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Digital Platforms and Internationalization

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Abstract

Digital transformation is a leading trend nowadays, impacting pervasively on firms' strategies. Related to this trend, Digital Platforms are revolutionizing the way how firms carry out their business worldwide, acting as a driver for firms to expand in a quick way and to scale up at an unprecedented level and pace. Digital Platforms' capacity to expand and scale up rapidly is rather impressive, as they benefit from network effects and improvements in digital technologies. Such phenomenon warrants considerable attention recently. Another topic getting increasing attention is firms' internationalization.

Despite the recent growth in the interest of researchers on both themes, the relationship between Digital Platforms and Internationalization has not been systematically researched, what makes this dissertation a timely contribution to the study of this ever more relevant relationship.

This dissertation is structured into two chapters. To address the existing gap, the first chapter develops a comprehensive literature review, focusing on the major themes and theoretical approaches regarding the existing literature on Digital Platforms and Internationalization. The second chapter analyzes, in a quantitative way, such literature through a rigorous bibliometric methodology. The application of bibliometric techniques to the relevant literature included 124 articles from the WoS and SCOPUS bibliographic databases, providing a systematic review of the recent work on Digital Platforms and Internationalization. Using this methodology, we were able to identify and analyze the most important publications, influential authors and main trends and patterns emerging from relevant literature. Such systematic analysis allowed to identify a clearly upward trend since 2016, accompanying the penetration and relevance in the economy of the phenomenon of Digital Platforms.

Keywords: Digital Platforms, E-commerce, Internationalization, International Business, Bibliometric Analysis

Resumo

A transformação digital é a grande tendência atualmente impactando a estratégia das empresas. Relacionado com esta tendência, as Plataformas Digitais estão a revolucionar a forma como as empresas realizam os seus negócios a nível mundial, atuando como um motor para que as empresas se expandam mais rapidamente e atinjam (se bem sucedidas) rapidamente uma escala sem precedentes. A capacidade das Plataformas Digitais para se expandirem e crescerem rapidamente é assinalável, dado beneficiarem de efeitos de rede e de melhorias ao nível das tecnologias digitais. Tal fenómeno tem atraído recentemente considerável atenção. Outro tema cada vez mais relevante na literatura é a Internacionalização empresarial.

Contudo, e apesar do interesse dos investigadores nos temas das Plataformas Digitais e da Internacionalização ser crescente, a relação entre Plataformas Digitais e Internacionalização não tem sido investigada de forma sistemática. Esta dissertação visa exatamente contribuir para colmatar a escassez de análise desta relevante relação.

A seguinte dissertação é composta por dois capítulos. O primeiro capítulo desenvolve uma abrangente revisão de literatura centrada nos principais temas e abordagens teóricas que caracterizam a literatura existente sobre Plataformas Digitais e Internacionalização. O segundo capítulo adota uma perspetiva quantitativa, analisando a literatura existente recorrendo a uma rigorosa metodologia bibliométrica. A aplicação de técnicas bibliométricas à literatura relevante inclui a análise de 124 artigos extraídos das bases de dados bibliográficas WoS e SCOPUS. Tal extração proporcionou uma recolha e subsequente análise detalhada de trabalhos recentes sobre plataformas digitais e internacionalização. Assim, pudemos avaliar as publicações mais importantes, os autores mais influentes e as principais tendências e padrões que emergem da literatura existente.

Ao analisar a literatura relevante, reconhece-se uma tendência claramente ascendente desde 2016, acompanhando a penetração e a importância na economia das plataformas digitais.

Palavras-chave: Plataformas Digitais, E-commerce, Internacionalização, Negócios Internacionais, Análise Bibliométrica

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List of Acronyms

BM – Business Model

BMI – Business Model Innovation

CAGE – Cultural, Administrative, Geographic, Economic

FDI – Foreign Direct Investment

FSAs – Firm Specific Advantages

GAFA – Google, Amazon, Facebook, Apple

ICT – Information Communications Technology

SCOPUS – SciVerse SCOPUS

WoS – Web of Science

Introduction - motivation, objectives, and research topic

Digital Platforms are increasingly pervasive and impactful in nowadays economy and society (Ojala et al., 2018; Parker et al., 2016). Several authors reflect and agree that we are in the midst of a “Platform Economy” (Kenney & Zysman, 2016), which reflects the modern digitally driven new economy (Deloitte, 2019).

A key motivation for researching this topic is, thus, its undeniable relevance. According to TheInnovator (2019), amongst the ten most valuable (in market capitalization) companies worldwide, seven are based on a platform business model (BM) (Apple, Google, Microsoft, Amazon, Facebook - recently renamed Meta, Tencent, Alibaba), stimulating the facilitation of productive interactions, speed, scale of innovation (Evans & Gawer, 2016), and transactions between different groups through digital. As a further motivation, the platform BM trend will continue to speed up and amidst the pandemic's economic collapse worldwide, digital advances emerged as a survival component to pursue socioeconomic activities (OECD, 2021). Aiming 2025, looking over a research conducted by McKinsey & Company, it is expected that a set of digital ecosystems will possibly generate a total business revenue over 30% (McKinsey, 2018).

Traditional BMs are being disrupted by the increasing impact of digital transformation as well as the ever-growing dominance of Digital Platforms (Ojala et al., 2018), in the way businesses, firms, and economies organize and operate (Autio & Zander, 2016). Digital Platforms benefit from key qualities such as agility and speed, as their BM benefits from aspects such as cloud infrastructure, demand-side economies of scale and solid direct and cross-side network effects.

The most important idea is “without people, platforms fail” (Forbes, 2021) since Digital Platforms, in order to be viable, need to ensure a certain critical mass of users in order for network effects to kick in (Evans & Schmalensee, 2016). According to the database Statista (2021), as internet access and adoption is rising worldwide, also digital consumers are increasing every year. In 2020, the purchase of services or goods through digital involved

over two billion people (Statista, 2021). All these businesses' digital operations are forecasted to grow exponentially.

On the other hand, digital transformation has an increasing impact on the Internationalization process of firms - which now increasingly draws on Digital Platforms. The Internationalization process involving Digital Platforms is markedly different when compared to what can be explained by traditional theories and models of Internationalization, challenging such traditional approaches. Digital Platforms focus their fast Internationalization process on magnetizing new users around their platforms (Chen et al., 2019). Nevertheless, even if Digital Platforms are online and generate distinctive value, they may confront a lack of embeddedness in foreign market user networks during the Internationalization process, causing potential adopters to be hesitant to connect (Chen et al., 2019).

Given that Internationalization as seen through traditional BMs and theories is fundamentally different, the dissertation's objective is to better comprehend the "new" Internationalization process, which encompasses Digital Platforms as a great opportunity to expand speedily and in a higher scale.

The overall research question that this dissertation aims to address is *"How do Digital Platforms impact the Internationalization process of firms?"*.

A further motivation for this topic is that it is argued to be an under-researched topic in the current International Business literature (Jin & Hurd, 2018). However, this dissertation may find some novel perspectives on this, as we are finding a very recent significant growth in such literature that is not yet synthesized and documented – providing a relevant opportunity to organize such literature.

This dissertation, right after an introduction, will be divided into two parts. The first part will consist of a thorough and in-depth review of the literature on the interesting research topics, preceded by the methodology adopted on the second part, a systematic bibliometric evaluation of the extant literature, retrieved from the two bibliographic databases Web of Science (WoS) and SciVerse SCOPUS (SCOPUS).

Chapter 1 – Literature Review

This chapter of the dissertation consists of a thorough literature review, addressing the key themes relevant to the dissertation. This first chapter includes the following parts: (1.1) Platforms, particularly how Digital Platforms revolutionize the firm's landscape and also their consequences on the concept of markets; (1.2) Internationalization, emphasizing why internationalization strategy is so important for firms, and addressing the different options to expand internationally, and (1.3) How Digital Platforms challenge traditional theories and models of Internationalization as well as they may provide new opportunities for firms that want to cross national boundaries.

1.1. Digital Platforms

Platforms are not new, if we think on businesses such as shopping malls and credit cards, which itself already were following a platform logic that enables interactions among users to carry out win-win transactions (Parker et al., 2016). Yet, Digital Platforms are a specific type of platforms, more recently developed. The digital economy is gaining greater importance (Evans & Gawer, 2016; Teece, 2018), generating a significant economic impact in recent years while also disrupting the BMs of established businesses. Throughout the last decade, the idea of platforms being temporary was pushed away, disputed by digital technology improvements (Pérez-Pérez et al., 2021). The main reasons for platforms strength are aligned with:

(1) The fact that it is simpler to connect and control several users in live time, because of digital technologies, has significantly increased the industries number in which platform BMs are feasible (Evans & Schmalensee, 2016).

(2) Platforms contribution to transaction costs reduction and their ability to scale up quickly with little upfront capital (Autio & Zander, 2016). According to Simões (2020), scalability may be segmented into two dimensions: on one side, technological scalability refers to a feature of computer networks, algorithms, networking protocols, and functionalities utilized (Guan et al., 2013). On the other side, business scalability is related to developing and exploiting economies of scale within and across fundamental business activities (Monaghan et al., 2020). In comparison to traditional models, where business is focused on supply-side economies of scale, on Digital Revolution economies of scale are

referred as demand-side, which is synonymous with network effects. It is important to keep in mind that, according Varian (2001), traditional supply-side economies of scale result in lowering average costs with scale, whereas "demand-side economies of scale" result in increasing average revenue with scale.

(3) Digital technology has widened the geographic reach of markets by decreasing distance expenses and enabling better coordination of transactions between distant users. Platforms in the pre-digital age were confined to a small number of businesses and were restricted by physical distance and capacity.

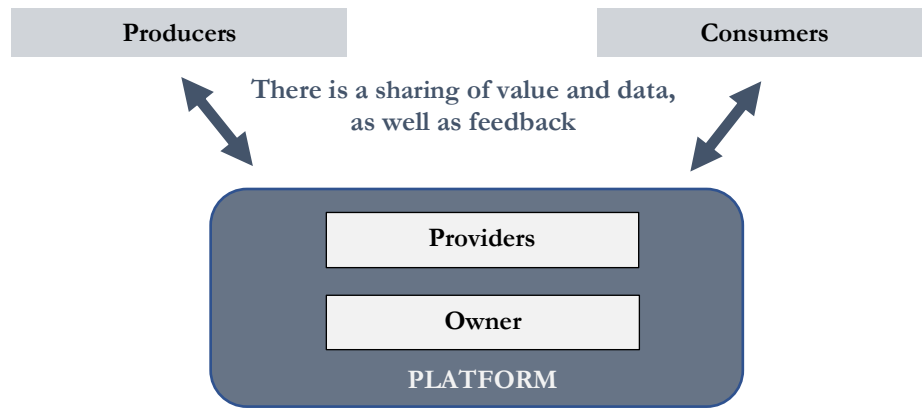
Despite considerable diversity, there is no globally acknowledged definition of Digital Platforms (Weiss & Grab, 2020). Digital Platforms can be considered from two viewpoints - a focus for innovation or a multi-sided marketplace (Nambisan et al., 2019). On the one hand, platforms are defined as a shared group of technology, elements, instruments, as well as services, frequently organized in modular architectures, serving as a base aiming the improvement of complementary goods and services, as Gawer (2014) argue. On the other hand, Parker et al. (2016) and Rochet and Tirole (2003) support that platforms are a set of technology architectures and rules that enable regulated involvement of multiple user groups in a multisided market, meeting the interests of all parties.

Research has revealed that synonymous designations exist referring to Digital Platforms (Simões, 2020; Stallkamp & Schotter, 2019), cited by different authors: "ibusiness platforms" (Brouthers et al., 2016; Chen et al., 2019), "multi-sided platforms" (Evans, 2003; Evans & Schmalensee, 2013; Staykova & Damsgaard, 2015), among others.

Digital Platforms perform the function of intermediaries, helping two or more distant groups to establish a connection and providing direct interaction (Zhu & Furr, 2016). Platforms use technology to provide a connection among people, organizations, and resources in an interactive ecosystem, enabling the creation and exchanges of value (Parker et al., 2016). Regardless of how each platform works, considering platforms that are based on a BM associated with the buy-and-sell of services, those involve four participants (Figure 1), such as (1) producers and (2) consumers, respectively, covering the platform offerings of founders and those who take advantage of using them, (3) platform providers, representing the platform's user interface, and (4) platforms owners that have complete power over its

intellectual property and governance, deciding who connects and how they connect (Van Alstyne et al., 2016).

Figure 1 – Participants of in a platform ecosystem



Source: Own elaboration, based on Van Alstyne et al. (2016)

Platforms flip businesses, blurring firms borders and shifting their inward focus into an outward one (Parker et al., 2016). The platforms focus is revolutionary by orchestrating external resources and interactions on the ecosystem, changing the purpose of control resources to orchestrate resources (Parker et al., 2016). The established 'pipeline' firms, where the value creation arises by controlling a set of activities with producers on the one side and consumers on the other, has deeply changed (Van Alstyne et al., 2016).

1.1.1. Business Model Innovation (BMI) and Digital Platforms

BMs have grown in popularity as a level of analysis for explaining variance in firm's success (Büyüközkan & Göçer, 2018). The architecture aligned with how firms can create value, delivery, and capture processes is referred to as firm's BM (Teece, 2010). The heart of a BM consists in how the company provides value to consumers, encourage them to pay for such value, and converts those payments into income for firms (Teece, 2010).

An era of digital change leads traditional BMs into becoming obsolete and firms become under immense pressure from technology to modify their BMs aiming to remain competitive (Kiel et al., 2017). Firms are increasingly embracing BMI, which refers to the transformation of established BMs to capture value creation and is aided by the intensity of the Internet and

advancements in information and communications technology (ICT) (Mihardjo et al., 2019). In line with the current digital economy, the advent of new BMs has enabled businesses to benefit from greater flexibility, be easily prepared to change, and with the ability to answer to consumers' current requirements in real time.

As a growing trend, firms are introducing Digital Platforms as novel BMs with the aim to connect network actors and their multiple resources to create value, manifesting itself as a competitive necessity for incumbent firms (McKinsey, 2019). Nowadays, we've noticed a change towards what is far more significant for firms – notably, the resources firms could connect as well as connect to, rather than what firms possess. Digital Platforms emerge as new opportunities for BM needed to be exploited since they intensify innovation, enabling entrepreneurs to take advantage of them to commercialize their business and for value creation and transfer (Gatautis, 2017). To sum up, Digital Platforms' value generation is characterized by resource orchestration rather than resource control, as well as an emphasis on interactions rather than transactions, while value capture is characterized by network effects rather than sales amount (Yrjölä et al., 2021).

The GAFA monopoly, representing Google, Amazon, Facebook, and Apple, is revealing the power of Digital Platforms in transforming the firm's landscape and having huge consequences on markets (Weiss & Grab, 2020). Nowadays, the intensification of Digital Platforms worldwide is changing the industries' panorama (Asadullah & Kankanhalli, 2018). Implementing Digital Platform businesses models is increasingly attractive for firms since these performs act as drivers for an economic growth (Asadullah & Kankanhalli, 2018). Pagani (2013) states that the leading benefits regarding to Digital Platforms settle on decreasing transaction costs, simpler asset distribution, decreasing the complexity of consumer searches by integrating data, and minimizing the monitoring costs for firms.

Firms that include Digital Platforms on their BM, enabling a connection through multiple sides and being exposed to cross-side network externalities, operate by using digital technologies and connecting to explore and regulate digitalized resources that are outside their scope (Gawer, 2021).

The current competitive environment is undergoing profound and quick changes. To promote innovation, value generation, as well as efficiency, Digital Platforms provide the capacity for firms to scale rapidly. When used effectively, these can be a huge business growth engine (Weiss & Grab, 2020). Over the last decade, firms that have benefited from the strength of platforms BMs have developed rapidly both in size and scope (Evans & Gawer, 2016). Platform-based digital markets are modifying the process of how companies create and deliver value for end customers; hence, they are modifying the way companies compete in the market (Cennamo, 2019).

The competition in traditional markets is based on rival firms from the same industry, providing related products and trying to satisfy related consumer's needs. Moreover, the partners as well as competitors are well defined. According to Rochet and Tirole (2003), platform business competition occurs between markets. In platforms, the products offer is not limited to only one sector, and their market borders span across several product markets and sectors (Cennamo, 2019), emphasizing the premise that partners and rivals are becoming more difficult to recognize. The competition is evolving, with increased cross-industry competition and competition between partners that rely on one another for successful endeavors. The key assets are not anymore found inside, instead they are likely to be found in outside networks (Rogers, 2016). Competition is less and less focused on a zero-sum game, where if a side wins the other side has to lose. Therefore, competition is becoming mainly focus on collaborating with competitors and competing with partners, requiring balance among both: simultaneously involving competition and cooperation (Rogers, 2016).

