



Dynamic capabilities for hire – How former host-country entrepreneurs as MNC subsidiary managers affect performance

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Abstract

MNC subsidiaries benefit from managers with entrepreneurial skills for finding superior combinations of MNC and host-country resources. However, such management skills are scarce. We reason that subsidiaries can improve their performance by hiring host-country entrepreneurs as managers since they develop similar skills in start-ups. Our theoretical model integrates mechanisms from entrepreneurial experience into theory on the microfoundations of dynamic capabilities. We test and support our prediction using longitudinal employer–employee data for 5587 foreign MNC subsidiaries in Portugal. Further, we show that performance effects are weaker when a subsidiary's management is internationally diverse and stronger in dynamic host-country environments.

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One of the entrepreneurs that we hired for a managerial position [...] shook the sales team since he was able to persuade them to rethink the way they were doing business. His broader view of the market helped us to redefine the product portfolio of one of our branches to include more services that go beyond printing.

—The human resources manager of a Japanese multinational corporation subsidiary in Portugal¹

INTRODUCTION

International business and strategy research emphasizes that multinational corporations (MNCs) rely heavily on subsidiaries to create and sustain competitive advantages (Birkinshaw, Hood, & Jonsson, 1998; Verbeke & Kano, 2016). Large parts of this literature highlight that heterogeneity in subsidiary performance can be



explained by how subsidiaries acquire, adapt, and link resources from within the MNC and the subsidiary's host-country (Asmussen, Pedersen, & Dhanaraj, 2009; Birkinshaw & Hood, 2000). Identifying such superior resource combinations depends crucially on the decision-making of MNC subsidiary management (Verbeke, Chrisman, & Yuan, 2007). Bartlett and Ghoshal (Bartlett & Ghoshal, 1987; Ghoshal & Bartlett 1995) stress for example the importance that the entrepreneurial skills of managers play in the ability of MNCs to respond to globalized markets and complex technologies. While some managers are merely resource allocators, a particular type of manager has entrepreneurial skills that he or she employs in recognizing and exploiting opportunities for superior resource combinations (Teece, 2014; Penrose, 1959). The extant literature on the microfoundations of dynamic capabilities emphasizes the performance potential from having such managers (Helfat & Peteraf, 2015; Felin, Foss, Heimeriks, & Madsen, 2012; Teece, 2007). However, the literature cautions that these managers are scarce in organizations since it is difficult to train people in entrepreneurial skills if they have not already developed naturally (Teece, 2016). Hence, existing research provides little guidance for how subsidiaries can increase their capacity of subsidiary managers with entrepreneurial skills.

In this study, we focus on the hiring decisions of MNC subsidiaries as a mechanism by which subsidiaries can increase their capacity of managers with entrepreneurial skills. More precisely, we reason that MNC subsidiaries can improve their performance by hiring host-country entrepreneurs, like the one described in the quote above, as managers. For this purpose, we integrate mechanisms from the literature on skill development in start-ups (i.e., entrepreneurial experience) (Campbell, 2013) into theoretical models explaining performance outcomes based on the microfoundations of dynamic capabilities (Teece, 2007). This theoretical lens is particularly useful for our setting because it connects the role of individual managers with explaining dynamic capabilities as "the abilities to reconfigure a firm's resources and routines in the manner envisioned and deemed appropriate by its principal decision-maker(s)" (Zahra, Sapienza, & Davidsson, 2006: 918).

The integrative element of our theorizing emerges from the congruence between the desirable skill profiles of subsidiary managers with entrepreneurial skills as microfoundations of

dynamic capabilities and the types of skill development of entrepreneurs in host-country start-ups. The former stream of research describes the need for managers with entrepreneurial judgment, ambition, and creative imagination regarding alternative uses of resources to enable the identification and exploitation of a subsidiary's opportunity set (Foss, Klein, Kor, & Mahoney, 2008). The latter stream of research emphasizes that start-ups provide a unique organizational context in which founders create and reveal unique heuristics and tacit knowledge for how to manage resources efficiently and creatively (Eesley & Roberts, 2012; Gruber, MacMillan, & Thompson, 2008). The integration of these theoretical models enables us to explain how the hiring of host-country entrepreneurs increases a subsidiary's capacity of managers with entrepreneurial skills who can create and deploy dynamic capabilities to improve the subsidiary's performance.

