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INTERNATIONALIZATION ECOSYSTEMS: A SYSTEMATIC LITERATURE REVIEW IN SEARCH OF A NEW THEORETICAL FRAMEWORK

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Abstract

Objectives: This study systematically investigates the concept of internationalization ecosystems (INT-E) to evaluate the depth of existing research and assess the feasibility of a new theoretical framework that incorporates an ecosystemic perspective into contemporary International Business (IB) theories.
Methodology: Utilizing a systematic literature review (SLR) and thematic analysis, the study examined 67 articles from Science Direct, Scopus, and Web of Science to understand the dynamics, actors, and characteristics of internationalization ecosystems.
Relevance / originality: The concept of INT-E is nascent in the IB literature, with a noticeable lack of an ecosystemic approach to studying internationalization. This study validates existing models while identifying conceptual gaps, suggesting new research directions.
Main Results: Significant gaps were identified in the IB literature regarding internationalization ecosystems. However, the study supports a previously proposed conceptual framework that integrates business, entrepreneurial, innovation, and platform ecosystems.
Theoretical / methodological contributions: This study contributes theoretically by applying an SLR to the emerging concept of internationalization ecosystems, encouraging further research within IB Theory by focusing on INT-E as an independent entity.
Management Contributions: Practically, this study lays the groundwork for a future conceptual framework that can help organizations strategically position themselves within the context of internationalization. While the INT-E framework is still developing, these preliminary insights can enhance internationalization strategies across various dimensions.

Key Words: International Business (IB) Theories, Internationalization Ecosystems (INT-E), Systematic Literature Review (SLR)

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Ecossistemas de internacionalização: uma revisão sistemática da literatura em busca de um novo framework teórico

Resumo

Objetivos: Este estudo examina sistematicamente o conceito de ecossistemas de internacionalização (INT-E) para avaliar a profundidade das pesquisas existentes e explorar a viabilidade de um novo referencial teórico que integre uma perspectiva ecossistêmica nas teorias contemporâneas de Negócios Internacionais (IB).
Metodologia: Através de uma revisão sistemática da literatura (SLR) e análise temática, examinamos as pesquisas existentes sobre ecossistemas de internacionalização para entender suas dinâmicas, atores e características. No total, foram estudados 67 artigos encontrados no Science Direct, Scopus e Web of Science.
Relevância / originalidade: O conceito de ecossistemas de internacionalização (INT-E) permanece incipiente na literatura atual de IB, com uma notável ausência de uma abordagem ecossistêmica para estudar o fenômeno da internacionalização. No entanto, o estudo parece validar modelos apresentados anteriormente, ao mesmo tempo que identifica lacunas conceituais na literatura, abrindo novas vias para pesquisas futuras.
Principais Resultados: O estudo revelou lacunas significativas na literatura de IB sobre ecossistemas de internacionalização, mas também apoiou um referencial teórico previamente proposto que integra ecossistemas de negócios, empreendedorismo, inovação e plataformas.
Contribuições Teóricas / Metodológicas: O estudo contribui teoricamente ao focar em uma SLR aplicada ao conceito de ecossistema de internacionalização, que ainda é incipiente. Além disso, ao focar no ecossistema de internacionalização (INT-E) como uma entidade independente, incentiva a exploração de estudos sobre ecossistemas de internacionalização (INT-E) na Teoria de IB.
Contribuições Gerenciais: Em termos de implicações práticas, este estudo estabelece a base para um futuro referencial teórico que pode guiar organizações no posicionamento estratégico dentro do contexto de seus objetivos, dinâmicas e interações. Embora o referencial de ecossistema de internacionalização esteja em desenvolvimento, esta percepção preliminar já pode servir como uma ferramenta valiosa para aprimorar estratégias de internacionalização em várias dimensões.

Palavras-chave: Teoria de Negócios Internacionais (IB), Ecossistema de Internacionalização (INT-E), Revisão Sistemática da Literatura (RSL), Framework Teórico

Ecosistemas de internacionalización: una revisión sistemática de la literatura en busca de un nuevo framework teórico

Resumen

Objetivos: Este estudio examina sistemáticamente el concepto de ecosistemas de internacionalización (INT-E) para evaluar la profundidad de las investigaciones existentes y explorar la viabilidad de un nuevo marco teórico que integre una perspectiva ecosistémica en las teorías contemporáneas de Negocios Internacionales (IB).
Metodología: A través de una revisión sistemática de la literatura (SLR) y análisis temático, examinamos las investigaciones existentes sobre ecosistemas de internacionalización para comprender sus dinámicas, actores y características. En total, se estudiaron 67 artículos encontrados en Science Direct, Scopus y Web of Science.
Relevancia / originalidad: El concepto de ecosistemas de internacionalización (INT-E) sigue siendo incipiente en la literatura actual de IB, con una notable ausencia de un enfoque ecosistémico para estudiar el fenómeno de la internacionalización. Sin embargo, el estudio

parece validar modelos presentados anteriormente, al mismo tiempo que identifica lagunas conceptuales en la literatura, abriendo nuevas vías para investigaciones futuras.
Principales Resultados: El estudio reveló lagunas significativas en la literatura de IB sobre ecosistemas de internacionalización, pero también apoyó un marco conceptual previamente propuesto que integra ecosistemas de negocios, emprendedores, innovación y plataformas.
Contribuciones Teóricas / Metodológicas: El estudio contribuye teóricamente al centrarse en una SLR aplicada al concepto de ecosistema de internacionalización, que aún es incipiente. Además, al centrarse en el ecosistema de internacionalización (INT-E) como una entidad independiente, fomenta la exploración de estudios sobre ecosistemas de internacionalización (INT-E) en la Teoría de IB.
Contribuciones de Gestión: En términos de implicaciones prácticas, este estudio establece la base para un futuro marco conceptual que puede guiar a las organizaciones en su posicionamiento estratégico dentro del contexto de sus objetivos, dinámicas e interacciones. Aunque el marco de ecosistema de internacionalización está en desarrollo, esta percepción preliminar ya puede servir como una herramienta valiosa para mejorar las estrategias de internacionalización en varias dimensiones.

Palabras clave: Teoría de Negocios Internacionales (IB), Ecosistema de Internacionalización (INT-E), Revisión Sistemática de la Literatura (RSL), Framework Conceptual

Introduction

Internationalization is conceptualized in the scholarly literature as the process of increasing involvement in international markets, manifested through various forms such as foreign direct investment (FDI), joint ventures, initial public offering (IPOs), technology exchange, and exports (Costa, Calazans, Andrade & Araújo, 2024; Zahoor, Al-Tabbaa, Khan & Wood, 2020; Wentrup, Nakamura & Ström, 2020; Johanson & Vahlne, 2009, 1990, 1977). It encompasses a diverse range of organizations, from small and medium enterprises (SMEs) to multinational enterprises (MNEs), universities, technology centres, government agencies, and representatives from civil society, creating a complex and ever-evolving ecosystem (Luo, 2021; Johnson, Dahl & Mariussen, 2019; Sekliuckiene, Sedziniauskiene & Viburys, 2016; Distefano, Gambillara & Di Minin, 2016; Covi, 2016).

Factors such as trade liberalization, digital business models, technological innovations, foreign direct investment (FDI) accessibility, global business process outsourcing (BPOs), communication flow, and social media have elevated internationalization to a key driver for business growth and competitiveness (Henn et al., 2022).

The expansion of internationalization has led to the formation of global business ecosystems, networks of interconnected organizations that enhance competitiveness through

networking, knowledge sharing, and innovation (Costa et al., 2024; Luo, 2021; Johnson et al., 2019; Henn et al., 2022; Tekin et al., 2021; Odei & Stejskal, 2020). Understanding these ecosystems is crucial for socio-economic development, engaging policymakers, academics, and stakeholders from large corporations to SMEs (Hewett et al., 2022; Velt et al., 2018; Rasmussen & Petersen, 2017; Moore, 1993). Competition now extends beyond companies to entire ecosystems, including cities and nation-states, focusing on raising capital, attracting FDI, and creating hubs of innovation (Roig et al., 2020; Wentrup et al., 2020; Van Schijndel, 2019; Bradley et al., 2019).

Despite numerous studies in IB Theory exploring internationalization, supporting mechanisms, and company performance, there are significant gaps in the literature on ecosystems focused specifically on internationalization (Costa et al., 2024; Zahoor et al., 2020; Nambisan et al., 2019; Yonatany, 2017; Covi, 2016). Typically, internationalization ecosystems are seen as sub-ecosystems within entrepreneurship and innovation literature. These ecosystems bring together public and private actors to enhance internationalization efforts (Theodoraki & Catanzaro, 2021; Luo, 2021; Johnson et al., 2019). However, the scholarly discourse on these ecosystems is still emerging, with limited understanding of their impact on internationalization processes and the challenges posed by entities like start-ups (Yonatany, 2017; Rasmussen & Petersen, 2017; Knight & Liesch, 2016; Rong et al., 2015; Zalan, 2018).

Following Kraus, Breier & Dasí-Rodríguez (2020) as well as Palmatier, Houston & Hulland (2018), it is possible to argue that a systematic literature review is needed in order to explore a new perspective on internationalization ecosystems or (INT-E), as previously presented by Costa et al. (2024), providing a platform for a new conceptual framework to reconcile and extend past research, the focus needs to shift towards understanding how internationalization ecosystems are formed and expand beyond geographic boundaries, linking with other ecosystems through global networking (Rong, Kang & Williamson, 2022; Hult, Gonzalez-Perez & Lagerström, 2020; Schafer & Henn, 2018; Sørensen & Hu, 2014), instead of merely describing internationalization ecosystems as sub-categories within other ecosystems.

