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Processes underlying interfirm cooperation

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Abstract

This special issue intended to bring together scholarly insights on the processes that underlie formation, growth, management, and termination of interfirm cooperation (IFC). In this introductory article, we highlight what we know about IFC and why fresh perspectives are warranted on this phenomenon from conceptual and practical standpoint. We also highlight the contribution of each paper published in this special issue. The seven selected papers differ in theoretical perspective, context, research methodology, and findings but they collectively enhance our understanding of various IFC processes. We end this article by highlighting fertile avenues of future research.

Processes underlying interfirm cooperation

Over the last few decades scholars have devoted significant attention to understand how cooperation between firms (interfirm cooperation or IFC) initiate, develop, sustain, and ultimately terminate or dissolve (Combs and Ketchen, 1999; Lui, Wong, and Liu, 2009; Lyu *et al*., 2020; Parkhe, 1993). Accumulated research in this domain suggests that IFC may take many forms ranging from simple contractual agreements between buyers and suppliers, trade associations, or co-branding to more complicated licensing, franchising, joint ventures, and strategic alliances (Majchrzak, Jarvenpaa, and Bagherzadeh, 2015; Oliver, 1990; Parmigiani and Rivera-Santos, 2011). Extant research further suggests that a wide variety of antecedents at the individual-, organizational-, environmental-, and national- level determine formation and growth of IFCs (see for details Beamish and Lupton, 2009; Gur, Bendickson, and Solomon, 2020; Kale and Singh, 2009; Martin, Romero, and Wegner, 2019). In addition, prior research highlights that IFCs can significantly impact firm-level outcomes (Bruyaka, Philippe, and Castañer, 2018; Lyu *et al*., 2020; Wu, Lii, and Wang, 2015) as well as influence outcomes at the partnership level (Abdi and Aulakh, 2012; Beamish and Lupton, 2016; Jiang, Jiang, Sheng, and Wang, 2020).

Extant scholarship also describes how IFCs may involve several stages. Broadly, these stages are formation, design, growth, management, evaluation and termination (Beamish & Lupton, 2009, Kale and Singh, 2009; Nippa & Reuer, 2019; Ring and Van de Ven, 1994). Further, IFCs evolve over their life cycles, meaning changes in the IFC structure take place as conditions surrounding IFCs change and partners engage in ongoing learning process (Doz, 1996; Ring and Van de Ven, 1994). As IFCs evolve, firms seek to achieve goal congruency and balance of power with their partners so that creation and appropriation of value can be positive and equal amongst them (Buckley, Munjal, Enderwick, and Forsans, 2016; Doz, 1996; Ozcan, 2018). However, benefitting in value does not always happen since many IFCs fail at different stages of life cycle.

Nonetheless, embarking on IFC by firms continue to flourish. As the business world witnesses growth in different types of IFCs, unabated interest in the scholarly community to fathom the intricacies and outcomes of IFCs is also clearly evident. But what processes underlie this growing phenomenon? Despite the growth in research we lack sufficient understanding of the processes involved in IFCs. *Process* refers to how IFCs are formed, continued, and / or terminated (Beamish and Lupton, 2016; Buciuni and Mola, 2014). In simple terms, process signifies the mechanisms undertaken and utilized by IFC partners that determine the essential attributes and effects of IFCs. Although different types of mechanisms (e.g., control, governance, cognitive, social, legitimation) have been examined in the literature (He *et al*., 2020; Parmigiani and Rivera-Santos, 2011) we need additional knowledge of such processes to enable a deeper understanding of the IFC phenomenon. Given the variety in nature and scope of IFCs, it is possible to generate advanced knowledge only when scholars expose us, through their research, to insights that are new, novel, and relevant.

With this idea in mind, we decided to create a special issue that would focus on the processes underlying IFC (Kundu, Munjal, and Lahiri, 2018). We received 50 contributions from scholars around the world. Given this large number of submissions, the evaluation process became highly competitive. After two rounds of revision, we selected a total of seven papers for publication in this special issue. The papers differ in theoretical perspective, research design, context and findings but they shed useful insights on various aspects of IFC processes. We discuss the contribution of each paper in this introduction to the special issue. However, before doing so we discuss the importance of IFC as an organizational strategy and explain why gaining knowledge about IFC processes is important.