1.1.2. Digital Platform value elements

Along the literature, platforms are characterized by their multi-sidedness (Armstrong, 2006; Rochet & Tirole, 2003) and by their network effects among platform sides (referring to platform users). Several authors identify network effects (or network externalities) as a crucial notion to know when evaluating Digital Platforms (Chen et al., 2019; Evans & Schmalensee, 2013; Hagiu & Wright, 2015; Parker et al., 2016; Rochet & Tirole, 2003), and platform network size is considered the most essential feature of platform value (Cennamo, 2019). Network effects stand as an outcome from the user value created according to the number of users that are connected to the platform (Parker et al., 2016). In essence, as more users

connect with platforms, they grow more valuable, picking the interest of potential new users (Katz & Shapiro, 1985). The network effects could be whether direct or indirect. Direct networks effects, also recognized as same-side effects, stand as the result of the influence users across one market side had upon users on the equivalent market side (e.g., the influence of buyers on other buyers) (Parker et al., 2016), emphasizing that products or networks are more valuable when used by similar buyers (Staykova & Damsgaard, 2015). In contrast, indirect network effects, also referred as cross-side effects, are built by the influence that certain users on one market side had over users on the other market side (e.g., the influence of sellers on buyers), who provide complementary products or services (Stallkamp & Schotter, 2019). To develop beneficial indirect network effects, an equilibrium among demand and supply should be established (Evans and Schmalensee, 2016).

On the other hand, platform technological architecture also refers to a significant element of platform value. It is outlined as the technological skills embedded in a platform and the way their technological components function and connect to their content (Baldwin & Woodard, 2008). Their own design is indeed an important thing to consider as it has a bearing upon quality of content (Ozalp et al., 2018).

Lastly, platform scope has a role in platform value as well once digital technologies contributed to widen the geographic reach. Platforms serve several markets through the functionalities they provide, being decisive to determine the platform's positioning regarding consumer's preferences and compared to rival platforms. In multisided markets, it can play a role of being a driving force of platform success (Eisenmann et al., 2011).

Another relevant concept is platform governance – which encompasses a vision toward a set of regulations, restrictions, and inducements created and used by platform owners to exceed market frictions in organizing and implementing co-specialized competences (Zhang et al., 2020). These market frictions, such as externalities produced by an agent among others and asymmetries on information, affect platform adoption and impact independent agents that already entered on platforms. A large portion of platform governance on Digital Platforms is carried out via digital design elements (Saadatmand et al., 2019) and since Digital Platforms handle vast amounts of data, authorities have begun to give greater emphasis on the legislation governing data gathered, kept, and utilized to protect users' confidentiality.

1.1.3. Chicken-and-egg problem

The chicken-and-egg problem can be summarized as the necessity of a platform to have a significant base of registered sellers to attract buyers, despite the fact that sellers will just cooperate if there is a large number of buyers affiliated to platforms (Caillaud & Jullien, 2003; Parker et al., 2016). The critical issue lies in sellers not having any incentive to join the platform unless there are buyers, and buyers will not join unless there are sellers. Network effects, direct as well as indirect, help platform businesses to gain the strength to overcome the chicken-and-egg problem (Evans & Schmalensee, 2016; Parker et al., 2016), i.e., to attract a minimum level of users for the platform sides that are required for the platform to ignite, and that is designated as critical mass (Evans & Schmalensee, 2016). This is a prevalent concern during the early stages of a platform business or while expanding to a new market (Caillaud & Jullien, 2003). Fast expansion is feasible if this barrier can be surmounted, and it is necessary acquiring and retaining as many users as possible, as network scale becomes a long-term competitive advantage (Sun & Tse, 2009). Parker et al. (2016) proposes certain strategies of market entry for platforms (Table 1), which can help firms overcoming this issue.

Table 1 - 8 strategies that can solve the chicken-and-egg problem

The follow-the-rabbit strategy can be implemented with the goal of captivating users on both sides to a new platform by using a non-platform model. Its goal is to develop a platform business on top of an existing pipeline firm.

The piggyback strategy is associated with the development of a link to an existing platform, being able to find resources to outperform the incumbent platform's creation value and go get their users.

The seeding strategy refers to the preparation of meaningful value units that persuade certain users and boost the market since further users who want to keep in touch with them will follow.

The marquee strategy settles on the involvement of particularly significant users being encouraged.

The single-side strategy. Initially, the emphasis is on developing a business that enrich only a subset of users. Afterwards, that business will evolve into a platform business with the power to attract users that will interact with the first users.

The producer evangelism strategy concerns a strategy that entices producers through platform design, leading their customers to turn into platform users.

The big bang adoption strategy spotlight push marketing approaches to help getting the most exposure and curiosity on the day of launch or during the road.

The micromarket strategy consists of targeting a restricted market that already benefits from interactions among members.

Source: Own elaboration, adapted from Parker et al. (2016), 60-66.

Strong network effects might also drive a market to favorably edge for the dominant firm, in which the platform with most users wins - winner-takes-all outcome (Eisenmann et al., 2006). This anticompetitive nature, where there is an encouragement for users to gravitate toward one platform at the expense of others, can be concerning since it appears to encourage a monopolistic performance.

1.1.4. Typologies of platforms and monetization

In today's economic landscape designated as "Platform Economy", understanding the contrasts between platform types is critical to clarifying the idea that platforms are not equal (Kenney & Zysman, 2016). Stressing that throughout the literature there are different typologies of platforms, in a broad perspective, Brouthers et al. (2016) defend platforms as virtual communities or marketplaces. Respectively, virtual communities concentrate on a platform that gives an opportunity for users with shared interests to interact, share knowledge, and create relationships, but regarding marketplaces the focus is on a platform that not only enables user interaction but also pulls users together to enable a buy-sell trading.

Simões (2020) developed a more detailed typology that consists of five different sorts of platforms businesses. All of them rely on the presence of internal and external interactions.

In *fully digital businesses* the key interactions occur exclusively through a Digital Platform and the monetization is made by charging advertisers or charging a subscription fee. *Marketplaces* include transactions of physical and digital assets or just one of them. An offline interaction could be necessary aiming the receiving of the physical assets purchased. Charges or commissions on sellers might be used to monetize the service. *Offline local customer delivery services* are similar to marketplaces regarding monetization. While marketplace products move throughout the country or even in a global scale, off-line local customer delivery services are typically limited to a location and its environs. Although most of interactions occur digitally, some, such as services offered in a physical interaction, actually occur offline. As a result, because the procedure requires physical intermediaries, it's vital that the participants stay inside a specific geographic area. In *offline local co-located interactive services*, the inside and outside interactions have a local focus, where services purchased through a Digital Platform or app are acquired through a face-to-face interaction. This kind of service requires more time and co-location for both persons involved. Lastly, in *offline international interactive services*, the conditions of the service occur online through the platform or app use. With the purpose of the supplier provision of the service, the customer must move to the place. The monetization occurs through commissions on sellers and advertising.

As a further typology, Monaghan et al. (2020) considered that Digital Platform businesses can be recognized as internet platform business, as digital solutions businesses, as e-commerce or retail businesses, and as producers of digital content.

It is worth mentioning that managers must decide on monetization techniques for platform businesses as it stands a critical feature. Once platforms are properly managed, it is feasible to create further value, and monetization takes place by collecting an amount of that value (Parker et al., 2016). Parker et al. (2016) mentioned four different techniques of monetization highlighted in the following Table 2, underlining that one of the most crucial consideration is whom to charge.

Table 2 - Monetization techniques

Charging a transaction fee is the most powerful strategy and does not harm the development of network effects; the charge occurs only once the transaction between the affected parties is performed. Nonetheless, managers must be mindful, though, so that the transaction's fee does not drive users away.

Charging for access is a win scenario for all parties concerned. For diverse reasons not related to the interaction with producers, it is possible to charge producers for access to new platform users.

Charging for enhanced access is used by platforms that are not capable to monetize the transaction, so that they could charge producers for enhance access to customers. Network effects are not harmed with monetizing enhanced access, and the parts involved can participate in the platform.

Charging for enhanced curation reveals the importance of quality to guarantee consumers will pay for their access, for an enhanced curation. This emphasizes the significance of network effects quality over quantity.

Source: Own elaboration, adapted from Parker et al. (2016), 75-79

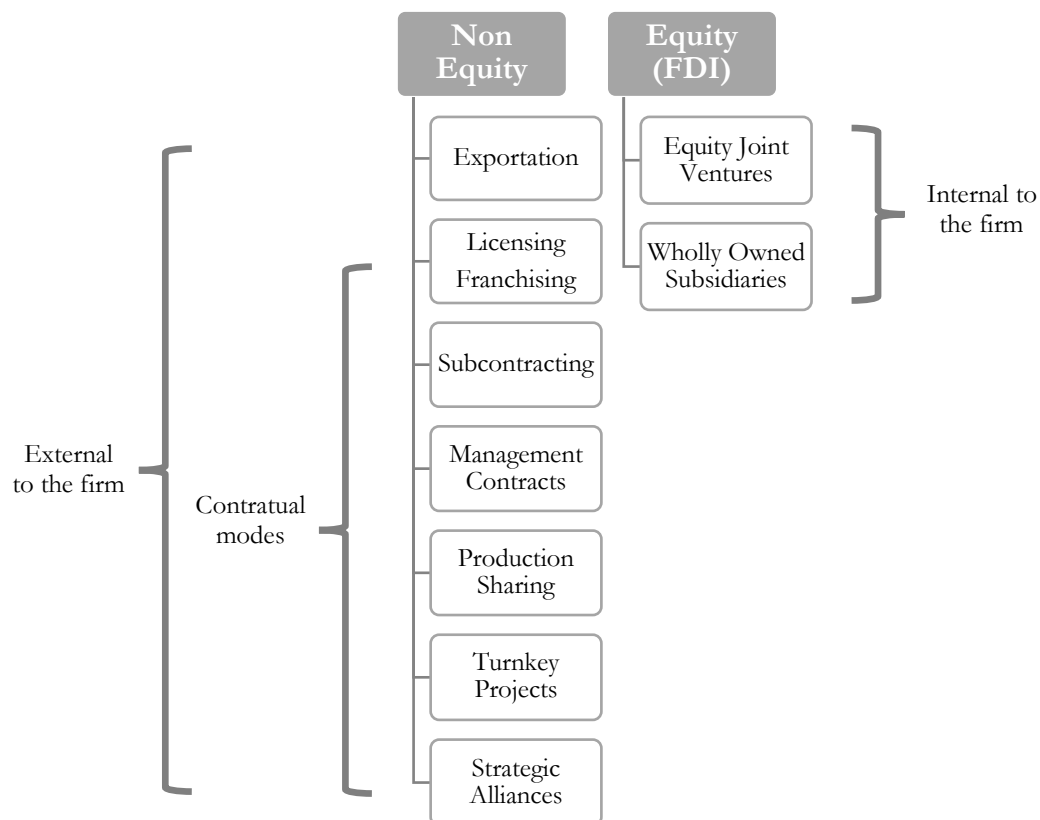
1.2. Internationalization process and entry modes

In the current globalization era, marked by the pandemic situation we are still facing, the majority of firms will operate worldwide at some time (Zain & Ng, 2006). Therefore, it is critical to clarify the ideas of Internationalization, foreign market selection, and the decision among the entry modes. Internationalization can be an opportunity or a risk for businesses and the primary focus should be on costs, on uncertainty and on the risk of entering in that foreign market as a starting point. Considerable research recognizes the Internationalization process as an increasing involvement in international activities, when the business' operations go beyond the borders of its home market (Welch & Luostarinen, 1988). Autio and Zander (2016, p. 1) define it as the process when a firm has the opportunity of “*allocating, accessing, and deploying resources and capabilities across national and organizational boundaries*”. Moreover, several factors influence this process. Psychic distance (Johanson & Vahlne, 1977) and liability of foreignness (Zaheer, 1995) are two fundamental factors needed to address in this

study, given the obvious disparities concerning foreign environments in language, culture, political systems, education, and industrial improvement (Yonatany, 2017).

Along the decision to internationalize, firms must decide between distinct entry modes, according to their circumstances, including their lifecycle phase. The decision must consider critical aspects such as resource commitments, exposure to risks, control, and profitability (Pan & Tse, 2000). Entry modes can be classified into two categories: (i) equity and (ii) non-equity, depending on if the company will enter in the capital of the other firm or not. Regarding this decision, it is important to analyze the pros and cons of each possible entry mode. Equity entry modes relate to foreign direct investment (FDI) and, in terms of control, are divided into wholly owned subsidiaries and equity joint ventures. Notwithstanding, FDI can be realized through two different modes of establishment: greenfield investments where new units are set up in foreign markets or acquisitions focused on the purchase of existing units or companies in the host country. Non-equity entry modes involve contractual modes and exports, as explained in Figure 2 below (Pan & Tse, 2000).

Figure 2 – Entry modes



Source: Own elaboration, based on the existing literature (Pan & Tse, 2000)

1.2.1. Theories and models of Internationalization

There are relevant theoretical approaches underlying this dissertation, such as the Uppsala Internationalization model (Johanson & Vahlne, 1977), the Born Global literature (Rennie, 1993), and Network theory (Johanson & Mattsson, 1988). Unlike the Uppsala Internationalization model and the Born global literature, which emphasize the firm's individual focus, Network theory emphasizes the network's collective focus.

1.2.1.1. Uppsala Internationalization model

Uppsala Internationalization model, advanced by Johanson & Wiedersheim-Paul (1975) and Johanson & Vahlne (1977), is regarded as the traditional model for understanding businesses' Internationalization process. Swedish firms served as an empirical basis for this theory of Internationalization. The model summarizes that firms begin their Internationalization process with a small size and always start only with presence in home country, later acquiring gradually a presence in foreign markets. Considering this theoretical perspective, Internationalization is an incremental process that follows an evolutionary logic and is driven by gathering knowledge and outward experience.

Due to a preference for entering markets that are psychologically close, the psychic distance concept (a key tenet of this theory) has a substantial impact on enterprises' entry choice into foreign markets. The psychic distance concerns elements that contribute to difficult the information flow between the firm and the market – including aspects at political, language, institutional, developmental, and cultural levels, *inter alia* (Johanson & Vahlne, 1977). The bigger is psychic distance, the bigger the liability of foreignness becomes (Johanson & Vahlne, 2009) – and this idea underlines the need of firms, who desire to go abroad, acquire specific advantages to overcome such liability of foreignness. Liability of foreignness describes the extra costs a firm suffers when operating in foreign markets in comparison with local ones, which decreases when foreign market knowledge is obtained (Johanson & Vahlne, 2009, 1977). Hence, the Uppsala model is a model of acquisition of knowledge on foreign markets by a certain firm, and subsequent application of such knowledge in the Internationalization process of the firm concerned.

Regarding this approach, the Internationalization process of firms involves four sequential phases (Johanson & Wiedersheim-Paul, 1975; Johanson & Vahlne, 1977), each reflecting a growing commitment of resources as well as a greater grasp of the market. Notwithstanding, to occur efficiently, it is not compulsory to carry out all the phases. In the first phase, the firm's activity is focused solely on the domestic market. Secondly, and due to lack of market knowledge, the next Internationalization phase, after being purely domestic, is sporadic exports, which is a strategy to test the foreign market slowly. Exports represent less risk and allow firms to start acquiring market knowledge. If this phase is successful, the firm's exports become more regular and, according to the original formulation of the Uppsala model, may involve the support of an independent agent. The third phase involves FDI, more specifically being related to an establishment of a foreign sales subsidiary, in a way that the firm will be able to acquire more market knowledge and direct contact with that specific market. In the fourth and last stage, the firm may set up a subsidiary in the host country if the firm is a manufacturing company.

1.2.1.2. Born Globals and International New Ventures

The theory stated previously cannot explain the situations when Internationalization occurs in a very fast way. Internationalization speed reflects a critical matter as it directly influences the firm's prosperity and survival (Deng et al., 2022). Born Globals and International New Ventures (to be explained in the next paragraphs) have arisen as concepts instead of theories, not envisaging an incremental Internationalization process. Both concepts are, in International Business, the most common ways of describing an earlier and rapid Internationalization process (Knight & Cavusgil, 2015). Rennie (1993) analyzed a range of Australian firms that had experienced an early and speedy Internationalization from their creation and was the first author to make use of the Born Globals concept to describe them. The abovementioned concept, firstly used by Rennie (1993), intended to reference those businesses which, from their beginning, see the whole world as a single large market and, from an early stage, follow an approach that is not domestic but is rather international.

