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Review Article

International vertical alliances within the international business field: A systematic literature review and future research agenda

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ABSTRACT

International vertical alliances (IVAs) have garnered increasing scholarly interest in the strategy and international business (IB) literature. Our review of 111 papers published in major IB journals from 2000 to 2020 sheds light on the antecedents, key mediators, moderators and outcomes of IVAs. To generate insights, we juxtaposed forward and backward alliances and compared IVAs with their domestic vertical and horizontal counterparts. In this paper, we highlight key areas for future IVA research, including—but not limited to—broadening the scope of the investigation in order to integrate new theories and methods suited to examine such alliances in the IB field.

1. Introduction

There is a growing consensus in the literature that firm involvement in strategic alliances¹ and networks matters for knowledge acquisition, innovation development, and expansion into international markets (Du et al., 2020; Huang & Kim, 2019; Lindstrand et al., 2009). Over the years, the strategic alliance literature has broadened significantly and has demonstrated that alliances with different partner types play different roles in complementing a firm's resources and capabilities. Two types of alliances—horizontal and vertical—have been highlighted for playing a vital role in enabling alliance parties to create value. It has been suggested that it is imperative to form horizontal alliances between competitors in a commensal fashion to attain collective ends (Weber & Heidenreich, 2018), whereas vertical alliances with suppliers and/or customers need to be set up symbiotically in order to achieve mutual goals (Belderbos et al., 2011). This literature has also demonstrated that the benefits of horizontal and vertical alliances differ based on partners being located in domestic or international markets (Garrette et al., 2009; Montoro-Sanchez et al., 2018; Shi et al., 2014). Vertical alliances offer learning opportunities specific to the needs of particular partners operating in a given market (cf. Dyer, 1997; Dyer & Nobeoka, 2000; Kotabe et al., 2003), whereas horizontal alliances offer a broad range of

collective knowledge applicable to the needs of partners operating across different markets (Dyer & Nobeoka, 2000; Stuart et al., 1998). In such a context, Stuart et al. (1998, p. 91) indicated that horizontal alliances may offer “*holistic learning and organizational advancement, not necessarily tied to the products sold to a particular buyer*”. The scrutiny of the two types of alliances in local and international markets enabled us to develop a 2×2 matrix and to pinpoint four alternative forms of alliances (see Fig. 1), as well as to summarize their key distinctions in Table 1.

A conclusion stemming from Fig. 1 and Table 1 is that different types of alliances are driven by different motives. While horizontal alliances expose firms to stimuli that fall within their familiar knowledge base (De Beule & Sels, 2016), vertical alliances are a key catalyst for accessing inter-task knowledge competencies due to partners being specialized in complementary value chain activities (Kano, 2018; Ozdemir et al., 2020). Firms use vertical alliances to obtain the key inputs they need to produce goods or services (Turkina & Van Assche, 2018). Global shifts have increased the importance of international vertical alliances (IVAs) to situate value-added activities in locations outside the home market's boundaries (Lojacono et al., 2017). By tapping into IVAs, firms are reducing or giving up their in-house operations and shifting their production to global upstream suppliers as well as increasing contacts with

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¹ These are defined as “*voluntary arrangements between firms involving exchange, sharing, or codevelopment of products, technologies, or services*” with partners located in international markets (Gulati, 1998, p. 293).

downstream foreign buyers (Clougherty et al., 2014). The IB research suggests that IVAs are at the core of gaining access to international markets through global value chain (GVC) activities (Ho et al., 2018; Inemek & Matthysens, 2013; Liu & Zhang, 2014). The starting point of these studies is that cross-country linkages with buyers-suppliers are a precondition not only for the exploitation of their competencies to seek innovation advantage (Ambos et al., 2021; Buciuni & Pisano, 2021), but also for the exploration of new ways of learning and knowledge accumulation (Li et al., 2017; Wang et al., 2017; Wang et al., 2020). As Lechner et al. (2020) argued, “participation in GVCs is seen as a fundamental precondition for upgrading because GVCs are where learning happens through interaction with (initially) more advanced actors” (p. 521).

IVAs can generate learning opportunities and give rise to novel global prospects due to the heterogeneous resources possessed by diverse value chain partners, thereby enabling the local partners involved in such alliances to develop their capabilities. IVAs also play an important role in local economic development due to their potential for knowledge spillovers (cf. UNCTAD, 2001). However, such relationships are exposed to increased uncertainty and risks because they involve different partners who have differing cultural, legal, economic, and social systems (Griffith & Zhao, 2015). They also entail an increase in supply risk for the buyer or a transfer of power to the supplying partners (Gallear et al., 2021). These risks can be avoided by developing greater interdependence between international buyers and suppliers, which, in turn, will facilitate a shift from outsidership to insidership in support of various firm activities. Through insidership in IVAs, firms can attain the potential gains linked to becoming embedded in and committed to international buyers and suppliers (Johanson & Johanson, 2021; Vahlne & Johanson, 2017).

Against this background, the extant IVA studies have focused on a range of issues—such as reinforcing profitably, exploiting unique firm-specific advantages, and creating value by forging IVAs in GVCs and leveraging their governance structures, geography, value creation, and outcomes (Jean et al., 2018; Kano et al., 2020; Mani & Gunasekaran, 2021; McWilliam et al., 2020). Nippa and Reuer (2019) argued that the

comparison and integration of evidence on IVAs, and “particularly changes over time, will most likely reveal interesting patterns that will foster the development of new theories of alliance formation and internationalization” (p. 575). However, despite the consensus that IVAs are an essential area of study in IB, the existing research is fragmented and inconclusive. While the IVA is a fundamental construct that encompasses different characteristics and dynamics, it would be interesting to understand its evolution and relevance for different purposes. For example, several quantitative studies have examined the impact of IVAs on a firm’s internationalization endeavors (e.g., Özcan et al., 2018; Sharma et al., 2019; Wang, Zhang, et al., 2019). Similarly, a growing number of qualitative and process-oriented studies are considering learning through knowledge spillovers and innovation gains for internationalization (Qiu & Yang, 2018; Wang et al., 2020). This prevailing diversity in methodological approaches and research issues reflects the vigor of the research topic, but can hinder any collective knowledge-building efforts made in this area.

The purpose of this paper is to present a systematic review of the empirical research on IVAs published in major IB journals and conducted with the aim of developing a comprehensive framework and of indicating avenues for future research. To this end, we identified and analyzed 111 empirical articles published from 2000 to 2020 in major IB journals. We explored: (1) the year and type of each publication; (2) the methodologies applied and data sources used; (3) the geographical and industrial contexts of the studies; (4) the theories applied and tested; and (5) the content in relation to the antecedents, mediators, moderators, and outcomes of IVAs.

Our study’s contributions are fourfold. First, its 2×2 comparison is novel and important because it summarizes and clarifies what is unique to IVAs, which has valuable empirical and theoretical ramifications. For instance, we differentiated between the challenges presented by vertical alliances involving domestic partners and those involving international ones, thus identifying theoretical gaps. Second, we explored the descriptive specifics and intellectual structure of research on IVAs in the IB context. Past reviews pointed at a researcher focus on strategic

	Horizontal alliances Quadrant I	Vertical alliances Quadrant II
Domestic alliances	<p>Characteristics:</p> <ul style="list-style-type: none"> Attractive strategy due to increased competition in domestic markets (Perry et al., 2004) Desire for the generation of new-to-the-market products (Belderbos et al., 2004; Gassmann et al., 2010) Improve knowledge depth in closely related knowledge domains <p>Challenges:</p> <ul style="list-style-type: none"> Prone to the opportunistic behaviors of competitors (Wallenburg & Schäffler, 2014) Undesirable knowledge spillovers and free-ridership Redundancy of knowledge and skills among partners (Xu & Cavusgil, 2019). <p><i>Theoretical perspectives:</i> RBV; Transaction cost economics.</p>	<p>Characteristics:</p> <ul style="list-style-type: none"> Important for scale advantages, productivity growth, and innovation (Faems et al., 2010) Established with the clear objective of utilizing scientific or commercial knowledge and resources Reduce firm’s cost through efficient outsourcing (George et al., 2002; Silverman & Baum, 2002) Enhances knowledge breadth in an extensive range of loosely related knowledge domains (Ozdemir et al., 2017) <p>Challenges:</p> <ul style="list-style-type: none"> Communication barriers given the different knowledge bases (Shin et al., 2016) Difficulty in the coordination of activities due to divergent organizational structures <p><i>Theoretical perspectives:</i> Dynamic capabilities perspective; Organizational learning perspective.</p>
International alliances	<p>Characteristics:</p> <ul style="list-style-type: none"> Dynamic marketplaces force firms to seek international competitors (Burgers et al., 1993) Enable to fill a particular resource gap that does not match the project requirements (Garrette et al., 2009) Promote absorptive capacity due to assimilation of complementary knowledge Less common type of alliance (López-Cózar-Navarro et al., 2017) <p>Challenges:</p> <ul style="list-style-type: none"> Difficulty in learning and exchanging knowledge with distant competitors (Kurt & Kurt, 2020) <p><i>Theoretical perspectives:</i> RBV; Game theory; Penrose’s theory of firm expansion.</p>	<p>Characteristics:</p> <ul style="list-style-type: none"> Suitable when firms experience internal growth and nurture their existing capabilities (Oliver, 2001) Contain a clear-cut purpose in terms of resources, skills, and international customer-seller relationship building (Luo & Park, 2004) Increase knowledge depth and breadth simultaneously (Zhang et al., 2010) Promote a long-term relationship of commitment and trust due to exchange of tacit information Build an efficient agile and responsive supply chain (Sivakumar et al., 2011) Conducive to innovation, knowledge integration, and global competitiveness <p>Challenges:</p> <ul style="list-style-type: none"> Globally dispersed value chains may create threats of opportunism (Lojacono et al., 2017) Increased cultural distance requires substantial relationship-specific investments and contractual agreements for effective governance <p><i>Theoretical perspectives:</i> RBV; Dynamic capabilities perspective; Organizational learning perspective; Transaction cost economics; Boundary theory.</p>

Fig. 1. Comparison of vertical vs. horizontal alliances and international vs. domestic alliances, See Refereces (Belderbos, Carree, & Lokshin, 2004; Burgers, Hill, & Kim, 1993; Faems, De Visser, Andries, & Van Looy, 2010; Gassmann, Zeschky, Wolff, & Stahl, 2010; George, Zahra, & Wood, 2002; Kurt & Kurt, 2020; Luo & Park, 2004; Oliver, 2001; Ozdemir, Kandemir, & Eng, 2017; Perry, Sengupta, & Krapfel, 2004; Silverman & Baum, 2002; Sivakumar, Roy, Zhu, & Hanvanich, 2011; Wallenburg & Schäffler, 2014; Xu & Cavusgil, 2019; Zhang, Shu, Jiang, & Malter, 2010).

Table 1
Key attributes of vertical and horizontal alliances.

Alliance types	Characteristics	Challenges
Domestic horizontal alliance	Consistent with the RBV, domestic horizontal alliances provide knowledge and learning advantage that are conducive to new-to-the market product development and innovation generation.	The proponents of transaction cost economics suggest that horizontal alliances are prone to opportunistic behaviors due to different idiosyncrasies. Horizontal alliance partners have higher levels of redundancy in terms of the capabilities and skills each partner contributes to the joint effort, which limit knowledge breadth development.
International horizontal alliance	Based on the RBV and Penrose's theory of firm expansion, firms turn to international horizontal alliances to implement projects that require greater resources than those available to them and to overcome foreign market competition.	It is difficult to identify appropriate competitors with which to form alliances in international markets. Therefore, it is a less common type of alliance. The psychic and cultural distance between firms and their foreign competitors creates outsidership in international horizontal alliance, thereby hindering knowledge exchange.
Domestic vertical alliance	The advocates of learning theory claim that domestic vertical alliances act as a source of learning because buyers and suppliers take advantage of each other's resources and capabilities such as their facilities, human resources, and technologies.	As buyers and suppliers have different knowledge bases, it is difficult to effectively exchange information. The differences in the organizational structure of buyers and suppliers make it difficult to coordinate joint activities.
International vertical alliance	Rapid globalization has made IVAs an attractive option to nurture the existing capabilities and develop new ones through different global value chain partners. The RBV suggests that firms can increase knowledge depth and breadth simultaneously due to the availability of diverse knowledge from different value chain partners. IVAs involve complex value chain activities that develop close relational ties and trust between partners, which not only makes it easy to work together but also reduces agency problem between partners.	As boundary theory argues, the central challenge for firms is to manage their international alliances with buyers/suppliers that supply different yet critical resources. In line with transaction cost economics, high cultural distances require substantial relationship-specific investments and contractual agreements to reduce the opportunistic behaviors of partners.

alliances in general (e.g., Sedzinauskienė et al., 2019; Zahoor et al., 2020) or on international ones (Christoffersen, 2013), distinguishing IVAs from other types of alliances and regarding them as an important means of knowledge exchange (Belderbos et al., 2011; Lojaco et al., 2017). However, we had hitherto lacked a systematic review that critiqued and synthesized the evidence on IVAs in an IB context. This paper therefore presents a mapping of the IVA field of the IB literature by analyzing and arranging the existing empirical evidence into specific interrelated categories. Third, we systematically analyzed our sample studies and identified five categories of evidence: antecedents, mediators, moderators, outcomes, and control variables, also distinguishing sub-categories for each of them. Accordingly, we developed a multi-level framework suited to exhibit the connections between the identified categories and deployed it to suggest key research avenues for

future studies. Finally, we developed an integrative framework suited to chart future research avenues. As an outcome of this endeavor, we suggest key theories—such as behavioral theory, agency theory, the micro-foundation perspective, and signaling theory—that have the potential to advance the field of IVA research. We also highlight content-based suggestions for future studies, including an increased focus on digital platforms, big data analytics, and meta-environments. Furthermore, we provide methodological suggestions aimed at overcoming the issue of the inherent bias found in the existing methods and the difficulties encountered in collecting primary data. Our suggestions include the use of experimental and simulation methods, historical content analysis (e.g., of newspaper articles and executive interviews), and fuzzy-set qualitative comparative analysis (FsQCA), among others.

The remainder of this paper is organized into four sections. In the ensuing one, we outline the methodology we used to identify the relevant articles, and explain how we developed an overarching framework. Next, we synthesize the key trends, methods, and theories used in the IVA literature. This is followed by a report of our results and crucial findings. Finally, based on the findings and identified gaps, we derive an agenda for future research.

2. Method

Despite the increasing research interest in IVAs, little effort has been made to conduct a methodical and systematic review of the existing studies on this topic within the IB field. Thus, an aim of our systematic review was to gain an understanding of the degree and nature of the extant research on IVAs in order to provide a comprehensive coverage of the relevant publications. Consistent with other IB reviews (Dau et al., 2020; Pisani et al., 2017; Shepherd et al., 2020), we took a systematic approach, defined as “a specific methodology that locates existing studies, selects and evaluates contributions, analyses and synthesizes data, and reports the evidence in such a way that allows reasonably clear conclusions to be reached about what is and is not known” (Denyer & Tranfield, 2009, p. 671). As recommended by Tranfield et al. (2003), we conducted our review in three steps: planning, conducting, and analyzing.

2.1. Planning

Although the IB field is dominated by IVA research, the scholarly evidence remains fragmented; hence, our review was aimed at examining and connecting it. Based on the identified themes mapped in our framework (see Fig. 2), our review was guided by three key research questions: “What leads firms to adopt IVAs?”, “How are IVAs coordinated in international markets?”, and “What are the outcomes of IVAs?”

In terms of scope, we needed to strike a balance between generality and specificity. As argued by Wee and Banister (2016), “being too specific restricts the range of literature that can be covered and being too general makes it much harder to produce a high-quality review, as there is so much material available” (p. 282). We thus followed the principle of purposive sampling (Krippendorff, 2018) and selected articles published in major IB journals. While the topic of IVAs is occasionally addressed in publications from other fields—such as strategy, economics, and management—we followed the rationale of Koveshnikov et al. (2019) and Christofi et al. (2021); we focused on IB journals to understand how this academic community views IVAs and to highlight any knowledge gaps and promising future research avenues. However, we also referred to IVA studies published in other fields to enrich our review by generating insights and exploring promising theoretical and methodological opportunities (Ceipek et al., 2019; Rabetino et al., 2021).