Importance of IFC

Extant business literature suggests that firms exist to create value for their stakeholders. Value creation allows firms to out-compete rivals, build market share, and grow financial and non-financial performance (Asmussen *et al.*, 2020; Contractor, 2012; Dyer, Singh, and Hesterly, 2018). Competing successfully against powerful rivals requires significant resource commitment. While developing the required resources and capabilities within organizational boundaries is always an option, firms may not possess the requisite knowledge, capabilities or experience of doing so in-house. In such instances, firms may decide to access useful and complementary resources from other business entities by resorting to IFC.

Several terms exist in the literature (e.g., interfirm cooperation, interfirm relationship, interfirm partnering, interorganizational relationship, interorganizational collaboration, interorganizational cooperation) that (almost) suggest the same phenomenon: short or long-term arrangements between independent business entities designed to generate mutually beneficial outcomes (Agostini, Nosella, and Teshome, 2019; Castañer and Oliveira, 2020; Lahiri and Kedia, 2009; Lui *et al.*, 2009; Majchrzak *et al.*, 2015; Oliver, 1990; Oliveira and Lumineau, 2019). Such arrangements differ widely in scope and complexity. Although cooperating firms may differ in size, motivation, experience and other resource attributes as well as in their industrial and national backgrounds, they engage in IFC for a variety of reasons. The reasons typically include (a) gaining access to new markets, resources and skills, (b) exchanging and sharing important resources and capabilities, (c) pooling risks, or (d) co-developing products and technologies. Thus, through IFC firms are likely to increase scale economies and competitiveness, and improve financial as well as non-financial outcomes such as innovation and strategic renewal (Beamish and Lupton, 2016; Deken *et al*., 2018; Lahiri and Kedia, 2009).

Various theories been used to explain cooperative arrangements between firms. These include agency theory, knowledge-based view, resource-based view, dynamic capabilities view, resource dependence theory, transaction cost economics, social exchange theory, relational theory, and institutional theory (for details see Agostini *et al*., 2019; Cao *et al*., 2018; He *et al*., 2020; Parmigiani and Rivera-Santos, 2011). In simple terms, firms use IFCs when such arrangements are in comparison to internalization or market transactions deemed to possess efficient form of business governance (Parmigiani and Rivera-Santos, 2011). However, managing and benefitting from IFCs are often complicated owing to a variety of reasons, such as (a) lack of compatibility in partners' motivation, power, and organizational culture, (b) various contractual complications, escalating tensions and conflicts, (c) unanticipated or unmanageable macroeconomic uncertainties and changes, and (d) failure to anticipate and deal with IFC evolution over time (Abdi and Aulakh, 2012; Beamish and Lupton, 2016; Gur *et al*., 2020; Nippa & Reuer, 2019).

Scholars have highlighted various exchange hazards in IFC (Cao *et al*., 2018) and cautioned there may indeed be *dark sides* of cooperation (Oliveira and Lumineau, 2019). Owing to these and related challenges IFCs often fail to create the desired value and result in negative outcomes such as revenue loss, premature contract termination, joint venture dissolution etc. Kale and Singh (2009) reported that failure rate in strategic alliances may range between 30%-70%. Despite various complexities and challenges associated with IFC, firms from varied background initiate IFC with the hope of generating wide-ranging benefits. In order to better understand IFC and foster efficient practice, scholars have examined how various mechanisms help IFC to form, grow and, more importantly, continue over successive stages.

What we know about IFC processes

While empirically testing the predictions of resource-based view Ray, Barney, and Muhanna (2004, p. 24) noted that business processes "can be thought of as the routines or activities that a firm develops in order to get something done". Process in the current (IFC) context indicates routines, activities, or mechanisms that a partner firm develops and utilizes in order to realize predetermined goals for itself as well as its partners. Such goals vary depending on the type of IFC (e.g., simple contractual agreement or a complicated cross-border strategic alliance), that is planned and initiated. Business scholars, over the years, have focused on how processes are formed. In their seminal paper, Ring and Van de Ven (1994) proposed a conceptual framework that explained how interorganizational cooperative arrangements *emerge, grow, and dissolve over time*. The main stages explained in their process framework are negotiation, commitment, and execution. The authors noted that the developmental processes involved in cooperation are not sequential but cyclical.

Scholars have discussed other processes as well. For example, Doz (1996) focused on how learning processes matter in the evolution of cooperation in strategic alliances. Using a longitudinal case study, the author provided a process model to explain how certain conditions facilitate or inhibit learning between partners in collaborative projects, and how learning impacts evolution of alliance. Kumar and Nti (1998) argue partners need to be aware of the outcome and process discrepancies in alliances. Such discrepancies, if not properly identified and assessed, may lead to ineffective alliance management. These authors developed a framework to better understand the dynamics of alliances. More recently, Ungureanu, Bertolotti, Mattarelli and Bellesia (2020) sought to gather detailed knowledge of how identities are formed in relationships, and how such formations impact partnership outcomes. Using a case study, the authors delineated how *swift identity* happens in cooperation and how reification and anticipated alignment processes are associated with such identity.