In 1994, Oviatt and McDougall (p.49) recognized International New Ventures like “*business organizations that, from inception, seek to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries?*”. Afterwards Knight and Cavusgil (2004, p. 124),

described Born global like “*entrepreneurial start-ups that, from or near their founding, seek to derive a substantial proportion of their revenue from the sale of products in international markets*”. They stay recognized as firms that typically follow a niche market strategy, that allows them to expand speedily, and many of these get a unique BM centered on innovation. Paul and Rosado-Serrano (2019) take into consideration the technological improvements as well as opening of markets due to globalization occurrence, as growth factors of these phenomenon. The clear vision of the world as a unique big market from the inception, perform a positive role on international business since any organization, regardless of size, experience, or resources, can be fully involved in international commerce (Knight & Cavusgil, 2015).

Both Born Globals and International New Ventures notions share similar features as both are described as young firms; as small sized firms; as limited on resources; and as firms with few or none experience in a foreign market (Knight & Cavusgil, 2015; Oviatt & McDougall, 1994).

1.2.1.3. Network theory

Network theory was developed by several authors and had a significant contribution from Johanson and Mattsson (1988). This approach has a collective focus, highlighting the idea of firms as non-isolated entities and not envisaging a slow, incremental process like in the Uppsala Model. This theory focuses on the firm's relationships with other stakeholders impacting the firm's activities. Firms are also reliant on other firms with whom they have built relationships, being dependent on them due to having access and control over resources, that requiring the coordination of operations. Belonging and managing such networks, in the long run, can provide greater knowledge and decrease costs and risks.

The international expansion of critical network elements encourages the remaining elements to do the same. Internationalization is the outcome of several interconnected and evolving relationships (Johanson & Vahlne, 1977). Establishing and improving positions in comparison to rivals, active in foreign networks, is part of a company's Internationalization process (Johanson & Mattsson, 1988).

Johanson and Vahlne (2011) provide an adjustment to the early Uppsala Internationalization model, that was first presented to account for developments in international business studies as also shifting landscape of international corporate practices. The main adjustment concerns the following: rather than focusing on the commitment of resources to the market and on a market where there are independent suppliers and consumers, it focuses on the development of relationships within the business network. The main issue is not any more focused on the liability of foreignness related to the lack of knowledge of a foreign market. Instead, the main issue has shifted to liability of outsidership, as it is more difficult for “outsiders” to obtain a position in the foreign country network if there is no presence in the foreign network (Johanson & Vahlne, 2009, 2011).

According to this theory, networks are the fundamental element for entry in foreign markets, both in market selection and in entry mode choice. Relationships between firms and their partners are crucial during the Internationalization process, in what concerns the position in market network and the success in the foreign market entry (Wentrup et al., 2019).

1.3. The way Digital Platforms challenge traditional theories and models of Internationalization

Given that the current Digitalization trend and technological improvements are impacting all industry sectors, it may be a good solution for firms to involve Digital Platforms in their internationalization strategy. Firms who adopt this approach of offering their goods and services may gain from broadening their reach, lowering costs, and expanding more quickly (Lee & Falahat, 2019; Pérez-Pérez et al., 2021). Because of the ongoing user interaction they enable, Digital Platforms that play a part in Internationalization will continue to evolve after the business internationalizes, representing a collective Internationalization network activity (Coviello et al., 2017). Exploiting Digital Platforms allows businesses that were non internationalized to expand worldwide, as well as boosting the growth of businesses already operating on international markets and providing access to global markets in a quicker, easier and cheaper way (Coviello et al., 2017).

Thinking further about Digitalization and Internationalization, given that this process may involve Digital Platforms, Autio and Zander (2016) describe four essential developments:

- (1) Firstly, given that Digitalization favors all forms of communication and interaction, it becomes simpler for firms that operate in geographically scattered activities to manage them (Fischer & Reuber, 2014).
- (2) Secondly, Digitalization allows firms to better develop their flexibility to organize their boundaries via outsourcing and offshoring (Di Gregorio et al., 2008).
- (3) Thirdly, Digitalization decreases the dependence on asset and location specificity, as physical presence may be not required. Additionally, Digitalization aids in the reduction of information anomalies that might arise among countries (Yamin & Sinkovics, 2006).
- (4) Lastly, focused on BMI, Digitalization may stimulate innovation and implementation of new approaches to organizing international firm's activities (Wirtz et al., 2010).

It is worth considering the relationship concerning traditional theories as well as models of Internationalization and the rising challenge of Digital Platforms in our business contexts.

The Uppsala Internationalization model, arise concerns about the risks and the uncertainty of a rapid Internationalization (Deng et al., 2022). Regarding the Uppsala model, there is (as aforementioned) a focus on an incremental and slow Internationalization process. Thus, this model does not seem fit to address Digital Platforms due such platform's capacity of scalability and fast growth. The Internationalization process involving Digital Platforms is mainly defined by their fast pace, making evident that the business's performance is not evaluated in its home country for a period of time in order to decide to move internationally later. In fact, the relation between firm's performance and Internationalization is considered not prominent (Pérez-Pérez et al., 2021). Rather than reaching market commitment, the Internationalization process is motivated by the development of a user base to include users abroad and to provide interactions.

Traditional Internationalization theory (Uppsala Internationalization model) was already challenged by the phenomena of Born Globals, just as it has recently become challenged by the strong internationalization capacity of Digital Platforms. The Born Global literature has many features in common with that on Digital Platforms, e.g. rapid globalization, scalability,

a high degree of innovation, and entrepreneurial origins (Parente et al., 2018). Both Born Globals and Digital Platforms owe much to recent technological and globalization trends. As Digital Platforms are virtual, people can use the platform worldwide from wherever they are, raising the notion of international platform “by default”, facilitating a direct connection with global buyers and suppliers, and promoting Born Global firms, characterized by fast Internationalization, as Digital Platforms make it easier for firms to overcome their size and resource scarcities.

According to Network theory, networks are considered the central element to reach foreign markets. Digital Platforms properties are compatible with this theory in which the interested parts represent nodes that spin in around the platform, and due to their complexity and incapacity to create value by themselves, network effects are a crucial element. Platforms can be seen as a new digital stakeholder which allows an interaction of traditional partners, acting as a bridge node in networks, in line with this theory (Visconti, 2019). Based on Network theory, the process of Internationalization involving Digital Platforms is focused on forming and developing connections with users of a foreign Digital Platform from a target market country, users of a Digital Platform from a non-target market country, and users of a domestic Digital Platform that grown its user base to foreign users (Doligalski et al., 2021).

Yonatany et al. (2017) highlight three advantages to the Internationalization process when firms decide to adopt platforms, challenging enterprises that rely on traditional methods of Internationalization. At first, the impact on the liability of foreignness for the firm will be lower. Secondly, the Internationalization process will be significantly accelerated, this being enabled by the platform’s infrastructure, which allows firms to reach out to far-flung established markets and grab value quickly. Finally, the psychic distance *vis-à-vis* the foreign market will have less influence on market choice.

Even though liability of foreignness is an issue also faced in Digital Platforms, it has a lower impact when compared to liability of outsidership (Brouthers et al., 2016). For Digital Platforms, liability of outsidership is the main issue, due to the lack of embeddedness in foreign market user network: this represents a significant hurdle as potential adopters may fear to connect and further be retained. This is a huge preoccupation given that platforms

achieve value only if they benefit from a considerable network of users (Brouthers et al., 2016; Chen et al., 2019).

1.3.1. Non location-bound firm specific advantages (FSAs) and externalization logic

As an outcome of Digitalization, firms resort to Digital Platforms to be able to organize their resources more easily outside, eroding the line among outside market and inside governance (Yoo et al., 2012). Bearing in mind resources, Digital Platforms bring up the concept of resource orchestration as the focus settles on organizing and integrating the resources globally instead of owning them. Resource orchestration is regarded as a novel component of dynamic capability, which must be managed appropriately to satisfy the market and ecosystem when users' needs are evolving (Nambisan et al., 2019).

Firms can use their FSAs (Rugman & Verbeke, 1992) in a variety of ways on a global scale - and these advantages, which firms have over their rivals, enable firm to survive, profit, and expand. Notwithstanding, these are not identical, and not all are appropriate for sustaining global expansion. Regarding internalization theory, this is a broad theory of how businesses move internationally, based on transaction costs, and carried by Buckley & Casson (1976), Hennart (1977), Rugman (1981), where firms try to leverage their FSAs based on knowledge, and, despite their foreignness, firms can compete with local businesses.

Recently, as a novel perspective of internalization theory, the focus switches to recombine the present FSAs to country advantages accessible in the new country, resulting in a differentiation among location-bound FSAs and non location-bound FSAs (Rugman & Verbeke, 1992). Location-bound FSAs are only useful in a certain country or location and require adaptations to be suitable in the host country. Non location-bound FSAs, on the other hand, are transferable across borders with lower costs and are effective in leveraging international activities, giving support to foreign market entry and enabling Digital Platforms to expand in a fast way (Rugman & Verbeke, 1992). The notion of location bound contrasts with the logic of Digital Platforms, emphasizing that Digital Platforms stand as not bound with geography. The interactions among the key business actors that occur inside the Digital Platform, since they normally don't involve human involvement to provide the service, are a property that greatly impacts location (un)boundedness of FSAs. Nevertheless, in some

cases, an offline interaction in the host country may be needed because of market conditions (Wentrup, 2016).

The exploitation of FSAs, concerning Digital Platforms, is not guided to obey an internalization logic, rather they might adhere to a logic of externalization focused on the coordination of networks which allows firms to obtain advantages (Li et al., 2019). Platform activities' value added is created upon networks among widely dispersed users, beyond the platform (Chen et al., 2019). Considering the great importance of ecosystems, Li et al. (2019) prioritizes network effects, focusing now on ecosystem-specific advantages rather than FSAs. These ecosystems' specific advantages arise from belonging to, or participating in, a platform-based ecosystem (Nambisan et al., 2019). Digital Platforms are centered on the growth of ecosystems, that include a diversity of actors who offer co-specialized resources.

The greater importance given to exploit differences between businesses contexts, according to Knight and Liesch (2016), increases the necessity to exploit "intercontextual businesses". As far as Digital Platforms ecosystems are implemented by firms as a driver to produce value cross border, their Internationalization choices and progressions could be molded by ecosystem- and context-specific advantages. Teece (2014) defends, as a fundamental firm dynamic capability, the combination of four types of advantages aiming rapid and worldwide environments - firm, ecosystem, context, and country advantages. The relation and interface between the specific advantages stated can contribute to modify the development of capabilities and the resources used on the processes and also transforms the mode of entry, the scaling dimension, and evolution.

1.3.2. Importance of network effects on the Internationalization process when involving Digital Platforms

As discussed above, network effects are the main factor for firms based on a Digital Platform sphere, and their generation is the main driver for Internationalization (Parker et al., 2016; Rochet & Tirole, 2003), holding an ability to reshape the international marketplace. Foreign market entry and selection are heavily reliant on discovery networking partners who can provide access to the resources required (Ojala et al. 2018). Stallkamp and Schotter (2019) addressed how network effects can affect fundamental Internationalization decisions. One

significant conclusion taken from these authors is that platforms which promote cross-country network effects (occurring at an international level) seem to be more likely to follow a global strategy, contrasting with those promoting within-country network externalities (occurring at the local level).

On one side, according to Stallkamp and Schotter (2019), if on the desired market already exists a Digital Platform competitor, the latter gained an early-mover advantage. New entrants find it harder to compete against early arrivals that count with a larger user base based on loop of good feedback caused by network effects (Brouthers et al., 2016). New entrants can take advantage from resources earlier incorporated in other company (Meyer et al., 2009) and enter by acquisitions (mode of establishment abroad regarding FDI) and strategic alliances (contractual forms), instead of entering independently. On the other side, if cross-border network externalities were considerable, rather than creating a whole new foreign local user network, the new entrant can bring over users from the specific market through its global network. When target country users' advantage from novel entrant's previous user base in plenty of locations, it means there are cross-country network effects, resulting in substantial non location-bound FSAs. In these circumstances, a huge worldwide user base has the potential to threaten the incumbents at the local level and entrants have a better chance of succeeding by entering independently.

Broadly, Doligalski et al. (2021) state that Internationalization involving Digital Platforms is mainly driven by online channels that empower foreign users to interact, yet strategic partnerships, joint ventures, and mergers and acquisitions can be embraced. Besides, the acquisition of access to international buyers and suppliers that firms would not otherwise be possible to access, the gain of access to network externalities, the acquisition of the ability to create connections with foreign Digital Platform users, as well as the availability of data from foreign platform users which allows knowledge co-creation on international markets are four recognized disruptive impacts on users with the Internationalization of Digital Platforms (Doligalski et al., 2021).

With respect to foreign market choice, non location-bound FSAs might even impact the countries that companies seek to emphasize for going global via platforms. Stallkamp and Schotter (2019) state that firms within industries featuring cross-country network

externalities, will prefer to go into neighboring countries which are closer to their home country at a cultural level. As well, Shaheer and Li (2020) describe that online platforms penetration in foreign countries is dependent on cultural, administrative, geographic, and economic domains (CAGE). The links among countries and their involvement, as well as the interactions among the individuals inside those countries, might influence foreign market choice and contribute to strengthen cross-country network externalities.

After deeply exploring and reviewing the most relevant topics and theories focused on the emerging topic of Digital Platforms and Internationalization, Chapter 2 of this dissertation aims to explain the chosen methodology (Bibliometric Analysis), followed by the application of bibliometric techniques and concluding remarks.

Chapter 2 – A bibliometric analysis of the firm’s Internationalization involving Digital Platforms

This chapter will outline the methodological approach used to analyze and explore the topic under research. We chose to perform a pioneering bibliometric analysis to spot and analyze the relevant works produced within the area of the research systematically and rigorously. Since the Internationalization process of firms involving Digital Platforms is still new and a rising phenomenon, we believe that using bibliometric techniques will provide a significant quantitative contribution. As far as we know, no such comprehensive literature review exists.

2.1. Methodology

Bibliometry, also known as bibliometric analysis, was the methodology considered for this study. It benefits researchers by rapidly providing a basic understanding of a given area and by identifying patterns. This methodology can be applied to diverse areas of knowledge and it is the researcher's role to adapt bibliometric techniques to their needs and research topic (de Oliveira et al., 2019; Aria & Cuccurullo, 2017). In business research, bibliometric analysis is of paramount importance for managing great volumes of scientific data, permitting significant contributions to research (Donthu et al., 2021). Bibliometrics is not recent – this methodology has been discussed since the 1950s (Wallin, 2005). Nevertheless, as evidenced in its increasing presence on subjects such as business, management, accounting, economics, econometrics, finance, and social sciences, bibliometrics is a relatively new phenomenon. Pritchard (1969), who proposed the “bibliometric” term, defines this term as mathematical and statistical approaches applied to literature and further forms of communication, referring to studies that aim to quantify the literature of a given knowledge area. Ozdagoglu et al. (2020) emphasize bibliometric analysis data as a contribution to obtaining the relevant quantitative insights of a given knowledge area, along with establishing relationships between several aspects, such as: main research topics, most influential papers, most cited publications, most influential authors, networks established, chronological evolution of the literature, among others. Another approach to describe bibliometric analysis is that its usage is valuable for understanding and mapping the increasing amount of scientific information

and to identify evolving nuances of topics, as well as helping on making clear the huge volumes of unstructured data through rigorous methods (Donthu et al., 2021).

In this dissertation, after the field of study was defined, we established which bibliographic databases were more useful to gather a significant database of pertinent bibliography on the field of study. It was decided to use the two most recognized bibliographic databases (Zhu & Liu, 2020), notably – Web of Science (WoS) and SCOPUS. These databases act as enabling tools for scientific data mining and allowing access to find a pertinent and large basis of scientific publications (de Oliveira et al., 2019). Both bibliographic databases complement each other. WoS, developed by Thomson Scientific and currently belonging to Clarivate Analytics, was launched in 1997. Overall, this platform covers 1,9 billion cited references, including publications since 1900 (WoS, 2020). Later, in 2004, SCOPUS bibliographic database was launched by Elsevier. Recognized as the largest citation database of peer-reviewed publications (SCOPUS, 2020), this platform includes more than 77,8 million records and more than 1,7 billion cited references, that are available before 1970 (SCOPUS, 2020). After selecting the bibliographic databases, in order to perform a rigorous and consistent bibliometric analysis, it was necessary to choose a set of keywords pertaining to the research topic and to the main related concepts. The research was led by using the combination of two or more keywords, as represented in Table 3.

On our first search performed, we selected “digital platform*” as first keyword, which was then combined with several complementary keywords related to International Business (IB) - presented on the second column of Table 3. This led to identify only 24 publications from WoS and SCOPUS, allowing to understand that the link between Digital Platforms and IB is still underexplored in the literature. Then, given that many articles, potentially relevant to the focus of our study were not covered by our primary search, we decide to use “platform*” as initial keyword instead of “digital platform*”, in order to see what results came through.