To further ensure that our review process would act as a quality control system (Yao et al., 2020), we only included empirical peer-reviewed journal articles—thus excluding books, book chapters, conference papers, editorials, commentaries, conceptual papers, and other non-refereed publications. We followed the meta-ranking journal

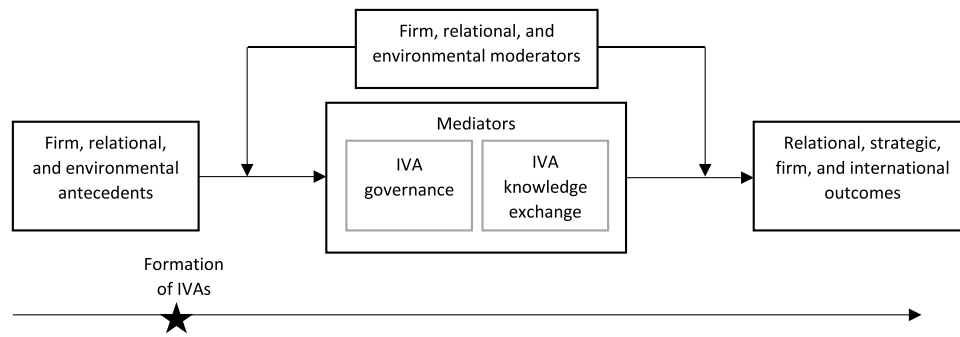


Fig. 2. A framework for the study of IVAs in the IB literature.

list published by Tüselmann et al. (2016), which sheds light on the “standing of IB journals, both within the IB domain and in relation to the wider competitive landscape of management and business journals” (p. 494). This led us to identify 16 IB journals that met our review criteria by representing an important and diverse body of IB research on IVAs. We set the time frame for the publication of the articles to be included in our review between January 2000 and December 2020. We deemed it logical to set the year 2000 as our starting point because it represents a milestone in IB research—i.e., when scholarly interest in IVAs took off (Gulati et al., 2000; Sarkar et al., 1999). Consequently, akin to other systematic reviews, ours spans a 20-year period (Koveshnikov et al., 2019).

2.2. Conducting

As described in Table 2, we defined a review protocol to assess whether an article qualified for inclusion. To limit our search results to publications in our defined research area, we constructed a list of the most relevant keywords commonly used to refer to IVAs. To do so, we looked at the publications on the topic of IVAs (e.g., Kano, 2018; Kim et al., 2018; Liu, 2012b; Murphree & Anderson, 2018; Strange & Humphrey, 2019) and review articles (Hoque & Rana, 2020; Shamsollahi et al., 2021). This helped us to create an initial list of 36 keywords (e.g., vertical integration, customer-supplier alliance, supplier-customer alliance, and cross-border vertical alliance). Further, we consulted experienced senior academics specializing in strategic alliances and IB, who assisted in identifying further combinations with different spelling and keyword variants (Van Grinsven et al., 2016). On that basis, we developed an exhaustive list of 58 major keywords, as summarized in Table 3.

We then performed a search for pertinent articles in each of the selected journals. Consistent with prior review studies (Niesten & Jolink, 2020; Savage et al., 2020), we typed our keywords in the topic search field (comprising titles, keywords, abstracts, and full texts). To ensure an exhaustive search, we used the keywords in both their singular and plural forms (Soto-Simeone et al., 2020) within our 2000–2020 search period. Our initial search yielded 1657 results. Next, we manually

Table 2
Criteria for the inclusion and exclusion of articles.

Inclusion criteria	Exclusion criteria
Peer-reviewed journal articles	Books, book chapters, conference papers, and other non-refereed publications
Articles published between January 2000 and December 2020, including early view	Articles published in journals outside the IB field
Articles focusing on IVAs	Articles exclusively focused on alliances between competitors
Articles addressing IVAs and aimed at contributing to the IB literature	Articles focused on mergers & acquisitions or joint ventures.
Articles based on an empirical focus	Articles based on a conceptual focus

Table 3
Keywords per selected journal and conducting procedure.

Keywords		
International*, Global*, Cross-cultural*, AND vertical alliances*, vertical networks*, vertical integration*, vertical collaboration*, vertical relationships*, supplier alliances*, supplier networks*, supplier integration*, supplier collaboration*, supplier relationships*, customer ^a alliances*, customer networks*, customer integration*, customer collaboration*, customer relationships* upstream alliances*, upstream networks*, upstream integration*, upstream collaboration*, upstream relationships*, downstream alliances*, downstream networks*, downstream integration*, downstream collaboration*, downstream relationships*, backward alliances*, backward integration*, backward networks*, backward collaboration*, forward alliances*, forward networks*, forward integration*, forward collaboration*, forward relationships*, supplier-buyer alliances*, supplier-buyer networks*, supplier-buyer integration*, supplier-buyer collaboration*, supplier-buyer relationships*, buyer-supplier alliances*, buyer-supplier networks*, buyer-supplier integration*, buyer-supplier collaboration*, buyer-supplier relationships*, inter-organizational alliances*, inter-organizational networks*, inter-organizational integration*, inter-organizational collaboration*, inter-organization relationships*, inter-firm alliances*, inter-firm networks*, inter-firm integration*, inter-firm collaboration*, inter-firm relationships*, outsourcing*.		
Filtering process	Description	Total
Step 1	Keyword search ^b in the journals and selection of articles	1657
Step 2	Reading the titles, keywords, and abstracts, and eliminating any non-relevant articles	418
Step 3	Reading the full texts of articles and eliminating any non-relevant ones	106
Step 4	Hand searching the reference list	5
Final sample		111

Note: a = we used alternative term as buyers; b = keywords search in IB field journals published from 2000 to 2020.

screened all titles, keywords, and abstracts to evaluate whether the basic criterion of relevance (i.e., a focus on IVAs) was fulfilled (Okwir et al., 2018). We eliminated any articles that merely mentioned the term ‘alliance’ without covering IVAs, focused on alliances between multinational subsidiaries, or were not of an empirical nature (Adams et al., 2016; Savino et al., 2017). This step left us with a total of 418 relevant articles, which we subsequently exported to the Endnote reference manager software. We read all articles in full and comprehensively assessed them, which yielded a sample population of 106. Finally, by manually searching the reference list, we included five additional articles, leading to a total of 111 ones as our final sample. The screening steps are described in detail in Table 3.

2.3. Analyzing

We analyzed our final sample and abstracted our key findings by taking a structuring content analysis approach (Mayring, 2000). We selected this approach as it is conventional and well-recognized (Breitenmoser & Bader, 2016; Hanelt et al., 2020), and helps to systematically extract the significance of a large amount of information obtained from diverse sources by organizing it into interconnecting categories

(Fastenrath & Braun, 2018). For content analysis, Mayring (2014) suggested following five different steps: (1) developing categories based on the research questions, (2) coding the text in accordance with the developed categories, (3) revising the previously developed categories, (4) re-coding the text based on the new categories, and (5) interpreting the results. Accordingly, we deductively identified and developed the categories from the literature. We used an Excel sheet to extract data from each article in terms of both its descriptive characteristics (such as author details, publication information, theory, geographical region, industry, sample, data collection, and data analysis) and main findings (including results, findings, and contributions). Specifically, we used an antecedents-mediators-outcomes (AMO) framework (McGrath, 1964) to derive basic structuring categories. This framework—which is commonly used in the general management (Klotz et al., 2013; Mathieu et al., 2008) and IB fields (Debellis et al., 2021; Hutzschenreuter et al., 2020; Martineau & Pastoriza, 2016)—offers an understanding of outcomes (O) in relation to their antecedents (A) and mediators (M). Accordingly, we coded the articles based on the three categories of antecedents, mediators, and outcomes. After conducting a trial run on 15%

of the articles, we refined the initial categories by subdividing them further (Mayring, 2000, 2014)—e.g., we divided the antecedent category into firm, network, and environmental characteristics. At this stage, we also realized that it would be helpful to include the two additional categories of moderators and control variables. Accordingly, we coded all the sample articles as per the refined categories. We then meticulously discussed and shared the coding scheme, and reached a consensus.

3. Descriptive overview of the literature

This section presents the results of our analysis of the key trends in empirical research and of the theories underpinning it.

3.1. Year of publication and journals

The temporal distribution of the IVA literature in the IB journals is depicted in Fig. 3. The growth in scholarly interest that has taken place over the last 10 years is clearly observable. Increased globalization and a

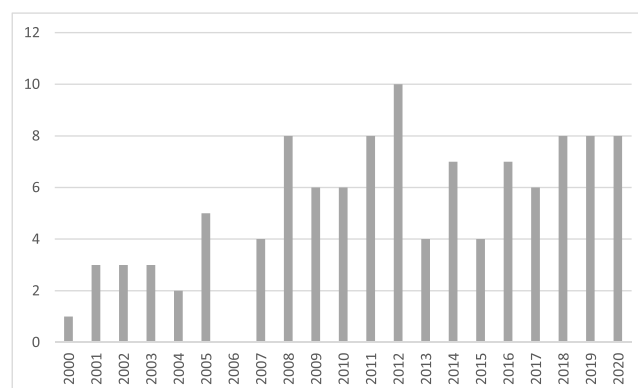


Fig. 3. Number of articles per year.

dynamic business landscape are likely to have encouraged firms to pursue IVAs to gain international recognition and enhance their performance (Alcácer et al., 2016; Sharma et al., 2019). The examination of the IB journals in which the sample articles had been published revealed a widespread distribution across 16 journals, mostly top-quality outlets such as the *Journal of International Business Studies*, the *Journal of World Business*, and the *International Business Review* (as shown in Table 4).

3.2. Methodological orientation

Table 5 indicates that, out of our 111 sample articles, 91 were quantitative, 18 were qualitative, and the remaining two had involved the use of mixed methods. The quantitative articles were dominated (68/91) by the use of cross-sectional survey data (Alteren & Tudoran, 2016; Chang & Gotcher, 2007; Hallin & Holmström Lind, 2012), while a small number (23/91) had used archival data (Huang & Kim, 2019; Kimino et al., 2014; Lojaco et al., 2017). As the process of IVA formation is complex, we concurred with Matanda and Freeman (2009), who posited that cross-sectional data could be affected by common method variance as they lead to an overestimation of the hypothesized relationships. In the survey-based articles, the response rate was found to vary from 8.70% to 83.78%. Our sample studies had taken a variety of data collection approaches, such as multi-country (11), multi-informant (3), and longitudinal surveys (3). The qualitative articles had primarily involved multiple case (13/18), single case (4/18), and comparative case studies (1/18). Several methods had been combined in the qualitative studies, such as interviews, observations, document analysis, and focus groups (Miozzo & Grimshaw, 2008; Saranga et al., 2019; Voldnes & Kvalvik, 2017). The combination of diverse methods had enabled researchers to triangulate, reducing any subjectivity or bias stemming from a single method (Heim et al., 2019; Wareham et al., 2005; You et al., 2018).

While our sample quantitative articles had tested the relationship between a set of pre-defined variables (Matanda & Freeman, 2009; Un & Rodríguez, 2018), the qualitative ones were found to present in-depth analyses of backward IVAs (Conti et al., 2014), the partner characteristics in forward IVAs (Miozzo & Grimshaw, 2008), and the challenges related to rising power in both backward and forward IVAs (Lechner et al., 2020; Wareham et al., 2005), and to develop insights into the best knowledge transfer practices in cross-cultural relationships (Duanmu & Fai, 2007; Jia et al., 2016; Sinkovics et al., 2019; Tiep, 2007). For example, while backward IVAs are considered vital for knowledge integration, Liu et al. (2014) highlighted that international buyers and suppliers have substantially different approaches to the extraction of value, which leads to competition in buyer-supplier relationships. In this situation, buyers and suppliers need to resort to *co-competition*, wherein more rigid contracts are required to control transactions (Williamson,

Table 4
Number of articles per selected journal.

Journals	Selected articles 2000–2020
International Business Review	37
Journal of International Business Studies	21
Journal of World Business	12
Management International Review	7
Asia Pacific Journal of Management	6
Journal of International Management	6
Asia Pacific Business Review	5
Journal of Asia-Pacific Business	4
Thunderbird International Business Review	3
Critical Perspectives on International Business	2
Journal of East-West Business	3
Global Strategy Journal	2
European Journal of International Management	1
Management and Organization Review	1
Multinational Business Review	1
Total	111

Table 5
Descriptive statistics of the sample articles.

Orientation	Description	Percentages	
Methods	Quantitative	91	
	Qualitative	18	
	Mixed methods	2	
Geographic region	Asia (China, Hong Kong, Japan, Taiwan, South Korea, Singapore, India, Pakistan, Vietnam, Thailand)	57	
	Europe (Austria, Cyprus, Denmark, Finland, France, Hungary, Italy, Norway, Poland, Slovakia, Slovenia, Spain, Sweden, the UK)	22	
	The US	12	
	International multiple markets	8	
	Pacific Ocean (New Zealand, Australia)	4	
	South America (Argentina, Brazil)	4	
	Middle East (Turkey)	2	
	North America	1	
	Africa (Zimbabwe)	1	
	Industry	High-technology (e.g., information and communication technology, automotive, biotechnology, electronics, equipment and machinery)	47
		Manufacturing	38
Manufacturing and services		11	
Wholesale and retail		5	
Food (seafood) processing		4	
Services		3	
Multiple industries		3	
IVA type	Backward	72	
	Forward	32	
	Backward and forward	3	
	No mention	4	

1996), whereas cooperative notions—such as trust and commitment—help promote relationship continuity, enhancing the value of business activities as per transaction-cost economics (TCE) (Emerson, 1976; Styles et al., 2008). Similarly, despite the prominence of forward IVAs for knowledge transfer, qualitative findings extend the dynamic capability perspective by arguing that international knowledge sharing is a dynamic process that is dependent on dynamic learning capabilities (Teece, 2007). An internationalizing firm needs to nurture its dynamic capabilities (i.e., its relationship-based learning and decision-making ones) for knowledge integration and opportunity identification (Vahlne & Bhatti, 2019). Multi-country analysis was also found to have been performed in our sample of qualitative articles to explain how emerging market firms contain the negative effects on host-country partners, and become serious global competitors in a seemingly short time (Saranga et al., 2019). Consequently, it can be argued that qualitative studies make a substantial contribution by uncovering both theoretical and practical paradoxes.

3.3. Contextual orientation

When we considered the geographical context of the empirical research, we found that the IVA topic had been explored across 37 economies. Articles on Mainland China were found to dominate (23), followed by Taiwan (15), the US (14), Japan (8), Sweden (7), and South Korea (7). This dominant focus on Mainland China, Taiwan, and the US can be explained by the roles they play in the global value chains and their high-level manufacturing. In terms of regional representation, Asia (51%) was found to come first, followed by Europe (20%), the US (11%), international multiple markets (7%), South America (3%), the Pacific Ocean region (3%), Africa (2%), the Middle East (2%), and North America (1%). While most sample articles had focused on a single country (82), others had studied two (14) or more (15). Furthermore, a comparison of research methods and geographical contexts suggested a preference for qualitative and mixed methods in the African and Asian regions (Duanmu & Fai, 2007), whereas the quantitative method was found to be the approach of choice in Europe and the US (Jindra et al.,

2009; Martínez-Noya & García-Canal, 2011). This is potentially a problem; for instance, it is challenging to reconcile the findings on alliances obtained via the two approaches, which limits the comparability of the results obtained, say, from developed and developing/emerging economies. Unfortunately, studies combining quantitative and qualitative methodologies were found to be rare.

Regarding the industrial context, our sample articles were heavily biased toward manufacturing (85), with a focus on high technology (47). The remaining articles had been focused on a combination of manufacturing and services industries (11), retail and wholesale (5), food processing (4), services (3) and multiple industries (3). Within the high-technology sectors, the automotive and electronics industries were found to be increasingly reliant on IVAs (Sinkovics et al., 2011; Wasti & Wasti, 2008), as their R&D-intensive nature makes the use of vertical alliances an optimal strategy to support their R&D and component manufacturing (Khan et al., 2015). However, compared with those in other manufacturing and service sectors, the firms in the automotive and electronics industries were found to outsource larger parts of their value chain and to experience greater challenges in the coordination of complex configurations (Jean et al., 2010; Wareham et al., 2005). We observed that a handful of studies had explored different industries such as seafood (Voldnes & Kvalvik, 2017), sports shoes (Lechner et al., 2020), wood (Svendson & Haugland, 2011), and grocery (Roslin &

Melewar, 2001). This suggested that the IB perspective and the aspects related to IVA activities are applicable to unique industry contexts. Given the increasing role played by the service industries, we were surprised by the relative dearth of studies on them, particularly in developed markets. This was also remarkable in light of the intangibility of their product, which, for instance, could present challenges vis-à-vis asset complementarity.