IFC researchers examined processes related to alliance building (Arranz, Arroyabe, and Arroyabe, 2016), alliance development (Das and Teng, 2002), joint venture partnering (Beamish and Lupton, 2009), joint venture post-formation change (Chung and Beamish, 2012), knowledge management (Inkpen and Dinur, 1998), knowledge sharing (Lyu *et al*., 2020), learning (Nippa and Reuer, 2019), market and partner selection (Doherty, 2009), and prospective resourcing (Deken *et al*., 2018). These studies are definitely insightful and contribute to our understanding of IFC. Cao *et al*. (2018) succinctly note that in collaborative relationships partners possess three major concerns. These are protection of various investments made in their collaborations, taking care of agreed upon conditions pertaining to environmental uncertainty, and evaluation of collaborating partner(s)' performance. Our collective wisdom of various processes, as obtained from the extant literature, help understand these concerns significantly.

Why we need to know more about IFC processes

Yet there appears to be room for greater understanding of IFC processes from conceptual and practical angles. Scholars have outlined multiple avenues of research that are important and relevant. For example, Beamish and Lupton (2009, p. 82) opined that, "another issue firms should consider is actively collecting and codifying knowledge concerning the JV management process itself". Buciuni and Mola (2014, p. 68), in their study of SMEs, observed that "…little is known about the process through which entrepreneurial organizations initiate and coordinate international relationships". Beamish and Lupton (2016, p.171) suggested that, "countless other studies could be conducted to enhance our understanding of these and other micro-political processes operating at the subunit level of analysis". Recently, Nippa and Reuer (2019, p. 593) noted that, "scholars may also study the duration of certain processes, such as the average lifespan of different kinds of IJVs". Working on these and other research recommendations forwarded by IFC scholars would extend our knowledge horizon related to IFC processes.

Our careful review of the IFC and allied literature indicates that every stage of IFC represents a sub-process of the complete process. That is, every stage encompasses routines, activities, or mechanisms that IFC partners develop and utilize to realize predetermined mutually beneficial goals (Ness, 2009). The evolved IFC is actually a summation of several sub-processes which, in combination, gives rise to the whole IFC process that spans the entire life-cycle. If sub-process in one stage is not well contemplated or executed, chances are that the stage will remain incomplete or fail to realize the goals, and the subsequent IFC stage may get delayed or never successfully initiate. Scholars have, time and again, suggested that several sub-processes intricately operate in the entire IFC process. Phrases (used in research publications) that bear testimony to this notion (of multiple sub-processes) are "formation process", information gathering processes", "process of reaching an initial agreement", "resource accumulation process".

In addition, prior works have used phrases such as "interaction process", "partnering process" "inter-partner coordination process", "alliance development process", "alliance management processes", and "joint decision-making processes" (Abdi and Aulakh, 2012; Beamish and Lupton, 2009; Das and Teng, 2002; Ness, 2009; Nippa & Reuer, 2019; Ring and Van de Ven, 1994; Walter, Lechner, and Kellermanns, 2008). Ness (2009, p. 477) concluded in the context of strategic alliances that "multiple relational practices might emerge over time and co-exist as distinct sub-processes". Despite the wealth of research in the domain of IFC, this aspect (i.e., IFC process = sum of stage-level sub-processes) has not been adequately made explicit or examined. Figure 1 captures a model of IFC processes that includes various sub-processes.

Insert Figure 1 about here

There are non-academic reasons as well that fuel the need to know more about IFC processes. On the practical side, macro-environmental changes have affected businesses and, by extension, formation and continuity of their cooperative ventures. Buckley, Munjal, Enderwick and Forsans (2016) argue that the impact of such changes trickles to the firm level in the form of variation in transaction costs, and such costs variations may affect firms' preference for and practice of IFC. Examples of macro changes include greater cooperation between home and host countries, increased trade openness and liberalization in some parts of the world (e.g., developing economies), and geopolitical unrest, nationalist sentiments, changing immigration policies, and trade war in other parts of the world. Brexit and COVID-19 pandemic are specific developments that created significant uncertainties about how to plan, initiate, and sustain IFC across regions and countries (Verbeke, 2020). Challenges of conducting IFC are also escalating owing to other notable external developments such as recurring natural disasters, terrorism-inspired activities, global warming, and modern slavery (Stringer and Michailova, 2018).