Table 3 – Keyword combinations searched in WoS and SCOPUS bibliographic databases

Keywords		Keywords Combination
"Platform*" AND	"International Business" OR "Internationalization" OR "Internationalisation"	Combination 1
	"MNC*" OR "MNE*" OR "multinational corporation*" OR "multinational enterprise"	Combination 2
	"Export"	Combination 3
	"Contratual modes" OR "Contratual forms" OR "Franchising" OR "Licensing" OR "Turnkey projects" OR "Subcontracting" OR "Management contracts"	Combination 4
	"FDI" OR "Foreign Direct Investment"	Combination 5

Source: Own elaboration

Based on the combination of these keywords, an extraction was performed on the 12th of January 2022, stored on the format of an Excel spreadsheet organized according to the following fields – Authors, Article Title, Publication Year, Source Title, Citations, DOI, Author Keywords, Index Keywords, Abstract, and Document type. On an initial phase, the extraction process was carefully managed using separate spreadsheets for the different WoS and SCOPUS extractions. Later, all the results have been consolidated, reaching a total of 1103 results. Then, all duplications were eliminated, reaching 635 results (Table 4).

Table 4 - Extraction results

Keywords Combination	WoS	SCOPUS	Total (WoS + SCOPUS)	Total (WoS + SCOPUS) free of duplications
Combination 1	97	134	231	182
Combination 2	61	90	151	112
Combination 3	129	260	389	303
Combination 4	42	93	135	98
Combination 5	92	105	197	150
Total of extractions			1103	845
Total of combinations (keywords 1 and 2) from WoS and SCOPUS free of duplications				635

Source: Own elaboration

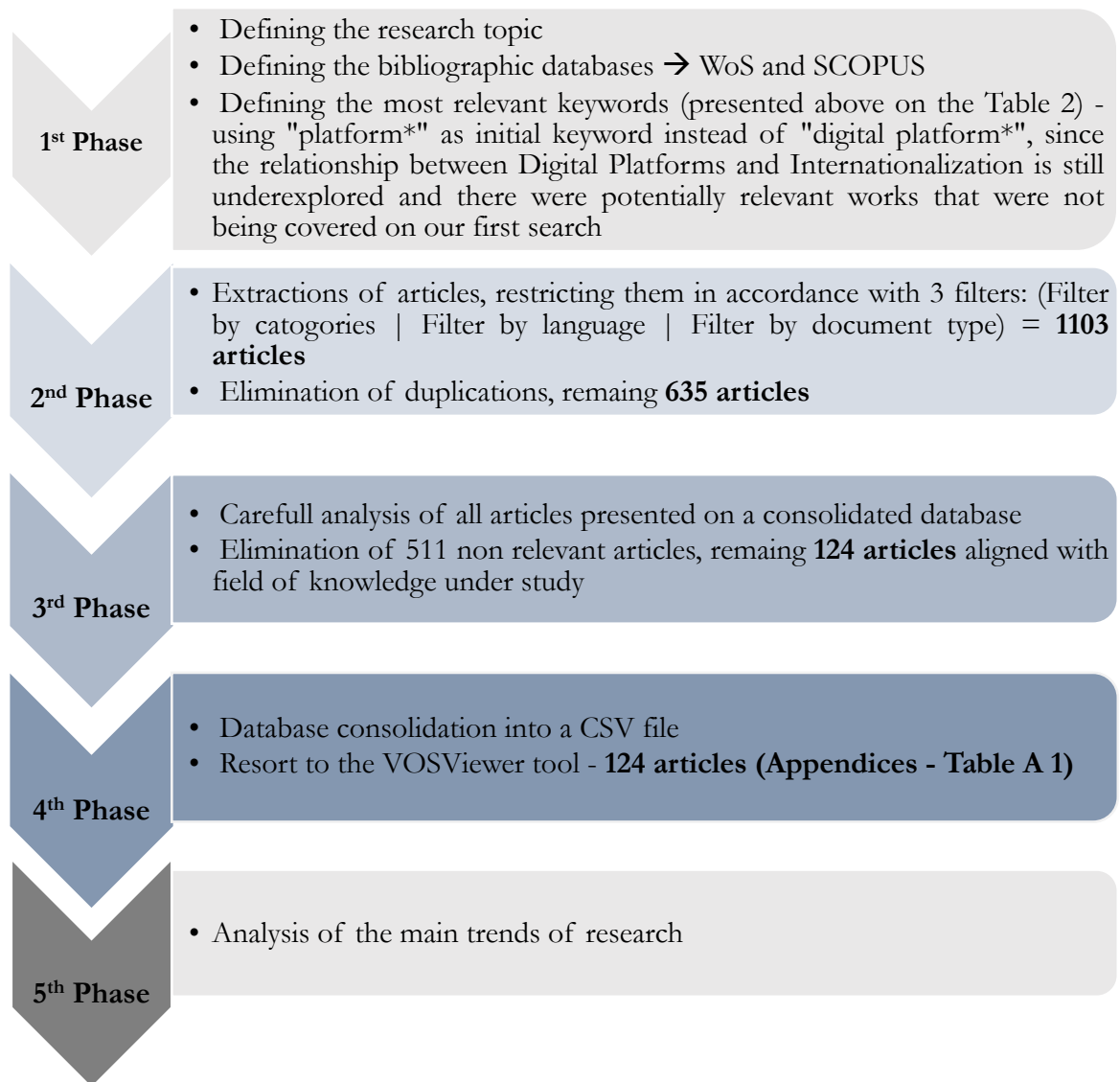
In order to restrict the scope, a few filters have been applied during the extraction from the different databases. The first filter implemented helped to limit the results by categories. In WoS the following categories were considered - Economics, Business and Management - while in SCOPUS - Economics, Econometrics, and Finance and Business, Management, and Accounting. A second filter applied restricted the results by language, choosing only the documents published in the English, as it's the common language in academic publications. The last filter applied was based on the document type. The only publications considered were reviews articles (literature reviews - comprising anticipated access publications) and articles, as they are peer-reviewed and published in scientific journals, conferring to these publications a high degree of credibility.

To better understand the relevance of each publication from the panoply of publications in our database, a careful analysis of all article titles, abstracts, and keywords individually was performed. Nonetheless, by analyzing the three elements mentioned previously, it was understood that many articles required a complete reading, with the purpose of confirming its relevance for the bibliometric study - evidencing a relation between Digital Platforms and Internationalization (Linnenluecke et al., 2019). After this detailed screening, only 124 results out of 635 were considered undoubtedly pertinent documents for this study.

After the selection of relevant articles, we employed the software tool in order to present the results in a more appealing way, and especially to highlight relationships, links and clusters (of several criteria – authors, keywords, etc). This software tool was very useful throughout our bibliometric analysis as it creates maps based on network data and helped us to observe and explore those maps and make important inferences and extract relevant conclusions on pertinent relationships (VOSViewer, 2022). A requirement of this tool was the conversion of our Excel consolidated database into a CSV file. The SCOPUS extraction is already presented in CSV format, in contrast to WoS that is extracted into an Excel format. For this reason, all the publications extracted from WoS, that were not included on SCOPUS extraction, were therefore included manually in an Excel file, together with the publications extracted from SCOPUS. At last, the whole file covering all publications was converted in a CSV file in the right format, ready to be used resorting to VOSViewer.

In a summarized form, Figure 3 explains the different phases of the process of implementation of the bibliometric analysis.

Figure 3 - Flowchart - Phases of the bibliometric analysis' implementation



Source: Own elaboration

2.2. Main Research Trends

The findings of the bibliometric study on Internationalization and Digital Platforms will be analyzed in this section. Complementing an analysis of the main research trends, it will facilitate the understanding of the current state of research and its evolution, as well as a recognition of the limitations of the existing literature and an identification of contributions for future research. This section will be explored aiming to answer the topics presented in Table 5, through the bibliometric study.

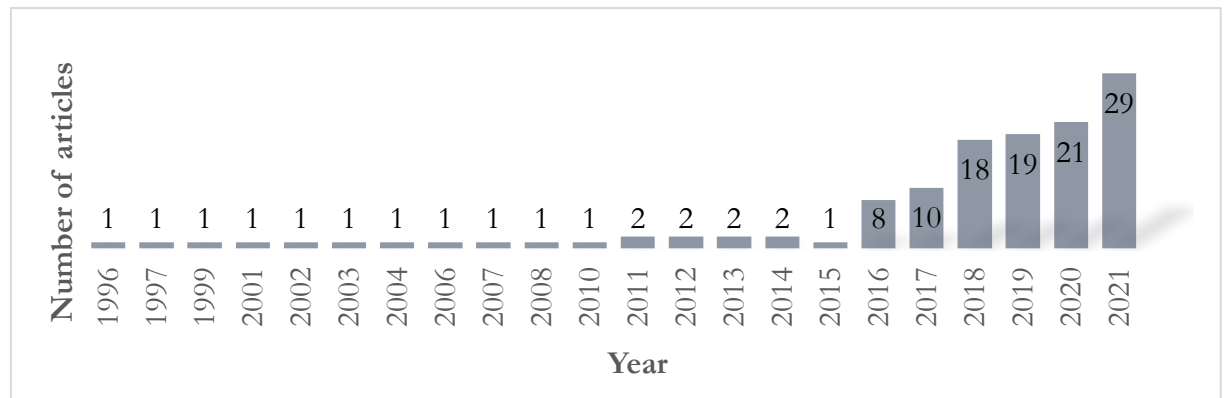
Table 5 - Main Research Trends

(1)	An analysis of the chronological evolution of the literature
(2)	Type of publications
(3)	Number of studies by category (conceptual, appreciative, empirical, formal)
(4)	Ranking of journals with most publications on the topic
(5)	Ranking of the most cited publications
(6)	Ranking of the most influential authors
(7)	Topics focused on literature analyzed

2.2.1. An analysis of chronological evolution of the literature

The Digital Platforms literature, related to Internationalization, clearly displays an upward trend, evident in Figure 4.

Figure 4 - Chronological evolution of the literature



Source: Own elaboration

The oldest publication in this knowledge area was in 1996. In this year, Roberts and Senturia published the article “*Globalizing the emerging high-technology company*”, focused on emerging high-tech companies and their globalization patterns.

From 1996 until 2015, only 20 articles (16,1 %) were published, representing a scarce number of articles that does not even compare modestly to the 29 articles just published in 2021. By observing the evolution of the literature, regarding articles published between 2016 and 2021, the growth trend is remarkable (increasing in 16,9% from 2016 to 2021). However, the most

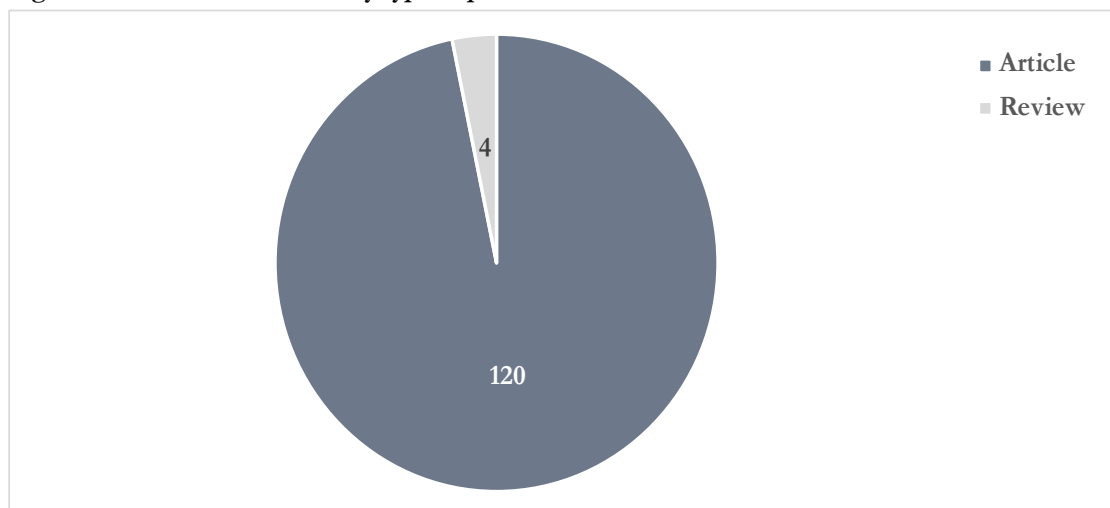
considerable year-to-year growth occurred between 2020 and 2021, with the number of articles increasing by 6,5%.

The peak is observable in 2021, reaching an output of 29 articles. Over this period analyzed, it can be verified that we are in presence of an emergent research topic, yet with a huge potential and increasing interest by researchers, being more and more researched in recent years and expecting an exponential growth in the coming years.

2.2.2. Type of publications

Considering the portfolio under analysis, comprised by 124 publications, only articles and reviews were kept in mind due to their high degree of credibility. As presented in Figure 5, the majority of publications are articles, representing 97,8% of the literature (120 articles). On the other hand, there are only a few literature reviews, corresponding to 3,2% of the literature (4 reviews).

Figure 5 - Number of articles by type of publication



Source: Own elaboration

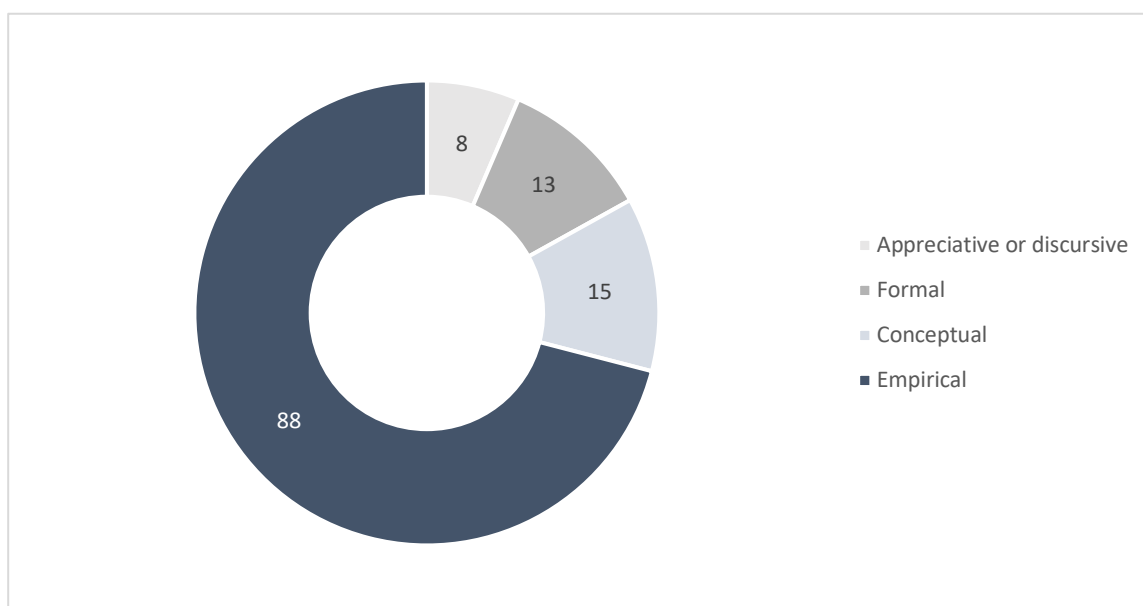
2.2.3. Number of studies by category

By evaluating the published studies on Digital Platforms and Internationalization, it is critical to analyze the methodologies applied. Consequently, we based our analysis on the paper developed by Castro e Silva and Teixeira (2011), followed by the Pato and Teixeira (2016)

paper. These authors classify the whole of the articles according to four main types: conceptual, appreciative/discursive, formal, and empirical. For the sake of clarity, the conceptual methodology covers articles that merely focus on theoretical development. On the other hand, articles that encompass appreciative or discursive methodology give a critical exposition. The empirical methodology comprises articles that stand to invoke econometric/statistical methods to analyze data. Lastly, formal articles rely on mathematics or analytics models.

Figure 6 mentions the number of studies regarding their type of methodology used. Most articles have adopted the empirical methodology (70,9 %). The conceptual methodology includes 12,1% of the total articles, resembling the formal methodology counting with 10,5%. Finally, the least used methodology was appreciative, also known as discursive, with a percentage of 6,5%.

