General Introduction

1.1. Research objectives

The past three decades of academic research has yielded a rich stream of studies examining joint ventures (JVs). JVs are independent organizational entities that represent pooled resources and shared equity of two or more firms (Kumar and Seth, 1998; Isidor, Schwens, Hornung and Kabst, 2015). Historically, classic JV research focused on the formation stage of JVs (e.g. Doz, 1996), and in particular how JV design and JV governance adopted by partners influences collaboration and JV performance (e.g. Harrigan, 1988; Kumar and Seth, 1998; Geringer and Hebert, 1989; Tallman and Shenkar, 1994; Reuer and Koza, 2000; Reuer and Tong, 2005). Meanwhile, scholars have noted that over time, competition and asymmetric changes between partners can shift collaboration off course and lead to the break-up of JVs. Consequently, an important stream of JV research studies the drivers of termination events such as JVs’ dissolution or failure (e.g. Park and Russo, 1996; Park and Ungson, 1997, 2001; Peng and Shenkar, 2002; Polidoro, Ahuja & Mitchell, 2011). Altogether, prior studies have provided valuable insights into the challenging nature of maintaining JVs.

Whereas early JV research has provided deep insight into the formation stage and the break-up of JVs, a recent review of the JV literature suggests that “[...] there are more than ample opportunities to deepen the foundations that have already been laid in the literature [on joint ventures] (Nippa and Reuer, 2019: 556)”. In particular, recent research
on JVs points to two key areas where JV research has so far advanced to a lesser degree: the dynamic aspect of JVs and the micro-foundations of JVs. First, several authors emphasize the dynamic nature of inter-organizational alliances, and point to important evolutionary changes that can alter their initial conditions, design and collaboration mechanisms (Doz, 1996; Ariño and de la Torre, 1998; Reuer, Zollo and Singh, 2002; Madhok, Keyhani and Bossink, 2015; Majchrzak, Jarvenpaa and Bagherzadeh, 2015). These dynamics can vary from contractual renegotiations, to more fundamental adjustments such as changes in partner composition (Reuer and Ariño 2002; Majchrzak, Jarvenpaa and Bagherzadeh, 2015). Early studies in this stream examine the antecedents of post-formation dynamics (e.g. Das and Teng, 2000a; Kumar and Nti, 1998; Dussagge, Garrette and Mitchell, 2000; Inkpen and Beamish, 1997), and recent studies have started exploring the relationship between post-formation partner change and the dissolution of JVs (e.g. Chung and Beamish, 2010; Bakker, 2016). Despite important advancements in this research field, it is notable however that empirical studies mostly emphasize the disruptive (negative) effects of post-formation dynamics, while conceptual work also highlights adaptive (positive) effects. Furthermore, recent studies have urged additional research to understand exactly which conditions shape post-formation dynamics (Majchrzak, Jarvenpaa and Bagherzadeh, 2015) and to explore under which conditions post-formation changes are beneficial rather than disruptive (Bakker, 2016). Against this backdrop, we therefore see an important opportunity to integrate existing perspectives on post-formation dynamics, in particular by studying under which conditions partner change has positive or negative performance effects in JVs.
A second promising avenue in JV research concerns individuals in JVs. Specifically, scholars have recently argued that further research is needed on the micro-level, to understand how the individuals involved in inter-organizational alliances shape the outcome of collaboration (Salvato, Reuer and Battigali, 2017). JVs also provide a relevant organizational context to examine boundary spanners, i.e. individuals that cross organizational levels and connect firms and inter-organizational alliances (Lumineau and Oliveira, 2018). In this vein, several recent studies emphasize the need for more research about the directors that represent JV partners in the board or management team of the JV (Reuer, Klijn, van den Bosch and Volberda, 2011; Klijn, Reuer, Volberda and van den Bosch, 2017; Cuypers, Ertug, Reuer and Bensaou, 2017). Examining directors in JVs also allows better understanding of the actual, ex-post implementation of JV governance rather than only focusing on ex-ante governance mechanisms such as contracts (Klijn, Reuer, Volberda and van den Bosch, 2017). In this dissertation, we highlight two important and fundamental research questions relating to directors in JVs that remain unaddressed in extant research. First, our understanding remains limited about which factors drive director appointment in JVs, even though the individuals appointed to a JV represent human capital that is a core alliance resource (Das and Teng, 2000b). Second, directors are faced with a natural divide that develops from representing the interests of different JV partners (Li and Hambrick, 2005; Hambrick, Li, Xin and Tsui, 2001), lending important opportunities to explore how this divide can be overcome by directors in JVs.