At the industry level, there have been unprecedented growth in services and information technology (IT)-enabled transactions, and rapidly increasing importance of artificial intelligence, big data, blockchain, internet of things, automation, 3D-printing, and disruptive innovation (Alcacer *et al*., 2016; He *et al*., 2020). These developments - often referred to as the new industrial revolution (Mims, 2019) - have changed the industry-level knowledge requirements, and are forcing firms to redraw the boundaries between industries and consider anew how to effectively reposition themselves. The growth of IFC in the service industry has taken place through strategic alliances, such as, code sharing in the airline industry and the use of non-equity organizational mode in the hotel industry (Contractor and Kundu, 1998).

At the firm level, several new developments are adding to the complexities of planning for and continuing IFC. Such developments include launch of highly innovative products (e.g., driverless cars, drones, robots) and differentiated services (e.g., ride-hailing, ride-sharing, Airbnb) in quick succession, and the consequent need for radical, and not just incremental, innovation. Further, many firms are considering how to develop and sustain new business models that would allow them to remain competitive through agility and innovation (Bahl, Lahiri, and Mukherjee, 2020; Foss and Saebi, 2018).

In addition many firms, to remain competitive, are executing multiple simultaneously-progressing alliances with different partners (Martinez, Zouaghi, and Garcia, 2019), and engaging in coopetition i.e., simultaneous cooperation and competition between firms (Ritala, 2012; Zacharia, Plasch, Mohan, and Gerschberger, 2019). Finally, many firms are embracing global value chain i.e., disintegrating value chain functions and dispersing them across different locations (Kano, Tsang, and Yeung, 2020; Verbeke, 2020). The above developments are often forcing firms to transform and reinvent themselves. They are also pushing many firms to enter completely new lines of business.

Papers in this special issue

How the aforementioned research gaps and critical changes in firms' external environment affect IFC is not adequately clear to us. We perceived the need to generate new insights on how these and related issues matter in the current business landscape. Such insights are likely to enable development of new theories and render managers to better comprehend efficient IFC management. In the special issue call for papers we, therefore, solicited theoretical and empirical (quantitative and qualitative) papers that further our knowledge of why and, more importantly, how firms initiate, sustain, and terminate (when necessary) cooperative relationships with partners in domestic or international contexts. We provided an illustrative list of ten questions that contributing authors could find helpful.

As noted before, seven papers selected for publication in the special issue. Of these, two focus at the individual-level. The first paper (Buckley and De Mattos, 2020) is theoretical in nature. The authors argue that successful IFCs such as alliances remain viable as long as they involve creation of governance structures that foster confidence among and continued investments by the collaborating partners. The authors present a process model that combines two underlying concepts: principle of mutual-forbearance at the individual level and the principle of congruity of actions. Mutual forbearance refers to "situation in which all parties forbear on a reciprocal basis" and congruity refers to "an actor's agreement with those that are perceived as supporting his evaluations/arguments". The authors argue that role of time and individual actions are key aspects to consider in their micro-mechanisms based process model. The authors develop two propositions in their paper.

The second paper (Mueller, 2020) examines how outcomes at the level of inter-firm networks is explained by individual-level factors. To do so the author focused on network facilitators. These are individuals that reside within lead firms associated with networks or third-party organizations, and help manage network-level cooperation. Utilizing a microfoundations perspective of network facilitation, the author undertook 85 qualitative interviews involving facilitators from five different countries. Analysis of the interview data revealed that facilitators in lead firms invest significantly in measures that build trust since they are perceived to lack benevolence and integrity. Facilitators in third-party organizations, in contrast, invest in developing competencies and skills and focus more on furthering the interests of their firms. This study offers new insights concerning network facilitation by considering individual-level, behavioral antecedents of network facilitators and their social interactions. Like the previous paper, Mueller (2020) offers propositions that synthesize the author's interpretations.