3.4. Size of firms

The majority of our sample articles (96) had focused on large multinational enterprises (MNEs) (Brookfield & Liu, 2005; Seyoum & Lian, 2018; Yu & Liao, 2008), while the remainder (15) had considered small and medium-sized enterprises (SMEs) (Eriksson & Chetty, 2003; Johnson et al., 2013). This was also somewhat surprising, given the growing visibility of SMEs in the global economy and their unique strategic features—e.g., their preference for piggybacking opportunities. Alliances between large and small firms might be of particular interest. Furthermore, a large number of sample articles were found to have categorized IVAs into: (1) backward IVAs from buyers to suppliers (e.g., Huang & Kim, 2019; Kim et al., 2018; Parente et al., 2011; Verwaal, 2017) and (2) forward IVAs from suppliers to buyers (Chetty & Eriksson, 2002; Dou et al., 2010; McDermott & Corredoira, 2010; Miozzo &

Table 6
Theoretical frameworks used in previous IB research on IVAs.

Theoretical approach	Location of authors	Study context	Basic assumptions	Exemplary studies
Agency approach	Hong Kong and the US	China	Firms possess power over their alliance partners (i. e., customers) due to their expertise and functional indispensability, which result in knowledge asymmetry.	(Dou et al., 2010)
Birkinshaw et al. (1995) model	The US	Taiwan	Structural determinants (market standardization) and competitive factors (economies of scale, comparative advantage) influence IVA formation and promote performance.	(Johnson et al., 2013)
Cultural theory	Canada, Taiwan, the UK, the US	Japan, New Zealand, Taiwan	Cultural distances—which reflect the divergent roles, responsibilities, and behaviors of allying firms—explain the complexity and configuration of IVAs.	(Delerue & Sicotte, 2019; Kim et al., 2018)
Dynamic capability	Finland, Sweden, Spain, Taiwan, the UK, the US, South Korea	Finland, Taiwan, Brazil,	Firms need to deploy IVAs to develop dynamic capabilities of sensing, seizing, and transformation in order to achieve competitive advantage.	(Jean et al., 2015; Liu & Zhang, 2014; Parente et al., 2011)
Institutional perspective	Finland, Hong Kong, Norway, Taiwan, the UK, the US	China, Japan, Norway, Taiwan	The institutional environment (i.e., legal, normative, and regulatory systems) of the home and host countries encourages a firm to substitute institutional pressure and coordinate vertical exchanges.	(Kimino et al., 2014)
Internationalization theory	Sweden, Italy, India, Lithuania, the US	Sweden, Italy, India, Lithuania	The success of firms in foreign markets is strictly related to the economic environment in which they operate and, especially, to information acquired through their relationship with vertical exchange partners.	(Conti et al., 2014; Johnson et al., 2013; Sim & Pandian, 2003)
Knowledge-based view	Belgium, Korea, Spain, Taiwan, the UK, the US	China, Japan, Korea, Netherlands, Poland, Spain, Taiwan	Firms can extend the scope of their knowledge through alliances with vertical partners in order to promote innovation and international performance.	(Nobeoka et al., 2002; Seyoum, 2020; Shin et al., 2016)
Network theory	Australia, Belgium, Canada, China, Denmark, Hong Kong, India, Italy, New Zealand, Spain, Sweden, Taiwan, Thailand, the US	Brazil, Denmark, Sweden, Taiwan, Thailand, Netherlands, New Zealand, the US	The social and structural embeddedness in IVAs improves the innovation potential of a firm to succeed in international markets.	(Eriksson & Chetty, 2003; Hohenthal et al., 2014; Turkina & Van Assche, 2018)
Relational view	Australia, Cyprus, Hong Kong, South Korea, the UK, the US	China, South Korea, the UK, the US, Zimbabwe	Relation-specific investments and relational norms (e.g., commitment, power, and trust) enable a firm to monitor IVAs and enhance their competitiveness in international markets.	(Matanda & Freeman, 2009; Zhang et al., 2003)
RBV	Australia, China, France, Hong Kong, Italy, Russia, Spain, Taiwan, the UK, the US	China, France, Germany, Poland, Russia, Taiwan, the UK	A firm's unique internal (e.g., relational specific investments) and external resources (i.e., IVAs) can contribute to knowledge acquisition and international performance.	(Birkinshaw et al., 2005; Chang & Gotcher, 2007; Gentile-Lüdecke & Giroud, 2009)
TCE	Austria, China, Cyprus, France, Germany, New Zealand, Norway, South Korea, Spain, Taiwan, Turkey, the UK, the US	China, Hungary, Japan, Poland, Slovakia, Slovenia, South Korea, Norway, Taiwan, the US	Transaction-specific assets present hazards, like technological leakage or expropriation hazards, and require a firm to protect itself from opportunism by IVA partners.	(Jindra et al., 2009; Leonidou et al., 2011; Lojacono et al., 2017)

Grimshaw, 2008).

3.5. Theoretical perspectives

An analysis of our sample articles revealed the multidisciplinary nature of the IVA literature. Numerous theories were found to have been used, many of which had originated in management and IB fields (McDermott & Corredoira, 2010; Wang & Wu, 2016), while others had been borrowed from different ones (Ayakwah et al., 2018; Griffith & Myers, 2005; Huang & Kim, 2019). However, among the wide variety of theories revealed by our analysis, not all had enjoyed the same degree of popularity (see Table 6). Importantly, as can be seen in Table 6, scholars from diverse geographic locations were found to have varied in their theory preferences, which could engender bias and undermine comparison opportunities. In general, five main theories were found to have been applied to the study of IVAs: TCE (22), network theory (17), the resource-based view (15), the relational view (11), and institutional theory (8).

Underlining the complexity of IVAs, the articles in the IB literature were found to have often taken multiple theoretical perspectives, arguing that a single theoretical approach could limit the understanding of complex vertical linkages in international activities (Wareham et al., 2005; Zhang et al., 2003). The adoption of multiple theoretical frameworks can provide insights at different levels. For instance, by relying on the RBV, dynamic capability, and the institutional perspective, Chang and Gotcher (2020) showed that the presence of co-production in the buyer-supplier relationship promotes environmental innovation ambidexterity and eco-innovation, but is conditioned by institutional pressures. Liu (2012a) integrated insights from TCE, organizational learning theory, and the knowledge-based view (KBV) to underscore the importance of protection, tacitness, and asset specificity for the acquisition of knowledge from vertical partners, thereby leading to enhanced innovation capability. Another potential advantage provided by the use of multiple theories is the ability to examine and compare their predictive power, thus contributing to cross-fertilization and novel theory development in IB and beyond. At the same time, the simultaneous use of multiple theories is challenging because scholars tend to develop an in-depth familiarity with a particular theory, and different theories may require different data and methodologies. All other things being equal, institutional theory would seem to be more amenable to qualitative inquiry than TCE, for instance.

Despite the existence of competing perspectives on IVAs, several scholars have suggested that both empirical and theoretical research should better account for the differences between backward and forward IVAs (Chen et al., 2017; Fang et al., 2015; Rindfleisch & Heide, 1997). Different theories may present different advantages in relation to the alliance type under study. For example, TCE is among the theories that seem to be better aligned with backward IVAs (Ju et al., 2019). Central to this theory is the selection of an organizational structure—with lower transaction costs—that effectively safeguards against opportunism in partners and ensures their compliance with contractual obligations (Williamson, 1989, 2008). In particular, due to behavioral uncertainty and to the potential opportunism of international suppliers, backward IVAs involve greater asset specificity than forward ones (Liu, 2012a; Skarmees et al., 2002). Research on backward IVAs suggests that buyers make transaction-specific investments (involving, e.g., the adoption of IT systems, enforceable contracts, and centralized controls) to lower the costs involved in the external coordination with suppliers without increasing the related contractual risks, thus leading to more backward integration (Jean et al., 2010; Zhou & Xu, 2012). Similarly, the institutional perspective (North, 1990; Scott, 1995) would seem to be better suited to understanding backward IVAs because global institutional situations—i.e., legal, normative, and regulatory arrangements (Scott, 2008)—influence buyer-supplier integration and international market entry in different ways (Svendsen & Haugland, 2011). Specifically, scholars have proposed that the pressure stemming from regulatory

unpredictability and corruption leads to buyer preference for different international suppliers to enter international markets (Sun et al., 2020). Another viable route involves looking at international supplier compliance with regulative institutions and adaptation to norms (Dow et al., 2011). In such situations, buyers need to make relation-specific investments and rely on effective governance mechanisms to overcome any institutional impediments and generate value from international suppliers to enhance their international performance (Svendsen & Haugland, 2011; Zhou & Poppo, 2010).

In contrast, research on forward IVAs tends to view (social) network theory as an important perspective (Emerson, 1976; Johanson & Mattsson, 1988). By relying on international customers, suppliers can understand market needs, gain knowledge about culture, identify opportunities, and design products suited to meet international market demands (Chetty & Eriksson, 2002; Dow et al., 2011). In particular, social networks based on trust and commitment contribute to supplier-buyer relationships favorable to joint value creation (Kwon, 2011). More importantly, the articles were found to unpack the characteristics and qualities of forward IVAs to generate value for IB activities (Chang & Gotcher, 2007). For example, it has been argued that an embedded supplier-customer relationship enhances information exchange and promotes joint learning (Soontornthum et al., 2020).

Some theories and ‘views’ (e.g., the RBV or the KBV) seem appropriate to understand both backward and forward IVAs. The RBV (Barney, 1991), for example, describes how firms leverage their resources (e.g., knowledge management tools, compositional capabilities, and relation-specific investments) to reconfigure their backward and forward IVA relationships (Chang & Gotcher, 2020; Malik, 2012). Others see backward and forward IVAs as critical resources and argue that interdependence between international partners transmits explicit knowledge and supports international performance (Kim et al., 2018; Nikolchenko et al., 2018). Similarly, the KBV’s proponents (Grant, 1996) see backward and forward IVAs as knowledge-based relational networks in which firms acquire and synthesize knowledge and build new advantages from reconfigurations of knowledge resources (Gentile-Lüdecke & Giroud, 2009; Verwaal, 2017). Specifically, any joint learning activities enacted in long-lasting buyer-supplier relationships make firms better able to refine and extend their innovation knowledge, skills, and processes due to knowledge exchange (Jean et al., 2018; Un & Rodríguez, 2018), whereas supplier-buyer relationships enable the selection of technologies in the production stage and the commercialization and repositioning of products in international markets (Nobeoka et al., 2002; Shin et al., 2016). Furthermore, a small number of studies were found to focus on the organizational learning perspective (Helleloid & Simonin, 1994), whereby partners view their backward and forward IVAs as chances to learn and obtain valuable information about new opportunities, which can be particularly important in the global setting (Kumaraswamy et al., 2012; Liu, 2012a).

4. Results and review framework

This section synthesizes the findings of the IVA literature into a multi-dimensional comprehensive framework (shown in Fig. 4) that includes antecedents, mediators, moderators, outcomes, and controls, provides a coherent summary of the findings, and serves as a guide for researchers and practitioners. Next, we discuss the findings related to each category along with its relevant sub-categories and the key themes within each of these (see Appendix 1-4 for details). We illustrate the sub-categories and key themes in italics (e.g., *long-term orientation* and *joint value creation* as themes of the *relational outcomes* sub-category).

4.1. Outcomes of IVAs

An analysis of the literature yielded a variety of *outcomes* resulting from antecedents and mediators. As shown in Fig. 4, our review revealed evidence of four broad outcome categories: *relational*, *strategic*,

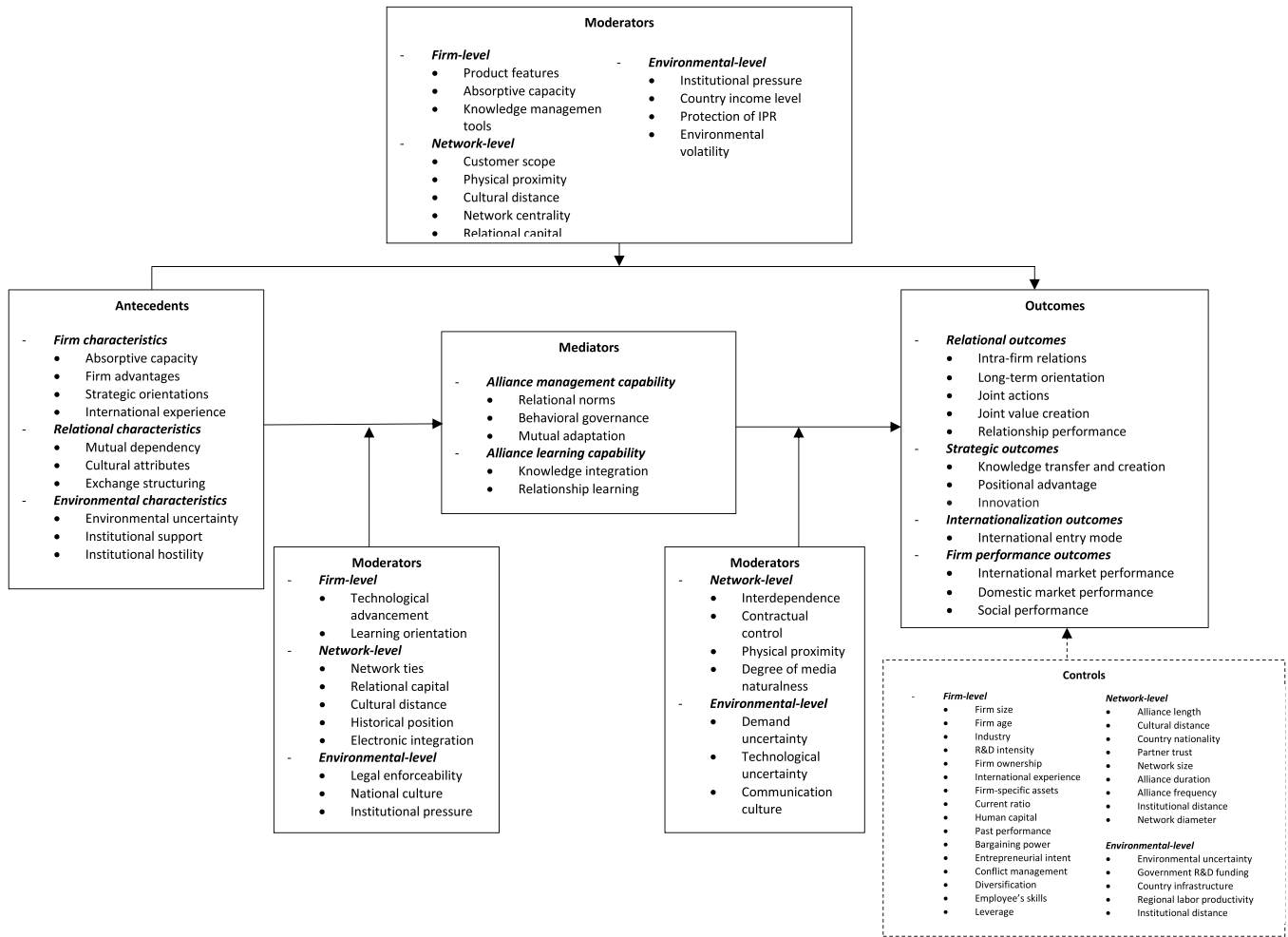


Fig. 4. Multi-level framework of IVAs in the IB literature.

internationalization, and performance.

4.1.1. Relational outcomes

Relational outcomes refer to the extent to which an IVA is productive and rewarding for intra- and inter-firm relationships (Kim et al., 2018). Most research has focused on five types of relational outcomes: *intra-firm relations*, *long-term orientation*, *joint action*, *joint value creation*, and *alliance performance*.

First, the literature on *intra-firm relations* suggests that political risks compel buyers to integrate knowledge sourced from international suppliers, which ultimately promotes global intra-firm relations (Lee et al., 2020).

Second, *long-term orientation* relates to the building of mutually cooperative and long-lasting relationships with external partners. For example, prior studies indicate that backward and forward IVAs promote relational norms and behavioral governance, which result in strong vertical ties (Dow et al., 2011) and long-term relationships (Yu & Liao, 2008).

Third, *joint actions* refer to the collaborative efforts made by firms to accomplish various tasks or activities (Hong & Snell, 2015). As argued by Duanmu and Fai (2007) and Liu and Zhang (2014), mutually dependent backward IVAs aid partners in sharing tacit knowledge and jointly improving product efficiency. In contrast, greater asset specificity and cultural distance reduces the degree of partner involvement in product development processes (Griffith et al., 2009).