The current article seeks to explore how internationalization ecosystems are systematically conceptualized within IB theory, focusing on their formation, expansion, and interconnection across geographic boundaries. This will be done through a systematic literature review and thematic analysis, aiming to assess the feasibility of a new theoretical framework – the Internationalization Ecosystem (INT-E) proposed by Costa et al. (2024) – and its integration into contemporary IB theories.

Theoretical framework

The conceptual framework guiding this study (Costa et al., 2024; Costa, 2023) employs an internationalization ecosystem perspective, integrating four interrelated concepts: a) Business Ecosystems, which are economic communities supported by collaborative organizations and individuals, encompassing traditional business models, industries, multinational enterprises (MNEs), and clusters; b) Entrepreneurial Ecosystems, which focus on fostering innovative and high-growth ventures, including start-ups, scale-ups, and non-traditional business models; c) Innovation Ecosystems, which extend beyond economic realms to include the triple and quadruple helix perspective, emphasizing knowledge creation and exchange; and d) Platform Ecosystems, which represent digital business environments characterized by advanced technology, knowledge transfer, and collaboration. This comprehensive framework provides a robust foundation for understanding the dynamics of internationalization across diverse ecosystem dimensions.

Business Ecosystem (BE)

Originating from the Biological Sciences, the ecosystem concept primarily addresses the interdependence of biotic (living organisms) and abiotic (physical environment) factors. This concept has been adapted to the business environment to analyze the co-effects and co-evolution of organizations and their external surroundings. It encompasses the study of how various actors, including institutions and individuals within a non-centrally organized economic community, coexist, thrive, innovate, cooperate, and compete through informal arrangements (Costa et al., 2024; Hewett et al., 2022; Velt, Torkkeli & Saarenketo, 2018; Rasmussen & Petersen, 2017; Moore, 1993).

The ecosystemic perspective emphasize the dynamics and functions of a complex, multifaceted, and interdependent multi-system that spans different industries, geographies, and cultures (Tippmann et al., 2023; Moore, 1993). Ecosystems are inconstant evolution (Moore, 1993), exhibiting significant variation across nations and industries due to differing relationships amongst institutions, competitiveness levels, infrastructure types, business life cycles, and cultural specificities (Tippmann et al., 2023; Parente, Geleilate & Rong, 2018). Despite the emphasis in international business literature on the formation and configuration of international networks for the internationalization process, knowledge gaps remain regarding

the interdependence of international ecosystems, particularly concerning digital businesses (Costa et al., 2024; Kolagar, Reim, Parida & Sjödin, 2022; Parente, Geleilate & Rong, 2018).

Entrepreneurial Ecosystem (EE)

To understand economic, cultural, and social developments in entrepreneurship, the concept of the entrepreneurial ecosystem has gained prominence in literature (Ratten, 2021). This concept highlights the dynamic interactions amongst various actors, organizations, institutions, and business processes that coexist and evolve in a region (Gawel, 2021; Stolze & Sailer, 2021; Ratten, 2021; Schafer & Henn, 2018). It focuses on creating, growing, and scaling new businesses, diversifying economic bases, and promoting development at micro, meso, and macro levels (Ferreira, Fernandes & Veiga, 2023; Zahra & Hashai, 2022).

Entrepreneurial studies have rapidly advanced, varying widely in scope but unified in their aim to understand the actors and processes within an entrepreneurial ecosystem. A key area of interest is internationalization (Costa et al., 2024), explored both independently and in conjunction with other phenomena (Ferreira, Fernandes & Veiga, 2023; Theodoraki & Catanzaro, 2021). The internationalization perspective adds a new dimension to entrepreneurial ecosystems by incorporating global culture, which enhances opportunity recognition and network embeddedness (Ferreira, Fernandes & Veiga, 2023; Henn et al., 2022). Despite research on born global organizations, large multinational enterprises (MNEs), and cross-border platforms, a systematic approach to entrepreneurial internationalization remains unclear, particularly regarding internationalization support ecosystems (ISE) and other transnational bridges between entrepreneurial ecosystems (Hemmert et al., 2022; Theodoraki & Catanzaro, 2021).

Innovation Ecosystem (IE)

The concept of the innovation ecosystem is closely linked to entrepreneurship, where entrepreneurs play a key role in driving innovative economic systems (Ratten, 2021; Prokopenko, Emerenko & Omelyanenko, 2014). These ecosystems involve collaborative arrangements that facilitate the creation, dissemination, and use of knowledge and technology among interconnected actors, such as businesses, research centers, policymakers, and civil society representatives (Tippmann et al., 2023; Costa, 2022; Gawel, 2021; Sekliuckiene et al., 2016).

Innovation ecosystems are made up of interdependent domains, including science and technology outputs from higher educational institutions (HEIs), venture capital, and innovative

infrastructure like incubators, accelerators, and technology parks (Stolze & Sailer, 2021; Civera, Meoli & Vismara, 2019; Rodríguez-Gulías et al., 2016). Additionally, they include innovation demands from technology-oriented organizations, legal frameworks that support innovation, and human capital composed of skilled managers and engineers (Costa, 2022; Roig, Sun-Wang & Manfredi-Sánchez, 2020; Ray, Kathuria & Kumar, 2020; Odei & Stejskal, 2020; Rasmussen & Petersen, 2017; Prokopenko et al., 2014).

The literature extensively examines innovation systems, particularly the Triple Helix (TH) framework, which emphasizes the importance of collaboration among universities, industries, and government for driving economic, social, and technological progress globally (Etzkowitz et al., 2019; Champenois & Etzkowitz, 2018; Sørensen & Hu, 2014). This framework encourages synergistic collaboration among these actors to achieve measurable outcomes in international entrepreneurship (Costa, 2023; Baier-Fuentes, Guerrero & Amorós, 2021; Sørensen & Hu, 2014).

The TH framework, along with trans-institutional agreements, fosters synergy and cooperation, promoting open innovation (Ferrer-Serrano, Latorre-Martinez & Fuentelsaz, 2021; Etzkowitz et al., 2019; Champenois & Etzkowitz, 2018; Sørensen & Hu, 2014). Since Leydesdorff (2012), scholars have advocated for adding a fourth helix—civil society—as a critical participant, which often cultivates an open innovation culture that influences traditional interactions between universities, industry, and government in knowledge-based economies (Costa et al., 2024; Ikram et al., 2018; Distefano et al., 2016).

Global networking enhances innovation through cross-border collaborations among the scientific community, public institutions, private sector, and civil society (Baier-Fuentes et al., 2021). The Triple Helix (TH) model and its variants are essential for understanding internationalization ecosystem dynamics (Costa, 2022; Odei & Stejskal, 2020; Roig et al., 2020; Ray et al., 2020).

Costa et al. (2024) argue that the Triple and Quadruple Helix models can serve as internationalization frameworks, extending beyond regional collaboration to global open innovation. However, the internationalization patterns of these helixes remain unclear, with possibilities ranging from incremental paths to common strategies, necessitating further research (Civera, Meoli & Vismara, 2019; Rasmussen & Petersen, 2017; Distefano et al., 2016; Thurner, Gershman & Roud, 2015).

Digital Platforms Ecosystem (PE)

Globalization and business internationalization are increasingly driven by digital transition and digitization, creating new opportunities for businesses to enter global markets. This evolution involves diverse actors ranging from SMEs to MNEs, including the emergence of micro-multinational companies (Brouthers, Chen, Li, Shaheer, 2022; Luo, 2021; Nambisan, Zahra & Luo, 2019; Sooreea, Damodar, Sharma & Sooreea-Bheemul, 2018).

The success of platform-based business models has notably contributed to the formation of a global digital ecosystem, integrating various value chains (Hewett et al., 2022; Rong, Kang & Williamson, 2022; Ratten, 2021). These ecosystems thrive on flexible specialization and extensive collaboration across organizational, geographical, and cultural boundaries, surpassing the geographic limitations of traditional entrepreneurial ecosystems through digital innovation and enhancing global participation. This transformation has significant implications for conventional International Business theories (Ratten, 2021; Nambisan, Zahra & Luo, 2019; Zalan, 2018; Knight & Liesch, 2016).

Digital Platform Ecosystems (PEs), which encompass technology platforms, digital transition, servitization, digitization, and new disruptive business models, are a pervasive phenomenon influencing the dynamics of various business ecosystems. These ecosystems are characterized by fluidity, dynamism, disruption, and unpredictability, directly impacting the internationalization process (Nambisan, Zahra & Luo, 2019; Yonatany, 2017; Ramussen & Petersen, 2017). This influence introduces significant challenges, particularly in integrating ecosystems comprehensively and potentially leading to new levels of competitive advantage (Kolagar et al., 2022; Ciasullo, Montera, Mercuri, Mugova, 2022; Costa, 2022; Rong et al., 2018).

Methodology

The study sought to explore existing research and methodologies in the current literature that investigate internationalization ecosystems. The objective was to comprehend the nature of these studies, focusing on their approaches to understanding the dynamics, actors, and specific characteristics within these ecosystems, following the protocol utilized by Costa et al. (2024) to propose the concept of Internationalization Ecosystem (INT-E).