The extant international business research has indicated that dynamic capabilities allow subsidiaries to manage the opportunities and challenges associated with the dual embeddedness in an MNC network and the host country by acquiring, integrating, combining, and continuously recombining resources from both environments (Michailova & Zhan, 2015; Phene & Almeida, 2008). However, the microfoundational underpinnings originating from the characteristics and behaviors of subsidiary managers are not well understood (Contractor, Foss, Kundu, & Lahiri, 2019; Kano & Verbeke, 2019). In this context, recent empirical studies have revealed how entrepreneurial attributes of subsidiary managers, such as championing behavior (O'Brien, Sharkey Scott, Andersson, Ambos, & Fu, 2019) and boundary-spanning characteristics (Nuruzzaman, Gaur, & Sambharya, 2019), translate into entrepreneurial outcomes at the subsidiary level. Even so, the underlying question of how subsidiaries increase the capacity of managers with entrepreneurial skills remains largely unaddressed. Similarly, the literature on the value of entrepreneurial experience in start-ups has mostly focused on its value in other start-ups (e.g., Gruber, MacMillan, & Thompson, 2012) or for an individual's career path (e.g., Campbell, 2013).

By integrating theoretical mechanisms from the literature on entrepreneurial experience into microfoundational models of dynamic capabilities in subsidiaries, we hypothesize that hiring host-country entrepreneurs leads to better subsidiary



performance. While hiring host-country entrepreneurs increases a subsidiary's capacity of managers with entrepreneurial skills, the resource configuration of subsidiaries can enable or constrain the degree to which performance effects emerge. The notion of resource reconfiguration is salient to the theory of dynamic capabilities because performance effects emerge from the combination of envisioning alternative resource uses and deploying them (Eisenhardt & Martin, 2000; Zahra et al., 2006). Accordingly, we explore three dimensions of subsidiary resource configurations and how they affect the degree to which the increased capacity of managers with entrepreneurial skills translates into subsidiary performance. We reason that the positive effect of hiring host-country entrepreneurs as subsidiary managers is (a) stronger for knowledge-intensive subsidiaries, providing many opportunities for resource reconfigurations, (b) weaker for subsidiaries with internationally diverse management teams, increasing the potential for conflicts, delays, or miscommunications in reconfiguration decision-making, and (c) stronger for subsidiaries in dynamic host-country environments, increasing the need for and value of frequent resource reconfigurations.

We test these hypotheses using longitudinal employer–employee data for 5587 foreign MNC subsidiaries in Portugal between 1995 and 2015. This dataset provides us with the unique opportunity to (a) capture the management as well as performance of a large number of foreign MNC subsidiaries while holding the host-country context constant and (b) identify host-country entrepreneurs becoming MNC subsidiary top managers. Portugal is an intriguing context for testing our theoretical framework because it has a dynamic business environment characterized by both high levels of entrepreneurial activity (Portugal had the highest share of employment in new enterprises of all member states of the European Union in 2016; Eurostat, 2019) and substantial inflows of foreign direct investment (FDI) (Portugal received net inflows of 4.6% of gross domestic product (GDP) in 2016, with the Organization for Economic Cooperation and Development (OECD) average being 3.3%; World Bank, 2018). Our estimations support all hypotheses except for the interaction with knowledge intensity.