Figure 6 - Number of studies by category



Source: Own elaboration

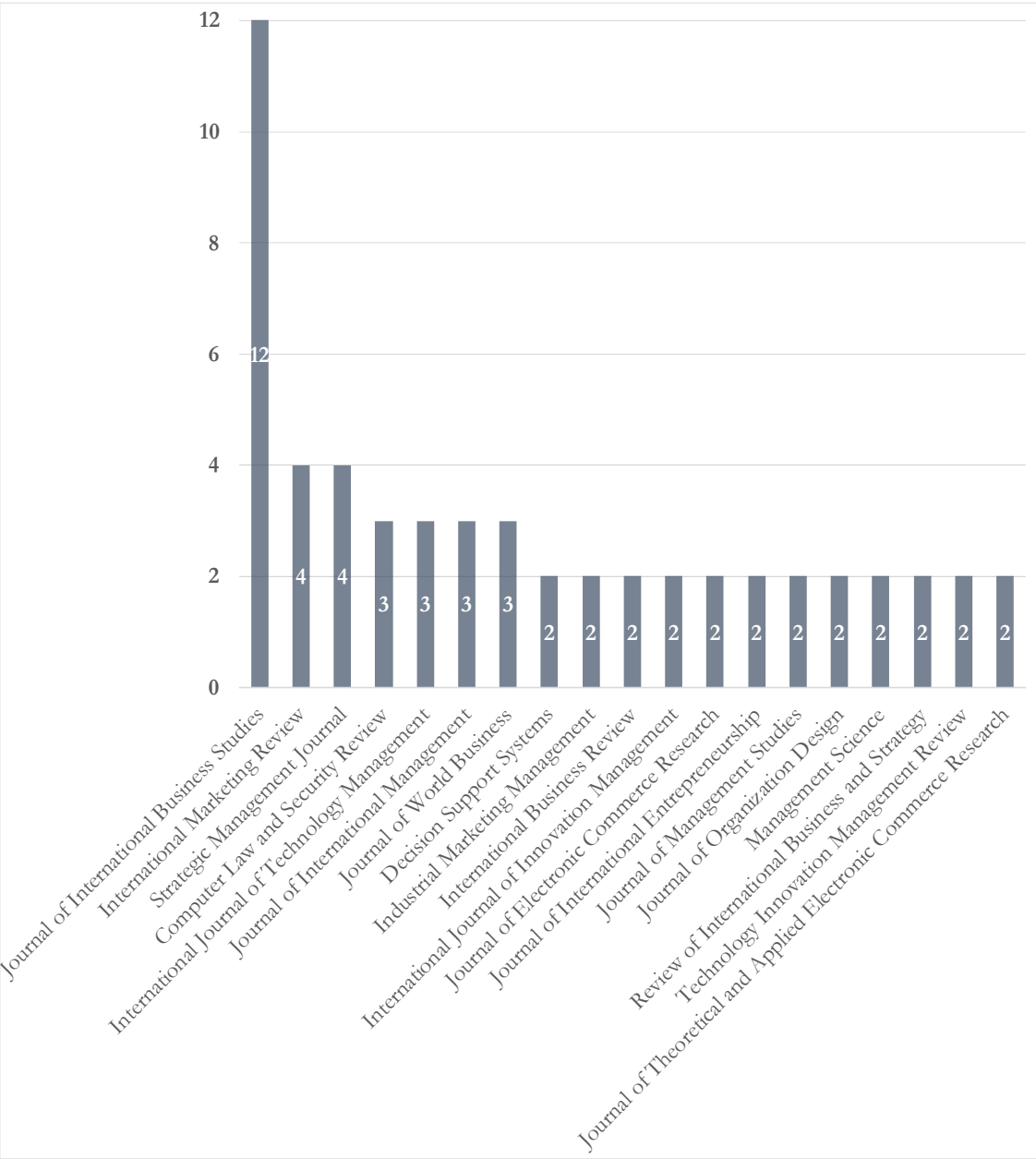
2.2.4. Ranking of journals with most publications on the topic

The aim on this subsection relies on the evaluation of the scientific journals with more emphasis on Digital Platforms and Internationalization, investigating the number of publications in each scientific journal and their impact on the literature. Overall, the 124

documents that integrate our consolidated database, aligned to the field of knowledge under study, were published in 86 distinctive scientific journals.

In Figure 7 are represented the most important journals on the topic with 2 or more publications, corresponding to 19 scientific journals. Notwithstanding, from a total of 124 publications included in our consolidated database, the ranking counts with 56 publications (45,2%).

Figure 7 - Scientific journals with 2 or more publications on the topic



Source: Own elaboration

The SCImago Journal Ranking - SJR and Journal Citation Report – JCR are two well-known measures representing the impact factor of each scientific journal. It should be noticed that this study was restricted to scientific journals in which, at least, one of these two impact factors were available. As a quantitative instrument, provided by Clarivate Analytics, the JCR impact factor is required to classify and evaluate scientific journals, enabling to follow the tendencies throughout the years. This is a statistic tool of average frequency in which, in a given period or year, the article was cited (WoS, 2020). Accordingly, the JCR impact factor of 2020 is calculated by dividing the quantity of articles published from 2018 to 2019, being further divided by the whole publications in that given period. As well, the SJR quantitative instrument, provided by Elsevier, classify, and evaluate scientific journals concerning their citations and publications. It is measured by dividing the citation pondered average in a given year by the publications of the previous three years (SCImago, 2020). The scientific journals impact on the scientific community, analyzed by using the previous impact factors stated, is also of great importance, as is the analysis of the scientific journals that published most of publications related to the given study topic.

Table 6 shows the ranking of journals with most publications, including the journals with two or more publications, and their respective impact factors. These scientific journals cover distinctive publications in different fields of study, observable on the last column of Table 6, such as Business, Management and Accounting; Economics, Econometrics and Finance; Computer Science; Social Sciences; Engineering; Arts and Humanities; Education; Strategy and Management; Business and International Management; Management of Technology and Innovation.

As the leading scientific journal, representing the higher number of publications according to Digital Platforms and Internationalization, the *Journal of International Business Studies* is regarded as among the most influential scientific journal in the International Business field, also having the greatest JCR 2020 impact factor – 9,158. *International Marketing Review* and *Strategic Management Journal* (presenting the greatest SJR 2020 impact factor – 11,035) are the second and third scientific journals on this ranking.

Table 6 - Ranking of journals with most publications on the topic and their impact factors

Ranking	Source Title	Number of articles	Impact Factor SJR 2020	Impact Factor JCR 2020	Fields of study
1	Journal of International Business Studies	12	4,819	9,158	Business, Management and Accounting; Economics, Econometrics and Finance
2	International Marketing Review	4	1,202	2,907	Business, Management and Accounting; Economics, Econometrics and Finance
3	Strategic Management Journal	4	11,035	5,471	Business, Management and Accounting
4	Computer Law and Security Review	3	0,815	1,849	Business, Management and Accounting; Computer Science; Social Sciences
5	International Journal of Technology Management	3	0,368	1,348	Business, Management and Accounting; Computer Science; Engineering
6	Journal of International Management	3	1,429	3,821	Business, Management and Accounting; Economics, Econometrics and Finance
7	Journal of World Business	3	3,607	5,194	Business, Management and Accounting; Economics, Econometrics and Finance
8	Decision Support Systems	2	1,564	4,721	Arts and Humanities; Business, Management and Accounting; Computer Science
9	Industrial Marketing Management	2	2,022	4,695	Business, Management and Accounting
10	International Business Review	2	1,773	3,953	Business, Management and Accounting; Economics, Econometrics and Finance
11	International Journal of Innovation Management	2	0,572	-	Business and International Management; Management of Technology and Innovation; Strategy and Management
12	Journal of Electronic Commerce Research	2	0,686	1,875	Computer science; Economics, Econometrics and Finance
13	Journal of International Entrepreneurship	2	0,811	-	Business, Management and Accounting
14	Journal of Management Studies	2	4,398	4,888	Business, Management and Accounting
15	Journal of Organization Design	2	1,789	-	Strategy and Management
16	Management Science	2	4,954	3,935	Business, Management and Accounting; Decision Sciences
17	Review of International Business and Strategy	2	0,556	-	Business and International Management; Strategy and Management
18	Technology Innovation Management Review	2	0,153	-	Computer Science Applications; Management of Technology and Innovation
19	Journal of Theoretical and Applied Electronic Commerce Research	2	0,556	1,906	Business, Management and Accounting; Computer Science

Source: Own elaboration

2.2.5. Ranking of the most cited publications

The study of the most cited publications is a key aspect to be included in a bibliometric analysis, since it provides a method to measure the quality of articles under analysis throughout the literature.

The ranking of the most cited publications shows that the leading 25 publications cover a whole of 2316 citations (as shown in Table 7). From these 25 publications, 8 publications encompass 100 or more citations. Table 7 emphasizes that a major part of documents are recent publications, supporting the increased relevance given by researchers to this field.

Table 7 - Ranking of the most cited publications

Ranking	Article Title	Authors	Publication Year	Source Title	Citations
1	Profiting from innovation in the digital economy: Enabling technologies, standards, and licensing models in the wireless world	Teece D.J.	2018	Research Policy	291
2	Peer-to-Peer Markets	Einav L., Farronato C., Levin J.	2016	Annual Review of Economics	222
3	Internationalization, innovation and entrepreneurship: Business models for new technology-based firms	Onetti A., Zucchella A., Jones M.V., McDougall-Covin P.P.	2012	Journal of Management and Governance	195
4	The Sharing Economy Globalization Phenomenon: A Research Agenda	Parente R.C., Geleilate J.M.G., Rong K.	2018	Journal of International Management	138
5	Collaborative platforms as a governance strategy	Ansell C., Gash A.	2018	Journal of Public Administration Research and Theory	120
6	Internet-enabled international marketing: A small business network perspective	Poon S., Jevons C.	1997	Journal of Marketing Management	105
7	Sustainability of the sharing economy in question: When second-hand peer-to-peer platforms stimulate indulgent consumption	Parguel B., Lunardo R., Benoit-Moreau F.	2017	Technological Forecasting and Social Change	101
8	Explaining the internationalization of ibusiness firms	Brouthers K.D., Geisser K.D., Rothlauf F.	2016	Journal of International Business Studies	100
9	Business models, value capture, and the digital enterprise	Teece D.J., Linden G.	2017	Journal of Organization Design	99
10	Firm capabilities and technology ladders: Sequential foreign direct investments of Japanese electronics firms in East Asia	Song J.	2002	Strategic Management Journal	85

11	International entrepreneurship: The pursuit of entrepreneurial opportunities across national borders	Reuber A.R., Knight G.A., Liesch P.W., Zhou L.	2018	Journal of International Business Studies	84
12	Platform strategies in international new product development	Muffatto M.	1999	International Journal of Operations & Production Management	76
13	The evolution of intellectual property strategy in innovation ecosystems: Uncovering complementary and substitute appropriability regimes	Holgersson M., Granstrand O., Bogers M.	2018	Long Range Planning	75
14	Global platforms and ecosystems: Implications for international business theories	Nambisan S., Zahra S.A., Luo Y.D.	2019	Journal of International Business Studies	74
15	Extending the international new venture phenomenon to digital platform providers: A longitudinal case study	Ojala A., Evers N., Rialp A.	2018	Journal of World Business	66
16	The global platform economy: A new offshoring institution enabling emerging-economy microproviders	Lehdonvirta V., Kassi O., Hjorth I., Barnard H., Graham M.	2019	Journal of Management	63
17	Intermediary services in the markets for technology: Organizational antecedents and performance consequences	Lichtenthaler U., Ernst H.	2008	Organization Studies	62
18	Globalizing the emerging high-technology company	Roberts E.B., Senturia T.A.	1996	Industrial Marketing Management	55
19	Platforms without borders? The international strategies of digital platform firms	Stallkamp M., Schotter A.P.J.	2021	Global Strategy Journal	51
20	Early-mover advantages at cross-border business-to-business e-commerce portals	Deng Z.L., Wang Z.Y.	2016	Journal of Business Research	48
21	Born digitals: Thoughts on their internationalization and a research agenda	Monaghan S., Tippmann E., Coviello N.	2020	Journal of International Business Studies	47
22	Global interfirm networks: The division of entrepreneurial labor between MNEs and SMEs	Buckley P.J., Prashantham S.	2016	Academy of Management Perspectives	44
23	The international penetration of ibusiness firms: Network effects, liabilities of outsidership and country clout	Chen L., Shaheer N., Yi J.T., Li S.L.	2019	Journal of International Business Studies	44
24	The role of networks in early internationalizing firms: A systematic review and future research agenda	Bembom M., Schwens C.	2018	European Management Journal	36
25	Antecedents and outcomes of digital platform risk for international new ventures' internationalization	Jean R.J., Kim D., Cavusgil E.	2020	Journal of World Business	35

Source: Own elaboration

The two most cited articles are “*Profiting from innovation in the digital economy: Enabling technologies, standards, and licensing models in the wireless world*” by Teece (2018), published on *Research Policy* and “*Peer-to-Peer Markets*” by Einav, Farronato and Levin J. (2016), published on *Annual Review of Economics*. The first publication in this ranking has 291 citations, while the second publication has 222 citations.

2.2.6. Ranking of the most influential authors

Considering the authorship of 124 publications included in our portfolio, 289 distinct authors were identified. The number of publications developed per author ranges between 1 to 4. Overall, 94,46% of authors published one single article on this study field. Rucy-Jer Bryan Jean and Daekwan Kim (0,69%) contributed above average, as each authored 4 publications (as shown in Table 8).

Table 8 - Number of publications developed per author

Number of publications	Number of authors	Number of publications per author
1	273	94,46%
2	13	4,50%
3	1	0,35%
4	2	0,69%
Total	289	100,00%

Source: Own elaboration

An analysis of the number of publications per author allow us to measure the scientific output of an author, assessing its productivity. Although, assumptions about the importance of these works are not found by using this metric.

Concerning this analysis based on the most influential authors, we evaluated the broad impact per author by examining the h-index, developed by Hirsch in 2005. The h-index is analyzed in the following way, described by Hirsch: “*A scientist has index h if h of his or her N_p papers have at least h citations each and the other $(N_p - h)$ papers have $\leq h$ citations each*” (Hirsch, 2005,

p. 16569). Clarifying, if an author has a 20 h-index, this implies that the author we are considering has published 20 publications that received 20 or more citations.

The authors with two or more publications are ranked on Table 9, according to the number of publications per author and their h-index. Out of 289 identified authors, 16 authors fulfill this condition. It is important to emphasize that the h-index for all these 16 authors was obtained via SCOPUS. Our overall bibliographic database gathers authors where some the h-index was not accessible through WoS, being more rigorous to consider only SCOPUS.

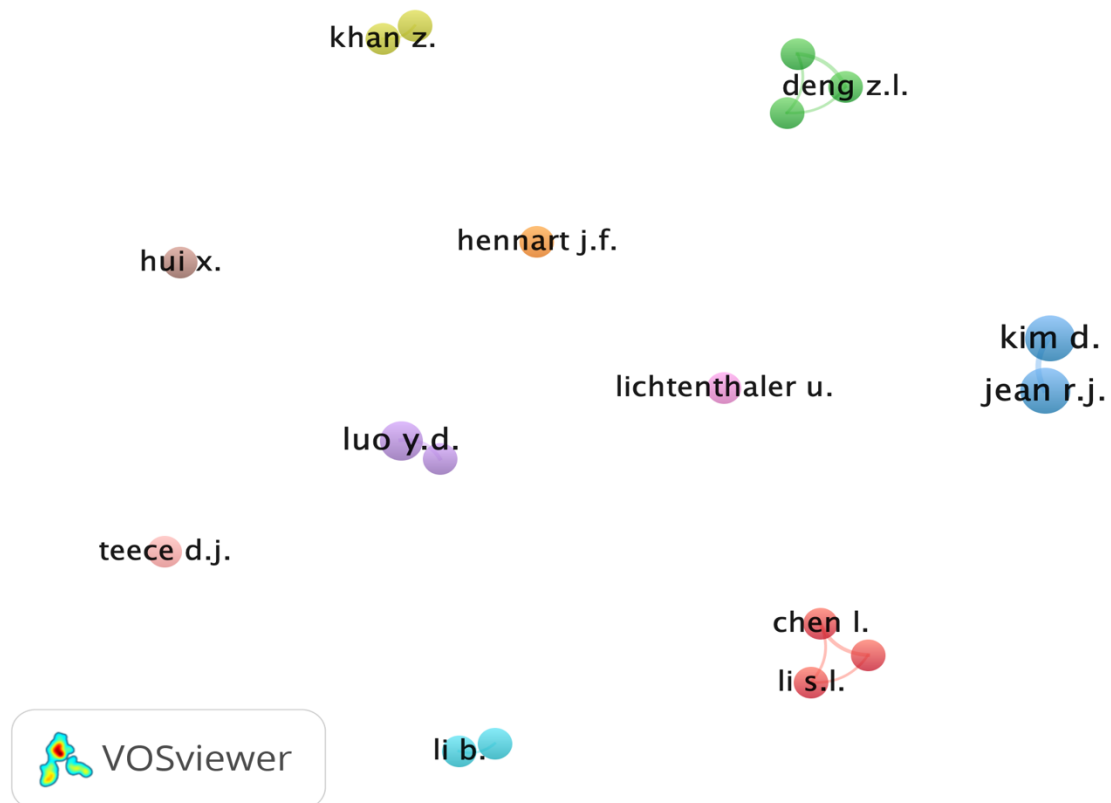
Table 9 - Ranking of the most influential authors

Ranking	Author	Number of publications	H-index
1	Daekwan Kim	4	24
2	Ruey-Jer 'Bryan' Jean	4	20
3	Yadong Luo	3	1
4	David J. Teece	2	57
5	Ulrich Lichtenthaler	2	32
6	Jean-François Hennart	2	31
7	Satish Nambisan	2	30
8	Peter W. Liesch	2	29
9	Zaheer Khan	2	24
10	Ke Rong	2	20
11	Sali Li	2	18
12	Ziliang Deng	2	12
13	Jingtao Yi	2	11
14	Liang Chen	2	9
15	Jing Zeng	2	9
16	Xiang Hui	2	3

Source: Own elaboration

We also found particularly interesting, by using the VOSViewer tool, to present the network overlay of the most influential authors showing the links among these 16 researchers (Figure 8). Given that each “bubble” size represents the number of publications that each author published on the given area of study, the authors Daekwan Kim, Ruey-Jer 'Bryan' Jean and Yadong Luo stand out.