The research was composed of two main phases: Firstly, a detailed Systematic Literature Review (SLR) following the guidelines outlined by Kraus, Breier & Dasí-Rodríguez (2020),

Palmatier, Houston & Hulland (2018), and Denyer and Tranfield (2009); and secondly, a Thematic Analysis inspired by the methodologies of Guest, MacQueen, and Namey (2012), and Boyatzis (1998). This dual approach aimed to achieve theoretical saturation, defined as the ability to "link similar concepts and processes in different situations, experiences, contexts, and events" (Morse, 2018, p. 1398), thus facilitating the generation of collective insights and shared knowledge through a practical-grounded theoretical synthesis (Costa et al., 2024; Van Aken, 2004). Details about the research protocol can be seen in Table 1.

Table 1

Research Protocol

Protocol	Details
Database	Science Direct Scopus Web of Science
Search criteria	Article title Abstract and Keywords
Keywords	Internationalization AND Ecosystem Internationalization AND “Triple Helix” Internationalization AND “Quadruple Helix”
Subject Area	Business Management and Accounting (Scopus and Science Direct) Economics, Econometrics and Finance (Scopus and Science Direct) Management (Web of Science) Economics (Web of Science)
Document Type	Peer Reviewed Articles
Year	Open
Language	Any

Number of articles (excluding duplicates)	134
Qualitative selection criteria	Articles focusing on internationalization and ecosystems, exploring, directly or indirectly, the internationalization conditions, drivers, strategies, operations or theoretical foundations .
Number of articles (excluding duplicate articles)	67

Note. Based on Costa et al. (2024).

The study conducted a focused search on prominent databases – Science Direct, Scopus, and Web of Science – in June 2022, revisited in January 2023, with the aim of uncovering the complexities, dynamics, actors, and specific aspects inherent in the ecosystemic perspective of internationalization. Articles were selected based on analysis of their abstracts, objectives, research problem, and scope to extract meaningful insights and understand their theoretical foundations, while identifying patterns and gaps in the literature (Morse, 2018; Higgs & Trede, 2010). This systematic categorization facilitated data organization and revealed significant insights (Zahoor et al., 2020; Guest, MacQueen & Namey, 2012).

Thematic Analysis, guided by protocols from Guest, MacQueen, and Namey (2012) and Boyatzis (1998), involved deriving emergent categories from collected data. This process included familiarization with data, initial coding, identification of recurring patterns, comprehensive review and refinement of themes, explicit definition of identified themes, and development of the research report. Through this systematic approach, a comprehensive understanding of synthesized themes from the literature was achieved, ensuring rigorous analysis.

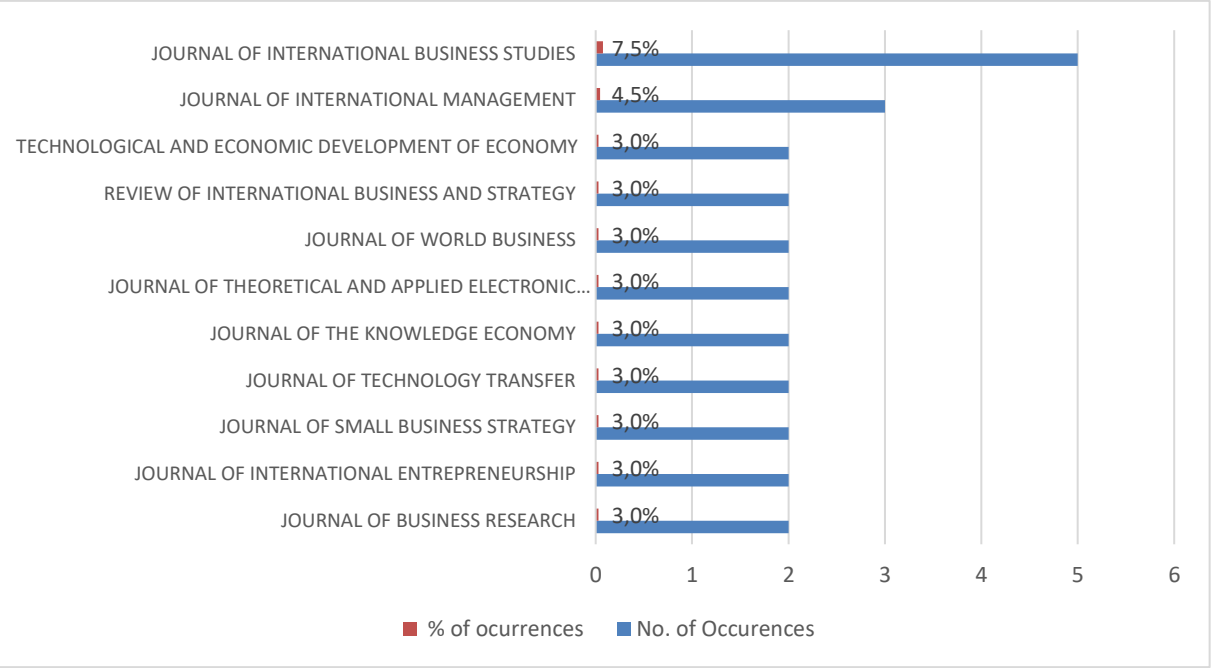
Results and Discussions

Journals, authors and publication date analysis

The 67 articles analyzed were found in a total of 52 different journals. Details about the journals with largest number of articles analyzed can be seen on Figure 1.

Figure 1

Journal Analysis



It was noticed that there are a large variety of periodicals (52 in total) with relevant articles fitting the research criteria. Despite their focus on the internationalization phenomenon as a whole, few periodicals presented a considerable number of relevant articles, except for the *Journal of International Business Studies*, with five articles or 7,5% of the total and *The Journal of International Management*, with three articles, or 4,5% of the total.

An explanation for this scenario may derive from the fact that, albeit internationalization is a largely explored theme from many different angles across a considerable timespan (e.g. Ferreira, Fernandes & Veiga, 2023; Costa, 2022; Luo, 2021; Hult, Gonzales-Perez & Lagerström; 2020; Santangelo & Meyer, 2017; Knight & Liesch, 2016; Johanson & Kao, 2010; Johanson & Vahlne, 2009, 1990, 1977); internationalization ecosystem seems to be still an incipient topic, since the majority of articles studied dealing with that thematic focus primarily on entrepreneurial ecosystems (e.g. Zahra & Hashai, 2022; Gawel, 2021; Stolze & Sailer, 2021; Ratten, 2021; Theodoraki & Catanzaro, 2021); business ecosystems (e.g. Tippmann et al., 2023; Rong, Kang & Williamson, 2022; Hult, Gonzales-Perez & Lagerström, 2020; Nambisan, Zahra & Luo, 2019), innovation ecosystems (e.g. Roig, Sun-Wang & Manfredi-Sánchez, 2020; Prokopenko, Emerenko & Omelyanenko, 2014), and to a lesser, albeit growing extent, platform ecosystems (Tippmann et al., 2023, Cha, Kotabe & Wu, 2023; Nambisan, Zahra & Luo, 2019). Internationalization, however, is seen as an essential element in any of those studies, which gives merit to a research focused on internationalization ecosystems.

In total, 175 authors appeared in the 67 articles analyzed, an average of 2,6 authors per article. However, 9 authors, or 5% of the total had more than one publication, based on the current research protocol, as presented in Table 2.

Table 2

Key Authors (more than one publication)

Author	Occur.	Journals	Citation
Rong, K.	3	J. Int. Manag. J. Int. Manag. J. Int. Manag.	Rong, Kang & Williamson (2022) Parente, Geleilate & Rong (2018) Rong et al. (2015)
Ambos, T.C.	2	J. World Bus. J. Int. Bus. Stud.	Tippmann et al. (2023) Tatarinov, Ambos & Tschang (2022)
Costa, J.	2	Economies J. Theor. Appl. Electron. Commer. Res.	Costa (2022) Costa & Castro (2021)
Di Minin, A.	2	Technovation J. Knowl. Econ.	Del Sarto, Isabelle & Di Minin (2020) Distefano, Gambillara & Di Minin (2016)
Hult, G. T. M.	2	Int. J. Mark. Res. J. Int. Bus. Stud.	Hewett et al. (2022) Hult, Gonzales-Perez & Lagerström (2020)
Luo, Y.	2	Int. Bus. Rev. J. Int. Bus. Stud.	Luo, (2021) Nambisan, Zahra & Luo (2019)
Wu, J.	2	Manag. Int. Rev. J. Int. Manag.	Cha, Kotabe & Wu (2022) Rong et al. (2015)
Zahra, S. A.	2	J. Int. Bus. Policy. J. Int. Bus. Stud.	Zahra & Hashai (2022) Nambisan, Zahra & Luo (2019)

Ratten, V.	2	Knowl. Manag. Res. Pract. Thunderbird Int. Bus. Rev.	Ratten (2021) Ratten & Thompson (2020)