Our findings have two important implications for research. First, we integrate theoretical mechanisms from entrepreneurial experience literature into a model of microfoundations of dynamic capabilities

of MNC subsidiaries. By doing so, we address a gap in the literature on the microfoundations of dynamic capabilities, which emphasizes the value of managers with entrepreneurial skills but acknowledges that such skills are scarce and it is difficult to generate them through training or education (Teece, 2016). Hence, the source of entrepreneurial skills in management for creating or deploying dynamic capabilities remains unclear. Our theoretical reasoning identifies (a) host-country start-ups as an organizational context in which the skill profile of a manager with entrepreneurial skills is developed or revealed and (b) hiring of these host-country entrepreneurs as a mechanism by which subsidiaries can increase their capacity of managers with entrepreneurial skills. In doing so, we respond to recent calls to incorporate more entrepreneurial thinking into a dynamic capabilities-based theory of the MNC (Al-Aali & Teece, 2014; Teece, 2014) while making dynamic capabilities actionable for MNC subsidiaries through recruitment. In addition, we identify dimensions of a subsidiary's resource configuration (low international diversity of management and high host-country dynamism) that are conducive to turning the increased capacity of managers with entrepreneurial skills into subsidiary performance. Our theoretical reasoning can serve as a useful platform for further theorizing on the channels by which firms can increase their management capacities for creating and deploying dynamic capabilities (e.g., by hiring from other organizational contexts such as consultancies).

Second, the international business literature has long argued that MNC subsidiaries provide important alternative career opportunities for entrepreneurial talent in host countries (De Backer & Sleuwaegen, 2003). While MNC staffing literature has explored many recruitment dimensions (for a review see Collings, Scullion, & Dowling, 2009), we know little about the performance impact that former entrepreneurs have as managers of MNC subsidiaries. We address this gap and reason that performance effects emerge because host-country entrepreneurs develop skills in a start-up context that make them valuable managers in subsidiaries for creating and deploying dynamic capabilities. Given this unique theoretical mechanism, we add a new dimension (i.e., prior work experience in start-ups) to the stream of literature that has explored the composition of the subsidiary management as a determinant for performance (Gong, 2003, 2006; Nielsen & Nielsen, 2013; Elron, 1997). Also, we find



that a commonly considered dimension of diversity in subsidiary management teams, international diversity (Gong, 2003), constrains the degree to which newly hired host-country entrepreneurs can increase subsidiary performance. Within our reasoning, this negative moderation effect occurs because former host-country entrepreneurs draw mostly from local knowledge and experiences, which is detrimental to decision-making processes on resource reconfigurations when management teams have increasingly diverse national imprints. Future studies can build on our theoretical model and consider other types of prior work experiences in the staffing decisions of MNC subsidiaries (e.g., hiring former government officials in the host country and how they interact with various dimensions of diversity in a subsidiary's top management).

THEORY AND HYPOTHESES

Our theoretical reasoning is at the level of the MNC subsidiary and predicts differences in the performance of subsidiaries. We develop a theoretical logic for how hiring host-country entrepreneurs (i.e., individuals who started and ran a business in the host country) as subsidiary managers increases subsidiary performance. For this purpose, we start by (a) defining the nature of managers with entrepreneurial skills and (b) establishing how these managers improve the performance of MNC subsidiaries by reviewing theory on the microfoundational underpinnings of dynamic capabilities in subsidiaries. Based on this review, we develop hypotheses for how subsidiaries can increase their capacity of managers with entrepreneurial skills by hiring host-country entrepreneurs. Furthermore, we explore how the performance effects of hiring host-country entrepreneurs are moderated by the resource configurations of subsidiaries.

The Nature of Managers with Entrepreneurial Skills

The extant literature does not limit the value of entrepreneurial management skills to the context of young or small firms but also sees these skills as important for management teams of established companies (Barney, Foss, & Lyngsie, 2018; Foss et al., 2008; Stevenson & Jarillo, 1990), including MNC subsidiaries (Bartlett & Ghoshal, 1987; Ghoshal & Bartlett, 1995; O'Brien et al., 2019). Within this logic, entrepreneurial skills are not predominantly defined by the organizational

context but rather by the distinct way in which some managers make resource decisions. While some managers act as pure resource allocators, others understand how the fungibility of firm resources can be translated into further firm growth (Teece, 2014). Fungible resources are resources that can be applied in different ways or for various tasks and that can be combined with other resources to offer a range of services (Penrose, 1959; Danneels, 2007). This potential variety of resource applications constitutes the firm's productive opportunity set. However, the realization of this potential is contingent on the subjective perceptions of managers regarding the causality between resources and the services the resources can render (Foss et al., 2008; Gruber et al., 2012). This logic follows Penrose's (1959) view of entrepreneurial resource management in that firms are not necessarily only heterogeneous in resources themselves but also in their managers' entrepreneurial qualities and cognitions that drive decision-making on the resources (see also Teece, 2012, 2016, for a similar use of the term 'entrepreneurial management').