Figure 8 - Network overlay of the most influential authors



Source: Own elaboration, using VOSViewer software tool

By analyzing the 16 authors and their number of publications, we concluded that those with the higher number of publications are Daekwan Kim, Ruey-Jer 'Bryan' Jean and Yadong Luo. In contrast, the greater h-index does not concern the three authors previously mentioned. Instead, the four following authors are those who have the greater h-index.

- 1 - David J. Teece, from University of California, United States, with a total of 215 publications and 49 665 citations.
- 2 - Ulrich Lichtenthaler, from International School of Management (ISM), Germany, with a total of 100 publications and 5154 citations.
- 3 - Jean-François Hennart, from Tilburg University, Netherlands, with a total of 65 publications and 5293 citations.
- 4 - Satish Nambisan, from Weatherhead School of Management, United States, with a total of 58 publications and 7636 citations.

Daekwan Kim and Ruey-Jer ‘Bryan’ Jean are the two most relevant authors regarding the weight of publishing in our field under study. In addition, they also reveal a high h-index of 24 and 20, respectively, expressing their relevance in this field of study, Digital Platforms and Internationalization.

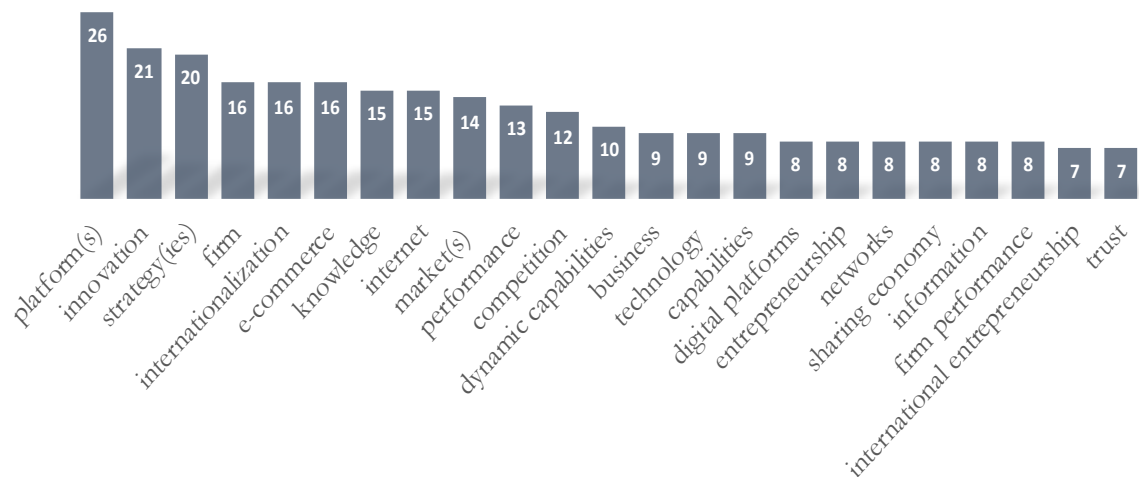
2.2.7. Topics focused on literature analyzed

Recognizing the key topics on the revised literature according to the theme under study is a crucial aspect of this dissertation, and this was achieved through an analysis of the keywords’ portfolio, as well as of the relationships between keywords.

2.2.7.1. Occurrence of keywords

According to the extraction from the WoS and SCOPUS, both authors’ keywords and index keywords were an included field per publication. Therefore, all keywords were correctly and objectively extracted as they were recognized. In the rare cases where the articles did not include keywords, we decided not to insert ourselves arbitrary keywords in order not to give margin for subjectivity in the conclusions obtained. Gathering all keywords, we reached a total of 812 keywords – including both author keywords and index keywords - resulting in an average of 6,5 (7) keywords per publication. Reflecting about the average of 6,5 (7) keywords per publication, we consider as the most important keywords the ones that appear more than 7 times (Figure 9), regarding the theme Digital Platforms and Internationalization.

Figure 9 - Occurrence of keywords mentioned in the publications

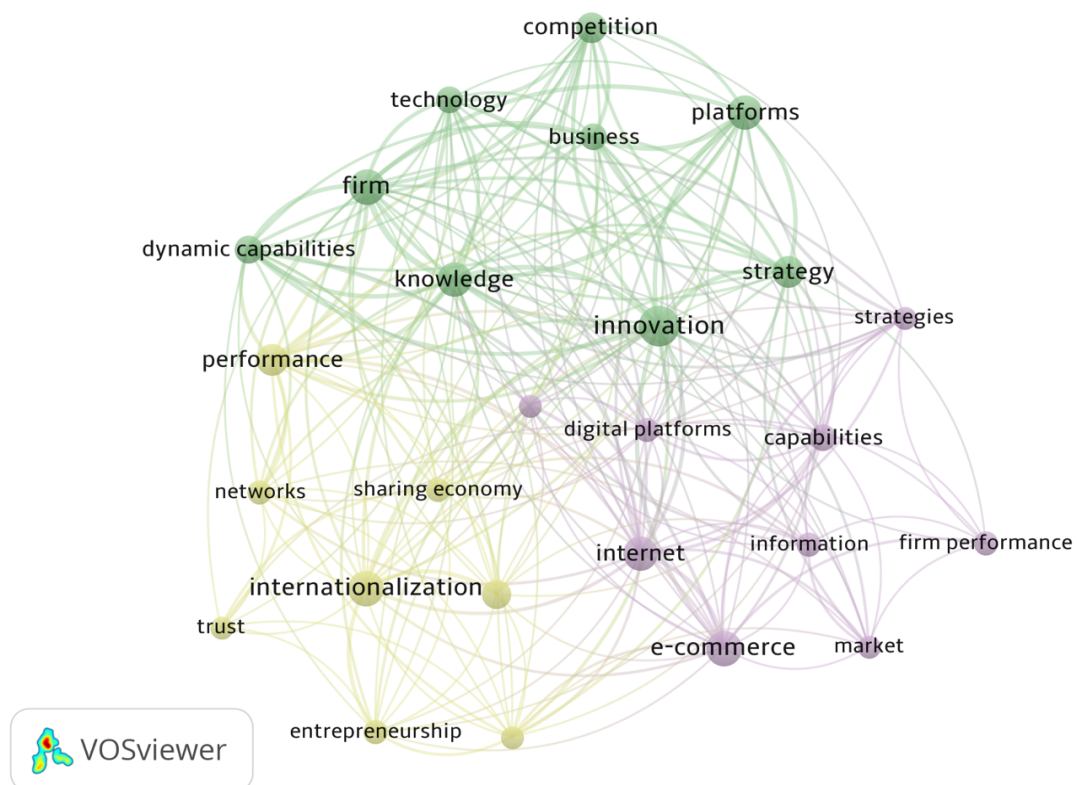


By implementing this restriction, 26 keywords fulfill it and the reference to a specific topic, at least 7 times, testifies to their importance. As estimated, from this range of keywords, the keywords with greatest impact were - Platform(s) with 26 occurrences, followed by Innovation (21), Strategy(ies) (20), Firm (16), Internationalization (16), and e-commerce (16).

2.2.7.2. Keywords clusters

When using the VOSViewer as a tool to help us perform a better analysis, cluster word analysis considers the terms that arise often together, bearing a thematic connection with each other. Figure 10 identifies, from a graphical analysis of overlapping network keywords, three large clusters (thereafter represented and analyzed) according to the diversity of topics under consideration, and their respective relationships.

Figure 10 - Network overlay of keywords



Source: Own elaboration, using VOSViewer software tool

The **green cluster** focuses on:

Green cluster		
business	competition	dynamic capabilities
firm	innovation	knowledge
platforms	strategy	technology

This first cluster, represented in green, is focused more broadly on platforms, as well on innovation (among other topics). In this line, the publications “*Profiting from innovation in the digital economy: Enabling technologies, standards, and licensing models in the wireless world*” and “*Internationalization, innovation, and entrepreneurship: business models for emerging technology-based enterprises*” - referred to in Table 7 as two of the most cited publications, stand out. In the review by Teece (2018) it is highlighted that, in the digital economy, the issue of capturing value for innovators presents some unique obstacles compared to the industrial economy and it unavoidably needs an understanding of platforms and their ecosystems. The review by Onetti et al. (2012) supports that globalization is likely to have an impact on novel technology-centered businesses, notably those who base their activities on a technological platform, regarding innovation as well as the pressure of competition. It is evident that nowadays firms more and more try to transform their BMs by innovating and fostering this innovation, as it is a key component to survive in a globalized and competitive economy. Platform development needs originality, strategic vision, and novel approaches to identify and provide value to clients through the development of BMI. Companies are currently adopting BMI, as a result of the digital advancements, by transforming their established BMs to capture value generation by resorting to platforms (Mihardjo et al., 2019). The literature also emphasizes that Digital Platforms can be viewed as hubs for innovation, with a technological foundation and distribution mechanism in place for businesses to add their innovations, hence enhancing the overall systemic value (Teece, 2018). A Digital Platform serves as a catalyst around which businesses and users may innovate and attract people significantly more effectively than they could if they tried to accomplish the same goals without it (Teece, 2018). The dynamic capabilities approach explores how companies might reconfigure their resources and capabilities to respond to different contexts (Eisenhardt & Martin, 2000). Dynamic capabilities, linked to innovation, have a great impact concerning the businesses’ resource base (Helfat et al. 2007) and their development explains the way firms can answer to fast technological change on markets. Resource orchestration,

underpinning the platforms, is seen as a novel component of dynamic capability that must be efficiently arranged to fulfill the changing demands of market and ecosystem users (Nambisan et al., 2019). Dynamic capabilities have an important role for firms to hold their competitive advantage. As far as competition is concerned, it is now much more centered on cooperation and co-creation (Parker et al., 2016).

The **pink cluster** highlights:

Pink cluster		
digital platforms	e-commerce	capabilities
information	internet	market(s)
firm performance	strategies	

Regarding the second cluster, by focusing on ICT, the adoption by firms of e-commerce through internet contributes to gain more competitive advantage, since it increases the geographical scope, as well it requires less operation and information costs. Furthermore, this market vision goes along with the expansion of e-commerce using Digital Platforms as critical motor. While in e-commerce the internet is seen as a mean of distribution, on Digital Platforms is also seen as an area that provides interaction and connection. Firms that involve Digital Platforms on their business, wish to foster innovation in order to their business scale-up and provide precious information achievable by the facilitation of interactions. The internet and digital instruments significantly improved the capacity to obtain information, restructuring how firms spread knowledge and goods nationally and beyond borders, revealing itself as a key to international business.

The **yellow cluster** develops around:

Yellow cluster		
sharing economy	networks	performance
entrepreneurship	internationalization	trust

In the third cluster, represented in yellow, stands out the publication "*The sharing economy globalization phenomenon: A research agenda*", as shown in Table 6. In the review by Parente et al. (2018), the sharing economy phenomenon, which is at the core of Digital Platforms, is

revealed to be far more simply a passing fad, capable of uprooting competition all over the world. The sharing economy concept has become widely used to characterize a variety of businesses that connect users and owners/providers via platforms, allowing for more flexibility in social interactive conditions (Parente et al., 2018). The attention on the sharing economy increased and, nowadays, it relies on allowing users transacting underutilized resources via two-sided platforms (Hou, 2018). Platforms, as it is well-known, are dependent on network effects among several ecosystem participants (Parente et al., 2018). Responding to pressures for expansion focused on network externalities and first-mover advantages, Internationalization becomes a requirement in this situation because sharing economy businesses are often start-ups that require large sums of money to maintain their activities. This, in turn, generates an incentive for Internationalization that is more than just a hunt for new markets; it is a must for survival (Parente et al., 2018). As this cluster focuses on Internationalization, there is a need to highlight that traditional theories of Internationalization may be unable to adequately describe or forecast the sharing economy platforms' expansion patterns. Fewer Internationalization hurdles will be faced than those faced by traditionally internationalized firms, and platforms have been reported to be able to devise unique approaches to global expansion (Nambisan et al. 2019). Trust is therefore crucial in the sharing economy, which is navigating new countries marked by high unpredictability and fast changing (Möhlmann & Geissinger, 2018). The entrepreneurial growth is centered on plans to achieve a rapid and clear worldwide market expansion and exposure, becoming clearly connected to Digital Platforms (Anwar, 2017). In our digital environment, the role of platforms in Internationalization is to share a virtual place seeking to create a connection between users with similar needs (Pérez-Pérez et al., 2021), and that implies expanding the activity and a time reduction, as well as speeding of the Internationalization process.

Concluding remarks

This dissertation's aimed at providing a systematic review of existing literature linking Digital Platforms and Internationalization, two key phenomena in contemporary Economics and Business. Its key contribution consisted of developing a quantitative (bibliometric) analysis of the relevant literature, enabling to identify trends and patterns, and laying the basis for future research in this field. Before the bibliometric study, a comprehensive (qualitative) literature review was developed, in order to situate and frame the key issues under analysis, as well as providing the theoretical framework underlying this dissertation.

This dissertation provides, thus, a rigorous understanding of the state-of-art of the literature on the area, by investigating the metadata of published works in an attempt to identify the key characteristics and patterns in extant research addressing the interaction of Digital Platforms and Internationalization.

In line with our extracted publications portfolio (covering 124 articles after applying the above-explained methodology), from 1996 to 2016, we unveiled that published research linking Digital Platforms and Internationalization was rather scarce. From 2016, we began to see an exponential rise in the number of publications, leading to expect that this important field of research will continue to receive greater attention from researchers.

Analyzing our portfolio, we conclude that most publications are articles rather than reviews. Most publications analyzed adopted an empirical methodology and a minority proposed an appreciative methodology.

The "Journal of International Business Studies", the "International Marketing Review", and the "Strategic Management Journal" stand out as the scientific journals with most publications on this research topic. The respective impact factors were also reported.

"Profiting from innovation in the digital economy: Enabling technologies, standards, and licensing models in the wireless world" published in 2018 and *"Peer-to-Peer Markets"* published in 2016, are the two most cited articles focusing on the field of study. Citation analysis is of paramount importance to bibliometric analysis, since it enables to assess the perceived quality of the

articles under analysis. Notwithstanding, we should remember that recent publications (e.g., from 2021) are novel, not being highly cited yet, but could be also meaningful contributions.

Regarding the most influential authors, Daekwan Kim, Ruey-Jer 'Bryan' Jean and Yadong Luo have contributed significantly to the literature and having a high productivity.

Regarding the topics focused on the revised literature, those more frequently referred to concern platforms, innovation, strategy(ies), firm, Internationalization as well as e-commerce. After analyzing the occurrence of keywords that appeared more often, we went on to understand the relations among them, with the help of the VOS Viewer software tool, that maps the network overlay of the most frequent keywords. Despite the diversity of topics, we show that three main groups or clusters can be identified, as observed in the previous section: (1) a cluster focused on platforms as well on innovation, (2) another cluster built around e-commerce and Digital Platforms, and (3) a third cluster developed around the sharing economy, Internationalization, and networks.

The analysis performed, based on this systematic review of extant literature, allows us to conclude that Digital Platforms seem to significantly impact the Internationalization process of firms. Digital Platforms represent, thus, an excellent driver to stimulate and achieve significant improvements in the Internationalization process of firms.