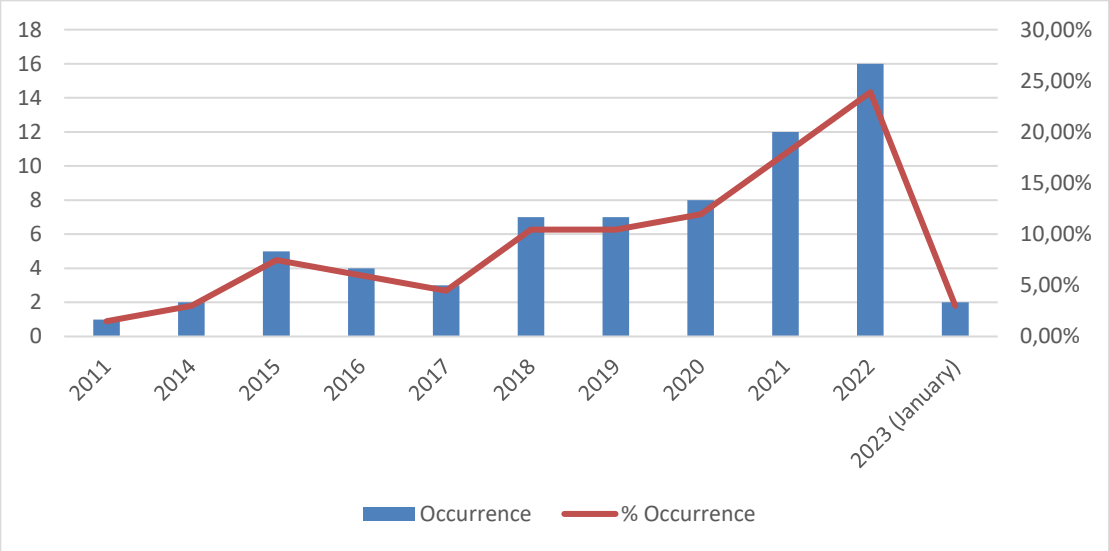
Note. Based on Costa et al. (2024).

The limited number of authors with more than one occurrence in the current research, might be explained by the same reasons for the low number of periodicals with multiple relevant articles.

Figure 2 displays the publication years since 2011, presenting a considerable growth curve, especially between the years of 2018 and 2022.

Figure 2

Publication years



Based on Figure 2, it seems that there is a possibility that internationalization ecosystem related themes, despite their incipience in scientific literature, are growing in relevance,

showing the contours of a new conceptual framework or theory (Tatarinov, Ambos & Tschang, 2022; Rong, Kang & Williamson, 2022; Theodoraki & Catanzaro, 2021; Nambisan, Zahra & Luo, 2019; Velt, Torkkeli & Saarenketo, 2018).

Research Objectives Analysis

Following a thematic analysis, Table 3 presents the categories based on the different objectives found in the selected articles; the subthemes related to the main category analyzed as well as the key works within those categories.

Table 3

Objectives: Thematic Categories

Objective Category	Theme	Works
Influence of different factors or players on the entrepreneurial and/or internationalization ecosystem	Networking, supply chain and knowledge sharing	Magni et al. (2022); Santoro et al. (2021); Ikram et al. (2018); Sekliuckiene, Sedziniauskiene & Viburys (2016); Rong et al. (2015); Musso & Francioni (2015); Siripitakchai, Miyazaki & Ho (2015).
	Entrepreneurial and/or local ecosystems and internationalization	Lachman & Lópes (2022); Pereira & Ogasavara (2022); Tekin, Ramadani & Dana (2021); Ratten (2021); Ratten & Thompson (2020); Odei & Stejskal (2020); Roig, Sun-Wang & Manfredi-Sánchez (2020); Wentrup, Nakamura & Ström (2020); Ray, Kathuria & Kumar (2020); Hemmert et al. (2019); Sooreea et al. (2018); Schafer & Henn (2018); Rasmussen & Petersen (2017); Covi (2016); Thurner, Gershman & Roud (2015).
	Tangible and Intangible resources	Costa (2022); Buyukbalci & Dulger (2022); Fakhreldin (2021); Prokopenko, Eremenko and Omelyanenko (2014).
	Digital transition, digitalization and platforms	Ciasullo et al. (2022); Tatarinov, Ambos & Tschang (2022); Kolagar et al. (2022); Gawel (2021); Costa & Castro (2021); Nambisan, Zahra & Luo (2019).

Objective Category	Theme	Works
	U-I Dynamics, TH model and academic entrepreneurship	Corsi et al. (2022); Stolze & Sailer (2021); Ferrer-Serrano, Latorre-Martinez & Fuentelsaz (2021); Civera, Meoli & Vismara (2019); Roigas, Mohnen & Varblane (2018); Rodríguez-Gulías, Fernández-López & Rodeiro-Pazos (2016).
	Business incubators and accelerators	Del Sarto, Isabelle & Di Minin (2020); Bartlett & Mroczkowski (2019);
Theoretical/Conceptual Model or Framework development in entrepreneurial and internationalization ecosystem	Internationalization performance, scaling or digital transition	Ferreira, Fernandes & Mota Veiga (2023); Tippmann et al. (2023); Brouthers, Chen and Shaheer (2022); De Cock, Andries & Clarysse (2021); Sharif & Baark (2011).
	Marketing ecosystem orquestration, sharing economy and strategic resources for internationalization	Hewett et al. (2022); Cha, Kotabe & Wu (2022); Zahoor et al. (2020); Parente, Geleilate & Rong (2018); Simba (2015).
	Barriers, challenges and liabilities within internationalization ecosystems	Rong, Kang & Williamson (2022); Luo (2021); Johnson, Dhal & Mariussen (2019)
	Entrepreneurial process and internationalization	Henn et al. (2022); Theodoraki & Catanzaro (2021); Van Schijndel (2019); Velt, Torkkeli & Saarenketo (2018).
	U-I Dynamics, TH model and academic entrepreneurship	Baier-Fuentes, Guerrero & Amorós (2021); Sørensen (2014).
	Evaluation of theoretical models and their evolution	Hult, Gonzales-Perez & Lagerström (2020); Zalan (2018); Santangelo & Meyer (2017); Yonatany (2017); Distefano, Gambillara & Di Minin (2016).
Government and Public policy	Clusters	Kuberska & Mackiewicz (2022).
	Mergers & acquisitions policies	Zahra & Hashai (2022).
	Cross-border venture capital investment	Bradley et al. (2019).

Note. Based on Costa et al. (2024).

The first category reflects the search for understanding the different factors, players or phenomena within and without the busines ecosystems that are related directly or indirectly with internationalization. The studies may have focused on isolated players on entire ecosystems, but they are predominantly case studies (see Table 4). It is important to notice that objectives related to entrepreneurial ecosystem are the most predominant within the current research. It seems that a framework for internationalization ecosystem has to be grounded into an international entrepreneurial perspective, drawing the relevant empirical and theoretical elements.

Networking and knowledge sharing are fundamental aspects of that category, including university-industry dynamics as well as the triple and quadruple helix perspective, which were

placed into different subcategories only to distinguish the more academic oriented elements of networking, since they are fundamentally intertwined (Baier-Fuentes, Guerrero & Amorós, 2021; Santoro et al., 2021; Ikram et al, 2018; Roigas, Mohnen & Varblane, 2018; Distefano, Gambillara & Di Minin, 2016; Sørensen & Hu, 2014; Sharif & Baark, 2011).

It is relevant to notice the profound significance of the digital economy at the very core of that category. Several forms of internationalization and advanced entrepreneurial ecosystem perspectives are related to the digital economy scenario (Hewett et al., 2022; Rong, Kang & Williamson, 2022; Ratten, 2021), which implies that no framework on internationalization ecosystem can be complete or even useful without considering the digital aspects of modern economy and ecosystems (Kolagar et al., 2022; Costa, 2022; Nambisan, Zahra & Luo, 2019; Rong et al., 2018).

The second category of objectives encompasses theoretical and conceptual works focused on different aspects of internationalization. That category is quite prominent, given that RSL and bibliographic analysis were the technical procedure most used in the selected articles. However, those works were not devoid of practical applicability, as it is shown in subcategories focusing on Internationalization performance and scaling, marketing orchestration, barriers to internationalization, the entrepreneurial process and networking, which may point out to a pattern of well-developed pragmatic managerial works, balancing rigor and relevance in relation to managerial knowledge as recommended by Wickert et al. (2021).

The table highlights the significance of an ecosystemic perspective in understanding the internationalization context by emphasizing various factors influencing the internationalization ecosystem. It encompasses diverse themes like knowledge networks, tangible and intangible resources, digital transition, and digital platforms, reflecting the ecosystem's complexity and the need for a holistic approach. Whilst studies on theoretical model and framework development are present, their focus on internationalization, performance, and digital transition suggests that the full integration of an ecosystemic perspective in IB theories is still in its early stages.

Research Methods Analysis

The research methodologies were analyzed and grouped into three categories: research type, method and technical procedure. Overall details can be seen in Table 4.

Table 4

Research nature and instruments

Research type	Total	Research Methods	Total	Technical Procedures	Total
Descriptive	51%	Quali-Quanti	15%	Bibliographic and Documental Research	22%
Explanatory	6%	Qualitative	66%	Case Study	22%
Exploratory	34%	Quantitative	19%	Multicase Study	12%
Exploratory & Descriptive	9%			Regression Analysis	7%
				Surveys	6%
				In-depth interviews and other qualitative Methods	4%
				Systematic Literature Review	3%
				Panel data	3%

Note. Based on Costa (2023).