The distinct traits underlying managers' entrepreneurial skills have been described in various ways (cf. Teece, 2016). These managers use their entrepreneurial judgment to identify and interpret opportunities and apply their creative imagination regarding alternative uses of resources to devise new and better ways of assembling things (Teece, 2012; Penrose, 1959). They have the confidence to get unusual things done and the ambition to pursue profitable growth paths as well as the ingenuity to mobilize the means to do so (Foss et al., 2008; Penrose, 1959). In contrast, the skills associated with pure resource allocators relate to planning and controlling since the main focus of these managers is maintaining or optimizing the firm's status quo (Teece, 2016). In the words of Penrose, "entrepreneurial versatility" is therefore different from the qualities of "managerial or technical versatility": While the former refers to "a question of imagination and vision, which may or may not be 'practical,'" the latter are "primarily questions of administrative and technical competence" (Penrose, 1959: 36).

In line with this stream of literature, we define subsidiary managers with entrepreneurial skills as those that help subsidiaries recognize opportunities for productively reconfiguring existing resource configurations and enabling the effective realization of these changes (Zahra et al., 2006).



Managers with Entrepreneurial Skills as Underpinnings of Dynamic Capabilities in MNC Subsidiaries

Given this definition of managers with entrepreneurial skills, we draw from theoretical models of the microfoundations of dynamic capabilities to explain performance differences among subsidiaries. While prior research has often conceptualized dynamic capabilities as organization-level capabilities (Di Stefano, Peteraf, & Verona, 2014), recent studies in both the wider management literature (Felin, Foss, & Ployhart, 2015; Helfat & Peteraf, 2015) and international business research (Contractor et al., 2019; Kano & Verbeke, 2019) have emphasized the importance of understanding dynamic capabilities from a microfoundations perspective. These studies stress that capabilities to reconfigure different resources require entrepreneurial judgment, creative thinking, and farsighted decision-making at the top management level and thus are inherently difficult to routinize in terms of firm-level processes (Helfat & Peteraf, 2015; Teece, 2012). This is consistent with Teece (2012), who suggests that “[a]lthough some elements of dynamic capabilities may be embedded in the organization, the capability for evaluating and prescribing changes to the configuration of assets (both within and external to the organization) rests on the shoulders of top management.”

In our model, dynamic capabilities of subsidiaries are predominantly rooted in subsidiary managers. These managers play the central role in integrating resources and act as intermediaries between host-country and MNC resources (Birkinshaw, 1999; Nuruzzaman et al., 2019); they also make strategic decisions regarding the use and application of these resources (Verbeke et al., 2007). Following the microfoundational reasoning that heterogeneity among managers accounts for distinct firm capabilities (Felin et al., 2012), we suggest that the particular type of subsidiary managers with entrepreneurial skills determine the dynamic capabilities, as these skills allow subsidiaries to find superior resource combinations (Michailova & Zhan, 2015; Teece, 2014; Birkinshaw & Hood, 1998). Subsidiary managers’ entrepreneurial judgment and creative acts ensure that the subsidiary’s products and services meet local requirements and are protected from imitation by local competitors. That is, having managers with entrepreneurial skills is essential for a subsidiary to adapt and continuously readapt operational capabilities from the MNC to a particular host-country context (Teece,

2014). In contrast, to conduct activities that are aligned with the status quo, such as processes to produce existing products, subsidiaries can rely on the administrative and technical skills of their managers (Helfat & Winter, 2011).