The main objective of this dissertation is to extend the frontier of JV research by further examining post-formation dynamics in JVs and studying the micro-foundations
of JVs. We conducted three empirical studies that can extend JV research across these dimensions. The empirical study in Chapter 2 offers an integrative perspective on post-formation partner change, by examining core JV characteristics that determine its positive or negative performance effect. Second, we aim to extend the depth of JV research, by taking a deeper look at key individuals operating on the micro-level of JV. The empirical projects in Chapter 3 and Chapter 4 aim to contribute to the second research objective. In Chapter 3, we contend that existing research is surprisingly limited in examining human capital resources allocated to JVs (i.e. directors’ expertise), even though the allocation of common resources to JVs has been established as an important issue in early JV research (Borys and Jemison, 1989). Further applying the micro-foundations lens, Chapter 4 aims to complement prior research that emphasizes the detrimental effects of subgroup formation among JV directors. We do so by highlighting that overlapping subgroups across JV partner lines (i.e. partner-spanning faultlines) can have so far overlooked positive effects on JV outcome. In Table 1.1, we summarize the core logic of the dissertation.
Table 1.1. Overview of the dissertation

<table>
<thead>
<tr>
<th>Research question</th>
<th>Chapter 2</th>
<th>Chapter 3</th>
<th>Chapter 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research question</td>
<td>Which conditions shape the performance effect of partner change in JVs?</td>
<td>What drives human capital resource allocation to JVs?</td>
<td>What are the implications of partner-spanning faultlines for JV termination?</td>
</tr>
<tr>
<td>Dependent variable</td>
<td>JV financial performance</td>
<td>JVs’ human capital value</td>
<td>JV termination</td>
</tr>
<tr>
<td>Theoretical perspectives applied</td>
<td>Strategic flexibility</td>
<td>Agency perspective – and resource dependence perspective</td>
<td>Social identity theory</td>
</tr>
<tr>
<td>Key insights</td>
<td>The performance effect of partner change depends on technological complexity as it indicates JVs’ degree of resource flexibility</td>
<td>Interfirm size diversity and equity concentration drive human capital value, and we attribute these effects to resource dependence and agency-related mechanisms</td>
<td>Partner-spanning faultlines (i.e. overlapping gender – and age subgroups across JV partner lines) act as a stabilizing force in JVs; prior ties between JV partners negatively moderate this effect</td>
</tr>
<tr>
<td>Contribution to the research objective</td>
<td>Highlight the organizational moderators of post-formation dynamics in JVs</td>
<td>Contribute to a micro-level understanding of JVs by studying (1) human capital resources allocated to JVs and (2) boundary spanning in JVs</td>
<td></td>
</tr>
</tbody>
</table>

1.2. Empirical setting: Wind farm joint ventures in the United Kingdom

The empirical context of the three projects in this dissertation is wind farm JVs incorporated in the United Kingdom (UK). Wind energy has been at the forefront of the global energy scene for the last close to thirty years. Wind farms consist of wind turbines that are mounted onto land (i.e. onshore wind farms) or into the seabed (i.e. offshore wind farms). Wind is an extractive industry, meaning that a wind turbine extracts part of the kinetic energy of the wind blowing through the swept surface area of a wind turbine rotor (Krohn, Morthorst and Awerbuch, 2009: 49). Although the commercial wind energy sector dates back to the United States, most market activity shifted to Europe after the 1990s (Kaldellis and Zafirakis, 2011). The United Kingdom (UK) in particular is the third largest European wind energy market with 21.51 Gigawatts (GWs) of installed wind
energy capacity (WindEurope, 2019) and also has the world’s largest offshore wind energy market (RenewableUK, 2019). Consequently, half of the country’s renewable sources are supplied by wind energy (RenewableUK, 2018). Wind energy in the UK, as in most European countries, is provided with governmental subsidy (so-called Contracts-for-Difference) as a way to compensate for the relatively price disparity of producing electricity from traditional (e.g. oil, gas) versus clean (e.g. wind, solar etc.) energy sources (IEA/IRENA, 2019).

We chose to carry out the empirical studies of this dissertation in the context of wind farm JVs in the UK due to (1) the importance of inter-organizational collaboration in the wind energy sector, (2) the dynamic nature of wind farm development and (3) the ability to triangulate different data sources that provide insights on different levels of wind farms. First, inter-organizational collaboration has become an important way that firms involved in wind farm development can account for the risks of development and attain cost efficiencies. In the UK in particular, JVs or consortia of utility companies have emerged as the most common development model as wind farm projects begun to increasingly grow in size (Building, 2015). Indeed, collaboration allows firms to combine efforts, resources and knowledge, and can therefore be an effective tool when addressing grand societal challenges such as increasing the abundance of renewable energy (George, Howard-Grenville, Joshi, & Tihanyi, 2016). Additionally, inter-firm collaboration has been emphasized as one of the key areas that can contribute to a long-term decrease in the cost of wind energy (ORE Catapult, 2015). Accordingly, while coding news announcements for our data collection, we observed that developing wind farms through
inter-organizational collaboration has been a popular strategy in the UK. Figure 1.1 illustrates the pattern of inter-organizational activity in the time period 2000-2014.