Fourth, *joint value creation* is related to the strategic benefits that enable the international alliance partners engaged in backward and

forward IVAs to join forces in competing against their competitors (Heim et al., 2019). For example, Chang and Gotcher (2007) showed that relation-specific investments promote relationship learning, which, in turn, promotes joint value creation.

Finally, *relationship performance* refers to a firm's satisfaction with the value generated from backward and forward IVAs, such as the availability of the products or services needed to perform a business operation or to achieve customer satisfaction (Collins et al., 2012; Katsikeas et al., 2009). Dou et al. (2010) found that partner asymmetry enables the goal incongruence that improves relationship performance. Other scholars confirmed that a firm's international experience and mutual dependency between buyers and suppliers promote knowledge integration, which supports relationship performance (Hohenthal et al., 2014; Liu et al., 2010).

4.1.2. Strategic outcomes

Strategic outcomes relate to the creative discovery and attainment of competitive market advantages that are directly gained from backward and forward IVAs. This category of outcomes includes *knowledge transfer and creation*, *positional advantage*, and *innovation*.

First, several studies support *knowledge transfer and creation* as an outcome of both backward and forward IVAs. For example, researchers have found that the absorptive capacities and organizational structures of buyers promote the integration of knowledge from international suppliers (Hallin & Holmström Lind, 2012; Khan et al., 2015), which ultimately promotes the creation of new firm knowledge (Gentile-Lüdecke & Giroud, 2009). Others have found that institutional and psychic

distance promote interconnectedness and adaptation between suppliers and international buyers (Sootornthum et al., 2020), which results in knowledge acquisition (Nordman & Tolstoy, 2014).

Second, *positional advantage*, which refers to the importance of holding a relatively low-cost and superior value position in the international marketplace (Lechner et al., 2020; Seyoum, 2020). For example, Kotabe et al. (2007) found that strategic orientations and firm advantages (e.g., technology capabilities and tacit knowledge) promote adaptation in forward IVAs due to supplier flexibility, which is fundamental for positional advantage. Similarly, backward IVAs promote positional advantage because supplier integration facilitates the rapid incorporation of technological improvements into production processes (Scott-Kennel & Enderwick, 2004; Seyoum & Lian, 2018).

Finally, there is growing evidence of *innovation* outcomes, referring to the ability of firms to develop new products/processes or improve existing ones (Parente et al., 2011). For forward IVAs, scholars have suggested that suppliers engage with customers in regular and disciplined discussions aimed at collective problem solving, which will eventually promote innovation (McDermott & Corredoira, 2010). In terms of backward IVAs, relational norms and governance mechanisms increase the integration of knowledge from international suppliers in support of innovation (Jean et al., 2010; Liu, 2012a).

4.1.3. Internationalization outcomes

Research on *internationalization outcomes* has considered *international entry mode* as a prominent outcome. The scholarship suggests that involvement in both backward and forward IVAs serves as a foundation based on which exporting can be used as a non-equity entry mode for accelerated internationalization (Jansson & Sandberg, 2008). Specifically, the establishment of and commitment to relationships with foreign distributors and agents provide access to resources, market knowledge, and cultural awareness (Jansson & Sandberg, 2008; Lojacono et al., 2017), leading to successful exporting (Alteren & Tudoran, 2016; Conti et al., 2014). Importantly, the international buyer/supplier relationships of exporters need to be developed in a balanced way; their nurturing should extend beyond their early or development stages of internationalization to encompass the post-entry one. However, in this latter stage, it is difficult to maintain contact with international buyers or suppliers due to a lack of intermediary control and an absence of market knowledge (Jansson & Sandberg, 2008). To overcome these challenges, the optimal strategy would seem to involve taking over buyer and supplier relationships by setting up subsidiaries (Jindra et al., 2009). By establishing subsidiaries as an equity entry mode, firms can become involved in host country vertical linkages, which is conducive to interacting more intensely with local firms, sharing knowledge, and learning from the local environment (Gentile-Lüdecke & Giroud, 2009). In particular, embedded IVAs—which are characterized by high levels of trust, adaptation, cooperation, and interdependence—facilitate the implementation of interactive learning processes between subsidiaries and local partners (Hallin & Holmström Lind, 2012; Un & Rodríguez, 2018). The presence of subsidiaries in the host business environment increases the likelihood of observing changes and introducing innovations with local customers and suppliers (Lee et al., 2020; Mol & Brewster, 2014). In a similar vein, equity-based international joint ventures can help firms to exchange knowledge with locally owned suppliers (Seyoum & Lian, 2018). However, while using international joint ventures as an entry mode, firms need to maintain a mechanistic decision-making structure and to consider the recipients' absorptive capacity in order to facilitate socialization processes aimed at the efficient exchange of knowledge with international buyers and suppliers (Khan et al., 2015).

4.1.4. Firm performance outcomes

A large body of scholarship has examined firm performance outcomes in terms of international market, domestic market, operational, and social performance.

First, *international market performance*—i.e., the achievement of revenues and sales objectives—is a widely studied outcome variable. For example, Savino et al. (2017) found that strategic orientations (e.g., market-oriented environmental sustainability) enhance knowledge integration, which promotes *international market performance*. Further, Matanda and Freeman (2009) found that, in the presence of environmental uncertainty, greater relational norms are required to enhance firm international performance.

Second, *domestic market performance* is the realization of market share, sales growth, and profitability (Jean et al., 2010; Ju et al., 2019). Scholars have suggested that firm advantages (e.g., market scanning, economies of scale, and comparative advantages) promote backward and forward alliance management, resulting in increased *domestic market performance* (Jean et al., 2015; Johnson et al., 2013). Moreover, in a culturally-distant relationship, partners must interact frequently to build trust in order to attain *market performance* (Ketkar et al., 2012).

Third, *operational performance*, related to on-time delivery and order fulfillment, is influenced by IVAs (Lee, 2016). For example, Nikolchenko et al. (2018) showed that the mutual dependency between suppliers and buyers provides the knowledge necessary for firm *operational performance*.

Finally, *social performance* is related to the configuration of social responsibility, processes of social responsiveness, and policies related to a firm's societal relationships (Lee, 2016). In this body of research, scholars have suggested that the mutual dependency between IVA partners requires them to pursue governance mechanisms aimed at promoting social performance (Lee & Gereffi, 2015; Park & Ghauri, 2015).

4.1.5. Summary

Looking across articles, our two sample decades of IVA research merit a few outcome-related observations. First, although antecedents and mediators can generate strategic outcomes, the focus on environmental sustainability—such as conservational innovations (Chang & Gotcher, 2020)—has been limited. This suggests that further research on environmental sustainability outcomes could enrich the extant scholarship. Second, while scholars have found evidence of accelerated internationalization and international market performance, the emphasis on forward IVA-related outcomes remains fairly limited. To fill this gap, future researchers could consider other international performance-related outcomes such as long-term resilience and growth patterns in foreign markets, particularly in the context of forward IVAs.

4.2. Antecedents of international vertical alliances

Questions pertaining to which factors influence outcomes and through which mediators they operate have been widely addressed in the literature, encompassing various theoretical perspectives (see Appendix 2). Our review of IVAs yielded three main categories of antecedents: *firm*, *relational*, and *environmental characteristics*.

4.2.1. Firm characteristics

Work exploring the impact of *firm characteristics* has primarily focused on the roles played by *firm advantages*, *absorptive capacity*, *strategic orientations*, and *international experience*.

First, *firm advantages* emerged as the most reported antecedent. Studies have shown that investment in technology (e.g., the use of mobile phones, 3-D printing, and digital platforms, and investment in technological knowledge) enables firms to effectively share information with backward and forward IVA international partners for joint value creation and relationship performance (Heim et al., 2019; Khare et al., 2012). Similarly, others have found that a firm's R&D capabilities imply a high-level of international vertical integration that enables the development of positional advantage (Kotabe et al., 2007; Kumaraswamy et al., 2012; Park & Krishnan, 2001). Human-focused perspectives reflect the alignment between human resources and IVAs for

relationship and international market performance (Anwar & Nguyen, 2011; Scott-Kennel & Enderwick, 2004). For example, Xie et al. (2010) showed that human capital enables the development of trust between IVA partners, which results in relationship performance. Further, scholars have proposed that the organic structural distribution of a firm ensures effective alliance management for knowledge transfer (Khan et al., 2015; Lechner et al., 2020).

Second, *absorptive capacity* provides a strong aptitude toward knowledge integration in IVAs (Gentile-Lüdecke & Giroud, 2009). Khan et al. (2015) tested and found support for the notion that *absorptive capacity* can be a stepping-stone in the socialization mechanism enacted between partners to comprehend knowledge transfer. Similarly, others have found that the *absorptive capacity* of a firm enhances alliance learning, which is conducive to joint action and relationship performance (Liu & Zhang, 2014; Liu, 2012b).

Third, *strategic orientations*—such as entrepreneurial, learning, or market ones—have been examined as an antecedent to mediators and outcomes. For example, Kotabe et al. (2007) showed that the degree of a firm's entrepreneurial orientation enhances the extent of vertical knowledge integration and promotes that firm's positional advantage. On the other hand, Savino et al. (2017) found that a market-oriented culture of sustainability can help a firm's external knowledge integration for sustainable offerings, which, in turn, leads to better international market performance. However, little research has been conducted with a clear focus on environmental sustainability.

Finally, some work has paid attention to *international experience*—which a firm gains by developing a strong customer base in a foreign market—as a means for international market entry (Conti et al., 2014). Research suggests that *international experience* promotes the experiential alliance knowledge that is necessary in order to improve and sustain relationship performance (Hohenthal et al., 2014). Overall, as in the rest of the alliance literature, the contribution made by *international experience* to a firm's core knowledge and the impact it has on its ability to establish and manage alliances are not always clearly differentiated. There is also hardly any reference to the notion of erroneous learning, whereby the international experience accumulated by operating in culturally and institutionally distant markets ends up distorting learning. While this has been found vis-à-vis multinational subsidiaries (Zeng et al., 2013), it would be intriguing to find out whether such finding holds in an alliance and, if so, in what type.

4.2.2. Relational characteristics

Another important antecedent category is *relational characteristics*, which includes *mutual dependency*, *cultural attributes*, and *exchange structuring*.

First, *mutual dependency* implies the cooperation between IVA partners aimed at upholding alliance mechanisms for the realization of outcomes (Hong & Snell, 2015; López-Cózar-Navarro et al., 2017; Roslin & Melewar, 2001). Consistent with the Uppsala model and the network perspective, prior studies have suggested that greater firm involvement in backward and forward IVAs provides richer, context-specific knowledge (Eriksson & Chetty, 2003; Lindstrand et al., 2009; Park & Krishnan, 2001), which leads to enhanced innovation, export, and firm market performance (Jansson & Sandberg, 2008; Jean et al., 2010; Malik, 2012; Mauri & Neiva de Figueiredo, 2012). However, several authors have argued that any mutual dependency between geographically distant partners is problematic due to information overload, power dynamics in international linkages, and unionization, which are detrimental to knowledge reconfiguration and international market performance (Premus & Sanders, 2008; Xie et al., 2010). In this regard, whole network-based studies suggest that occupying a gatekeeping position in an IVA enables a firm to apply, filter, and reframe knowledge as it passes from buyer/supplier to focal firm, enhancing its own international market performance (Sharma et al., 2019). Also, greater face-to-face interaction and socialization can help international partners to reduce any relational tensions and promote cultural adaptation for innovation

(Dyer & Chu, 2000; Jia et al., 2016; McDermott & Corredoira, 2010). Furthermore, IVA partners can benefit from the adoption of a co-competition strategy because, whereas competition promotes a learning race, cooperation promotes trust for the sharing of knowledge, thus counterbalancing the exchange of knowledge for the realization of outcomes (Hong & Snell, 2015). Moreover, studies have suggested that, unlike joint ventures, contractual IVAs offer substantial benefits in technology-intensive industries because they can help to avoid supplier opportunism and to gain value from international production processes (Lojacono et al., 2017). A possible alternative can also involve relying on cross-country linkages within the same geographic region (e.g., Europe) (Jindra et al., 2009), domestic vertical alliances (DVAs) (Jurkov & Benito, 2018), or clustering, whereby partners can benefit from quality, speed, and likelihood of information access to drive innovation (Ayakwah et al., 2018; Perri et al., 2013) and international market performance in relation to culturally and physically different markets (Conti et al., 2014).

Second, *cultural attributes*, as the perceived risks associated with cultural beliefs and host-country legal systems, have received significant scholarly attention in the backward and forward IVA literature (Ho et al., 2018; You et al., 2018). While DVAs consist of individuals from the same communities with high mutual absorptive capacity for knowledge (Tallman & Chacar, 2011), IVAs establish barriers to the cross-partner sharing of knowledge due to cross-cultural differences (Delerue & Sicotte, 2019). Specifically, consistent with the TCE assumption, prior studies have argued that cross-cultural differences encourage IVA partners to act in their respective self-interest (Mol & Brewster, 2014), ultimately resulting in lower degrees of alliance learning and joint actions (Griffith et al., 2009; Liu, 2012b). Cultural preferences vary across countries; Liu and Zhang (2014) found that “USA partners have more room for negotiation” (p. 723) and Liu (2012a) that “Western partners are more open and easier to communicate and share information. Japanese partners incline to protect their proprietary knowledge with strict rules on sharing documentation” (p. 315). This was further confirmed by Bstieler and Hemmert (2008), who found that the trust levels observed in international supplier-buyer linkages are weaker in South Korea than in Austria because of the greater influence of family ties in the former, which means that it takes more time to develop the same level of trust with outsiders. To develop relationship commitment for better international market performance, IVA partners need to be equipped with cultural sensitivity (Skarmeas et al., 2002). Another stream of research argues that individualistic countries (e.g., the US and Brazil) are more self-oriented and perform cost-benefit analyses in relation to working with other parties (Griffith et al., 2009; Ketkar et al., 2012). Similarly, partners from high-uncertainty avoidance cultures use coordination systems to manage uncertainty issues, whereas low-uncertainty avoidance countries are less comfortable with formal rules (Delerue & Sicotte, 2019; Kim et al., 2018). Thus, individualistic and high uncertainty avoidance countries prefer joint ventures and contractual alliances, whereas collectivist and low-uncertainty avoidance ones prefer relational norms and trust building (Delerue & Sicotte, 2019; Zhang et al., 2003). Thus, cultural differences can give rise to conflicts and misunderstandings that have negative implications on the exchange of knowledge between international vertical partners.

Finally, researchers have found that *exchange structuring* can promote the effective management of IVAs and is correlated with mediators and outcomes. Notwithstanding their popularity, vertical alliances are associated with salient risks such as deceitful and self-serving behaviors (Katsikeas et al., 2009), which tend to be more severe in IVAs that they are in DVAs formed in local markets (Handley & Angst, 2015). Our review suggests that long-term relationships benefit from structuring and maintaining IVAs. With a foundation in TCE, research indicates that asset specificity (i.e., the impossibility of redeploying specialized investments to other relationships) implies that relation-specific investments signal greater relational norms in IVAs and promote alliance learning (Chang & Gotcher, 2007; Katsikeas et al., 2009; Kwon, 2011).

In particular, backward IVAs become more productive because specialized assets are better suited to international suppliers' needs and support specific production tasks (Katsikeas et al., 2009; Skarmeas et al., 2002). In contrast, others have argued that asset specificity leads to partners being locked in backward relationships in which suppliers behave opportunistically, ultimately leading to reduced joint actions (Griffith et al., 2009). Under such conditions, partnering firms need to choose more explicit forms of contractual governance to avoid having to both engage in costly bargaining over earned profits and shoulder the cost of potential early terminations (Zhou & Poppo, 2010; Zhou et al., 2008). In addition, international partners need to be in settings involving symmetric dependency, such that each partner contributes equal levels of asset specificity to the IVA (Williamson, 2008); this acts as a control mechanism and therefore promotes cooperation (Leonidou et al., 2013). As suggested by prior empirical evidence, the presence of partner asymmetry in forward IVAs leads to goal incongruence (i.e., divergent views between vertical partners regarding specific goals), ultimately reducing relationship performance (Dou et al., 2010). In a similar vein, prior research has shown that any psychic distance between international partners can reduce trust and create problems for knowledge integration in backward IVAs (Katsikeas et al., 2009; Nordman & Tolstoy, 2014). Relatedly, scholars have found that forward IVAs require better quality communication and less history of unresolved conflicts between geographically distant partners (e.g., Asian and Western ones) to promote trust in the innovation development process (Bstieler & Hemmert, 2008).