Hence, the entrepreneurial skills of subsidiary managers are useful for the management of opportunities and challenges associated with the dual embeddedness in an MNC network and the host country (Michailova & Zhan, 2015). In particular, these skills help subsidiaries in better acquiring, combining, and recombining resources from the headquarters and sister subsidiaries as well as from external host-country sources (Phene & Almeida, 2008). Subsidiary managers with entrepreneurial skills thereby enable a subsidiary to create unique resource bases, respond to or even shape changes in the local market, and thus sustain competitive advantages (Teece, 2014; Rugman & Verbeke, 2001).

Recent empirical research in international business acknowledges the importance of microfoundations for explaining concepts akin to dynamic capabilities in subsidiaries, such as initiative taking and entrepreneurial behaviors (Verbeke et al., 2007; Ambos, Andersson, & Birkinshaw, 2010). This research highlights the role of subsidiary managers’ activities for materializing entrepreneurial orientation (O’Brien et al., 2019), the importance of their entrepreneurial self-efficacy (O’Brien, Scott, & Andersson, 2018), the value of their boundary-spanning characteristics (Nuruzzaman et al., 2019), and the impact of headquarters involvement and socialization mechanisms on proactive behaviors of subsidiary management (Decreton, Nell, & Stea, 2019). These studies demonstrate the relevance of studying the entrepreneurial characteristics and activities of subsidiary management as well as the context in which managerial decisions are made to understand the emergence of entrepreneurial initiatives and outcomes at the subsidiary level. However, they are relatively silent regarding the mechanisms by which subsidiaries increase their capacity of managers with entrepreneurial skills.

While prior work experience, such as within an MNC or industry, is important for subsidiary performance (Nuruzzaman et al., 2019), entrepreneurial skills cannot easily be built in every organizational context; indeed, they are “difficult to teach and absorb if they have not already developed naturally” (Teece, 2016: 207). Therefore, in our study, we explore how MNC subsidiaries can



increase their capacity of subsidiary managers with entrepreneurial skills.

Subsidiary Performance Effects from Hiring Host-Country Entrepreneurs

The central notion of our hypothesis development is that subsidiaries can increase their capacity of managers with entrepreneurial skills through their hiring in the host country. We reason that this increased capacity will enhance the degree to which subsidiaries' dynamic capabilities result in performance advantages. To develop our reasoning, we draw on mechanisms from the literature on entrepreneurial experience and integrate them into a microfoundational model of dynamic capabilities. The literature on entrepreneurial experience identifies start-ups as organizational contexts that allow their founders to develop and reveal skills or other human capital that are also valuable in other contexts (Campbell, 2013). Within our reasoning, subsidiaries will improve their performance when they hire host-country entrepreneurs because the entrepreneurial skills of these individuals are likely to ensure that dynamic capabilities are created and used in such ways that they yield resource combinations that are new and valuable.

The performance effect of dynamic capabilities depends on the value of the resource combinations that they create (Zahra et al., 2006). Put differently, the mere possession of dynamic capabilities is not a sufficient condition to achieve superior firm performance because the benefits of dynamic capabilities are contingent on how well the underlying activities are performed (Helfat et al., 2007; Zahra et al., 2006). Hence, the application of a dynamic capability will first and foremost lead to an alteration of a subsidiary's resource base but not automatically to a strategic advantage (Helfat & Martin, 2015). Whether the need for reconfiguring subsidiary resources is optimally met and the new resource combinations are valuable strongly depends on how subsidiary managers perceive and address the need for change. A misapprehension of the need for change and a misuse of dynamic capabilities can even undermine organizational success (Zahra et al., 2006). For example, misadaptations of HR practices of a Japanese MNC to foreign US subsidiaries can result in more frequent labor lawsuits (Mezias, 2002). Therefore, we argue that the entrepreneurial experience of the hired host-country entrepreneurs will enable a subsidiary's management to enact and direct the subsidiary's dynamic capabilities to attain resource

combinations that are not only new but also valuable in terms of improving subsidiary performance.