*Figure 1.1. Inter-organizational collaboration announced in the UK wind sector, 2000-2014*

---

Second, the nature of wind farm development lends itself to rich longitudinal data which provides sufficient variance across our sample. In particular, the installation of a wind farm occurs along several interlocking phases that span from the initial planning and financing to maintenance and operation of the wind farm (EnergieKontor, 2019). One of our expert interviewees described these phases the following way:

“…the permitting and construction phase, they [...] are not three separate pieces. That is also part of the success of the project. [...] you see that the phases interlock with each other [...] a bit hand in hand” [Interview with a Project Manager of an offshore wind farm, 2017]

More importantly, energy developers have various strategies for engaging wind farm development and often engage at different stages of the development. This provides interesting variance across the JVs in our sample and a rich foundation for testing our
hypotheses. The quote below from an interview with an industry expert illustrates this strategy the following way:

“[for example] the whole business model of [one of the large global developers] is leveraging their […] construction experience in offshore wind […] they manage the construction risk to have a fully operational assets, and [the developer] may step out of that role subsequently and sell off their share at an effective price to an infrastructure investor while maintaining an operational role or also selling that off […]” [Interview with a Partner at a global consultancy firm, 2017]

Finally, the third reason for which we focus on this setting is that wind farms developed in the UK are well documented across various databases and enjoy rich media coverage that we could exploit for data collection. Such information coverage of wind farms is due to (1) policy support of wind farm projects being available as public information and (2) the extensive local media coverage that follows the process of wind farm development. Similarly, various foundations focused on renewable energy (e.g. International Energy Agency, Renewable Energy Foundation and RenewableUK) document the progress of wind energy development globally and in the UK. Being able to triangulate rich information from multiple sources is important, because established databases on strategic alliances and joint ventures (e.g. SDC Platinum) do not contain extensive information on production-oriented alliances such as wind farm JVs. Altogether, focusing on the wind energy market in the UK enables us to test our hypotheses on a rich longitudinal dataset of wind farms developed by two or more firms.

1.3. Methodological approach
The empirical studies presented in Chapters 2 – 4 of the dissertation use a unique dataset containing longitudinal, multi-level data on wind farm JVs in the United Kingdom. We developed this JV database by integrating information from multiple secondary data
sources. We first used a news database (LexisNexis) to create an initial “map” of inter-organizational collaboration in the UK wind sector. This is an established practice and an increasingly valuable alternative to relying on established alliance databases such as SDC Platinum (Schilling, 2009). Using a string of key words in LexisNexis, we manually scanned approximately 67000 news articles and press releases published between 2000 and 2014. To ensure that our sample is not biased towards capturing wind farms with large news coverage, we also relied on other secondary databases for identifying additional JVs. Specifically, we cross-referenced our initial sample with a broader list of operational wind farms from the REF Renewables Generators Database. Together, these steps led us to identify 101 wind farms JVs incorporated in the UK in the sample period. We searched for the official financial accounts filed by each JV from the UK’s company registry (Companies House) and cross-referenced this information with the global company database of Bureau van Dijk (Orbis). Combining information from these databases offered a rich set of JV-level and partner-level variables for our analyses. Finally, Companies House documents report information about the individuals involved as directors in each organization. Using this information, we were therefore able to explore the micro-level of each JV as well. Altogether, our approach enabled us to develop a rich and unique dataset of UK-based wind farm JVs, which represents a robust and reliable sample for exploring the research questions set out in the dissertation.

Parallel to collecting quantitative data, we obtained qualitative insights from conducting ten interviews with ten industry experts. All interviews took approximately one hour and were conducted in English or Dutch with industry experts involved in
various areas related to wind energy (e.g. consulting, component manufacturing, project development etc.). Insights from these interviews offered us a better understanding of the challenges and intricacies of wind farm development, thereby providing a rich qualitative backdrop to our quantitative analyses. Our experts also pointed to relevant contextual variables that we could take into account in our analyses (such as testing wind speed differences in Chapter 2).