One noteworthy observation relates to the significant prevalence of descriptive research within the different articles, comprising over 50% of all studies. As noted by Saunders, Lewis & Thornhill (2016), descriptive research serves as a valuable methodological approach for delineating characteristics, trends, patterns, and categories within diverse contexts, particularly in instances where a comprehensive understanding of the research topic or problem is lacking.

This underscores the necessity for studies investigating the internationalization ecosystem, which, still in its formative stages, necessitates an overarching comprehension of the phenomena before delineating causal relationships or developing robust theoretical frameworks (Costa, 2023; Brouthers et al., 2022). This assertion gains further credence from the predominance of qualitative studies, constituting 66% of the total, which are geared towards

eliciting insights into individuals or phenomena to elucidate reality and engender the development of explanatory models and theories (Saunders, Lewis & Thornhill, 2016) .

Ferreira, Fernandes & Veiga (2023) argue that given that entrepreneurial ecosystems are an evolutive phenomenon that encompass concepts from different streams of business literature and are further convoluted due to the presence of multiple stakeholders with fluid roles, the theme is very relevant, however, most studies remain conceptual, with few empirical studies and even fewer studies with quantitative methodologies. Taking into account that internationalization ecosystem is a concept still in formation, but has considerable epistemological ties with entrepreneurial ecosystem, it is likely that it will be faced by the same challenges, demanding the same approaches to further investigate its nature in order to build robust and impactful research (Costa et al., 2024; Wickert et al., 2021).

Those impressions are further reinforced when analyzing the major technical procedures found in the selected works. 22% were bibliographical and documental and, most importantly, close to 35% were predominantly single or multiple case studies. Despite the apparent lack of studies focusing on internationalization ecosystems, there are some conceptual studies as well as empirical ones, albeit isolated and focused on describing different angles of the internationalization ecosystem phenomenon (See Table 3). These studies, given their ample theoretical background and observable impact (See Tables 5 and 6 respectively), may compose a robust conceptual/empirical basis for the development of a framework on internationalization ecosystem as they already have identified several main variables, components, themes and issues within and around the topic.

Key Theoretical Background

It was possible to identify seven key Theoretical Background categories in the works analyzed. The identification of the categories followed the thematic analysis presented by Guest, MacQueen, & Namey and Boyatizis, (1998), also observing other relevant SLR and theoretical works analyzed in the current studies (e.g. Tippmann et al., 2023; Hewett et al., 2022; Brouthers, Chen & Shaheer, 2022; Zahoor et al., 2020; Hult, Gonzalez-Perez & Lagerström, 2020; Nambisan, Zahra & Luo, 2019; Santangelo & Meyer, 2017). Each category found is composed by a vast conceptual framework that is conceptually and empirically interconnected, mapping the theory landscape (Higgs & Trede, 2010; Denyer & Tranfield, 2009). Table 5 presents the key theoretical themes alongside their subthemes and frequency found in the studied articles.

Table 5

Theoretical Themes and Subthemes

Key Theoretical Background	Conceptual Framework	Key Authors
Internationalization Business Theory, Strategy and Operations	Internationalization performance Business growth Scaling ecosystems Cross border strategy Marketing ecosystem orquestration International relationship marketing Entry modes Family business Uppsala model Born globals Eclectic paradigm Collaborative internationalization Global governance Reverse-internalization theory International production network (IPM)	Ferreira, Fernandes & Mota Veiga (2023); Tippmann et al. (2023); Kolagar et al. (2022); Hewett et al. (2022); Magni et al. (2022); Brouthers, Chen and Shaheer (2022); Rong, Kang & Williamson (2022); Costa (2022); Ciasullo et al. (2022); Pereira & Ogasavara (2022); Henn et al. (2022); Cha, Kotabe & Wu (2022); Tatarinov, Ambos & Tschang (2022); Buyukbalci & Dulger (2022); Corsi et al. (2022); Fakhreldin (2021); Baier-Fuentes, Guerrero & Amorós (2021); Luo (2021); Theodoraki & Catanzaro (2021); Gawel (2021); De Cock, Andries & Clarysse (2021); Santoro et al. (2021); Zahoor et al. (2020); Hult, Gonzales-Perez & Lagerström (2020); Odei & Stejskal (2020); Roig, Sun-Wang & Manfredi-Sánchez (2020); Wentrup, Nakamura & Ström (2020); Ray, Kathuria & Kumar (2020); Del Sarto, Isabelle & Di Minin (2020); Civera, Meoli & Vismara (2019); Nambisan, Zahra & Luo (2019); Van Schijndel (2019); Parente, Geleilate & Rong (2018); Velt, Torkkeli & Saarenketo (2018); Zalan (2018); Sooreea et al. (2018); Santangelo & Meyer (2017); Yonatany (2017); Sekliuckiene, Sedziniauskiene & Viburys (2016); Distefano, Gambillara & Di Minin (2016); Simba (2015); Rong et al. (2015); Thurner, Gershman & Roud (2015); Musso & Francioni (2015); Sørensen (2014).

Key Theoretical Background	Conceptual Framework	Key Authors
	Global supply chain/network (GSN) theories	
Entrepreneurial Ecosystems	Small open economies acquisitions Local support ecosystems Economic resilience Geographic entrepreneurship Entrepreneurship theory Institutional entrepreneurial activity Academic entrepreneurship/ spin-offs Technology-based university spin-offs (T-USOS) Entrepreneurship policy Higher education institutions' third mission Mixed embeddedness theory Sports entrepreneurship Returnee entrepreneurship Entrepreneurial discovery process (EDP) Support systems	Rong, Kang & Williamson (2022); Ciasullo et al. (2022); Pereira & Ogasavara (2022); Magni et al. (2022); Buyukbalci & Dulger (2022); Kuberska & Mackiewicz (2022); Fakhreldin (2021); Baier-Fuentes, Guerrero & Amorós (2021); Costa & Castro (2021); Ratten & Thompson (2020); Ray, Kathuria & Kumar (2020); Bartlett & Mroczkowski (2019); Nambisan, Zahra & Luo (2019); Hemmert et al. (2019); Van Schijndel (2019); Bradley et al. (2019); Johnson, Dhal & Mariussen (2019); Ikram et al. (2018); Santangelo & Meyer (2017); Rasmussen & Petersen (2017); Rodríguez-Gulías, Fernández-López & Rodeiro-Pazos (2016); Covi (2016); Simba (2015); Rong et al. (2015); Musso & Francioni (2015); Siripitakchai, Miyazaki & Ho (2015); Prokopenko, Eremenko and Omelyanenko (2014).

Key Theoretical Background	Conceptual Framework	Key Authors
	International/ transnational entrepreneurship Local collective entrepreneurship	
Innovation: Strategy and Operations	Triple Helix University - Industry collaboration/ cooperation Network theory Open innovation Innovation networks Innovation ecosystems Interorganizational network Lean start-ups Quadruple Helix National Innovative Systems Design Theory Research technology organizations (RTOs)	Hewett et al. (2022); Corsi et al. (2022); Stolze & Sailer (2021); Baier-Fuentes, Guerrero & Amorós (2021); Ferrer-Serrano, Latorre-Martinez & Fuentelsaz (2021); Santoro et al. (2021); Odei & Stejskal (2020); Johnson, Dhal & Mariussen (2019); Bartlett & Mroczkowski (2019); Hemmert et al. (2019); Van Schijndel (2019); Sooreea et al. (2018); Ikram et al. (2018); Roigas, Mohnen & Varblane (2018); Rasmussen & Petersen (2017); Covi (2016); Sekliuckiene, Sedziniauskiene & Viburys (2016); Distefano, Gambillara & Di Minin (2016); Simba (2015); Prokopenko, Eremenko and Omelyanenko (2014); Sørensen (2014); Sharif & Baark (2011).
Digital Ecosystems, platforms and transition	Digital entrepreneurial ecosystems Digital (platform) ecosystems Digital Internationalization 4.0 Technologies Digital transformation Omnichannel strategy Digital solutions Digital servitization Digital Firms Digital economy	Ferreira, Fernandes & Mota Veiga (2023); Brouthers, Chen and Shaheer (2022); Rong, Kang & Williamson (2022); Lachman & Lópes (2022); Ciasullo et al. (2022); Kolagar et al. (2022); Tatarinov, Ambos & Tschang (2022); Buyukbalci & Dulger (2022); Luo (2021); Costa & Castro (2021); Ratten & Thompson (2020); Wentrup, Nakamura & Ström (2020); Nambisan, Zahra & Luo (2019); Zalan (2018); Rasmussen & Petersen (2017).

Key Theoretical Background	Conceptual Framework	Key Authors
	e-commerce and e-marketing Digitization Digital entrepreneurship Digital business models Blockchain fundamentals Social networks	
Knowledge Management	Hayek's knowledge economy approach Sharing economy Knowledge transfer Knowledge sourcing strategy Transnational learning Knowledge spillover Absorptive capacity Rapid knowledge development model	Cha, Kotabe & Wu (2022); ; Ferrer-Serrano, Latorre-Martinez & Fuentelsaz (2021); Santoro et al. (2021); Ratten (2021); Civera, Meoli & Vismara (2019); Johnson, Dhal & Mariussen (2019); Parente, Geleilate & Rong (2018); Roigas, Mohnen & Varblane (2018); Schafer & Henn (2018); Simba (2015).
Organizational, Behavior & Governance	Organizational design Social cognitive theory of motivation Imprinting Stakeholder theory Regional governance Network approach theory Evolutionary theory Co-evolutionary theory	Fakhreldin (2021); De Cock, Andries & Clarysse (2021); Ratten & Thompson (2020); Johnson, Dhal & Mariussen (2019); Civera, Meoli & Vismara (2019); Santangelo & Meyer (2017); Yonatany (2017); Simba (2015); Siripitakchai, Miyazaki & Ho (2015).