Entrepreneurship literature has given extensive attention to how the entrepreneurial experience of individuals (i.e., having repeated work experience in start-ups) influences their success in founding and managing new ventures (Delmar & Shane, 2006; Eesley & Roberts, 2012; Gruber et al., 2012; Politis, 2005). Entrepreneurial experience in start-ups positively affects individuals' earnings along their careers and in other organizational contexts (Campbell, 2013). These studies argue that entrepreneurial experience allows individuals to have unique learning opportunities because new ventures require entrepreneurs to develop a broad range of idiosyncratic skills to deal with resource-constrained environments that one cannot easily acquire otherwise (Busenitz & Barney, 1997; Campbell, 2013; Politis, 2005). This includes specific heuristics and tacit knowledge of how to manage scarce resources as well as operative and strategic tasks along the entrepreneurial process that average managers do not possess (Eesley & Roberts, 2012; Gruber et al., 2008). Evidence shows that entrepreneurial experience has lasting effects on the cognition and behavior of individuals; that is, it changes the way they perceive the world by imprinting particular mental processes (Mathias, Williams, & Smith, 2015). Thus, this kind of experience allows individuals to increase their abilities to recognize and exploit opportunities (Politis, 2005), which also constitute the qualities needed to effectively deploy dynamic capabilities in a subsidiary context (cf. Zahra et al., 2006).

Through the establishment and management of their own start-up, entrepreneurs learn a more holistic view of how organizations operate in local markets and thereby extend their ability to observe new opportunities (cf. Gruber et al., 2012). Prior studies have shown that entrepreneurs develop a particular way of thinking that allows them to arrive at seemingly unrelated connections, recognize new opportunity patterns, and attain qualitatively better judgment (Baron & Ensley, 2006; Gruber et al., 2008, 2012; McGrath & MacMillan, 2000). Such an entrepreneurial mind-set puts an individual into a state of permanent alertness for new opportunities, even without the actual intention to seek such opportunities (Gaglio & Katz, 2001). As a result, former entrepreneurs can recognize comparatively more opportunities for resource combinations when in managerial positions



(Gruber et al., 2008). That is, they can identify more and newer applications originating from specific resources than the average manager who possesses only corporate managerial and/or technical experience. Such abilities for opportunity recognition of host-country entrepreneurs are particularly useful for employing dynamic capabilities in MNC subsidiaries that have access to rich intra-MNC resources (Kogut & Zander, 1993; Kronborg & Thomsen, 2009; Un, 2011) that can be creatively applied in novel products or processes in a host country. Specifically, host-country entrepreneurs will tend to perceive those resource combinations of MNC and host-country resources that are most valuable, thereby providing the basis for a subsidiary's dynamic capabilities to improve subsidiary performance (Almeida & Phene, 2004).

Concerning the exploitation of resource opportunities, individuals who have founded and led a new business in the host country can better comprehend what it takes to successfully realize an opportunity in the local context. Unlike established firms that typically rely on a division of labor and specialization, start-up firms are usually smaller and more resource-limited, which forces their founders to take on a broader array of tasks and responsibilities than individuals who work in established firms (Campbell, 2013). Thus, entrepreneurs have typically gained experience in different areas and roles along the value chain, which helps them to better understand how different company functions must interact, so that newly identified uses of resources can be reliably implemented to contribute to company success (Easley & Roberts, 2012). Moreover, entrepreneurs have often acquired experience in combining existing resources with new ideas to realize new products and processes (Zander, 2007). Specifically, the resource constraints of a start-up have taught prior entrepreneurs how to engage in entrepreneurial bricolage (Campbell, 2013) (i.e., "making with what is at hand") to combine the few existing resources in a young firm to address new opportunities in the most promising ways (Baker & Nelson, 2005: 329). Such abilities for opportunity exploitation are valuable in implementing new resource combinations in an efficient and effective manner, since the misuse of dynamic capabilities in MNC subsidiaries that compete with other subsidiaries for MNC resources (Mudambi & Navarra, 2004) and with domestic competitors for host-country resources (Schmidt & Sofka, 2009) can have detrimental performance effects.