In the special issue, four papers use qualitative research methodology. One is Mueller (2020) that was discussed above. The other three are Hettich and Kreutzer (2020), Park *et al*. (2020), and Rui and Bruyaka (2020). The paper by Hettich and Kreutzer (2020) provides an interorganizational process model of strategy formation. The authors argue that firms face complex business environment with meta-problems. Often this requires multiple firms to prepare a joint coordinate response in the form of interorganizational strategy. Following grounded theory approach on case-based data collected from 25 firms operating in Germany's electric mobility sector, the authors conclude that the process of forming interorganizational strategy involves three stages: a) initiation, b) negotiation, and c) execution. Initiation phase provides internal (individual firm- level) and external (inter-firm level) stimulus. This leads to mobilization and matching of resources and actors who undertake the critical task of bridging gaps and managing diversity amongst them. Finally, execution stage follows a cyclical interaction involving de-coupling, re-coupling, stabilization, and the perpetuation of results and relationships. This process model is quite comprehensive and it opens several doors to our understanding of IFC, particularly at the interorganizational level, which is a special feature of this paper.

Park *et al*. (2020) focus on cooperation between firms operating on digital platforms and customer-entrepreneurs. Customer-entrepreneurs are customers who behave like businesses and create value for their end-customers by resorting to informal or even illegal means. The authors argue that interdependence between firms and customer–entrepreneurs represents an emerging form of interdependence. Utilizing institutional logic, the authors explain the interaction between two large cosmetic firms and one type of digital customer-entrepreneur (daigou agents) in the Korean cosmetics industry over a five-year period. The study highlights that organizational sensemaking is very important in recognizing, instantiating, and managing the new form of interdependence.

Rui and Bruyaka (2020) focus on the orchestration of collaborative networks. Orchestration refers to the design and management of a network of collaborative alliances where multilateral transactions by the network members take place. The authors posit that emerging market firms' transition from catching-up in production capabilities to catching-up in innovative capabilities depends upon collaboration undertaken by these firms. Set in the context of Chinese high speed train manufacturing industry (1990-2020), this longitudinal case study offers a network-based explanation of the catch-up process in which organizational learning and development of absorptive capacity play crucial roles. Interestingly, the authors show that the catch-up process of the central actor (leading company named CRRC corporation limited) of the high speed industry is not linear. To do this research, the authors utilized data collected through face-to face interviews and various secondary sources.

The last two published papers are also empirical in nature but they employ quantitative design. The first is the paper by Adomako and colleagues (2020). These scholars argue that although institutional voids (IVs) exist in emerging markets and IFCs commonly take place in such markets, prior research has not adequately examined how such voids influence IFC. This study, involving small and medium enterprises (SMEs) from Ghana, conclude that IVs favorably impact the use of R&D support that the government provides, and use of such support mediates the association between IVs and IFC. The study also finds that the association between IVs and government R&D support usage is positively moderated by economic adversity. The authors utilized institution-based perspective and resource dependence theory to build their logic and collected data from business executives using questionnaire survey. The respondents represented both manufacturing and services industry.

The second quantitative paper is by Hu *et al*. (2020). These authors bring in fresh insight with regard to the tenure of IFC. The authors suggest that centrality asymmetry, generally perceived as detrimental to alliance longevity, can motivate partners to opt for long-term alliance through the process of network resource complementarity. Centrality asymmetry refers to different levels of network centrality (for example, high versus low) that partners deal within networks. Such asymmetry determines the amount of information and network resources that partners may access within the network which, in effect, gives rise to power imbalance between them. The authors theorize that two factors (extent of partner's cooperation and the degree of competition they face outside of alliance) may reduce power imbalance, and encourage the partners to fend themselves from external competition by strengthening their existing alliance. Using a sample of Japanese firms' equity alliances, the authors show that the relationship between centrality asymmetry and alliance dissolution is nonmonotonic, specifically U-shaped. The authors further demonstrate that higher and lower levels of asymmetry have greater effect on dissolution than moderate level of asymmetry. This is an interesting study in the domain of alliance dissolution.

Table 1 highlights the salient features of the seven published papers.

Insert Table 1 about here

How do the published papers extend our knowledge of IFC processes? The papers collectively a noteworthy aspect: multilevel nature of IFC processes. That is, IFC processes may be theorized using antecedents at the macro/external level, firm-level, and individual-level. Two papers that explain the used of macro-level factors are Adomako *et al*. (2020), and Hu *et al.* (2020). The first paper uses institution-based theory and suggests that a key aspect of institutional environment (institutional voids) in emerging markets can affect how firms engage in IFC processes. Two other external factors that contribute to the processes in emerging markets are government R&D support and economic adversity. This paper contributes to the IFC literature and extends the use of institution-based theory in the domain of IFC processes.