Nota. Based on Costa (2023).

Given the internationalization orientation taken on this study, it is reasonable to expect that the key theoretical framework is about IB theories in their many forms. 67% of the articles

addressed the theme directly, centering their analysis in the vast extant theoretical body on the phenomenon. It is interesting to notice that from classical thematic revisions about the Uppsala Model (e.g. Hult, Gonzalez-Perez & Lagerström, 2020) or the Eclectic Paradigm (e.g. Parente, Geleilate & Rong, 2018) also involving the challenges presented with born global organizations (e.g. Parente, Geleilate & Rong, 2018; Velt, Torkkeli & Saarenketo, 2018; Zalan, 2018), global supply chain and network theories (e.g. Luo, 2021; Simba, 2015), the role of scaling ecosystems (e.g. Tippmann et al., 2023) and the need for marketing ecosystem orquestration (e.g. Hewett et al., 2022); it is possible to perceive internationalization as an ever-evolving phenomenon, sometimes difficult to replicate, as it is influenced from individual and local characteristics, which demands constant studies to adapt the extant theoretical framework (e.g. Kolagar et al., 2022; Theodoraki & Catanzaro, 2021; Yonatany, 2017; Sekliuckiene, Sedziniauskiene & Viburys, 2016; Covi, 2016). A key element in the theoretical background is the fact that IB theories have not dived deeply into the internationalization ecosystem perspective yet, which opens a whole new venue of research opportunities (Costa et al., 2024).

Further to the IB theory, the most recurrent theoretical body presented in the literature review was related to entrepreneurial ecosystems, 37% of the studies focused on this theme (e.g. Ferreira, Fernandes & Mota Veiga, 2023; Henn et al., 2022; Tekin, Ramandani & Dana, 2021), from different perspectives such as entrepreneurship and innovation through T-Usos (e.g. Rodríguez-Gulías, Fernández-López, Rodeiro-Pazos, 2016), academic spin-offs (e.g. Civera, Meoli & Vismara, 2019), HEIs third mission (e.g. Stolze & Sailer, 2021), digital businesses (e.g. Ratten & Thompson, 2020), international cooperation (e.g. Tekin, Ramandani & Dana, 2021); SMEs internationalization (e.g. Fakhreldin, 2021), cluster strategy (e.g. Ikram et al., 2018) and Start-ups internationalization strategy (e.g. Gawel, 2021).

Entrepreneurship and entrepreneurial ecosystems are presented from diverse angles, from large organizations to SMEs in local and transnational collective entrepreneurial ecosystems. It is increasingly difficult to distinguish entrepreneurial ecosystems from internalization initiatives as well as innovation strategies, it seems that innovative cross-border initiatives are the core of entrepreneurial ecosystems (e.g. Henn et al., 2022; Theodoraki & Catanzaro, 2021; Sørensen & Hu, 2014), which indicates that any attempt to develop an internationalization ecosystem analysis or framework will have to embrace entrepreneurial ecosystems as one of its fundamental elements.

The TH model and its variants seems to be one of the most complete models to explain ecosystem dynamics towards innovation, involving RTOs, National Innovative Systems, different levels of cooperation and interorganizational networking. (e.g. Baier-Fuentes,

Guerrero & Amorós, 2021; Distefano, Gambillara & Di Minin, 2016; Sørensen & Hu, 2014). The TH Model also presents a robust theoretical and pragmatic model to support internationalization, not just to bring producers close to consumers, as in other networking models, but also to increase inter-ecosystem cooperation, raising the internationalization concept beyond market relationship to open innovation ecosystems involving actors in academia, industry, government and civil society (e.g. Baier-Fuentes, Guerrero & Amorós, 2021; Van Schijndel, 2019). It seems that is not conceptually feasible to develop an internationalization ecosystem framework without taking into account the TH model and its variances.

Digital platforms play an essential role into the internationalization process of industries and whole entrepreneurial ecosystems (Ferreira, Fernandes & Veiga, 2023; Cha, Kotabe & Wu, 2023). Entrepreneurial ecosystems and innovation ecosystems are profoundly interlinked with digital technologies and platforms (Buyukbalci & Dulger, 2022; Nambisan, Zahra & Luo, 2019), and the internationalization process has become more dynamic and ubiquitous, due to new technologies, to a point in which it is hard to conceive internationalization as a distinct phenomenon from digital transition, digitization and digital platforms.

Another fundamental aspect regarding internationalization ecosystems which is interlinked with all other key theoretical background present is the emphasis on knowledge management, knowledge transfer and sourcing strategy as well as organization learning and networking (e.g. Ratten, 2021; Stolze & Sailer, 2021; Ferrer-Serrano, Latorre-Martinez & Fuentelsaz, 2021; Thurner, Gershman & Roud, 2015). Internationalization is presented as a learning process which can be optimized in an ecosystem that facilitates knowledge transfer and spillovers, both local and transnational, occurring mainly through successful networking.

Research Geography and Scope

Mapping the geography and scope of the studies analyzed is vital for the literature review (Saunders, Lewis & Thornhill, 2016, Denyer & Tranfield, 2009). We have analyzed all the countries/regions in which the studies took place as well as the universe analyzed within those regions.

The European Continent, more precisely the European Union member countries, compose the majority of the geography for internationalization ecosystem related studies. It is interesting to notice that the vast majority of the organizations studied they are either digital

business or business undergoing a digital transition process (e.g. Rong, Kang & Williamson, 2022; Hewett et al., 2022; Brouthers, Chen, Li, Shaheer, 2022; Luo, 2021; Ratten, 2021; Nambisan, Zahra & Luo, 2019).

There are a considerable variety of organization analyzed, specifically SMEs, which reinforce the notion of early internationalization and born global firms and its widespread importance for business development (e.g. Fakhreldin, 2021; Ferrer-Serrano, Latorre-Martinez & Fuentelsaz, 2021; Ray, Kathuria & Kumar, 2020; Johnson, Dhal & Mariussen, 2019, Zalan, 2018). Italy rises as the country with the largest number of studies encompassing start-ups as well as traditional agri-food businesses.

Emerging economies are also widely present in the studies, Argentina, Brazil, China, Mexico, Egypt, India, Morocco, Russia and Turkey are analyzed for different types of organizations, including SMES, start-ups, MNEs and other relevant ecosystem actors, there are also studies focused on South America, BRICs and Eastern European countries.

Some of the studies focus closely on the concept of ecosystems in their research universe instead of in specific industries, mainly centered on national innovation systems (e.g. Ferrer-Serrano, Latorre-Martinez & Fuentelsaz, 2021; Distefano, Gambillara & Di Minin, 2016; Prokopenko, Eremenko & Omelyanenko, 2014); public and private internationalization support organizations (e.g. Magni et al., 2022; Corsi et al., 2022; Theodoraki & Catanzaro, 2021; Roig, Sun-Wang & Manfredi-Sánchez, 2020); entrepreneurial ecosystems (e.g. Henn et al., 2022; Stolze & Sailer, 2021; Baier-Fuentes, Guerrero & Amorós, 2021; Schafer & Henn, 2018); clusters and business ecosystem partnerships (e.g. Kuberska & Mackiewicz, 2022; Rong et al., 2015).

Results categories

The results found in each work were analyzed *vis-à-vis* the objectives previously established, in order to identify the essential elements of each contribution and distinguish them from possible accidental or unplanned contributions (Wickert et al., 2021; Saunders, Lewis & Thornhill, 2016).

The current authors strived to place each work in a single category based on their main results. However, some of the works are placed in multiple categories when the contributions are clearly expressed and presented separately in the original work, that is, when it is possible to find different thematic categories (Guest, MacQueen, & Namey, 2012; Boyatzis, 1998). The five results categories found are presented in Table 6:

Table 6

Results Categories

Results Category	Key thematic areas	Authors
Internationalization ecosystem strategy, operations and performance optimization	Supporting agents and internationalization ecosystems	Prokopenko, Eremenko and Omelyanenko (2014)
	SMEs and / or family business internationalization model, strategy and ecosystems	Ferreira, Fernandes & Mota Veiga (2023); Costa (2022); Fakhreldin (2021); Santoro et al. (2021)
	Entrepreneurial and internationalization driven networking	Lachman & Lópes (2022); Ratten & Thompson (2020); Schafer & Henn (2018); Musso & Francioni (2015)
	Entrepreneurial ecosystem structuration, expansion and internationalization	Pereira & Ogasavara (2022); Buyukbalci & Dulger (2022); Ratten (2021); Gawel (2021); De Cock, Andries & Clarysse (2021); Hemmert et al. (2019); Hemmert et al. (2019); Sooreea et al. (2018); Rong et al. (2015)
	International entrepreneurship collaboration/cooperation	Tekin, Ramadani & Dana (2021); Stolze & Sailer (2021); Roig, Sun-Wang & Manfredi-Sánchez (2020); Roigas, Mohnen & Varblane (2018); Thurner, Gershman & Roud (2015)
	Innovation ecosystems and internationalization expansion	Odei & Stejskal (2020); Sekliuckiene, Sedziniauskiene & Viburys (2016); Prokopenko, Eremenko and Omelyanenko (2014)
	Knowledge sharing and internationalization	Magni et al. (2022); Ray, Kathuria & Kumar (2020); Bartlett & Mroczkowski (2019)
	Triple and Quadruple Helix internationalization dynamics	Corsi et al. (2022); Baier-Fuentes, Guerrero & Amorós (2021); Ferrer-Serrano, Latorre-Martinez & Fuentelsaz (2021); Johnson,