In sum, we suggest that subsidiaries hiring host-country entrepreneurs as managers are particularly well equipped to find and implement comparatively better solutions for resource combinations than subsidiaries where the management lacks this work experience. Such subsidiaries are more likely to have sufficient entrepreneurial skills in their management to enact and direct the subsidiaries' dynamic capabilities in desired and valuable ways. In other words, these skills help to reliably identify needs and opportunities for modifying and adapting MNC resources to local contexts, finding unexploited potentials in existing host-country resources, and effectively recombining existing MNC resources with local knowledge and resources. As a result, subsidiaries hiring host-country entrepreneurs as managers should experience comparatively better performance.

Hypothesis 1: MNC subsidiaries hiring host-country entrepreneurs as managers have higher performance than MNC subsidiaries without this type of managers.

Moderating Factors Emerging from Subsidiary Resource Configuration

Following this baseline expectation, we explore contingencies affecting the strength of the relationship between the hiring of host-country entrepreneurs as subsidiary managers and subsidiary performance. The microfoundations approach suggests that differences in capabilities and performance outcomes at the subsidiary level do not arise only from the heterogeneity in subsidiary managers but also from heterogeneity in the conditions to which these decision-makers are exposed (Contractor et al., 2019). Within our reasoning, hiring of host-country entrepreneurs increases a subsidiary's capacity of managers with entrepreneurial skills but performance effects will be unequal depending on the subsidiary's resource configuration and the degree to which they are conducive to reconfiguration.

In particular, we draw on a central argument of the dynamic capabilities framework that effective dynamic capabilities are necessary but not sufficient prerequisites for achieving superior performance (Eisenhardt & Martin, 2000; Helfat & Peteraf, 2015). Performance gains not only lie in the dynamic capabilities themselves but also depend on the resource configurations that managers manipulate when deploying dynamic capabilities (Eisenhardt & Martin, 2000; Teece, 2012). In



the context of subsidiaries, we identify three important dimensions of resource configuration that matter in the degree to which they enable or constraint the former host-country entrepreneurs in reconfiguring resources: (a) the knowledge intensity of the subsidiary (Mata & Portugal, 2000; Mudambi & Navarra, 2004), as it affects the degree to which opportunities for resource reconfigurations emerge, (b) the international diversity in the subsidiary management (Gong, 2003), since it influences the potential for friction in reconfiguration decision-making of internationally diverse management teams, and (c) the dynamism of the host-country environment (Fainshmidt, Pezeshkan, Frazier, Nair, & Markowski, 2016), as it affects the degree to which resource reconfigurations are needed and valuable.

Knowledge intensity

We start out by discussing moderation effects from the knowledge intensity of subsidiaries and how it affects reconfiguration opportunities for subsidiary managers with entrepreneurial skills. The knowledge intensity of subsidiaries and especially the skill level of their employees (e.g., for research and development (R&D) activities or marketing) is an important determinant of subsidiary performance (Mata & Portugal, 2000). A subsidiary's ability to create and share knowledge influences its bargaining power for securing MNC resources (Mudambi & Navarra, 2004). Knowledge-intensive subsidiaries can gain competence-creating assignments, so-called mandates, within MNCs (Cantwell & Mudambi, 2005). The nature of such mandates can be traced back to exploration in organizational learning theory. Exploration implies activities such as creating new products, resources, or capabilities (March, 1991). While such knowledge-intensive activities per se should be positively correlated with resource combination in subsidiaries, we suspect that host-country entrepreneurs as subsidiary managers are particularly beneficial in knowledge-intensive subsidiaries that provide them with comparatively more opportunities for combinations and recombinations.

In contrast to strictly domestic firms, MNC subsidiaries may not have to develop products, resources, or capabilities in the location in which they are used. Some MNC subsidiaries can be merely competence exploiting (Cantwell & Mudambi, 2005). These subsidiaries rely on knowledge transfers from global headquarters or other subsidiaries (i.e., they are comparatively less

knowledge intensive). These subsidiaries are largely responsible for adapting products or processes to local tastes or regulations (Sofka, Shehu, & de Faria, 2014b). Such subsidiaries are frequently not endowed for or incentivized to create novel resource combinations.