Moreover, based on our research, notably on the first part, the literature review framing the topics under analysis and the relevant theories, we observed that, despite traditional theories of internationalization are still frequently used to explain nowadays business environment, on the theories based on an incremental process of Internationalization, like the Uppsala Model, have difficulty in explaining Internationalization via Digital Platforms. Our results point that market choice and market entry strategies are highly impacted by network externalities, the strongest feature of Digital Platforms. And Digital Platforms contribute to an international expansion in a quick way and allow scaling up at an extraordinary level and pace.

All research has limitations, and this one is no exception, especially as the research on the relationship between Digital Platforms and Internationalization is still at an early stage. To

perform this pioneering bibliometric analysis, our first search in this field was carried out using the WoS and SCOPUS bibliographic databases. As a matter of fact, by resorting to Digital Platform as first keyword and then combining it with the panoply of keywords related to International Business, we noticed that it did not include some publications that were pertinent to this analysis as well as leading to a scarce number of publications extracted. Furthermore, throughout the bibliometric analysis performed, it is likely that some publications and authors may not reflect their true relevance and impact since the topic in question is still recent and still emerging. Although these limitations exist and should be acknowledged, by using a robust methodology, this dissertation is a valid and original contribution.

Considering the novelty of the exploration of the relationship between Digital Platforms and Internationalization, there are certainly several avenues for future research. One of them is on how International Business theories can be adapted to better explain Digital Transformation of companies, and how such theories can explain the Internationalization strategies of firms involving Digital Platforms. Another avenue could be the impediments or drawbacks for firms to involve Digital Platforms in their Internationalization strategies, or even, in a broader way, how Digital Platforms may disrupt the very concepts of markets, as they can be perceived in themselves a market, and a de-territorialized and borderless type of market who can even facilitate the Internationalization process of SMEs and early-stage firms.

References

- Anwar, S. T. (2017). Alibaba: Entrepreneurial growth and global expansion in B2B/B2C markets. *Journal of International Entrepreneurship*, 15, 366-389. <https://doi.org/10.1007/s10843-017-0207-2>
- Aria, M., & Cuccurullo, C. (2017). Bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4), 959-975. <https://doi.org/10.1016/j.joi.2017.08.007>
- Armstrong, M. (2006). Competition in two-sided markets. *RAND Journal of Economics*, 37(3), 668-691.
- Asadullah, A., & Kankanhalli, A. (2018). Digital platforms: A review and future directions. *PACIS 2018 Proceedings*.
- Autio, A., & Zander, I. (2016). Lean internationalization. *Academy of Management Proceedings*, 1-5. <https://doi.org/10.5465/ambpp.2016.81>
- Baldwin, C. Y., & Woodard, C. J. (2008). The architecture of platforms: A unified view working paper. Harvard Business School.
- Brouthers, K. D., Geisser, K. D., & Rothlauf, F. (2016). Explaining the internationalization of ibusiness firms. *Journal of International Business Studies*, 47(5), 513-534. <https://doi.org/10.1057/jibs.2015.20>
- Buckley, P. J. & Casson, M. C. (1976). The future of the multinational enterprise. Homes and Meier Press, London. <https://doi.org/10.1007/978-1-349-21204-0>
- Büyüközkan, G., & Göçer, F. (2018). Digital supply chain: Literature review and a proposed framework for future research. *Computers in Industry*, 97, 157-177.

Caillaud, B., & Jullien, B. (2003). Chicken & Egg: Competition among intermediation service providers. *RAND Journal of Economics*, 34(2), 309-328. <https://doi.org/10.2307/1593720>

Castro e Silva, M., & Teixeira, A. A. C. (2011). A bibliometric account of the evolution of EE in the last two decades: Is ecological economics (becoming) a post-normal science? *Ecological Economics*, 70(5), 849-862.

Cennamo, C. (2019). Competing in digital markets: A platform-based perspective. *Academy of Management Perspectives*, 1-48. <https://doi.org/10.5465/amp.2016.0048>

Chen, L., Shaheer, N., Yi, J., & Li, S. (2019). The international penetration of ibusiness firms: Network effects, liabilities of outsidership and country clout. *Journal of International Business Studies*, 50(2), 172-192. <https://doi.org/10.1057/s41267-018-0176-2>

Coviello, N., Kano, L., & Liesch, P. W. (2017). Adapting the uppsala model to a modern world: Macro-context and microfoundations. *Journal of International Business Studies*, 48(9), 1151-1164. <https://doi.org/10.1057/s41267-017-0120-x>

Deloitte (2019). The rise of the platform economy. Retrieved from: <https://www2.deloitte.com/content/dam/Deloitte/nl/Documents/humancapital/deloitte-nl-hc-the-rise-of-the-platform-economy-report.pdf>

Deloitte (2019). Digital platform as a growth lever. Retrieved from: <https://www2.deloitte.com/us/en/insights/focus/industry-4-0/digital-platform-strategy.html>.

Deng, Z., Zhu, Z., Johanson, M., & Hilmersson, M. (2022). Rapid internationalization and exit of exporters: The role of digital platforms. *International Business Review*, 31(1), 1-6. <https://doi.org/10.1016/j.ibusrev.2021.101896>

de Oliveira, O.J., Silva, F. F., Juliani, F., Barbosa, L., & Nunhes, T. (2019). Bibliometric method for mapping the state-of-the-art and identifying research gaps and trends in literature: An essential instrument to support the development of scientific projects. *Scientometrics*, 1-20. <https://doi.org/10.5772/intechopen.85856>

Di Gregorio, D., Musteen, M., & Thomas, D. E. (2008). International new ventures: The cross-border nexus of individuals and opportunities. *Journal of World Business*, 43(2), 186-196. <https://doi.org/10.1016/j.jwb.2007.11.013>

Doligalski, T., Misiuna, J., Mróz, B., Nowicka, K., Goliński, M., Jung, B., Korczyński, A., Kozłowski, K., & Witek-Hajduk, M. (2021). Disruptive platforms: Markets, ecosystems, and monopolists. Digital platforms' internationalisation and its disruptive impact on international business. Routledge.

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 285-296. <https://doi.org/10.1016/j.jbusres.2021.04.070>

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, 21(10-11), 1105-1121.

Eisenmann, T., Parker, G., & van Alstyne, M. W. (2006). Strategies for two-sided markets. *Harvard Business Review*, 84(10), 92-101.

Eisenmann, T., Parker, G., & van Alstyne, M. (2011). Platform envelopment. *Strategic Management Journal*, 32(12), 1270-1285. <https://doi.org/10.1002/smj.935>

Evans, D. S. (2003). Some empirical aspects of multi-sided platform industries, 1-19. *Review of Network Economics (RNE)*, 2(3). <http://dx.doi.org/10.2139/ssrn.447981>

Evans, P. C., & Gawer A. (2016). The rise of the platform enterprise: A global survey. 4-21.

Evans, D. S., & Schmalensee, R. (2013). The antitrust analysis of multi-sided platform businesses. Evans, D., & Schmalensee, R. (2013). The Antitrust Analysis of Multi-Sided Platform Businesses. NBER Working Paper Series, 2-38. <https://doi.org/10.3386/w18783>

Evans, D. S., & Schmalensee, R. (2016). The new economics of multisided platforms: A guide to the vocabulary. SSRN Electronic Journal, 2-7. <http://dx.doi.org/10.2139/ssrn.2793021>

Fischer, E., & Reuber, A. R. (2014). Online entrepreneurial communication: Mitigating uncertainty and increasing differentiation via twitter. *Journal of Business Venturing*, 29(4), 565-583. <https://doi.org/10.1016/j.jbusvent.2014.02.004>

Forbes (2021). Digital platform strategy: 5 questions your company must ask now. Retrieved from: <https://www.forbes.com/sites/bernardmarr/2021/04/26/digital-platform-strategy-5-questions-your-company-must-ask-now/?sh=1af0fd6a661d>.

Gatautis, R. (2017). The rise of the platforms: Business model innovation perspectives. *Engineering Economics*, 28(5), 585-591. <https://doi.org/10.5755/j01.ee.28.5.19579>

Gawer, A. (2014). Bridging differing perspectives on technological platforms: Toward an integrative framework. *Research Policy*, 43(7), 1239-1249. <https://doi.org/10.1016/j.respol.2014.03.006>.

Gawer, A. (2021). Digital platforms' boundaries: The interplay of firm scope, platform sides, and digital interfaces. *Long Range Planning*, 54(5), 1-14. <https://doi.org/10.1016/j.lrp.2020.102045>

Guan, X., Choi, B. Y., & Song, S. (2013). Reliability and scalability issues in software defined network frameworks. 102-103. <https://doi.org/10.1109/GREE.2013.28>.

Hagiu, A. & Wright, J. (2015). Multi-sided platforms. *International Journal of Industrial Organization*, 43, 1-7.

Helfat, C., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., Teece, D. & Winter, S. (2007) *Dynamic capabilities: Understanding strategic change in organizations*, 1-13. Malden, MA: Blackwell.

Hennart, J. F. M. A. (1977). *A theory of foreign direct investment*. University of Maryland.

Hirsch, J. E. (2005). An index to quantify an individual's scientific research output. *Proceedings of the National Academy of Sciences*, 102(46), 16569-16572.

Hou, L. (2018). Destructive sharing economy: A passage from status to contract. *Computer Law & Security Review*, 34(4), 965-976. <https://doi.org/10.1016/j.clsr.2018.05.009>

Jin, H. & Hurd, F. (2018). Exploring the impact of digital platforms on SME internationalization: New zealand SMEs use of the alibaba platform for chinese market entry. *Journal of Asia-Pacific Business*, 19(2), 72-95. <https://doi.org/10.1080/10599231.2018.1453743>

Johanson, J. & Mattsson, L. G. (1988). Internationalization in industrial systems – A network approach. *Strategies in Global Competition*, 19, 287-314.

Johanson, J., & Vahlne, J. E. (1977). The Internationalization process of the firm – A model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies*, 8(1), 23-32. <https://doi.org/10.1057/palgrave.jibs.8490676>

Johanson, J., & Vahlne, J. E. (2009). The Uppsala Internationalization process model revisited: From liability of foreignness to liability of outsidership. *Journal of International Business Studies*, 40(9), 1411-1431. <https://doi.org/10.1057/jibs.2009.24>

Johanson, J., & Vahlne, J. E. (2011). Markets as networks: Implications for strategy-making. *Journal of the Academy of Marketing Science*, 39(4), 484-491.

- Johanson, J. & Wiedersheim-Paul, F. (1975). The Internationalization of the firm: four Swedish cases. *Journal of Management Studies*, 12, 305-322. <https://doi.org/10.1111/j.1467-6486.1975.tb00514.x>
- Katz, M. L., & Shapiro, C. (1985). Network externalities, competition, and compatibility. *American Economic Review*, 75, 424-440.
- Kenney, M., & Zysman, J. (2016). The rise of the platform economy. *Issues in science and technology*, 32, 61-69.
- Kiel, D., Müller, J. M., Arnold, C., & Voigt, K. I. (2017). Sustainable industrial value creation: Benefits and challenges of industry 4.0. *International Journal of Innovation Management*, 21(8), 1-15. <https://doi.org/10.1142/S1363919617400151>.
- Knight, G. A., & Cavusgil, S. T. (2004). Innovation, organizational capabilities, and the born-global firm. *Journal of International Business Studies*, 35(2), 124-141. <https://doi.org/10.1057/palgrave.jibs.8400071>
- Knight, G. A. & Cavusgil, S. T. (2015). The born global firm: An entrepreneurial and capabilities perspective on early and rapid internationalization. *Journal of International Business Studies*, 46(1), 3-16. <https://doi.org/10.1057/jibs.2014.62>
- Knight, G. A., & Liesch, P. W. (2016). Internationalization: From incremental to born global. *Journal of World Business*, 51(1), 93-102. <https://doi.org/10.1016/j.jwb.2015.08.011>.
- Lee, Y. Y., & Falahat, M. (2019). The impact of digitalization and resources on gaining competitive advantage in international markets: Mediating role of marketing, innovation and learning capabilities. *Technology Innovation Management Review*, 9(11), 26-38.
- Li, J., Chen, L., Yi, J., Mao, J., & Liao, J. (2019). Ecosystem-specific advantages in international digital commerce. *Journal of International Business Studies*, 50(9), 1448-1463. <https://doi.org/10.1057/s41267-019-00263-3>

Linnenluecke, M., Marrone, M., & Singh, A. (2019). Conducting systematic literature reviews and bibliometric analyses. *Australian Journal of Management*, 45(2), 175-194. <https://doi.org/10.1177/0312896219877678>

McKinsey (2018). If you're not building an ecosystem, chances are your competitors are. Retrieved from: <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-strategy-and-corporate-finance-blog/if-youre-not-building-an-ecosystem-chances-are-your-competitors-are>.

McKinsey (2019). The right digital-platform strategy. Retrieved from: <https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/the-right-digital-platform-strategy>.

Meyer, K. E., Estrin, S., Bhaumik, S. K., & Peng, M. W. (2009). Institutions, resources, and entry strategies in emerging economies. *Strategic Management Journal*, 30, 61-80.

Mihardjo, L. W. W., Sasmoko, S., Alamsjah, F., & Elidjen, E. (2019). Digital leadership role in developing business model innovation and customer experience orientation in industry 4.0. *Management Science Letters*, 9(11), 1749-1762.

Monaghan, S., Tippmann, E., & Coviello, N. (2020). Born digitals: Thoughts on their internationalization and a research agenda. *Journal of International Business Studies*, 51(1), 11-22.

Möhlmann, M. & Geissinger, A. (2018). Trust in the sharing economy: Platform-mediated peer trust, 27-37. In N. Davidson, M. Finck, and J. Unfranca (eds), *Cambridge Handbook of the Law of the Sharing Economy*. Cambridge University Press.

Nambisan, S., Zahra, S. A., & Luo, Y. (2019). Global platforms and ecosystems: Implications for international business theories. *Journal of International Business Studies*, 50(9), 1464-1486. <https://doi.org/10.1057/s41267-019-00262-4>.

OECD (2021). The role of online platforms in weathering the COVID-19 shock. Retrieved from: <https://www.oecd.org/coronavirus/policy-responses/the-role-of-online-platforms-in-weathering-the-covid-19-shock-2a3b8434/>.

Ojala, A., Evers, N., & Rialp, A. (2018). Extending the international new venture phenomenon to digital platform providers: A longitudinal case study. *Journal of World Business*, 53(5), 725-739. <https://doi.org/10.1016/j.jwb.2018.05.001>

Onetti, A., Zucchella, A., Jones, M. V., & McDougall-Covin, P. P. (2012). Internationalization, innovation and entrepreneurship: Business models for new technology-based firms. *Journal of Management & Governance*, 16, 337-368.

Oviatt, B. M., & McDougall, P. P. (1994). Toward a theory of international new ventures. *Journal of International Business Studies*, 25, 45-64. <https://doi.org/10.1057/palgrave.jibs.8490193>

Ozalp, H., Cennamo, C., & Gawer, A. (2018). Disruption in platform-based ecosystems. *Journal of Management Studies*, 55(7), 1203-1241. <https://doi.org/10.1111/joms.12351>.

Ozdagoglu, A., Ozdagoglu, G., Topoyan, M., & Damar, M. (2020). A predictive filtering approach for clarifying bibliometric datasets: An example on the research articles related to industry 4.0. *Technology Analysis & Strategic Management*, 32(2), 158-174. <https://doi.org/10.1080/09537325.2019.1645826>.

Pagani, M. (2013). Digital business strategy and value creation: Framing the dynamic cycle of control points. *Mis Quarterly*, 37(2), 617-632.

Pan, Y., & Tse, D. K. (2000). The hierarchical model of market entry modes. *Journal of International Business Studies*, 31(4), 535-554. <https://doi.org/10.1057/palgrave.jibs.8490921>

- Parente, R. C., Geleilate, J. M. G., & Rong, K. (2018). The sharing economy globalization phenomenon: A research agenda. *Journal of International Management*, 24(1), 52-64. <https://doi.org/10.1016/j.intman.2017.10.001>
- Parker, G. G., Van Alstyne, M. W., & Choudary, S. P. (2016). *Platform revolution: How networked markets are transforming the economy - and how to make them work for you*, 10-173. New York: W. W. Norton & Company.
- Pato, M. L., & Teixeira, A. A. C. (2016). Twenty years of rural entrepreneurship: A bibliometric survey. *Sociologia Ruralis*, 56(1), 3-28.
- Paul, J. & Rosado-Serrano, A. (2019). Gradual internationalization vs born-global/international new venture models: A review and research agenda. *International Marketing Review*, 36(6), 830-858.
- Pérez-Pérez, C., Benito-Osorio, D., & García-Moreno, S. M. (2021). New puppets in the old school: The applicability of traditional internationalisation theories in the sharing economy. *Administrative Sciences*, 11(3), 1-23. <https://doi.org/3390/ADMSCI11030098>
- Pritchard, A. (1969) Statistical bibliography or bibliometrics. *Journal of Documentation*, 25, 348-349.
- Rennie, M. W. (1993). Born global. *The McKinsey Quarterly*, (4), 45-53.
- Rochet, J. C., & Tirole, J. (2003). Platform competition in two-sided markets. *Journal of the European Economic Association*, 1(4), 990-1029. <https://doi.org/10.1162/154247603322493212>
- Rogers, D. L. (2016). *The digital transformation playbook*. Columbia University Press.
- Rugman, A. M. (1981). A test of internalization theory. *Managerial and Decision Economics*, 2(4), 211-219. <https://doi.org/10.1002/mde.4090020402>

Rugman, A. M., & Verbeke, A. (1992). A note on the transnational solution and the transaction cost theory of multinational strategic management. *Journal of International Business Studies*, 23(4), 761–771. <https://doi.org/10.1057/palgrave.jibs.8490287>

Saadatmand, F., Lindgren, R., & Schultze, U. (2019). Configurations of platform organizations: Implications for complementor engagement. *Research Policy*, 48(8), 1-17.