Results Category	Key thematic areas	Authors
		Dhal & Mariussen (2019); Ikram et al. (2018)
	Business incubators and accelerators	Del Sarto, Isabelle & Di Minin (2020)
	Academic spinoffs and university entrepreneurship	Civera, Meoli & Vismara (2019); Rodríguez-Gulías, Fernández-López & Rodeiro-Pazos (2016)
Theoretical and conceptual contributions on internationalization ecosystems	Marketing Ecosystem Orchestration	Hewett et al. (2022)
	Entry modes	Brouthers, Chen and Shaheer (2022)
	Digital firms, platforms and ecosystems internationalization	Tippmann et al. (2023); Rong, Kang & Williamson (2022); Zalan (2018); Tatarinov, Ambos & Tschang (2022)
	Internationalization and international entrepreneurship process	Henn et al. (2022); Theodoraki & Catanzaro (2021); Zahoor et al. (2020); Hult, Gonzales-Perez & Lagerström (2020); Van Schijndel (2019); Velt, Torkkeli & Saarenketo (2018); Santangelo & Meyer (2017); Yonatany (2017); Siripitakchai, Miyazaki & Ho (2015)
	Sharing economy and knowledge economy	Cha, Kotabe & Wu (2022); Parente, Geleilate & Rong (2018); Simba (2015)
	OLI Advantages	Luo (2021); Nambisan, Zahra & Luo (2019)
	Triple and Quadruple Helix internationalization theory	Distefano, Gambillara & Di Minin (2016); Sørensen (2014)
Effects of digital transition and technologies on internationalization ecosystems	Digital servitization/ Digitization strategy	Kolagar et al. (2022)
	Digital Platforms and ecosystems internationalization	Ciasullo et al. (2022); Tatarinov, Ambos & Tschang (2022); Rasmussen & Petersen (2017)
	e-commerce	Costa & Castro (2021)
	Digital entrepreneurship	Wentrup, Nakamura & Ström (2020)
Public policy impact on internationalization ecosystems	Cluster performance and policy	Kuberska & Mackiewicz (2022); Covi (2016)
	Acquisitions	Zahra & Hashai (2022)
	Cross-border VC investments	Bradley et al. (2019)

Note. Based on Costa (2023).

The first category with more than 50% of the results analyzed was the *Internationalization ecosystem strategy, operations and performance optimization.* That category encompasses the articles whose contribution are focused on practical and objective knowledge, focused on understanding or improving performance directly related to internationalization. The studies were carried out in different types of organizations and geographical locations, which points to the diversity of academic efforts aimed at improving internationalization operations and performance.

The second category with the largest number of occurrences was *Theoretical and conceptual contributions on internationalization ecosystems*, this category present results that add to the internationalization cannon from different perspectives as presented in the thematic areas. Both categories, however, point to a research body that could be fundamentally considered pragmatic, as they present practical and relevant results for different stakeholders of the internationalization ecosystem without ignoring the need for theoretical and methodological rigor (Wickert et al., 2021; Saunders, Lewis & Thornhill, 2016; Van Aken, 2004).

The findings of the investigation demonstrate that the internationalization ecosystem represents a viable and multidisciplinary concept, encompassing intricate challenges, multiple strata of actors, profound economic, social, and cultural dynamics, and a continually evolving conceptual perspective. Consequently, any theoretical framework emanating from a systematic literature review must meticulously consider these facets, incorporating diverse phenomena, processes, and actors.

Key Framework Constructs for Internationalization Ecosystems (INT-E)

The research has found in the literature, several aspects related to business, entrepreneurial, innovation and platform ecosystems that has a connection with internationalization ecosystems. In Table 7, each macro category encompasses meso categories, which further delineate into micro categories, providing a comprehensive framework for understanding the dynamics within these ecosystems.

Table 7

Framework Constructs

Macro Category	Meso Category	Micro Categories
Business Ecosystem	Business strategy	Resource-Based View
		Transactional Costs
		International Ambidexterity
		Dynamic Capabilities
		Strategic Alliances
		Knowledge-based View
	Clusters	Regional Clusters
		Public Policies
	Networking, supply chain and knowledge sharing	Knowledge Transfer
		Supply Chain Management
	Foreign Direct Investment	Cross-Border Venture Capital Investments
		Mergers & Acquisitions
Entrepreneurial Ecosystem	Entrepreneurial activity	Local Support Ecosystems
		Economic Resilience
		Entrepreneurship Policies
	International Entrepreneurship	Mixed Embeddedness Theory
		Ecosystem Integration
		Transnational Entrepreneurship
	Academic Entrepreneurship	Entrepreneurial Education
		Technology-Based University Spin-Offs
		Business Incubators and Accelerators
	Entrepreneurial organizations	Small and Medium Organizations
		Startups and Scaleups
		Born Global Firms
		Multinational Enterprises
Innovation Ecosystems	Triple and Quadruple Helix	University - Industry Collaboration
		Innovation Networks
		Entrepreneurial Discovery Process
		Innovation Policies

Macro Category	Meso Category	Micro Categories
	Innovation Strategy	Open Innovation
		Smart Specialization
		National Innovative Systems
	Innovative Organizations	Research Technology Organizations
		HEIs 3rd Mission
Platform Ecosystems	Digital Transition and Digitization	Digital Servitisation
		Digital Transformation
		Digital Economy
	Digital Ecosystems	E-Commerce and E-Marketing
		Omnichannel Strategy
		Digital Business Models
		Enabling Technologies

Note. Based on Costa et al. (2024).

The concept of Business Ecosystems (BE) transcends conventional paradigms, integrating diverse stakeholders such as social networks, research institutions, regulatory bodies, and civil society representatives (Cha, Kotabe & Wu, 2023; Zeng, Khan & Da Silva, 2019). Widely recognized as a paradigmatic framework for understanding business dynamics, it has conceptual and empirical connections with entrepreneurial, innovation, and platform ecosystem perspectives (Costa, 2024; Ferreira, Fernandes & Veiga, 2023).

The Entrepreneurial Ecosystems (EE) foster dynamic interactions amongst diverse actors, organizations, and processes, nurturing new businesses and economic development (Zahra & Hashai, 2022).

Similarly, Innovation Ecosystems (IE) facilitate collaborative knowledge exchange amongst various actors, including businesses, research centers, and policymakers (Tippmann et al., 2023). The triple helix framework emphasizes collaboration between universities, industries, and government, driving innovation and economic growth (Baier-Fuentes, Guerrero & Amorós, 2021).

Digitalization plays a pivotal role in globalization, enabling businesses to engage in cross-border transactions through innovative Platform Ecosystems (PE) (Brouthers, Chen, Li, Shaheer, 2022). Digital Platform Ecosystems (PEs) have revolutionized business dynamics,

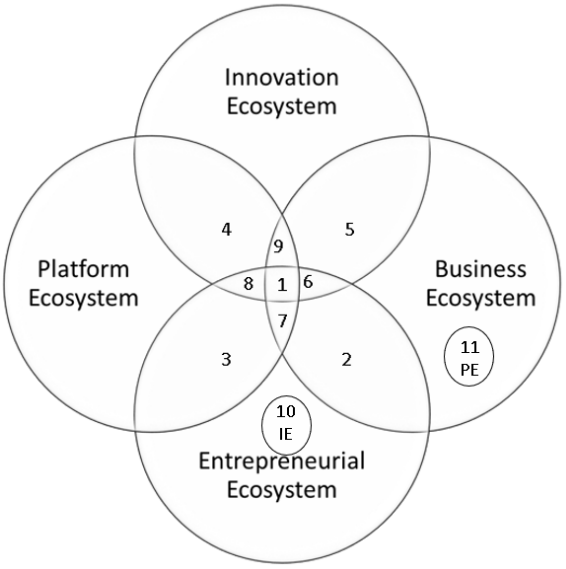
fostering collaboration and value creation across organizational and geographical boundaries (Kolagar et al., 2022)

Those ecosystems, interconnected to varying degrees, highlight internationalization as a vital strategy for organizational expansion, pointing out to a framework to explain Internationalization Ecosystems (INT-E) as presented previously by Costa et al. (2024). Thus, the notion of INT-Es integrates components from various ecosystem concepts, each with unique characteristics and relationships to the internationalization process (Rong, Kang & Williamson, 2022), as presented in Figure 3.