In the second paper, Hu and colleagues use network centrality theory to explain the process of alliance dissolution. The core idea in this study is that although alliance partners participate in interfirm networks they differ in the level of centrality within the networks, and this centrality asymmetry and its consequences play a major role in the dissolution process. This paper also highlights the role of another external factor (external competition) that help minimize the influence of centrality asymmetry on alliance dissolution by lowering power imbalance between partners and urging them to strengthen their ongoing alliance. Hu *et al*. (2020) help illustrate that alliance dissolutions need not always be theorized on the basis of partner firms' internal factors such as resources and capabilities. Like the previous paper, this paper also contributes to IFC scholarship and extends the use of network centrality theory in the sphere of IFC processes.

Four of the seven published papers contribute to firm-level theorizing of the IFC process. Adomako *et al*. (2020) use resource dependence theory to explain how partner firms are dependent on critical resources for IFC processes in their external environment. A key resource that firms in this study utilize to benefit from IFC is government R&D support, specifically government grants. This particular paper extends the use of resource dependence theory in the area of IFC processes. The study by Hettich and Kreutzer (2020) theorize and examine how firms engaged in multipartner initiatives develop organizational strategies that allow them to overcome meta-problems in their external environment. The process model in this study highlights the notion that although the need to undertake IFCs may come from the external environment, it is firms' internal processes that help initiate, negotiate, and execute interorganizational strategies.

The third paper (Park *et al*. 2020) uses institutional logic to explain how firms view and recognize a new form of interdependence (between businesses and customer–entrepreneurs) in their external environment. The authors suggest that firms may differ in how they make sense of this new institutional pressure, and respond to it. Specifically, firms may respond by developing a determined account or they may opt for an open-ended account. These responses determine how IFCs between businesses and customer–entrepreneurs are initiated and managed. This paper enhances our understanding of logic use inside firms in devising strategic courses of action. The strategic network orchestration theory used by Rui and Bruyaka (2020) illuminates how firms in emerging markets catch-up by orchestrating collaborative networks of alliances involving domestic and international partners. This study theorizes and illustrates that catching up is a dynamic process involving several stages, and requires the formation and use of strategic goals and organizational learning strategies. This study, like Adomako *et al*. (2020), contributes to the literature on emerging markets.

Of the published papers, two theorize at the individual-level. According to Buckley and De Mattos (2020), top managers' view of the potential contribution of partners in IFC may determine the initiation and operation of IFC. The authors suggest that mutual-forbearance and the principle of congruity are two key principles that shape the individual's view of IFC. The role of cultural background of individual actors and temporal dimension of actions/reactions are of paramount importance in the effectiveness of acts of mutual forbearance. This paper explicates how using a micro-mechanism lens is a useful way to understand IFC. Another paper focusing on the individual level (Mueller, 2020) theorizes how individuals within firms impact facilitation of inter-firm networks that are set up to foster IFC. The author's focus in this study is on network facilitators who are charged with setting up the networks and managing them. According to this study, it is essential to understand the crucial attributes of the facilitators (e.g., motivations) and relate those to outcomes at the network level.

Taken together the published studies clearly highlight that IFC processes/sub-processes cannot be adequately explained by focusing on one level of analysis. To gain a holistic understanding of IFC processes, it is essential to delineate the role that is played by individual actors/managers, individual firms and their strategies, and partner networks and interorganizational strategies. In addition, it is also essential to examine the role played by macro / external environment of partner firms and how they impact development and sustenance of IFCs. While the published studies draw on extant theories, related literature, and different levels of analysis they also contribute to better understanding of IFC and their sub-processes, and generates a range of theoretical and managerial implications. A key learning that emerges from the published papers is that IFC processes represent a multilevel phenomenon.

Conclusions and future research

As noted above, the explanations and findings offered in the published papers are new, interesting, and relevant in terms of organizational theorizing and managerial practice. We posit that it is possible to relate contribution of each paper in terms of one or more of the sub-processes highlighted in Figure 1. For example, while three papers (Adomako *et al*. 2020; Hettich and Kreutzer, 2020; Park *et al*. 2020) contribute to the first sub-process (formation and partner selection), five papers (Buckley and De Mattos, 2020; Hettich and Kreutzer, 2020; Mueller, 2020;

Park *et al*. 2020; Rui and Bruyaka, 2020) relate to the second (design and governance) sub-process. Further, we can relate six papers (Adomako *et al*. 2020; Buckley and De Mattos, 2020; Hettich and Kreutzer, 2020; Mueller, 2020; Park *et al*. 2020; Rui and Bruyaka 2020) with the next sub-process (management) and two papers (Hu *et al*. 2020; Mueller, 2020) with the evaluation sub-process. Finally, contribution of one paper (Hu *et al*. 2020) fits with the last (continuation / termination) sub-process. The above reveals that the published papers exhibit significant overlap across IFC sub-processes. This is not a surprising observation given that Ring and Van de Ven (1994) informed us long ago that developmental processes in IFC are cyclical and not sequential.

