The adaptability of MSMEs in the international environment determines their ability to take advantage of internationalization (Bogavac, 2019). Bogavac et al. (2021) submit that the IDSME index (Bogavac & Čekerevac, 2019) focuses on (1) connectivity quality, (2) internal digital skills, (3) DT integration with the business, and (4) internet utility can enable MSMEs to effectively evaluate their achievements, capabilities, and shortcomings. The agility of MSMEs empowers them to expand overseas easier despite their resource limitations (Knight & Liesch, 2016). While investment in information and communication technology resources and cyber resilience, as well as building a set of competencies in terms of business process management, customer relationship management, and partnership are critical to MSMEs seeking international expansion (Westerlund, 2020), MSMEs are constantly internally challenged by resource limitation and simple structure (Cerrato & Piva, 2012). Even though MSMEs usually have active relationships in foreign markets which serve as their most important sources of knowledge (Hsieh et al., 2019), MSMEs typically face challenges in building a customer's network in the foreign market and identifying and managing the right information in their internationalization quests (Costa et al., 2020). Due to the heterogeneity of the MSME landscape, researchers face difficulties in identifying the success factors or success measurements for internationalization (Schmitt & Baldeger, 2020). It is a learning process (Schweizer, 2012) and requires various capabilities (Joensuu-Salo et al., 2018).

Digitalization forces scholars to reexamine the foundations of the international business field when established theories are unable to offer a satisfactory theoretical explanation for rapid internationalization (Eden, 2016). In a study, Banalieva & Dhanaraj (2019) conclude that digitalization has rendered existing IBT inadequate to explain MNEs in the digital economy. Traditional internationalization invokes the necessity of investment in physical assets in foreign markets, but DCs can expand digitally into a new market by enabling global consumers to access their offerings through apps. Price-setting has been revolutionized from the analog era (Mayer-Schönberger & Ramge, 2018), and firms can offer personalized pricing based on a bucket of considerations, including geographical location (Banalieva & Dhanaraj, 2019). Jean & Kim (2020) argues MSMEs exporters, especially BGCs, use the internet as a fast facilitator of their export performance. Thus, some scholars attempt to use the international entrepreneurship approaches that focus on MSMEs and the utility of the internet in international activities (Wittkop et al., 2018), including networks, capabilities, and internal factors of a company (Hagen & Zucchella, 2014) to explain new phenomena like BDCs and BGCs (Wittkop et al., 2018). Hennart (2014) argues that the rapid internationalization of BGCs depends on their value propositions rather than the individual experiences of the entrepreneurs, knowledge capabilities, internal resources, or external networks. On some occasions, BGCs go international without proactive planning and they could be accidental internationalists (Hennart, 2014). Autio & Zander (2016) also submit that young DCs' market expansion adopts the do-first-plan-later approach because digitalization has significantly reduced the risk and cost of failure. Scholars have started the journey to develop theoretical models explaining DCs, BGCs, and internationalization, such as Wittkop et al. (2018) (DCs internationalization), Ojala et al. (2018) (BGC internationalization), and Autio & Zander (2016) (lean internationalization concept), but there is still a long way to go. For instance, DCs are commonly perceived as rapid internationalization players (Bell & Loane, 2010) because of the high digitalization in their value chain (Brouthers et al., 2016; Wentrup, 2016) and this is a potential research topic (Vadana et al., 2020). Although MSMEs are increasingly using the internet for internationalization (Jean & Kim, 2020), there is little research on the impact of digitalization on SMEs' internationalization management (Costa et al., 2020). There are studies on DT's impact on internationalization, but little research is on measuring the effect of DT on the activities of established internationalizing MSMEs (Hervé et al., 2020a).