SCImago (2020). Retrieved from: www.scimagojr.com.

SCOPUS (2020). Retrieved from: www.scopus.com.

Shaheer, N. A., & Li, S. (2020). The CAGE around cyberspace? How digital innovations internationalize in a virtual world. *Journal of Business Venturing*, 35, 1-6.

Simões, V. C. (2020). Implications of COVID-19 for international business: The case of platform businesses. European International Business Academy (EIBA) online conference.

Stallkamp, M., & Schotter, A. P. J. (2019). Platforms without borders? The international strategies of digital platform firms. *Global Strategy Journal*, 11(1), 58-80. <https://doi.org/10.1002/gsj.1336>

Statista (2021). E-commerce worldwide – statistics & facts. Retrieved from: <https://www.statista.com/topics/871/online-shopping/>

Staykova, K. S., & Damsgaard, J. (2015). A typology of multi-sided platforms: The core and the periphery. ECIS 2015 Completed Research Papers.

Sun, M., & Tse, E. (2009). The resource-based view of competitive advantage in two-sided markets. *Journal of Management Studies*, 46(1), 45-64. <https://doi.org/10.1111/j.1467-6486.2008.00796.x>

Teece, D. J. (2010). Business models, business strategy and innovation. *Long Range Planning*, 43(2–3), 172-194. <https://doi.org/10.1016/j.lrp.2009.07.003>

Teece, D. J. (2014). A dynamic capabilities-based entrepreneurial theory of the multinational enterprise. *Journal of International Business Studies*, 45(1), 8-37.
<https://doi.org/10.1057/jibs.2013.54>

Teece, D. J. (2018). Profiting from innovation in the digital economy: Enabling technologies, standards, and licensing models in the wireless world. *Research Policy*, 1367-1387.

TheInnovator (2019). The platform economy. Retrieved from: <https://innovator.news/the-platform-economy-3c09439b56>.

Van Alstyne, M. W., Parker, G. G., & Choudary, S. P. (2016). Pipelines, platforms, and the new rules of strategy. *Harvard Business Review*, 94(4), 54-62.

Varian, H. R. (2001). High-technology industries and market structure.

Visconti, R. M. (2019). Corporate governance, digital platforms, and network theory: Information and risk-return sharing of connected stakeholders. *Management Control*, 179-204.

VOSviewer (2022). Retrieved from: <https://www.vosviewer.com>.

Wallin, J. A. (2005). Bibliometric methods: Pitfalls and possibilities. *Basic and Clinical Pharmacology and Toxicology*, 97(5), 261-275.

Welch, L. S., & Luostarinen, R. (1988). Internationalization: Evolution of a concept. *Journal of General Management*, 14(2), 34-55.

Weiss, P., & Grab, B. (2020). Risks and opportunities of digital platforms for scaling business models, 1-5.

Wentrup, R. (2016). The online–offline balance: Internationalization for Swedish online service providers. *Journal of International Entrepreneurship*, 14(4), 562-594.

Wentrup, R., Nakamura, H. R., & Ström, P. (2019). Uberization in Paris – The issue of trust between a digital platform and digital workers. *Critical Perspectives on International Business*, 15(1), 20–41. <https://doi.org/10.1108/cpoib-03-2018-0033>

Wirtz, B. W., Schilke, O., & Ullrich, S. (2010). Strategic development of business models: Implications of the web 2.0 for creating value on the internet. *Long Range Planning*, 43(2–3), 272-290. <https://doi.org/10.1016/j.lrp.2010.01.005>

WoS. (2020). Retrieved from: <https://incites.clarivate.com/>

Yamin, M., & Sinkovics, R. R. (2006). Online internationalisation, psychic distance reduction and the virtuality trap. *International Business Review*, 15(4), 339-360. <https://doi.org/10.1016/j.ibusrev.2006.03.002>

Yonatany, M. (2017). Platforms, ecosystems, and the internationalization of highly digitized organizations. *Journal of Organization Design*, 6(1). <https://doi.org/10.1186/s41469-017-0012-3>.

Yoo, Y., Boland, R. J., Lyytinen, K., & Majchrzak, A. (2012). Organizing for innovation in the digitized world. *Organization Science*, 23, 1398-1408. <https://doi.org/10.1287/orsc.1120.0771>

Yrjölä, M., Mattila, M., Hautamaki, P., & Mikkonen, M. (2021). *Business Models and Firm Internationalisation. Digital platforms as disrupting business models for internationalisation.* Routledge.

Zaheer, S. (1995). Overcoming the liability of foreignness. *The Academy of Management Journal*, 38(2), 341-363.

Zain, M., & Ng, S. I. (2006). The impacts of network relationships on SMEs' internationalization process. *Thunderbird International Business Review*, 48(2), 183-205.

Zhang, Y., Li, J., & Tong, T. W. (2020). Platform governance matters: How platform gatekeeping affects knowledge sharing among complementors. *Strategic Management Journal*, 43(3), 599-636.

Zhu, J. & Liu, W. (2020). A tale of two databases: The use of web of science and scopus in academic papers. *Scientometrics*, 321-335. <https://doi.org/10.1007/s11192-020-03387-8>

Zhu, F., & Furr, N. (2016). Products to platforms: Making the leap. Retrieved from: <https://hbr.org/2016/04/products-to-platforms-making-the-leap>

Appendices

Table A 1 - 124 articles aligned with the field of study

Authors	Article Title
Ahmad N., Schreyer P.	Are GDP and productivity measures up to the challenges of the digital economy?
Akter S., Hossain M.A., Lu Q., Shams S.M.R.	Big data-driven strategic orientation in international marketing
Alekseieva K., Novikova I., Bediukh O., Kostyuk O., Stepanova A.	Technological orders' change caused by the pandemics: Digitalization in the internationalization of technology transfer
Alhorr H.S., Singh N., Kim S.H.	E-commerce on the global platform: Strategic insights on the localization-standardization perspective
Amornkitvikai Y., Tham S.Y., Tangpoolcharoen J.	Barriers and factors affecting e-commerce utilization of Thai small and medium-sized enterprises in food and beverage and retail services
Ansell C., Gash A.	Collaborative platforms as a governance strategy
Anwar S.T.	Alibaba: Entrepreneurial growth and global expansion in B2B/B2C markets
Argyres N., Bercovitz J., Zanarone G.	The role of relationship scope in sustaining relational contracts in interfirm networks
Aspelund A., Azari M.J., Aglen A.F., Graff S.G.	The birth and development of a born global industry: The case of microelectronics in Norway
Atherton A.	China's emerging businesses: The next generation of global corporations?
Auer D., Manne G.A., Bowman S.	Should ASEAN antitrust laws emulate European competition policy?
Aujirapongpan S., Songkajorn Y., Ritkaew S., Declers S.	Japan's digital advance policy towards performance in multilateral ASEAN's innovation business
Azzam J.E., Ayerbe C., Dang R.	Using patents to orchestrate ecosystem stability: the case of a French aerospace company
Baronian L.	Digital platforms and the nature of the firm
Bembom M., Schwens C.	The role of networks in early internationalizing firms: A systematic review and future research agenda
Berger L., Guo L., King T.	Selfish sharing? The impact of the sharing economy on tax reporting honesty
Bonakdar A., Frankenberger K., Bader M.A., Gassmann O.	Capturing value from business models: the role of formal and informal protection strategies
Brouthers K.D., Geisser K.D., Rothlauf F.	Explaining the internationalization of ibusiness firms
Brynolfsson E., Hui X., Liu M.	Does machine translation affect international trade? Evidence from a large digital platform
Buckley P.J., Prashantham S.	Global interfirm networks: The division of entrepreneurial labor between MNEs and SMEs
Cassia F., Magno F.	Cross-border e-commerce as a foreign market entry mode among SMEs: the relationship between export capabilities and performance
Caviggioli F., Ughetto E.	The drivers of patent transactions: corporate views on the market for patents
Cha H.	A paradigm shift in the global strategy of MNEs towards business ecosystems: A research agenda for new theory development
Chen L., Shaheer N., Yi J.T., Li S.L.	The international penetration of ibusiness firms: Network effects, liabilities of outsidership and country clout

Chen M.X., Wu M.	The value of reputation in trade: Evidence from alibaba
Chou C.H.	Could coexistence of open-source and proprietary platforms be an equilibrium outcome?
Khanagha S., Zadeh M.T.R., Mihalache O.R., Volberda H.W.	Embracing bewilderment: Responding to technological disruption in heterogeneous market environments
Costa J., Castro R.	SMEs must go online-e-commerce as an escape hatch for resilience and survivability
Curchod C., Patriotta G., Wright M.	Self-categorization as a nonmarket strategy for MNE subsidiaries: Tracking the international expansion of an online platform
Cuypers I.R.P., Hennart J.F., Silverman B.S., Ertug G.	Transaction cost theory: Past progress, current challenges, and suggestions for the future
Deng Z.L., Liesch P.W., Wang Z.Y.	Deceptive signaling on globalized digital platforms: Institutional hypnosis and firm internationalization
Deng Z.L., Wang Z.Y.	Early-mover advantages at cross-border business-to-business e-commerce portals
Dezi L., Cillo V., Usai A., Pisano P.	Equity crowdfunding in technology transfer strategies and licensing
Dhanorkar S., Kim Y., Linderman K.	An empirical investigation of transaction dynamics in online surplus networks: A complex adaptive system perspective
Edward W.	The uberisation of work: the challenge of regulating platform capitalism. A commentary
Einav L., Farronato C., Levin J.	Peer-to-Peer markets
Evans D.S.	The antitrust analysis of rules and standards for software platforms
Ferguson S., Henrekson M.	The long-run performance of born globals in computing: The role of digital platforms
Fernandes A.M., Mattoo A., Nguyen H., Schiffbauer M.	The internet and chinese exports in the pre-ali baba era
Gajendran T., Brewer G., Marimuthu M.	Internationalisation of construction business and e-commerce: Innovation, integration and dynamic capabilities
Gao H.Z., Ren M., Zhang J., Sun R.Y.	Network gatekeeping in SME exporters' market entry in china
Glavas C., Mathews S., Russell-Bennett R.	Knowledge acquisition via internet-enabled platforms examining incrementally and non-incrementally internationalizing SMEs
Hartmann G., Nduru G., Dannenberg P.	Digital connectivity at the upstream end of value chains: A dynamic perspective on smartphone adoption amongst horticultural smallholders in kenya
Hasselwander M., Bigotte J.F., Fonseca M.	Understanding platform internationalisation to predict the diffusion of new mobility services
Hennart J.F.	Digitalized service multinationals and international business theory
Holgersson M., Granstrand O., Bogers M.	The evolution of intellectual property strategy in innovation ecosystems: Uncovering complementary and substitute appropriability regimes
Hou L.	Destructive sharing economy: A passage from status to contract
Hui X.	Facilitating Inclusive global trade: Evidence from a field experiment
Ishihara M., Muller E.	Software piracy and outsourcing in two-sided markets

Jean R.J., Kim D.	Internet and SMEs' internationalization: The role of platform and website
Jean R.J., Kim D.	Signalling strategies of exporters on internet business-to-business platforms
Jean R.J., Kim D., Cavusgil E.	Antecedents and outcomes of digital platform risk for international new ventures' internationalization
Jean R.J., Kim D., Zhou K.Z., Cavusgil S.T.	E-platform use and exporting in the context of alibaba: A signaling theory perspective
Jeng C.-R.	The role of trust in explaining tourists' behavioral intention to use e-booking services in taiwan
Jin H., Hurd F.	Exploring the impact of digital platforms on SME internationalization: New zealand SMEs use of the alibaba platform for chinese market entry
Johan S.	Peer-to-peer lending's customer profile: Empirical research on indonesia's financial technology market
Kathuria V.	Greed for data and exclusionary conduct in data-driven markets
Kolesnikov A.V., Orlova I.V., Kamchatova E.Y., Babeshko L.O., Serebrennikova	Directions of digital technologies development in the supply chain management of the Russian economy
Kong J.J., Yang F.	Green technology licensing under platform selling
Kumar V., Nim N., Agarwal A.	Platform-based mobile payments adoption in emerging and developed countries: Role of country-level heterogeneity and network effects
Lee Y.Y., Falahat M.	The impact of digitalization and resources on gaining competitive advantage in international markets: The mediating role of marketing, innovation and learning capabilities
Lehdonvirta V., Kassi O., Hjorth I., Barnard H., Graham M.	The global platform economy: A new offshoring institution enabling emerging-economy microproviders
Lendle A., Vezina P.L.	Internet technology and the extensive margin of trade: Evidence from eBay in emerging economies
Li F.	Why have all western internet firms (WIFS) failed in china? A phenomenon-based study
Li J.T., Chen L., Yi J.T., Mao J.Y., Liao J.W.	Ecosystem-specific advantages in international digital commerce
Li Y., Li B., Wang G., Yang S.	The effects of consumer animosity on demand for sharing-based accommodations: Evidence from Airbnb
Lichtenthaler U., Ernst H.	Intermediary services in the markets for technology: Organizational antecedents and performance consequences
Lindblom A., Nadayama N., Asakawa K., Cuthbertson R.	De-internationalization of transactional platforms: an exploratory case study
Liu Y., Shi Y.J.	Understanding international product strategy in multinational corporations through new product development approaches and evolution
Luo Y.D.	A general framework of digitization risks in international business
Ma S.Z., Chai Y.X., Zhang H.S.	Rise of cross-border e-commerce exports in china
Manu C., Sreejesh S.	Addressing service failure and initiating service recovery in online platforms: Literature review and research agenda
Martens B., Mueller-Langer F.	Access to digital car data and competition in aftermarket maintenance services
Miao Y.M., Du R., Li J., Westland J.C.	A two-sided matching model in the context of B2B export cross-border e-commerce

Miller C.D., Toh P.K.	Complementary components and returns from coordination within ecosystems via standard setting
Mir-Bernal P., Guercini S., Sadaba T.	The role of e-commerce in the internationalization of spanish luxury fashion multi-brand retailers
Monaghan S., Tippmann E., Coviello N.	Born digitals: Thoughts on their internationalization and a research agenda
Montero J., Finger M.	Regulating digital platforms as the new network industries
Muffatto M.	Platform strategies in international new product development
Nambisan S., Luo Y.D.	Toward a loose coupling view of digital globalization
Nambisan S., Zahra S.A., Luo Y.D.	Global platforms and ecosystems: Implications for international business theories
Ojala A., Evers N., Rialp A.	Extending the international new venture phenomenon to digital platform providers: A longitudinal case study
Onetti A., Zucchella A., Jones M.V., McDougall-Covin P.P.	Internationalization, innovation and entrepreneurship: Business models for new technology-based firms
Parente R.C., Geleilate J.M.G., Rong K.	The sharing economy globalization phenomenon: A research agenda
Parguel B., Lunardo R., Benoit-Moreau F.	Sustainability of the sharing economy in question: When second-hand peer-to-peer platforms stimulate indulgent consumption
Perez-Perez C., Benito-Osorio D., Garcia-Moreno S.M.	New puppets in the old school: The applicability of traditional internationalisation theories in the sharing economy
Peukert C.	The next wave of digital technological change and the cultural industries
Poon S., Jevons C.	Internet-enabled international marketing: A small business network perspective
Punt M.B., van Kollem J., Hoekman J., Frenken K.	Your Uber is arriving now: An analysis of platform location decisions through an institutional lens
Puthusserry P., Khan Z., Knight G., Miller K.	How do rapidly internationalizing SMEs learn? Exploring the link between network relationships, learning approaches and post-entry growth of rapidly internationalizing SMEs from emerging markets
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