In order to make further progress in this research area we can provide few prominent suggestions. First, scholars in the future may pursue studies that generate deeper insights of each of the IFC sub-processes and their interrelationship as shown in Figure 1. The papers in this special issue have provided meaningful direction in this regard and future studies may build on these studies and generate newer and better understanding of the sub-processes. Given that sub-processes, in combination, gives rise to the IFC life-cycle, we will need greater understanding of how each sub-process initiates, continues, and translates into the next sub-process. We concluded before that IFC processes need to take into account various levels of analysis. Future research needs to capture how each sub-process of IFC may be understood using multilevel analysis. For example, what individual/managerial factors hasten or inhibit alliance dissolution (termination sub-process)? What IFC interorganizational strategies are helpful or detrimental to IFC evaluation sub-process? Numerous interesting research avenues can be contemplated.

Second, future research may examine how sub-processes evolve and how individual evolution relate to the evolution of entire IFC. As we know a key feature of IFC is evolution over time (Doz, 1996). Owing to various complexities that typically exist within IFCs (Nippa and

Reuer, 2009; Oliveira and Lumineau, 2019) it is possible that evolution a sub-process may not progress as planned by the collaborating partners. What could be the reasons for such deviation at different levels of analysis? How unrealized strategy for a certain sub-process affects the evolution of the following sub-processes, and entire whole IFC? A wealth of scholarship exists on how to evaluate or ascertain performance of IFCs (Nippa and Reuer, 2009). Researchers in the future may devise studies that suggest methodologies and evaluate performance of each sub-process.

Third, although scholars have the discretion to employ different research methodologies we urge them to conduct qualitative, multiple case-based studies (e.g., Hettich and Kreutzer, 2020; Park *et al*., 2020) as such examinations often generate fine-grained results that are not possible in typical quantitative research designs. In addition, we encourage future scholars to devise longitudinal studies that would facilitate understanding IFC sub-processes and their evolution over a longer time-frame to generate richer insights. It is true that longitudinal studies require significant time and resource commitment but such studies are not uncommon in organizational research. Such studies, among other things, may enable better understanding of how learning happens across the sub-processes, and how feedback is shared and used along the IFC life-cycle. In addition, longitudinal studies would throw light on the formation and propagation of *dark side* of IFCs (Oliveira and Lumineau, 2019). Scholars may also consider using a new analytical tool— fuzzy-set qualitative comparative analysis (fsQCA)—that is gaining prominence in business scholarship (Fainshmidt, Witt, Aguilera, and Vebeke, 2020).

Fourth, we urge future scholars to focus more on individual managers and teams to understand how IFC sub-processes unfold and grow (Buckley and De Mattos, 2020; Gur *et al*., 2020). This is because it is the managers, and not lifeless companies, who create, develop and manage IFCs (Contractor, Foss, Kundu, and Lahiri, 2019; Mueller, 2020). Focusing on IFC managers would allow generation of various micro-mechanisms related to the dynamics of each IFC sub-process and allow taking appropriate measures to ensure that growth, management, and performance of each sub-process happens as planned. Such examinations would allow understanding how various individual or top management attributes (age, qualification, gender, experience, country-of-origin) impact IFC sub-processes. Knowledge of how mutual-forbearance and principle of congruity matter in IFCs (Buckley and De Mattos, 2020) and how crucial attributes of network facilitators influence network-level outcomes (Mueller, 2020) may provide useful starting points to future scholars.

Fifth, we encourage scholars in the future to replicate the five empirical studies of this special issue in new settings (country, industry, sector) and for different type of IFCs (e.g., co-branding, joint venture) as well as different type of firms (e.g., size, age, high tech/low tech, whether affiliated to conglomerate). Doing so would increase the generalizability of current findings (Adomako et al., 2020; Martin et al., 2019). Moreover, replication may allow generation of context-focused findings that would complement the current findings. For example, replicating two emerging market studies in this special issue (Adomako et al., 2020; Rui and Bruyaka, 2020) in other emerging markets may yield relatively newer findings since formal and institutional setups may be different in those countries. Further, these studies may be replicated in the developed markets, and the resulting findings may be compared with the existing findings. Relatedly, scholars may consider undertaking future research based on research avenues highlighted in the seven published papers.