3.4 Digitalization and Internationalization Risks

Nowadays, MNEs are operating in an increasingly complicated geopolitical context (Lubinski & Wadhvani, 2020) and the pandemic has added tension to organizations' coordination activities (George & Schillebeeckx, 2022). When a company exploits its geographic diversity, whether through global supply chain expansion or international market expansion, environmental dynamism is amplified (Kano et al., 2020). Digitalization brings new opportunities and vast benefits to MNEs but is not free of risks (Luo, 2022). Luo (2022) defines risk as the likelihood of a bad event occurring as a result of external or internal vulnerabilities that pose a danger to corporate operations. MNEs' risk exposure can come from within-country and cross-country (Luo, 2022). On the digital front, politicians are attempting to put an end to the period of digital exceptionalism by imposing rigorous data protection rules on digital services and international taxes (Milliken & Holton, 2021), marking digital risk as one of the risks to MNEs (George & Schillebeeckx, 2022). MNEs are becoming increasingly reliant on others as a result of digital globalization, making them more vulnerable to contagion effects from all threats they face and collaborating units (S. Lund et al., 2020). As MNEs are not isolated from digital global platforms and ecosystems (Stallkamp & Schotter, 2021), they are equally exposed to related risks. Cybersecurity is an enabler of digital scaling that need to be emphasized (Bailetti & Craigen, 2020; Westerlund, 2020). Internationalization can result in increased risk exposure which in the long term, jeopardizes the firm's performance (Zen & Faizin, 2021). Failure of leadership to handle digitalization challenges might have far-reaching consequences, affecting not only the company's worldwide operations and those of its partners in other nations and industries but also the company's global reputation and public goodwill (Luo, 2022). Therefore, risk management is one of the primary objectives of MNEs (Tong & Reuer, 2007). IDI can create novel risks that digitalization or internationalization alone do not exhibit or amplify existing risks to a greater scale.

The literature on the effects of digitalization and internationalization is disproportionate to studies on their associated risks (Bergamaschi et al., 2021). Much international business research has concentrated on political, financial, and transactional risks in international trade (Rugman, 2009), leaving digitization-related risks relatively unexplored (Luo, 2022). While Luo (2022) identified three critical digital risks, such as digital interdependence risk, global information and cybersecurity risk, and digital regulatory complexity risk, many other related risks have yet to be considered. Digital internationalization risks such as price increase pressures, insufficient global legal protections, and increasing global competitiveness are topics under-addressed (Hervé et al., 2020b). Other risks like business risks (Lavington, 1925), e-business risks (Scott, 2004), system-compatible risks (Ramos & Yoo, 2019), third-party risks (McCahery & de Roode, 2018), technological risks (Chernyakov & Chernyakova, 2018), and talent capability risks (Guo et al., 2020) are future research opportunities. A future research agenda on digital internationalization risk theoretical models is welcome.

4. Conclusion

The advent of DT has popularized the notion of digitalization in both societal and commercial spheres in the past few decades. Digitalization has severely disrupted traditional business models, challenging firms' competitive advantages, and offering novel opportunities for new entrants. Internationalization is a well-established business expansion strategy that enables MNEs to grow customers and profitability in a scalable fashion. The convergence of digitalization and internationalization has created undisputable disruptions to existing IBT. We are witnessing new phenomena like DCs, BDCs, and BGCs experiencing unprecedented SOI. Although there is extant literature on both digitalization and internationalization themes, new scientific explanations are required to catch up with their continuous dynamic developments. This paper has identified four streams of future research agenda: theoretical frameworks of IDI, enrichment and expansion of IBT for large MNEs, theoretical models for small MNEs, and scientific investigation of digitalization and internationalization-associated risks. Each of these streams can serve as a great contribution to the existing scholarly knowledge and enable practitioners to better maneuver digitalization in the internationalization sphere. While a thorough review has been made to derive useful insights, it is greatly influenced by the limited selection of literature. One limitation of this paper is the number of articles reviewed and the exclusion of articles that did not focus their research entirety on digitalization and internationalization. For example, the impact of the pandemic on digitalization and internationalization and e-business or e-commerce was not selected. We recognize that research on other disciplines can also make a significant contribution to IDI.

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