4.2.3. Environmental characteristics

Prior studies on *environmental characteristics* have considered *environmental uncertainty*, *institutional support*, and *institutional hostility* as antecedents.

First, *environmental uncertainty*, which refers to the instability of technological, market, and demand conditions, is a critical antecedent (Zhou & Poppo, 2010). Research demonstrates that *environmental uncertainty* in local and host markets creates unpredictable conditions for both backward and forward IVAs, hence dampening relational norms between international partners (Katsikeas et al., 2009; Kim et al., 2018; Skarmeas et al., 2002). In contrast, others have found that *environmental uncertainty* promotes relational norms between international partners, supporting backward integration and thereby enhancing international market performance (Liu, 2012b; Zhou et al., 2008). For example, studies have shown that the turbulence and competitive intensity found in international markets require access to unique information (Matanda & Freeman, 2009; Sun et al., 2020). As a result, close and trustful cooperation between international vertical partners can overcome any *environmental uncertainty* and lead to better international market performance (Matanda & Freeman, 2009).

Second, research has shown that *institutional support*, particularly in emerging markets, enables firms to develop innovations as a result of weak intellectual property right protection, and promotes firm performance (Sun et al., 2020). In a similar vein, Dinh Nguyen et al. (2017) showed that institutional support in international markets encourages IVA formation and innovation in exporting firms.

Finally, limited efforts have been dedicated to assessing the impact of *institutional hostility*, which, in host markets, increases market risks for international firms, causing dependency on IVA partners in export markets (Zhang et al., 2003).

4.2.4. Summary

Firm and relational characteristics have been the antecedents most frequently examined in the literature. Our review suggests that firm characteristics (e.g., firm advantages and absorptive capacity) push them to seek IVAs, and relational characteristics (e.g., mutual dependency and exchange structuring) pull them to invest in IVAs. As such, firm and relational characteristics help firms to pursue IVA mechanisms and attain outcomes. While cultural attributes have been

widely studied in the context of backward IVAs, we noticed that forward linkages remain an underexplored area of research, thereby warranting more attention. In addition, the possible prevalence of cultural differences across the various regions of a country also warrants future scholarly attention. With few exceptions, researchers have not tested how institutional conditions relate to mediators and outcomes. In addition, individual characteristics (e.g., managerial attributes, leadership characteristics, and dual boards) remain overlooked in the extant literature. Researchers have also paid limited attention to firm, relational, and environmental characteristics in the context of forward vertical alliances.

4.3. Key mediators of international vertical alliances

As illustrated in the AMO framework (Fig. 4), an important category that has preoccupied scholars pertains to the mediators through which antecedents lead to outcomes. We identified two primary mediator categories linking antecedents to outcomes—*alliance management capability* and *alliance learning capability*.

4.3.1. Alliance management capability

Alliance management capability consists of the routines and activities needed to manage vertical alliances in order to gain meaningful outcomes (Ling-yee & Ogunmokun, 2001). While DVAs can be managed and monitored through frequent face-to-face interactions (Ayakwah et al., 2018), achieving high performance outcomes in IVAs is a major challenge because of cultural and physical differences and varied competitive conditions (Alteren & Tudoran, 2016). Research focusing on *alliance management capability* emphasizes the mechanisms (i.e., relational norms, behavioral governance, and mutual adaptation) required to maintain close and long-term IVAs.

First, drawing on social exchange theory (Emerson, 1976) and the relational paradigm (Morgan & Hunt, 1994; Styles et al., 2008), prior research has focused on the roles played by *relational norms*—such as trust, commitment, communication, cooperation, power, and flexibility—in ensuring lasting backward and forward IVAs. In fast-moving industries, trust and flexibility between international partners promote technical cooperation and facilitate the flow of information for good international market performance (Matanda & Freeman, 2009; Zhang et al., 2003). Particularly in backward IVAs, relational norms of commitment, cooperation, communication, and trust promote the advantages of mutual dependency for relationship (Leonidou et al., 2013), social, and operational performance. Also, firms in forward IVAs need to capitalize on trust, commitment, and power to leverage the value of asset specificity for relationship (Kwon, 2011) and international market performance (Matanda & Freeman, 2009).

Second, *behavioral governance* enables the active monitoring of international partners' activities and thus encourages effective alliance management (Svendsen & Haugland, 2011; Yu & Liao, 2008). Specifically, given the TCE assumption that opportunism is an inherent factor in IVAs, studies have found that the use of contractual governance and output monitoring can reduce conflicts and align the expectations of international partners (Gentile-Lüdecke & Giroud, 2009). In addition, contractual governance acts as a mediating mechanism to leverage the value of IVA dependency for innovation and firm market performance because of the greater mutual accountability felt by international partners (Jean et al., 2010). However, the idea of contractual governance might not be effective in Asian contexts, such as that of China, in which personal connections and relational ties serve as a lubricant for international exchanges (Zhou & Xu, 2012). Yet, under conditions of weak institutions and a lack of relational ties, contractual governance cannot prevent partners from exploiting the commitment and efforts of other parties (Zhou et al., 2008). In such situations, formal visits—despite their cost and complexity and the strong dedicated efforts they require (Katsikeas et al., 2009)—can enable international partners to both avoid opportunism and leverage the value of organic organizational structure

and absorptive capacity for knowledge transfer (Khan et al., 2015). Accordingly, recent scholarship has underscored the importance of *virtual integration* as an effective governance mechanism in coordinating and communicating the joint tasks through which firms can exploit cultural differences and environmental uncertainty for relationship performance (Kim et al., 2018). Clearly, it is too early to make a definitive call on the role apparently played by virtual integration and whether—and under what circumstances—it can effectively substitute for physical integration. Future research will hopefully address this question.

Finally, *mutual adaptation* is an important mediating mechanism in IB. Due to the greater complexity inherent in IVAs, as opposed to DVAs (García-Canal & Sánchez-Lorda, 2007; Iurkov & Benito, 2018), partners need to develop a deep understanding of the local demands that are linked with cultural preferences, geographical issues, and local market conditions (Lojacono et al., 2017). This requires international vertical partners to be mutually adaptable in order to overcome their cultural differences and work together effectively (Collins et al., 2012). For example, when Western buyers and Asian suppliers socialize (Khan et al., 2015), they need to understand, adjust to, and learn each other's culture, enabling the creation of a hybrid culture in which buyers and suppliers shed their respective home ones (Jia et al., 2016). By adapting to each other's abilities, values, and cultures, international partners can exploit IVAs to promote joint value creation and relationship performance (Dou et al., 2010; Leonidou et al., 2011), and to enhance knowledge transfer (Soontornthum et al., 2020), which holds true in the case of both backward and forward alliances (Dou et al., 2010).

4.3.2. Alliance learning capability

Alliance learning capability is related to the ability to acquire and integrate knowledge from IVA partners to achieve desired outcomes (Liu & Zhang, 2014). Scholarly work on *alliance learning capability* has considered two aspects: *knowledge integration* and *relationship learning*.

First, *knowledge integration* involves the accumulation of knowledge and information from vertical international partners. Prior studies have shown that vertical international partners are better equipped with knowledge of the regulatory requirements found in global marketplaces (Lindstrand et al., 2009). As dependency is built-in in forward IVAs (Inkpen, 1998), it serves as a critical factor to promote the value of market-oriented environmental sustainability for knowledge integration and international market performance (Li et al., 2017). Others have argued that, over time, international supplier-customer integration strengthens mutual trust and provides a foundation for the sharing and integration of knowledge, eventually leading to joint value creation (Bhatti et al., 2020; Liu et al., 2010). Similarly, for backward IVAs, the empirical findings suggest that asset specificity is more likely to build a tightly-knit system suited to coordinate knowledge integration for innovation enhancement (Liu, 2012a); however, foreign partners tend to protect themselves by erecting barriers to their local partners' access to specific knowledge, thereby limiting knowledge integration for innovation enhancement (Liu, 2012a).

Second, prior studies have considered *relationship learning* as a mediating mechanism. For example, scholars have found that a firm's strategic orientations promote relationship learning from international backward partners, which is conducive to relationship performance (Liu, 2012b) and innovation (Jean et al., 2018; Liu & Zhang, 2014). In addition, asset specificity encourages firms to closely work with international partners in backward alliances for relationship learning, which results in joint value creation (Chang & Gotcher, 2007).

4.4. Moderators of international vertical alliances

Another interesting topic in the existing literature on IVAs is the role played by moderators. While we observed mixed findings, it is surprising that, despite nearly two decades of research, scholars have only made limited efforts to investigate the key boundary conditions of IVAs. A

partial explanation for this may be the fragmented nature of the research and the lack of precise empirical examination. As shown in Fig. 4, the investigated moderators fall into the *firm level*, *network-level*, and *environmental-level* categories. Furthermore, our review findings suggest that the vast majority of studies conducted on moderators have considered their role in the antecedents–outcomes and antecedents–mediators relationships, thereby leaving an important gap related to the mediators–outcomes one. These findings are discussed in the following section.

4.4.1. Firm-level moderators

Firm-level moderators refer to firm features—such as product features, absorptive capacity, knowledge management tools, technological advancement, learning orientation, adaptation, and financial slack. For the antecedents–outcomes relationship, the quality of product features determines the relationship between IVAs and international market performance. When a firm's products are low in innovativeness and differentiation, any increase in IVA sourcing will positively influence international market performance due to the availability of external knowledge suited to improve product quality (Murray et al., 2005). Also, absorptive capacity moderates the impact of backward IVAs on innovation performance, enabling firms to acquire and assimilate external knowledge with their internal one to create innovation performance (Shin et al., 2016). Moreover, knowledge management tools promote the positive association between IVAs and firm market performance; they do so because frequent visits and videoconferences support bonding and reduce coordination costs (Seyoum & Lian, 2018).

Considering the *antecedents–mediators* relationship, Jean et al. (2015) found that a firm's *technological advancement* positively moderates the effect of firm advantages (i.e., market scanning) on alliance management capability, but negatively moderates the relationship between international buyer-supplier mutual dependency and alliance management capability. In addition, a few scholars have considered *learning orientation* and found that the effect of international partner asymmetry on goal incongruence is reduced in the presence of a high learning orientation of a supplier toward an international buyer (Dou et al., 2010). They reasoned that a firm with a strong learning orientation is more open to new information; therefore, even if an international buyer is unfamiliar, a firm's ability to process local knowledge may enable it to reduce any goal incongruence found in a forward alliance.

In relation to the *mediators–outcomes* relationship, our review highlights that *financial slack* improves a firm's ability to utilize mutual adaptation for knowledge transfer in forward IVAs (Soontornthum et al., 2020).

4.4.2. Network-level moderators

Early research has shown that network-level moderators, primarily related to the characteristics and configurations of IVAs, shape the relationships in IB research. Scholars have identified customer scope, physical proximity, cultural differences, network centrality, relational capital, historical position, and electronic integration as important moderators. For the *antecedents–outcomes* relationship, research has shown that *customer scope* diminishes the returns reaped by supplier performance from forward IVAs because new customers with different requirements and expertise will be less valuable in servicing existing ones (e.g., non-automotive vs. automotive customers) (Nobeoka et al., 2002). Moreover, a higher *physical proximity* between buyers and suppliers strengthens the positive association between IVAs and firm performance because it increases the speed of information exchange and thus reduces uncertainties in the assembly lines (Seyoum & Lian, 2018). Sharma et al. (2019) argued that any increase in the average path length between IVA partners can boost opportunistic behaviors that are detrimental to the exploitation of suppliers for international market performance. However, Conti et al. (2014) suggested that a lower physical proximity strengthens the positive impact of backward IVAs on export propensity because geographical distance hampers the path of

international expansion and requires spillover from international suppliers. Similarly, large *cultural differences* increase the positive association between backward IVAs and export propensity because suppliers matter more to overcome transaction costs in the presence of high cultural distance (Conti et al., 2014). However, other scholars suggested that a high cultural distance decreases the positive effect of backward IVAs on innovation performance because it makes communication and control more difficult in relation to knowledge transfer (Parente et al., 2011). Moreover, *network centrality* is considered to be a moderator and the increased reputation and status of a firm in IVAs is argued to potentially signify the impact of network density on international market performance (Sharma et al., 2019). Finally, relational capital is vital for IVAs and innovation performance, in that trustful and close supplier relationships facilitate organizational learning and knowledge exchange in support of innovation and financial performance (Verwaal, 2017).

For the *antecedents–mediators* relationship, scholars have contended that *network ties* moderate the relationship between partner asymmetry and export marketing unethicality; the stronger the *network ties*, the stronger the negative association between partner asymmetry and export marketing unethicality due to effective governance mechanisms in building solidarity (Leonidou et al., 2013). Prior studies have considered *relational capital* as a moderator and have argued that relational norms of trust and social bonding can strengthen the positive impact of learning intent, absorptive capacity and relationship-specific investments on relationship learning due to the sharing of tacit and codified knowledge between partners (Chang & Gotcher, 2007; Liu, 2012b). Moreover, high levels of mutual trust developed among partners lessen the negative influence of institutional distance on access to knowledge (Ho et al., 2018). Also, in the presence of high levels of relational capital, detailed contracts are negatively related to supplier opportunism (Zhou & Xu, 2012). Furthermore, *cultural distance* is viewed as a moderator for the *antecedents–mediators* relationship. For example, Jean et al. (2015) found that high cultural distance strengthens the impact of market scanning, mutual supplier dependency, and trust on alliance management capability. Similarly, in the presence of high cultural distance, the IT advancement of firms can better contribute to behavioral governance in international customer-supplier relationships (Jean et al., 2010). However, Lew et al. (2016) argued that, at high levels of cultural distance, the maintenance of IVAs is more resource-intensive, which, in turn, makes knowledge sharing more costly. Soontornthum et al. (2020) found that, in forward IVAs, a longer *historical position* strengthens the effect of mutual dependency on technical adaptation because a longer period of exposure to the norms and standards of partners can amplify the logic of establishing embedded relationships. Finally, scholars have contended that *electronic integration* is an important moderating factor because it promotes the relationship between proactive customer orientation and joint learning due to the quantity and quality of information system integration (Jean et al., 2018).

Regarding the *mediators–outcomes* relationship, *interdependence* appears to be an important moderator for the relationship between relational norms and firm performance (Katsikeas et al., 2009). Leonidou et al. (2011) also considered the moderating role played by *interdependence* and found that the association between adaptation and relationship performance is made stronger by the willingness of partners to maintain the relationship in order to gain any desired resources and achieve important goals. However, others have argued that *contractual control* is a vital moderating factor because high levels of contractual governance, while promoting the positive impact of technological coordination on knowledge acquisition, reduce the positive impact of personal coordination mechanisms on knowledge acquisition (Wang, Huo, et al., 2019). Furthermore, Leonidou et al. (2011) argued that, in relationships characterized by low *distance*—e.g., low differences in language, political-legal systems, and business infrastructure—the resources possessed by customers are more visible and adaptation to forward IVAs is easier, thus improving relationship performance. Similarly,

the *physical proximity* of buyers and suppliers reduces potential delivery issues and therefore promotes the relationship between behavioral governance and competitive market advantage (Kotabe et al., 2007). In addition, a higher *degree of media naturalness* (e.g., face-to-face interaction and electronic communication) can promote knowledge sharing and learning, thus strengthening the positive association between behavioral governance and competitive market advantage (Kotabe et al., 2007).

4.4.3. Environmental-level moderators

Scholars have identified a number of environmental-level moderators—i.e., factors found in the external environment—including institutional pressure, income level, intellectual property right protection, environmental volatility, legal enforceability, and national culture. For the *antecedents–outcomes relationship*, scholars have suggested that *institutional pressure* strengthens the positive relationship between joint production actions and environmental innovation (Chang & Gotcher, 2020)—as well as vertical sourcing and international market performance (Ju et al., 2019)—because increasing external institutional pressure requires suppliers to acquire their partners' knowledge to yield performance outcomes. Similarly, the *income level* of a country determines the effect of backward IVAs on export propensity; in high income level export destination markets, the effect of backward IVAs on export propensity is more pronounced, particularly in the context of physically and culturally different markets (Conti et al., 2014). Moreover, a high degree of *protection of intellectual property rights* (IPR) in a firm's home country strengthens the positive effect of technological capabilities on the propensity to outsource; this is due to the firm's ability to protect itself from the risk of third party opportunism (Martínez-Noya & García-Canal, 2011). In addition, *demand uncertainty* promotes the positive effect of vertical knowledge sourcing on international market performance due to the availability of various types of adaptation schemes suited to deal with high demand uncertainty (Ju et al., 2019; Murray et al., 2005). However, high levels of *technological uncertainty* reduce the positive influence of vertical knowledge sourcing on international market performance (Murray et al., 2005). This is due to the complex nature of technological uncertainty, which makes it difficult to evaluate suppliers and obtain information on technological advancement from them.