We expect the above five directions for future research to not only deepen our understanding of each IFC sub-process but to also inform managers of the associated best practices that may be needed to realize the desired goals. The references that we used in this paper include a mix of relatively old and new articles. Our hope is that future researchers will find those as well as special issue publications extremely useful when contemplating their theories and research designs. In particular, authors will find the 'review' articles (e.g., Beamish and Lupton, 2009; Beamish and Lupton, 2016; Castañer and Oliveira, 2020; Kale and Singh, 2009; Majchrzak *et al*., 2015; Nippa and Reuer, 2019; Oliveira and Lumineau, 2019; Parmigiani and Rivera-Santos, 2011) highly beneficial. We hope this introductory article, in combination with the seven published special issue papers, will ignite scholarly passion for accomplishing more in-depth studies of IFC and the underlying processes.

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Table 1. Articles in the special issue (arranged alphabetically)

Authors	Theory	Empirical	Data source	Country	Industry/sector	Main finding
Adomako *et al*., 2020	Institution-based perspective and resource dependence	Yes (quantitative)	Primary (executive survey)	Ghana	Manufacturing and services	Institutional voids (IVs) favorably impact use of government-provided R&D support, and use of such support mediates the association between IVs and IFC
Buckley and De Mattos, 2020	Mutual forbearance and principle of congruity	No (conceptual)	-	-	-	Mutual-forbearance at the individual level and principle of congruity of actions enable IFCs to remain viable
Hettich and Kreutzer, 2020	Grounded theory approach	Yes (qualitative)	Primary (25 case studies)	Germany	Electric mobility (automobile)	Process of interorganizational strategy formation involves three stages: initiation, negotiation, and execution
Hu *et al*., 2020	Network centrality, centrality asymmetry, and alliance dissolution	Yes (quantitative)	Archival	Japan	Multi-industry/manufacturing	The relationship between centrality asymmetry and alliance dissolution is U-shaped, and higher and lower levels of asymmetry has greater effect on dissolution than moderate level of asymmetry
Mueller, 2020	Microfoundations perspective of network facilitation	Yes (qualitative)	Semi-structured interviews	Austria, Germany, U.K, USA, and Switzerland	Multi-industry/manufacturing and services	Facilitators in lead firms invest significantly in measures that build trust. Facilitators in third-party organizations, in contrast, invest in developing competencies and skills and focus more on furthering

						their firms' interests
Park *et al.*, 2020	Institutional logic	Yes (qualitative)	Multiple case studies	Korea	Cosmetics	Organizational sensemaking is very important in recognizing, instantiating, and managing cooperation between firms and customer–entrepreneurs
Rui and Bruyaka, 2020	Strategic network orchestration	Yes (qualitative)	Longitudinal case study	China	High speed train / manufacturing	How network orchestration mechanisms enabled Chinese high-speed train industry to catch up in production and innovation capabilities

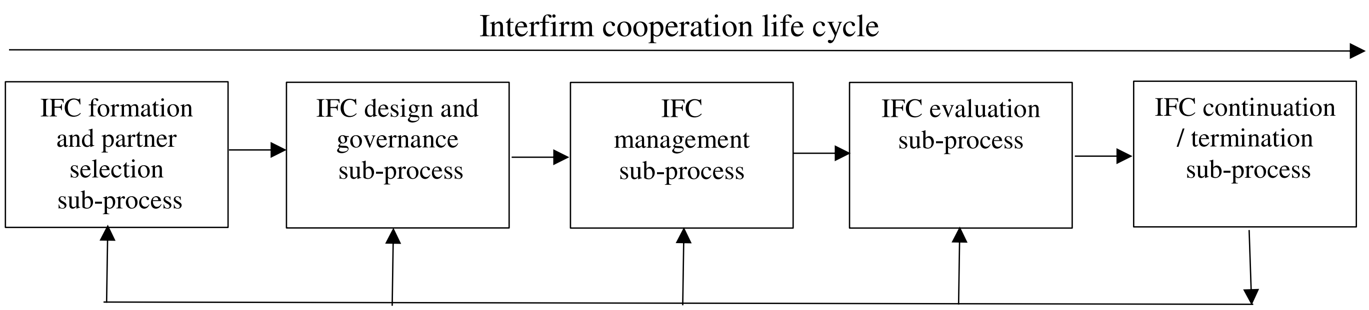

Figure 1. A holistic process model of interfirm cooperation (IFC)