Figure3

Internationalization Ecosystem Core Concept

1. Core Internationalization Ecosystem (BE + EE + IE + PE)
2. MNE/SME Integration Ecosystem (BE + EE)
3. New Digital Business Ecosystem (EE + PE)
4. Open Digital Innovation Ecosystem (PE + IE)
5. TH Model and Variants Ecosystem (BE + IE)
6. TH Model and Variants Ecosystem - focused on new business models (BE + IE + EE)
7. Digital Business Ecosystem (BE + EE + PE)
8. Digital TH Model and its Variants Ecosystem (EE + PE + IE)
9. Digital TH Model and its Variants Ecosystem - focused on traditional business models (BE + IE + PE)
10. Digital Incubation Acceleration Ecosystem (EE + IE)
11. Digital Transition Ecosystem for traditional Business Models (BE + PE)



Note. Based on Costa et al. (2024)

Table 8 outlines various types of ecosystems based on intersections of Innovation Ecosystems (IE), Entrepreneurial Ecosystems (EE), Business Ecosystems (BE), and Platform Ecosystems (PE). Each type is associated with specific characteristics of their internationalization process, and focuses on different aspects of innovation, collaboration, and internationalization, present actual ecosystems that could fit the described criteria as seen in Figure 3.

Table 8

Ecosystem Dynamics

Int.	Type of Ecosystem	Level of Internationalization	Examples
1	Core Internationalization Ecosystem Model	Central to Ecosystem Dynamics	Silicon Valley (USA) Shenzhen (CN) Tel Aviv (IL)
2	MNE/SME Integration Ecosystem	Secondary Factor	Automotive Industry Cluster in Stuttgart (GE) Fashion and Design Cluster in Milan (IT) Renewable Energy Cluster in Copenhagen (DK)
3	New Digital Business Ecosystem	Key Aspect	Fintech Ecosystem in London (UK) Digital Health Ecosystem in Stockholm (SE)
4	Open Digital Innovation Ecosystem	Key Aspect	MIT Media Lab Ecosystem (USA) Station F Entrepreneurial Campus (FR) Imperial College London Innovation Ecosystem (UK)
5	TH Model and Variants Ecosystem	Growing Importance	Oxford Science Park (UK) Biotech Cluster in Boston (USA)
6	TH Model and Variants Ecosystem (focused on new business models)	Central Element	Tech City in London (UK) MedTech Cluster in Zurich (CH)
7	Digital Business Ecosystem (focused on digitization and digital transition)	Central Aspect	E-commerce Innovation Cluster in Seoul (KR) Fintech Cluster in Singapore Tech Accelerator in Silicon Valley (USA)

Int.	Type of Ecosystem	Level of Internationalization	Examples
8	Digital TH Model and its Variants Ecosystem	Central Aspect	Smart City Innovation Hub in Barcelona (ES) Cybersecurity Innovation Cluster in Tel Aviv (IL)
9	Digital TH Model and its Variants Ecosystem (focused on traditional business models)	Indirect but Central	Woodworking Excellence Cluster in Vancouver (CA) Manufacturing Innovation Hub in Stuttgart (GE)
10	Digital Incubation/Acceleration Ecosystem	Perceived as Central, but Lacking Research	Startup Chile in Santiago (CL) Lisbon Challenge (PT)
11	Digitalization Ecosystem	Core Strategy	Digital Banking Innovation Network in London (UK) E-Commerce Transformation Cluster in Shanghai (CN)

Note. Based on Costa et al. (2024) and Costa (2023).

The descriptions in Table 8 are based on information from specialized literature but do not fully capture the complexity and dynamics of ecosystems. Ecosystems are intricate, multifaceted entities with fluid boundaries, which complicates the encapsulation of their interactions and dependencies. These elements evolve continuously and can be somewhat unpredictable (Costa 2023; Hewett et al., 2022; Rasmussen & Petersen, 2017; Moore, 1993).

Costa et al. (2024) introduced the foundational conceptual framework for the Internationalization Ecosystem (INT-E), which integrates four interconnected ecosystem concepts: Business Ecosystems (BE), Entrepreneurial Ecosystems (EE), Innovation Ecosystems (IE), and Platform Ecosystems (PE). The current systematic literature review (SLR) validates and reinforces the INT-E framework by synthesizing existing research. It confirms the framework's applicability in analyzing the complexities and dynamics of internationalization from an ecosystemic perspective. This validation highlights the framework's significant contribution to understanding how various ecosystem dimensions interact and influence international business practices.

Future Research

The Internationalization Ecosystem (INT-E) framework (Figure 3), introduces novel concepts to the field of International Business (IB) theory and offers valuable theoretical insights. By categorizing ecosystems according to the intersection of Business Ecosystems (BE), Entrepreneurial Ecosystems (EE), Innovation Ecosystems (IE), and Platform Ecosystems (PE), this framework facilitates comparison between various ecosystem models and their impacts on internationalization. Additionally, by emphasizing the central or secondary role of internationalization within each model, the framework encourages research into how ecosystem dynamics influence firms' internationalization strategies. A research agenda for scholars investigating Internationalization Ecosystems is outlined in Table 9.

Table 9

Future Research

Research Area	Specific Research Questions
Integration of the Ecosystemic Perspective	• How can existing internationalization theories be effectively adapted to incorporate an ecosystemic perspective? • What are the key challenges and opportunities associated with this integration?
Understanding Internationalization Dynamics	• How do ecosystems with varying levels of internationalization (e.g., Core vs. MNE/SME Integration) differ in their governance structures, collaborative practices, and resource allocation strategies that influence internationalization? • To what extent do technology platforms and digital tools facilitate internationalization within different ecosystem types (e.g., Core vs. Digital Business) compared to traditional methods?
Specific Ecosystem Exploration	• How do Digital TH Model variants (Cells 8 & 9) leverage their unique characteristics (e.g., participation of large traditional businesses, focus on specific industries) to facilitate internationalization for traditional business models? • How do the dynamics of internationalization (e.g., focus markets, barriers encountered) differ within the same ecosystem type across different geographical regions (e.g., Fintech ecosystems in London vs. Singapore)?
Ecosystem Boundary Conditions	• What are the relevant boundaries of internationalization ecosystems? • How do these boundaries affect firm behavior and performance?
Ecosystem Governance	• What are the most effective mechanisms for governing internationalization ecosystems? • How can stakeholders collaborate to ensure the sustainable development and growth of these ecosystems?
Ecosystem Measurement and Impact	• How can we measure the performance and impact of internationalization ecosystems? • What are the key metrics for assessing the effectiveness of these ecosystems in promoting internationalization?
Digitalization and the Ecosystem	• How is digitalization transforming internationalization ecosystems? • What are the emerging opportunities and challenges associated with digital platforms and technologies within these ecosystems?

Through the application of the internationalization framework model discussed in this work, scholars and practitioners alike can contribute not only to academic discourse but also to the development of practical strategies that promote responsible internationalization, yielding positive outcomes for businesses and society in general. The unexplored realms of internationalization ecosystems present a fertile ground for rigorous scholarly inquiry, where ongoing research endeavors aim to cultivate a deeper understanding of the complexities inherent in global business dynamics.

Conclusion

This article aimed to systematically understand and conceptualize internationalization ecosystems within the broader context of International Business (IB) theory, focusing on their formation, expansion, and cross-border interconnections, and exploring how this perspective could be integrated into contemporary IB theories. Through a systematic literature review and thematic analysis, the research assessed the depth of studies on internationalization ecosystems, exploring their characteristics and evaluating the feasibility of the Internationalization Ecosystems (INT-E) framework (Costa et al., 2024) to explain internationalization from an ecosystemic viewpoint.

The study involved a focused search across prominent databases like Science Direct, Scopus, and Web of Science, conducted in June 2022 and revisited in January 2023. It meticulously analyzed 67 selected articles by examining elements such as authors, journals, keywords, methodologies, theoretical frameworks, and geographic scope. This analysis provided insights into the dynamics, actors, and specificities of the ecosystemic perspective on internationalization. Thematic Analysis was used to derive emergent categories, ensuring a comprehensive understanding of synthesized themes and a rigorous analysis aligned with established protocols.

The research revealed that current IB theories, including revisions of classical concepts like the Uppsala Model and Eclectic Paradigm, do not fully explain the internationalization ecosystem phenomenon. The studies were primarily descriptive, with limited empirical and quantitative analysis, reflecting a lack of robust knowledge on the ecosystemic approach to internationalization. There is a need to build a comprehensive understanding of this phenomenon, including reviews of traditional theoretical approaches, to establish a substantial theoretical foundation that explains its nature, dynamics, and perspectives.

Internationalization ecosystems are identified as a multidisciplinary theme involving complex problems, multiple actors, and evolving economic, social, and cultural dynamics. An effective framework should integrate four key ecosystem concepts: Business Ecosystems (traditional industries and clusters), Entrepreneurial Ecosystems (new ventures and disruptive models), Innovation Ecosystems (including the Triple Helix concept), and Platform Ecosystems (digital business models in the international sphere). The integration of these ecosystemic approaches reveals a unique set of characteristics that can explain the fluid nature of the internationalization phenomenon.

The article contributes to IB literature by arguing that internationalization ecosystems should be analyzed as independent ecosystems rather than as sub-components or secondary phenomena, as often approached in other studies. By treating internationalization ecosystems as distinct entities, it encourages further research on ecosystem integration and replication, laying the groundwork for a new theory in IB. Future studies should focus on adapting existing theories, exploring ecosystem dynamics, and examining digitalization's impact on internationalization.

The study acknowledges certain limitations, including potential biases in selecting studies and the heterogeneity of the works analyzed. The lack of a unified theoretical framework may introduce some vagueness, which could be addressed in future research. Additionally, the analysis was confined to specific databases and thematic areas, and findings may differ with the inclusion of other databases, thematic areas, or more recent studies.

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