For the *antecedents–mediators* relationship, our review findings suggest that, in the presence of higher levels of perceived *legal enforceability*, the effect of relational reliability on contract explicitness is weaker; this is because managers may not use their prior alliance experience to support the use of contractual governance (Zhou & Poppo, 2010). In addition, *national culture* moderates the relationship between mutual dependency and trust formation in IVAs, so that high-context cultures (e.g., South Korea)—as opposed to low-context ones (e.g., Austria)—are more likely to take advantage of communication to foster trust in their relationships (Bstieler & Hemmert, 2008). Furthermore, the *institutional pressures* found in less developed host countries faced with economic turbulence undermine the positive influence of forward IVAs on knowledge acquisition (Miozzo & Grimshaw, 2008).

Concerning the *mediators–outcomes* relationship, prior research shows that low *environmental volatility* can strengthen the positive impact of virtual integration on relationship performance due to the increased ability to govern forward IVAs (Kim et al., 2018). To further extend the moderating effect of *environmental volatility*, Jean et al. (2018) considered the different moderating effects of technological and demand uncertainty. Specifically, they argued that high levels of *technological uncertainty* weaken the positive impact of joint learning on innovation performance because manufacturers are more likely to use their existing technological knowledge (Jean et al., 2018). In contrast, when *demand uncertainty* is high, any market knowledge gained from joint learning becomes more valuable and generates more innovation performance (Jean et al., 2018). In a similar vein, *communication culture* shapes the relationship between virtual integration and relationship

performance, so that low-context cultures tend to favor explicit and electronic coordination in order to attain relationship objectives (Kim et al., 2018).

4.4.4. Summary

Taken together, our findings on moderators yield two observations. First, the scholarship on boundary conditions has helped us to understand when IVAs in the IB context will likely experience augmentation or decrease. For example, firms with higher absorptive capacity will benefit more from mutual dependency in support of innovation performance (Shin et al., 2016). However, physical proximity can act as a buffer against mutual dependency in both backward and forward IVAs for international market performance (Conti et al., 2014). Second, while moderators are important, they have not hitherto received much attention, especially for forward IVAs. Thus, more work on boundary conditions is needed, particularly with regard to individual- and environmental-level factors.

4.5. Control variables used in international vertical alliances

We identified a final category of control variables pertaining to IVAs and their related outcomes. The rationale behind the use of controls is to statistically remove any distortions associated with superfluous variables, thus revealing pure relationships and providing true results (Atinc et al., 2011). Our review results indicate that 48% of our sample studies were missing control variables, while others were missing explanations for 67% of the control variables they had utilized. This seems to be a common practice in many IB studies, which do not provide any explanation for their control variables (Nielsen & Raswant, 2018). We identified and grouped such controls into the firm-, network-, and environmental-levels.

First, at the *firm-level*, researchers have often recognized firm size (Mauri & Neiva de Figueiredo, 2012; McDermott & Corredoira, 2010; Nikolchenko et al., 2018), firm age (Nordman & Tolstoy, 2014; Sharma et al., 2019; Svendsen & Haugland, 2011), industry (Turkina & Van Assche, 2018; Wang, Huo, et al., 2019), R&D intensity (Aabo et al., 2016; Dinh Nguyen et al., 2017), firm ownership (Soontornthum et al., 2020; Zhou et al., 2008), and international experience (Griffith & Myers, 2005; Lojacono et al., 2017) as important controls capable of influencing the relationship between antecedents, outcomes, and mediators. Some other significant yet less researched controls include diversification (Li & Yayavaram, 2019; Sun et al., 2020), responsiveness (Ling-yee & Ogunmokun, 2001), employee skills, leverage (Un & Rodríguez, 2018), equity and current ratios (Aabo et al., 2016), labor productivity (Conti et al., 2014), knowledge stock (McDermott & Corredoira, 2010), bargaining power (Yu & Liao, 2008), conflict management (Xie et al., 2010), entrepreneurial intent (Parente et al., 2011), and past performance (Li & Yayavaram, 2019).

Second, prior research has selected control variables for related outcomes at the *network level*; these have included alliance length (Chang & Gotcher, 2007; Jean et al., 2018; Zhou & Poppo, 2010), cultural distance (Dou et al., 2010; Zhou & Xu, 2012), country nationality (Murray et al., 2005), network diameter (Sharma et al., 2019), partner trust (Wareham et al., 2005), network size (Li & Yayavaram, 2019), alliance frequency (Zhou et al., 2008), and alliance duration (Zhou & Xu, 2012).

Finally, *environmental-level* controls have been examined by a small number of studies. Such controls include government R&D funding (Shin et al., 2016), institutional distance (Park & Ghauri, 2015), country infrastructure (Kim et al., 2018), regional labor productivity (Conti et al., 2014), and environmental uncertainty (Svendsen & Haugland, 2011; Wasti & Wasti, 2008).

4.5.1. Summary

Overall, our examination of controls suggests that, while demographics are used often, researchers should consider the theoretical

implications of control variables with respect to the key relationships in their studies. Predicting the direction (positive or negative) of the relationship between the control variables and the dependent one is key to understanding the former's potential impact. In future studies, a separate section should be dedicated to explaining the measurements of control variables, their justification, and relevance.

5. Future research opportunities in regard to international vertical alliances in the IB context

We thoroughly analyzed a sample of 111 articles on IVAs in the IB context in terms of contexts, methods, theoretical approaches, and contents. Using an AMO framework, we identified the main trends in the research and mapped the interrelationships between antecedents, mediators, moderators, and outcomes. Our review findings suggest that, despite the prevalence of empirical studies, the findings still remain fragmented and inconclusive. This was evidenced in the preceding review sections, in which we reported finding only one or two studies providing support for some empirical relationships. In addition, most of our sample empirical research was found to tend to focus on backward IVAs, thereby leaving important research gaps in the forward IVA literature. In this section, we leverage these insights to provide an integrative framework and discuss a set of proposals and directions for future research. For the sake of consistency, the discussion is organized using the same labels found in the previous section (Fig. 5).

5.1. Outcomes of IVAs

The extant research has long acknowledged that IVAs have an impact on relational, strategic, international, and firm performance outcomes (Ayakwah et al., 2018; Chang & Gotcher, 2020; Collins et al., 2012; Heim et al., 2019). However, despite significant scholarly efforts, some important omissions remain that warrant future attention.

5.1.1. Consideration of multiple outcomes in a study

First, given their examination of a variety of single outcomes, we were surprised to find that few studies in our review sample had considered multiple ones (Leonidou et al., 2011; Nikolchenko et al., 2018). Future researchers could delve further into this issue and consider multiple outcomes in a single study. In this way, we could learn when and how different factors can enhance not merely relation- or firm-specific outcomes but also a variety of multiple-level ones.

5.1.2. Dedication of efforts to study new outcomes

The business community, general public, and academics are passionately debating the issue of environmental sustainability (McWilliam et al., 2020; Turkina & Van Assche, 2018). Therefore, it is surprising that few studies in our review sample were found to have considered strategic outcomes including corporate social responsibility, environmental innovation, and sustainable development goals, among others (Chang & Gotcher, 2020; Lee, 2016; Park & Ghauri, 2015). A possible explanation for this may be the difficulty in measuring and operationalizing these concepts, and problems of data availability. That being said, the impacts of IVA antecedents and mediators on relevant environmental sustainability outcomes are an important research direction that presents a significant challenge in the IB context. To make these findings more impactful, researchers could also engage with policymakers and international economists to facilitate linkages between the institutional- and firm-level perspectives for the development of policy implications (Kano et al., 2020). Further, we found that previous studies have recognized that firm-level characteristics—such as absorptive capacity, R&D capabilities, and conflict management—affect the intended outcomes. However, limited research has been conducted to ascertain how dependency in IVAs and governance mechanisms promotes absorptive capacity (Shin et al., 2016), entrepreneurial intent, and dynamic capabilities (Kotabe et al., 2007; Lew et al., 2016).

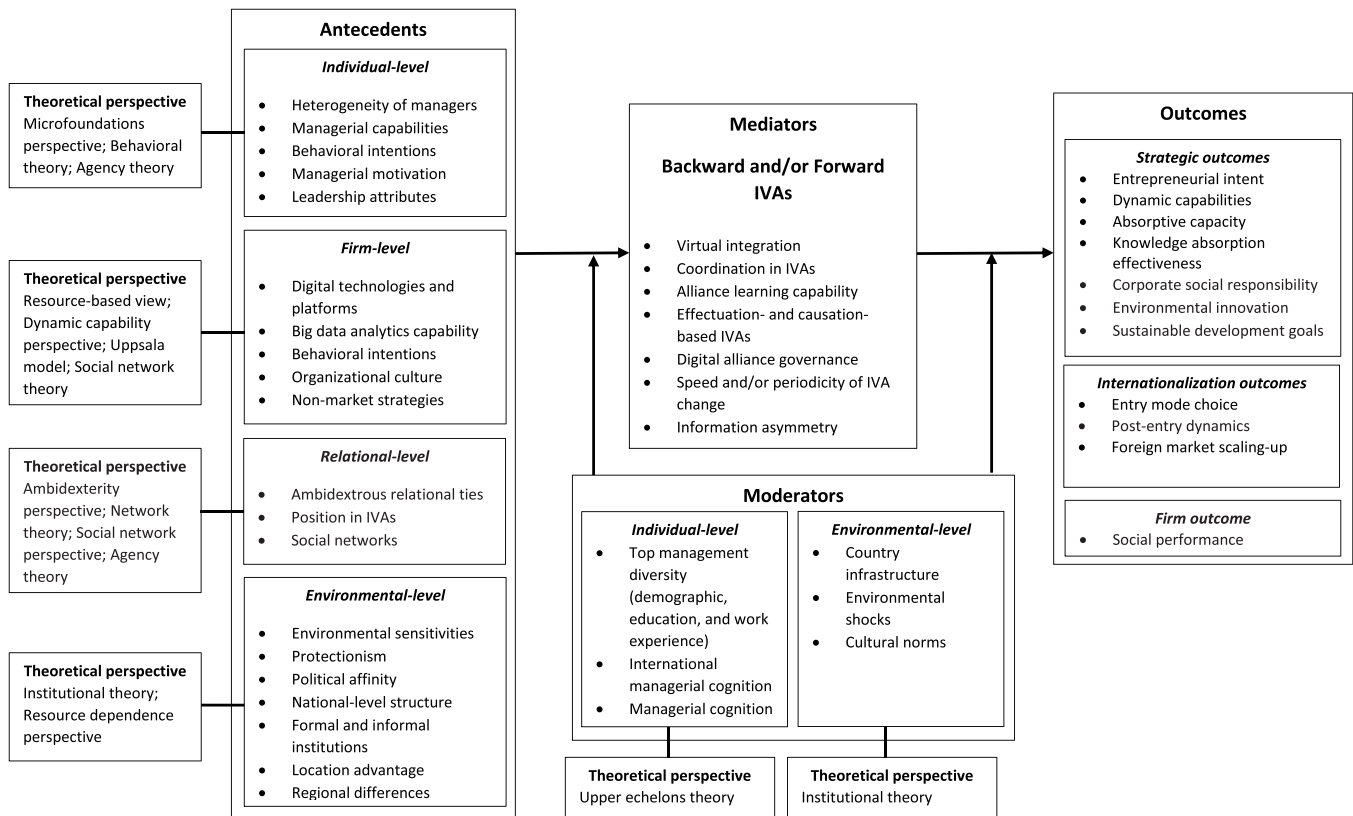


Fig. 5. Integrative framework for future IVA research.

Researchers could also consider the role played by IVAs in the generation of innovation based on the categorization put forward by Bucini and Pisano (2021).

Attention could also be devoted to some of the overlooked internationalization outcomes, such as entry mode choice, post-entry dynamics, and foreign market scaling-up. Zhao et al. (2021) argued that international alliances enable firms to develop embeddedness in the host country and promote post-entry investment decision; future studies could extend this line of enquiry by specifically focusing on backward and forward IVAs and investigating their relevance for post-entry investment choices (e.g., greenfield and FDI), post-entry expansion decisions, and post-entry commitment.

5.2. Antecedents of IVAs

Our review revealed an array of antecedents. Earlier efforts notwithstanding, there has been a lack of emphasis on individual and environmental-level characteristics. Also, any changes in the nature of the business environment as a result of external disruptions (e.g., COVID-19 and Brexit) require unique firm characteristics to realize the effectiveness of IVAs. Here, we call attention to three lines of inquiry.

5.2.1. More focus on individual attributes and characteristics

While the nature of individual-level learning and knowledge capabilities is inherent in the idea of value chain upgrading, the IVA literature still exhibits a lack of research on individual characteristics. Therefore, attention to individual attributes and characteristics is necessary to meaningfully advance the IVA research agenda. Indeed, the micro-foundations perspective asserts that individual-level abilities, actions, processes, and interactions between those and other mechanisms located at a higher level can shape IVAs (Felin & Foss, 2005). Our review findings revealed that, although IVAs are a source of knowledge generation and value creation (Nobeoka et al., 2002; Nordman & Tolstoy, 2014), to establish IVAs, organizational members (i.e., managers)

need to make the decisions with respect to choosing partners and shaping IVAs. These decisions are often guided by the background, experiences, proclivities, and behaviors of managers. Contractor et al. (2019) argued that—given their different backgrounds, beliefs, and preferences—decision-makers in different nations arrive at very different strategy choices; in this regard, a micro-foundational approach would provide interesting insights into how manager heterogeneity shapes or alters IVAs between culturally distant partners and affects performance outcomes. Similarly, managerial abilities like cultural awareness, sense-making, a global mindset, entrepreneurial orientation, and analytical capabilities constitute critical building blocks to successfully orchestrate exchanges in IVAs.

Relatedly, the behavioral perspective—with its roots in the behavioral theory of the firm (Carter, 1971; March & Simson, 1963)—provides a theoretical rationale for the study of the behavioral intentions of managers and the formation of IVAs. The behavioral perspective focuses on how the link between aspiration and performance stimulates change and risk preferences (Baum et al., 2005; Greve, 1998). Performance below aspirations triggers a search for a possible solution (Greve, 1998, 2011), whereas performance above aspirations serves as a basis to avoid the complications inherent in organizational change (Greve, 2003). In this sense, behavioral theory would offer a promising lens through which to understand the aspiration-performance link for mutual dependency in backward and forward IVAs (Elia et al., 2019). Performance below aspirations might encourage an individual to seek mutual dependency as a solution (Kim et al., 2014; Narula et al., 2019). Conversely, performance above aspirations normally causes inertia, whereby individuals prefer to avoid any unnecessary risks and prevent excessive mutual dependency (Ref & Shapira, 2017; Rhee & Kim, 2014). Scholars could consider the importance of managerial behaviors in shaping IVA dependency while managing cultural and contextual heterogeneity (Kano et al., 2020). For example, research could be conducted on those managerial behaviors of generativity, psychological availability, and reflective reframing that give rise to mindful attitudes,

whereby each partner respectfully attends to the comments and actions of others, thus enabling the effective exchange of knowledge between IVA partners (Carmeli et al., 2021). Future researchers may also benefit from integrating the behavioral perspective with agency theory to control for the self-serving behaviors of managers. For example, agency theory assumes that choices of contract differ based on the length of the relationship, with behavior-based contracts being suited to longer relationships (Eisenhardt, 1989). This issue needs the further examination of managerial behaviors and motivations to monitor both backward and forward IVAs. Thus, explicating and testing individual-level antecedents may help scholars to understand the mechanisms underlying value-generation in IVAs. Specific research questions could include “How does cross-cultural managerial heterogeneity shape or modify IVAs?”, “How does managerial behavior promote knowledge exchange and the performance outcomes of IVAs?”, and “Which managerial capabilities lead to IVA integration and governance?”.