1.4. Overview of the empirical projects

We conducted three empirical projects that address the core research questions posed in this dissertation. In the empirical project presented in Chapter 2, we aim contribute to the dynamic perspective on JVs by studying the performance implications of partner change, i.e. changes in the partner composition of the JV which have been emphasized as a relevant post-formation change (Chung and Beamish, 2010; Greve, Mitsuhashi and Baum, 2013; Bakker, 2016). Conceptually, existing research has emphasized both the adaptive benefits and disruptive effect of post-formation partner change (Koza and Lewin 1998, Doz, 1996; Ariño and de la Torre, 1998; Reuer, Zollo, and Singh, 2002; Majchrzak, Jarvenpaa and Bagherzadeh, 2015; Yan and Zeng, 1999; Fang and Zou, 2010, Chung and Beamish, 2010; Bakker, 2016). Meanwhile, empirical research on partner change has mostly advanced in the direction of emphasizing how partner change increases the likelihood of JV termination (e.g. Bakker, 2016). In this study, we provide an integrative perspective, and argue that the positive or negative effect of partner change on JV financial performance depends on (1) the extent to which a JV’s resources can be adapted to new contexts (i.e. technological complexity) and (2) the extent to which a JV’s
hierarchy enables effective coordination of the change process (i.e. equity concentration). These arguments build on strategic flexibility literature, which emphasizes resource- and coordination characteristics as inhibitors or facilitators of an organization’s ability to deal with fundamental changes (Young-Ybarra and Wiersema, 1999; Bock, Opsahl, George and Gann, 2012; Sanchez, 1995; Brozovic 2018; Dai, Goodale, Byun and Ding, 2018). We hypothesize that technological complexity negatively moderates the relationship between partner change and JV financial performance, and that equity concentration positively moderates the effect of partner change on JV financial performance. We test these hypotheses on a panel dataset of 101 wind farm JVs set up in the United Kingdom between 2000 and 2014.

In Chapter 3, we point to an important limitation in studying JV resources on the micro-level. Specifically, we posit that prior research has assigned surprisingly little attention to examining the allocation of human capital to JVs (i.e. strategic expertise in the form of directors), even though human capital has been positioned as a relevant resource in such inter-organizational collaborations (Hess and Rothaermel, 2011; Martinez, Zouaghi, and Garcia, 2017). In this study, we address this shortcoming by examining partner-level and JV-level determinants of JVs’ human capital value (i.e. strategic expertise allocated to a JV). We do so by building on established theoretical perspectives from research on director selection, namely agency theory and resource dependence theory (Hillman and Dalziel, 2003; Dalton, Daily, Ellstrand and Johnson, 1998; Johnson, Schnatterly and Hill, 2013; Sur, Lvina and Magnan, 2013). Applying these perspectives to human capital in JVs, we argue that directors are allocated to JVs because
they fulfill resource dependence and monitoring needs emerging in the JV. From the agency and resource dependence perspectives, we derive three theoretical mechanisms (i.e. internal resource dependence, interfirm resource dependence and interfirm monitoring) and identify corresponding factors (i.e. environmental volatility, interfirm size diversity and equity concentration) that drive JVs’ human capital value by triggering these respective mechanisms. Specifically, we hypothesize that environmental volatility and equity concentration negatively influence JVs’ human capital value, and that interfirm size diversity positively influences human capital value. We test our conceptual model using a unique sample of director teams allocated to 101 wind farm JVs in the United Kingdom (UK).

In Chapter 4, we apply the micro-foundations lens further by studying director teams in JVs. Prior research examining JV directors has so far emphasized that directors often form subgroups, and that overlapping subgroups in director teams (referred to as faultlines) negatively affect team outcomes (e.g. Veltrop, Hermes, Postma and de Haan, 2015; Hambrick, Li, Xin and Tsui, 2001). In this study, we argue that this research overlooks the potential positive implications of faultlines in JVs, and that this tendency is rooted in taking coalitions (i.e. subgroups formed by JV partners’ representatives) as a core logic of studying faultlines in JVs. To complement prior research, we take an alternative approach and study the effect of partner-spanning faultlines on JV termination (i.e. the dissolution or acquisition of the JV). Specifically, we argue that gender and age subgroups that overlap across JV partner lines (i.e. partner-spanning faultlines) foster boundary spanning among directors and therefore act as a stabilizing
force in JVs (i.e. decrease the hazard rate of JV termination). We also argue that the relational context of the JV, and in particular prior ties among JV partners, negatively influences the core relationship between faultlines and JV termination. To test these two hypotheses, we constructed faultlines among a sample of directors involved in 101 wind farm JVs in the UK, and tested survival models to understand the effect of partner-spanning faultlines on JV termination.