5.2.2. Broadening the focus on firm characteristics in the digital and big data era

Although the extant studies have considered firm characteristics, the evolving nature of the business environment due to the COVID-19 pandemic and protectionist measures requires scholars to extend this line of research by exploring the implications of digital technologies (Kamal, 2020; Srinivasan & Eden, 2021)—e.g., robotic systems, the Internet of Things, and additive manufacturing—which are already having an impact on IB practices (Ghauri et al., 2021). While global travel restrictions were in place at the peak of the COVID-19 pandemic, digital technologies helped international firms to remain connected within their IVAs, surviving the related challenges (Gereffi, 2020; Zahra, 2021). Within IVAs, digital tools—including cloud systems, application programming interfaces, electronic conferencing tools, and co-creation platforms—have the potential to facilitate virtual connectivity and improve coordination between IVA partners (Jean et al., 2020; Kim et al., 2018). From a TCE perspective, digital technologies act as alternative governance mechanisms due to the increased amount of visualization, communication, and delivery of data about manufacturing, local sales, and so on (Galera-Zarco et al., 2020; Stallkamp & Schotter, 2019; Zeng et al., 2019). Accordingly, an important implication for future studies pertains to the timeliness of conducting explorations of the usage of digital technologies in the selection of complementary IVA partners (Lioukas & Reuer, 2018) or the monitoring of previously experienced ones (Wang & Nicholas, 2007) that connect for mutual self-interest, thereby forgoing opportunism.

Researchers could study the implications of digital technologies for both equity- and non-equity-based IVAs in order to determine the scope of international alliance activities and symmetric dependency (i.e., the contribution of equal levels of specific assets) in relation to inhibiting partners' opportunistic behaviors (Ali et al., 2021). It might be particularly important to conduct research in locations and cultural settings in which partners have the tendency to behave opportunistically (McWilliam et al., 2020). The advantages of digital technologies notwithstanding, the proponents of the Uppsala model suggest that digital platform firms can suffer from outsidership in IVAs because they are required to establish a new local user base in each foreign market (Brouthers et al., 2016; Coviello et al., 2017). Therefore, it is vital to understand the heterogeneity of partners in terms of digital platforms and its relevance in overcoming outsidership in IVAs. Scholarship could thus investigate digital trust building, knowledge creation, and relationship development related to digital platform firms in IVAs. Taken together, specific research questions could include: “How will advances in digital platforms and technology (e.g., artificial intelligence, blockchain technology, and augmented reality) change IVAs?”, “How can a digital platform firm shift from IVA outsidership to insidership in a new foreign market?”, “How are power dynamics managed in digital platform-based IVAs within the international sphere?”, “How does digitization shape the power dynamics, governance, and value creation

in IVAs?”, “What variations are apparent in IVA outcomes across different digital business models (including space versus physical place)?”.

Relatedly, big data is a powerful source of firm economic and social value creation and competitive advantage (Akhtar et al., 2019; Awan et al., 2021). The use of big data can facilitate decision-making and help to determine the solutions best suited to solve practical problems (Ding et al., 2020), as well as to mitigate any opportunistic behaviors of alliance partners. Despite its ability to provide appropriate insights suited to overcome any non-cooperative behaviors of global suppliers and customers, the concept of big data is relatively new in the context of IVAs (Lamba & Singh, 2017; Tiwari et al., 2018). By using big data, firms can monitor supplier and customer behaviors by collecting data on when they pause, rewind, and fast-forward (Johnson et al., 2017; Shamim et al., 2020). Particularly during extreme events like the COVID-19 pandemic, firms can use big data to mitigate any uncertainties and bottlenecks in IVA relationships (Henke et al., 2020). Hence, by drawing insights from the RBV and the dynamic capability perspective, future studies could explore the antecedents of a firm's big data analytics capability and uncover the hidden value of this capability for firms that are part of IVAs (Maheshwari et al., 2021). For example, the RBV could be leveraged to understand the technological resources, data-driven culture, and organizational learning needed to support the big data analytics capability for IVAs. Some exemplary questions could include: “What impact do leadership styles and leader reputation have on big data utilization for IVA configuration?”, “What is the relevance of leadership styles in shaping the big data analytics capability of reconfiguring IVAs?”, “To what extent does managerial confidence determine the level of adaptation in IVAs based on big data analytics?”, and “How does the big data analytics capability influence performance outcomes in IVAs?”

5.2.3. Broader coverage of relational attributes

Scholarly efforts have been made for the study of various relational characteristics. Future research would benefit from more sophisticated multi-layer complex relational characteristics suited to explain alliance management and learning mechanisms as well as performance outcomes. First, prior studies have emphasized strong and weak relational ties (Dow et al., 2011; Leonidou et al., 2013). However, it is still unclear whether strong or weak ties are more beneficial for innovation and learning, and whether firms need to adopt strong and weak ties simultaneously to attain strategic and internationalization outcomes (Michelfelder & Kratzer, 2013). Building on the ambidexterity perspective, future studies could address questions like: “How does an ambidextrous IVA (i.e., one featuring both strong and weak ties) outperform other IVA structures in the creation of innovation and the sharing of knowledge?” and “To what extent are IVA variety and intensity ambidextrous and how do they lead to learning and organizational performance?”. Second, we advocate for more research to be conducted on positions in IVAs to the end of understanding their role in strategic and internationalization outcomes (Sharma et al., 2019). Different positions within IVAs can explain how relational commitment will be realized when engaging in post-entry expansion (Zhao et al., 2021). Integrating network theory with the internationalization literature, studies could attempt to answer the following questions: “How does IVA heterogeneity break new grounds for learning and post-entry dynamics?” and “Can a brokerage position compensate for a weak R&D capability and offer access to valuable knowledge in international markets?”. Finally, despite the importance of mutual dependency in IVAs, scholars have hitherto disregarded the social network perspective, which emphasizes the establishment of social network relationships in order to gain resources and competitive advantages (Cuypers et al., 2020). Any social ties between backward and forward IVA partners can inhibit opportunism and give rise to social initiatives suited to address sustainable development goals. Hence, potential questions for future research include: “To what extent do any economic actions embedded in

social relationships nurture IVAs, making them more trusting and collaborative?"; "What role is played in knowledge transfer by brokers spanning across structural and cultural holes in IVAs?"; "What governance mechanisms are in play in social IVAs with respect to embeddedness and trust, together with other governance perspectives such as TCE and agency theory?"

5.2.4. Need for research on environmental characteristics

The little research found in the literature on environmental characteristics suggests that environmental and institutional factors are determinants of IVA governance and overseas investment (Deng et al., 2020). We believe that researchers should focus on environmental characteristics at different levels of analysis, including market, institution, and country. With regard to the market level, Anwar and Nguyen (2011) argued that the development of financial markets has enabled firms to enhance their export activities. Accordingly, financial market developments and pressures can produce different demands and configurations for IVAs in different regions and countries. Firms originating from developed countries—like the UK and the US—experience stable financial markets that are associated with more relational governance arrangements (McWilliam et al., 2020). Future research could address the following questions "How have financial market considerations compelled firms to govern IVAs?", and "To what extent does financial market development produce different organizational and geographical configurations for IVAs?"

Institutional reforms and their relevance for IVA survival and exit are an important yet underexplored issue worthy of future scholarly consideration. Institutional reforms—in the form of political, legal, and societal changes—create significant institutional uncertainty (Dau et al., 2020) that can engender IVA formation and activities. Hence, building on institutional economics (North, 1990), future studies could address questions like: "What impact do pre-institutional reforms have on the formation and success/survival of backward and forward IVAs?", "Should governments or institutions encourage IVAs in a pendulum of periods of institutional reforms?", and "How does the influence on IVAs of institutional reforms and reversals challenge some of the assumptions of incremental and rapid models of international expansion?". Going forward, studies could also pay greater attention to both pre- and post-institutional reforms, examining which alliance partners accrue the greater benefits from them.

In terms of country, protectionism—as a governmental reaction to any trade policies aimed at protecting foreign commercial interests (Enderwick, 2011)—is gaining prominence in the IB context (Hasija et al., 2020). The current economic situation (e.g., Brexit) and the global COVID-19 pandemic are increasing the focus on the issue of protectionism and reactions to globalization (Kano & Oh, 2020; Levy, 2020). Although the issue of protectionism was not directly addressed in our review sample, future studies could focus on questions including: "How can the level of protectionism in the home country determine the level of dependency in IVAs?", "How are protectionism, the non-market political strategies employed by firms, and IVA governance related?", "How does any political affinity between the home and host countries determine the association between protectionism and relational outcomes in IVAs?", and "How do national-level sentiments structure and control vertical alliances in international markets?"

5.3. Mediators of IVAs

Research on mediating factors has not gone far enough, having mostly focused on relational norms and behavioral governance (e.g., Griffith & Myers, 2005; Leonidou et al., 2013; Matanda & Freeman, 2009), with a few exceptions having addressed adaptation (e.g., Soonthum et al., 2020) and virtual integration (Kim et al., 2018). We believe that researchers looking at the alliance management capability should be less focused on governance in traditional IVAs, and examine instead the relational and behavioral norms related to virtual

integration. With the digital infrastructure in place—e.g., Wi-Fi networks, mobile phones, and online payment systems—firms can coordinate with culturally distant, co-specialized partners without investing in relational governance. In contrast, the location choice of partners can pose unprecedented challenges due to dispersed IVA activities. The key questions for future research are: "To what extent can firms capitalize on their inter-country/regional differences with partners and location-specific advantages linked to digital business models?", "How do the structure of governance and its impact on alliance performance change over time?", "How do firms from developed and developing countries strengthen their IVA advantages by combining them with digital and big data competency?", "How effective will that be in developed versus developing markets?", and "How does IVA resilience support the exploitation of data analytics capability for absorptive capacity?" A related subject worth exploring is the alliance learning capability related to opportunity sensing and seizing, learning-by-doing, or internalization of R&D, which acts as a mediator to link effectuation- and causation-based alliances with desired outcomes (Del Giudice et al., 2019).

5.4. Moderators of IVAs

Despite decades of research on IVAs, scholar have overlooked individual-level moderators and devoted limited attention to environmental-level ones. This suggests that further empirical work on individual- and environmental-level factors is needed.

5.4.1. Emphasis on managerial characteristics and diversity

Individual-level sources of variations in forward and backward IVAs (moderators) could be identified, thus explaining how and why backward and forward IVAs lead to different performance outcomes, and adopting an assumption of heterogeneity. This focus is consistent with the upper echelon perspective (Hambrick & Mason, 1984), which suggests that strategic choices and subsequent performance are determined by the background characteristics, experiences, and cognitions of top management. For example, diversity in demographics (e.g., age, gender, or nationality), education (e.g., level of education or specialization), and work experience (e.g., functional experience, industry experience, or international experience) can help improve the decision-making pertaining to forward and backward IVAs for the achievement of performance outcomes (Bengtsson et al., 2020; Tasheva & Nielsen, 2020). Similarly, a focus on international managerial cognition and global may play an important role in understanding how top managers perceive the opportunities presented by backward and forward IVAs and how they interact during their implementation (Mihalache et al., 2012). Thus, researchers could address questions like "How does top management diversity (i.e., demographics, education, or work experience) affect the effectiveness of firms in enhancing performance through IVAs?", "To what extent does international managerial cognition influence the relationship between IVAs and performance outcomes?", and "How does top management global focus determine the relationship between IVAs and performance?"

5.4.2. Broadening the focus on country characteristics and environmental shocks

Second, the scope of environmental-level antecedents could be extended by drawing insights from the institutional perspective and exploring how country characteristics promote the relevance of digital platforms for the management of IVAs in developing versus developed countries. As countries differ in their digital infrastructure, some firms may be more willing than others to adopt digital platforms and therefore engage in IVAs. Another potential issue is that any benefits accrued through IVAs might decline sharply as the adopters of digital platforms may hold opinions that differ from those of their international customers or suppliers, and thus devalue any opportunities to interact with them (Chen et al., 2019). This indicates the potential to consider a 3C model

(complementarity, commitment, and compatibility) and explore how partner fit reinforces investments in digital platforms made by developed versus developing country partners in order to realize value in IVAs (Cherbib et al., 2021; Sandulli et al., 2017). In addition, future studies could adopt the lens of signaling theory to examine how environmental shocks (industry-wide and global-level) may shape mutual dependency and alliance management to realize relational outcomes. Taken together, specific research questions could include: “How does a country’s infrastructure shape the linkage between digital platforms and IVA outcomes?”, “How can cross-cultural partner fit reinforce the investments made in digital platforms and value creation in IVAs?”, and “How do environmental shocks influence the power dynamics and performance outcomes of IVAs within the international sphere?”.

6. Future research directions in terms of location, industry, and methodology

This section discusses future opportunities for research on IVAs in the international business domain in terms of location, industry, and methodology.

6.1. The need for interdisciplinary research

Due to a growing scholarly interest in the fields of IVAs and IB, advancements and cross-fertilization of knowledge in interdisciplinary research could capture the attention of various audiences (Dahlgrün & Bausch, 2019). It is also worth noting that we found instances of unintentional replication of work (Delerue & Sicotte, 2019; Mauri & Neiva de Figueiredo, 2012; Murray et al., 2005); this suggests the vital importance of researcher awareness of extant scholarly efforts, which can enable the identification of the questions most critical to pursue. More importantly, interdisciplinary research would limit any unintended replication and increase the impact of studies.

6.2. Broader geographical coverage

To date, prior studies have focused on single countries, with some exceptions within the Asian, European, and American regions. Future research could consider subnational regions in countries like China, the US, Nigeria, Vietnam, Thailand, Argentina, India, and Jordan. The comparison of subnational regions within a single country or even multiple ones may yield interesting research insights (Leonidou et al., 2011). In this regard, researchers could consider subnational variations in emerging countries other than China—e.g., Brazil, Russia, Indonesia, Turkey, Saudi Arabia, and the United Arab Emirates—and emerging African markets such as Nigeria and Ghana. More importantly, researchers could contextualize and integrate the location contexts of the home and host countries in their empirical findings (Sharma et al., 2019). Collaborating with local host country researchers or organizations in the data collection process may also benefit scholars. Another connected area of research could involve the investigation of the peculiarities of the geographic context within smaller developed countries like Switzerland, Norway, Singapore, and Finland, as well as smaller developing and emerging economies such as the Philippines, Malaysia, Iceland, Qatar, and Slovenia. This would help researchers to verify the validity of the findings on IVAs found in the IB literature.

6.3. Broadening industrial contexts

Most studies in our sample were focused on the manufacturing industry. A focus on multiple-industry settings would help to establish the generalizability and external validity of the findings (Park & Ghauri, 2015; You et al., 2018). The vast majority of previous studies also concentrated on high-technology industries such as the electronics, machinery, IT, and automotive ones. Conducting research on other industry sectors—such as energy, high-tech manufacturing, and

professional services, which involve greater technological and market turbulence in accordance with structural contingency theory—may go a long way to extend the existing knowledge and to deepen any theoretical developments (Ju et al., 2019; Khan et al., 2015; Soontornthum et al., 2020). Future research could consider a greater range of industries like digital platforms, power plants, construction, food, renewable energy, and recycling (Alteren & Tudoran, 2016; Bhatti et al., 2020). In particular, studies aimed at directly comparing IVA dynamics in different industries would go a long way toward developing an understanding of the impact of the industry context.

6.4. Broadening the diversity of research methods

A large portion of studies in our review sample had employed quantitative methods involving survey techniques. There is thus an opportunity for researchers to move away from individual researcher survey-based data collection to large and improved time-series panel data. However, creating IVA-related databases is clearly a challenging endeavor that requires IVA registration databases and collaborative investment analyses, among other aspects. To overcome these issues, additional theoretically-grounded qualitative in-depth case studies could help us to expand our understanding of IVAs (McWilliam et al., 2020; Oh et al., 2019; Park & Ghauri, 2015). For example, in-depth comparative case studies could provide insights into the inconsistency of certain empirical findings, such as those related to the effects of cultural distance and geographic diversity (Sinkovics et al., 2019). It should be noted that, throughout our paper, we refrained from commenting on the adequacy of cultural distance—as used by multiple studies—as a concept and a measure. We did so not because it is unimportant (it would obviously have affected the findings) but, rather, because it fell outside of the scope of our study. We do however recommend that future studies look at the potential issues associated with the construct (Shenkar, 2001) and consider alternative measures—including newly proposed frameworks, such as cultural friction, that have the potential to offer a deeper understanding of the cultural dynamics found in different affiliation and alliance types (e.g., Shenkar et al., 2008).

Further, while many of our sample studies held the assumption that IVA partners prioritize their own self-interest (Katsikeas et al., 2009; Zhou & Xu, 2012), questions concerning the conditions under which opportunism logics prevail over collective gain ones were neglected. Experimental and simulation methods are showing promise for the investigation and testing of how, why, and when partners deviate from rational bounds in the context of IVAs. However, the busy schedules of organizations and executives may make it difficult to engage them in experimentation. Yet, the online environment provides a rich amount of data in a wide range of formats, including videos, images, executive interviews, and texts. There are many videos on YouTube, Vimeo, social media, and other website; images on websites of firms and newspapers in the form of graphics and cartoons; text on social media (LinkedIn, Twitter), blogs, executive interviews, corporate reports, and podcasts. Researchers could study IVAs by using this unstructured data and performing automated text analyses through dictionary-based tools such as Microsoft Text Analytics API, Text Mining, Leximancer, Google’s Brain, and Microsoft’s Azure. Despite being rarely used in the IVA literature, such alternative methodologies offer a unique opportunity to study the cognition and motivation of IVA partners and to develop formal models of beliefs and choice that are truly representative of the formation of IVAs involving geographically dispersed partners. Researchers could rely on newspaper articles and other business outlets, company filings, and white papers to gain additional insights into variables not measured by the data collection in the IVA literature (Aguinis et al., 2020).

Our review also highlights the need to study IVAs by means of multilevel methods, integrating variables at the individual, firm, network, and macro levels in a single study. Such analysis could offer a comprehensive view and reconcile many contradicting results by

accounting for the heterogeneity of cross-country partners. In this regard, FsQCA may generate interesting insights as it not only analyzes the isolated effect of two or more variables on the result of interest, but also explores all the possible interactions between the variables (Eden & Nielsen, 2020; Fainshmidt et al., 2020). For example, FsQCA can elucidate whether a developing country firm can reach the same IVA partners of a developed country firm, which might vary per different individual firms and macro configurations. FsQCA can enable to explain the equifinality, asymmetric causality, and causal complexity found in the IVA phenomenon. Another solution relates to subjecting the data to necessary-condition analysis (NCA), which is a technique that helps to identify those variables that are essential to the achievement of a particular outcome (Dul, 2016). By using this technique, IB research could examine any causal effects when predicting IVA outcomes; for example, how firms differ in their approach to achieving relational outcomes. A study addressing this question could consider a firm’s internal routines, familiarity with partners, structural governance, relational governance, and non-market capabilities. The NCA technique could provide information not only on whether a lack of relational governance causes firms to choose different determinants but also on the minimum level of relational governance needed to choose one factor over another. Therefore, NCA could help future researchers to better understand the causal structure and chains involved in IVAs.

7. Conclusion

IVAs represent a pivotal field in IB, one that draws on different

theoretical perspectives and multiple approaches. A holistic overview of the empirical research on IVAs is essential for the advancement of the IB field. In this context, we systematically reviewed 111 articles on IVAs published in leading IB journals. Our study provides an overarching framework by identifying the key antecedents, mediators, moderators, outcomes, and controls of IVAs. This framework could serve as a basis to provide future recommendations across different themes. We hope that our study will provide a worthy foundation, making future recommendations more salient to future researchers interested in this important topic.

Our review has several limitations arising from our research process. First, despite our use of a range of keywords to search for papers in IB journals, some papers may still have been overlooked. Second, in our data analysis, we relied on studies published in IB journals. This made it difficult to guarantee the absence of publication bias in our review (Dada, 2018). Future studies could therefore expand the scope of our review by conducting multi-disciplinary reviews of IVAs field and consider articles published across diverse disciplines. This would enable researchers to broaden the insights. Third, we synthesized our findings using an AMO framework, thus neglecting any alternative ones. Considering these limitations, future researchers could extend the findings of our review by gaining insights from different sets of journals or analytical approaches.

Appendix 1. Outcomes of IVAs in the IB literature

Criterion domain	Criterion category	Criteria example	Exemplary studies
Relational outcomes	Long-term orientation	Strength of ties; length of relationship.	(Dow et al., 2011; Lye & Hamilton, 2001)
	Joint actions	Development of products, mutual learning; engagement in manufacturing processes.	(Liu, 2012b; Sinkovics et al., 2011; You et al., 2018)
	Joint value creation	Efficient working relationship; fulfillment of alliance objectives; productive relationship; effective completion of projects.	(Leonidou et al., 2011; Sinkovics et al., 2019; Tiep, 2007)
Strategic outcomes	Relationship performance	Improvement to current processes; learning about customers; increased sales growth from alliance; enhanced product quality; achievement of planned alliance goals.	(Kim et al., 2018; Kwon, 2011; Leonidou et al., 2013; Liu et al., 2010; Liu et al., 2014; Lye & Hamilton, 2001; Pimpa, 2008; Skarmas et al., 2002)
	Knowledge transfer and creation	Timely transfer of knowledge; understanding of knowledge; frequent exchange of information; technology expertise; marketing knowledge; managerial techniques; manufacturing processes.	(Khan et al., 2015; Nordman & Tolstoy, 2014; Soontornthum et al., 2020; Wang, Huo, et al., 2019)
	Innovation	Patents registration; R&D capability; introduction of new products; new technology development; refinement of processes.	(Li & Yayavaram, 2019; Liu, 2012b; McDermott & Corredoira, 2010; Shin et al., 2016; Sim & Pandian, 2003; Turkina & Van Assche, 2018; Wang & Wu, 2016)
International outcomes	Intra-firm relations	Trading between subsidiaries; relationship between managers within firm.	(Gress, 2015; Lee et al., 2020)
	Positional advantage	Low product and labor cost in the market; strong customer position.	(Kotabe et al., 2007; Scott-Kennel & Enderwick, 2004; Seyoum, 2020)
	Market entry and expansion	Rapid entry into foreign markets; diversification into new markets.	(López-Cózar-Navarro et al., 2017)
Firm performance outcomes	Export performance	Sales growth; market share; profitability; return on investment in international markets.	(Ling-ye & Ogunmokun, 2001; Savino et al., 2017; Sharma et al., 2019; Yenyurt et al., 2005; Zhang et al., 2003)
	Market performance	Sales growth; market share; return on assets; return on investments; return in revenue.	(Kumaraswamy et al., 2012; Kwon, 2011; Lew et al., 2016; Malik, 2012; Mauri & Neiva de Figueiredo, 2012; Murray et al., 2005; Nobeoka et al., 2002; Rawwas & Iyer, 2013)
Operational performance	Operational performance	On-time delivery; lead-time of order fulfillment; logistic cost.	(Lee, 2016; Nikolchenko et al., 2018; Wareham et al., 2005)
	Social performance	Ethical compliance; corporate image and reputation; improving societal benefits; retaining earning to support community.	(Lee, 2016; Park & Ghauri, 2015)

Appendix 2. Antecedents of IVAs in the IB literature

Criterion domain	Criterion category	Criterion sub-categories	Theoretical approaches	Key findings	Exemplary studies
Firm characteristics	Absorptive capacity	—	RBV; KBV; dynamic capability perspective	The absorptive capacity of a firm enables the acquisition of knowledge from IVA partners.	(Gentile-Lüdecke & Giroud, 2009; Liu & Zhang, 2014)
	Strategic orientations	<ul style="list-style-type: none"> • Entrepreneurial orientation/intent • Learning orientation • Market-oriented environmental sustainability • Customer orientation 	RBV; Dynamic capability; Relational view; Learning theory	Strategic orientations, including entrepreneurial, market, learning, and customer orientations, are essential in building high quality relationships to achieve market performance.	(Alteren & Tudoran, 2016; Kotabe et al., 2007; Liu & Zhang, 2014; Liu, 2012b; Lojacono et al., 2017)
	Firm advantages	<ul style="list-style-type: none"> • Investment in technology • R& D capabilities • Human resources • Organizational structure 	Dynamic capability; RBV; Learning theory; OLI framework; Structural contingency theory	The advantages (e.g., organizational structure, manufacturing capacity, human capital, marketing skills, risk-reduction, management, R&D intensity, technological portfolio, and financial resources) of a firm make them attractive partners in IVAs and generate effective outcomes.	(Anwar & Nguyen, 2011; Duanmu & Fai, 2007; Gress, 2015; Jean et al., 2015; Jindra et al., 2009; Johnson et al., 2013; Khan et al., 2015; Kotabe et al., 2007; Park & Krishnan, 2001; Scott-Kennel & Enderwick, 2004; Svendsen & Haugland, 2011)
	International experience	—	Learning theory	A greater exposure to international markets broadens a firm's experience and enhances its prospects of identifying trustworthy knowledge from partners.	(Hohenthal et al., 2014)
Network characteristics	Mutual dependency	<ul style="list-style-type: none"> • Greater involvement • Partner geographic diversity 	Social network theory	Mutual dependency between IVA partners can create embedded relationships, which are a strategic resource for information sharing and alliance learning.	(Collins et al., 2012; Heim et al., 2019; Jansson & Sandberg, 2008; Jean et al., 2015; Lindstrand et al., 2009; Mayrhofer, 2004; Murray et al., 2005; Park & Krishnan, 2001; Roslin & Melewar, 2001; Soontornthum et al., 2020)
	Cultural attributes	<ul style="list-style-type: none"> • Cultural distance • Cultural sensitivity 	RBV; Dynamic Capability; Organizational learning; Transaction cost economics	International partners have their own different cultures. Due to cultural distance, effective alliance management is needed to transfer knowledge and facilitate the alliance learning process.	(Liu & Zhang, 2014; Liu, 2012b; Mol & Brewster, 2014; Voldnes & Kvalvik, 2017)
	Exchange structuring	<ul style="list-style-type: none"> • Asset specificity • Partner asymmetry • Value similarity • Psychic distance 	Transaction cost economics; Institutional perspective	Asset specificity increases the level of switching costs. Therefore, firms are required to establish relational ties to share information and increase the level of contract customization needed to guide in unexpected events.	(Chang & Gotcher, 2007; Collins et al., 2012; Delerue & Sicotte, 2019; Dou et al., 2010; Griffith et al., 2009; Katsikeas et al., 2009; Kwon, 2011; Leonidou et al., 2013; Skarmas et al., 2002; Zhou & Poppo, 2010; Zhou et al., 2008)
Environmental characteristics	Environmental uncertainty	<ul style="list-style-type: none"> • Competitive intensity • Technological uncertainty • Market turbulence 	Learning theory; RBV; Relational perspective; Transaction cost economics	An unpredictable and volatile external market, competitive actions, and technological changes exacerbate information asymmetries and require relational norms.	(Katsikeas et al., 2009; Kim et al., 2018; Matanda & Freeman, 2009; Zhou & Poppo, 2010)
	Institutional support	—	Uppsala model; OLI; Institutional theory	The provision of institutional support encourages firms to invest in international markets through IVAs.	(Sim & Pandian, 2003; Sun et al., 2020)
	Institutional hostility	<ul style="list-style-type: none"> • Legal and institutional environment 	Transaction cost economics; Resource dependency theory; Institutional theory	The hostility of the regulatory, normative, and cognitive environment increases the difficulty of interpreting foreign market conditions and requires firm to vertically integrate with partners.	(Ho et al., 2018; Lee et al., 2020; Zhang et al., 2003)

Appendix 3. Mechanisms of IVAs in IB literature

Criterion domain	Criterion category	Criterion sub-categories (where relevant)	Theoretical approaches	Key findings	Exemplary studies
Alliance management capability	Relational norms	<ul style="list-style-type: none"> • Trust • Commitment • Cooperation • Communication • Flexibility 	Social network theory; RBV; Relational perspective; Transaction cost economics	Relational norms—such as trust, commitment, cooperation, flexibility, communication—serve as important mechanisms to exploit strategic orientation and mutual dependency for outcomes.	(Alteren & Tudoran, 2016; Ketkar et al., 2012; Kwon, 2011; Lee, 2016; Leonidou et al., 2013; Skarmas et al., 2002)

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Criterion domain	Criterion category	Criterion sub-categories (where relevant)	Theoretical approaches	Key findings	Exemplary studies
Alliance learning capability	Behavioral governance	<ul style="list-style-type: none"> Behavioral monitoring Formal socialization 	RBV; Transaction cost economics	Due to firm advantages and the availability of alliance resources, firms use alliance governance (i.e., contractual governance and behavioral monitoring) to support relational outcomes.	(Jean et al., 2010; Khan et al., 2015; Zhou et al., 2008)
	Mutual adaptation	<ul style="list-style-type: none"> Technical adaptation Cultural adaptation 	Social network theory; Relational view; Agency theory	Greater mutual dependency enables IVA partners to attain high levels of cultural adaptation (i.e., knowledge of and, if necessary, adaptation to each other's' cultural values) and technical adaptation (changes to products, processes, and overall business conduct) necessary for relational performance.	(Jia et al., 2016; Leonidou et al., 2011; Soontornthum et al., 2020; Voldnes & Kvalvik, 2017)
	Virtual integration	—	RBV	Virtual integration is an alternative governance mechanism that connects environmental uncertainty and cultural distance with relational performance.	(Kim et al., 2018)
	Knowledge integration	<ul style="list-style-type: none"> Knowledge acquisition Knowledge dissemination 	Dynamic capability; RBV; KBV; Learning theory; Relational view	Knowledge integration from IVA partners is possible due to absorptive capacity, the mutual dependency of partners, and institutional hostility. Knowledge integration involves embedding the acquired knowledge and modifying the existing one in order to meet outcomes.	(Bhatti et al., 2020; Gentile-Lüdecke & Giroud, 2009; Ho et al., 2018; Liu, 2012a; Savino et al., 2017)
	Relationship learning	—	RBV; Social network theory; Knowledge-based view; Dynamic capability	For IVA, firm-level and network-level factors assist in relationship learning in terms of information exchange for outcomes.	(Chang & Gotcher, 2007; Jean et al., 2018; Liu & Zhang, 2014; Liu, 2012b)

Appendix 4. Moderators of IVAs in the IB literature

Criterion domain	Criterion category	Criterion sub-categories (where relevant)	Theoretical approaches	Key findings	Exemplary studies
Firm-level	Absorptive capacity	—	Knowledge-based view	Absorptive capacity enables the acquisition and assimilation of external knowledge. Therefore, it positively moderates the effect of mutual dependency on innovation.	(Shin et al., 2016)
	Learning orientation	—	Agency theory	The greater learning orientation of partnering firms weakens the positive effect of knowledge asymmetry on goal incongruence.	(Dou et al., 2010)
	Financial slack	—	Social network theory	Financial slack increases the extent to which adaptation can lead to successful knowledge transfer. Financial slack improves a learning firm's ability to take risks by helping it relax any internal capital restrictions for investment decisions.	(Soontornthum et al., 2020)
	Social arrangements	<ul style="list-style-type: none"> Knowledge management tools Comfort zone Technology advancement Product differentiation 	Dynamic capability; RBV; Resource-dependency theory	When a firm advances its knowledge management tools (e.g., information technology advancement, electronic knowledge), the relationship between mutual dependency and outcomes is strengthened (weakened).	(Jean et al., 2015; Murray et al., 2005; Seyoum & Lian, 2018; Sinkovics et al., 2019)
Network-level	Cultural distance	—	Resource dependency theory; Dynamic capability	In high cultural distance relationships, the effects on outcomes of mutual dependency, firm advantages, and relational norms would differ.	(Lew et al., 2016; Parente et al., 2011; Sinkovics et al., 2011)
	Relational governance	<ul style="list-style-type: none"> Trust Commitment 	Relational view; Knowledge-based view; RBV; Social network theory	The effects of opportunism, relation-specific investment, and mutual dependency on contractual governance, relationship learning, and innovation outcomes, respectively, are contingent on relational governance.	(Chang & Gotcher, 2007; Verwaal, 2017; Zhou & Xu, 2012)
	Exchange configuration	<ul style="list-style-type: none"> Physical proximity Historical position 	RBV; Social network theory	The physical proximity of partners ensures regular interaction and therefore strengthens the effect of mutual dependency on outcomes. In addition, a longer historical position enhances the positive association between mutual dependency and adaptation.	(Conti et al., 2014; Kotabe et al., 2007; Seyoum & Lian, 2018; Soontornthum et al., 2020)
Environmental-level	Institutional pressures	—	RBV; Dynamic capability	Institutional pressures positively moderate the relationship between mutual dependency and innovation and performance outcomes.	(Chang & Gotcher, 2020; Ju et al., 2019)

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Criterion domain	Criterion category	Criterion sub-categories (where relevant)	Theoretical approaches	Key findings	Exemplary studies
	Environmental vitality	<ul style="list-style-type: none"> • Demand uncertainty • Technological uncertainty 	Resource dependency theory	When environmental volatility is high, the effect of mutual dependency between vertical partners and alliance learning will be higher for outcomes.	(Jean et al., 2018; Murray et al., 2005)

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