In contrast, knowledge-intensive subsidiaries provide host-country entrepreneurs hired as managers with opportunities for novel resource combinations. We reason that under knowledge-intensive conditions, subsidiary management including former host-country entrepreneurs is particularly salient. Many employees in knowledge-intensive subsidiaries are supposed to identify opportunities for new resource creation or combination (e.g., through R&D or new product development). In comparatively less knowledge-intensive subsidiaries, though, these abilities are rare (e.g., in production or distribution). Former host-country entrepreneurs hired as managers can create complementarities. They have previously developed skills (or other human capital) that allow them to identify patterns of opportunities (Baron & Ensley, 2006; Gruber et al., 2012; McGrath & MacMillan, 2000). While scientists and engineers in knowledge-intensive subsidiaries can create new knowledge and innovations on their own, managers who were former host-country entrepreneurs are particularly well positioned to reinforce the process by providing attention and budgets. Entrepreneurs develop a level of alertness that is habitual in nature and a chronic psychological schema, resulting in more intense perception and information processing toward potential innovations (Gaglio & Katz, 2001).

Similarly, entrepreneurship trains individuals not to overestimate a commercial opportunity based on technological novelty. The risk for the latter is high for knowledge-intensive subsidiaries. Entrepreneurs, though, experience the importance of market demands, customer needs, and financial returns in opportunities (Baron & Ensley, 2006; Gruber et al., 2012). Hence, hiring former host-country entrepreneurs as managers increases a knowledge-intensive subsidiary's expertise in exploiting opportunities, not just creating them. In sum, we hypothesize:

Hypothesis 2: MNC subsidiaries hiring host-country entrepreneurs as managers have higher performance than MNC subsidiaries without these managers, and this positive effect increases with the knowledge intensity of the subsidiary.



International diversity of subsidiary management

We focus on the international composition of subsidiary management teams as a second moderation effect affecting resource reconfiguration by managers with entrepreneurial skills. Almost by design, MNCs have an internationally diverse workforce (Collings et al., 2009). However, MNC subsidiaries vary in the degree to which they hire new managers internationally. Apart from recruiting host-country nationals, subsidiaries often fill key positions by employing home-country nationals (often expatriates coming from the MNC's headquarters) but also by hiring third-country nationals (i.e., individuals from countries other than the home or host country) (Collings et al., 2009). Thus, the composition of subsidiaries' management teams is likely to differ along the dimension of nationality diversity (Gong, 2003), which translates into heterogeneity in values, cognitive schemas, and behaviors associated with managers' respective nationalities (Hambrick, Davison, Snell, & Snow, 1998).

A high degree of heterogeneity in nationalities brings an increasingly broad range of perspectives and experiences from different institutional contexts to a subsidiary's management team (Smith, Smith, Sims Jr, O'Bannon, Scully, & Olian, 1994). This diversity can stimulate cognitive conflicts, which in turn result in creative problem-solving, organizational learning, and innovation (Elron, 1997; Nielsen & Nielsen, 2013). However, a broader range of perspectives can also lead to conflict other than cognitive tension that stimulates creativity. Heterogeneity in nationality is likely to create biases in the interrelationships between the members of a subsidiary management team because individuals tend to have more difficulty identifying with individuals of other nationalities (Gong, 2003). This can lead to clashes of norms and demeanors as well as nationality-based categorization that causes affective conflicts and lowers a management's cohesiveness, with potentially negative implications for subsidiary performance (Gong, 2003; Nielsen & Nielsen, 2013).

While we believe that the cognitive outcomes associated with international diversity of subsidiary management have an overall positive main effect on subsidiary performance, we postulate that high levels of international diversity negatively affect a subsidiary's ability to take advantage of the entrepreneurial skills of former host-country

entrepreneurs. When starting their own ventures, entrepreneurs become part of a particular social context by developing local relations and networks (Hite, 2003; Larson & Starr, 1993). It is through this process of embeddedness that entrepreneurs can identify local resources that they combine to create value (Hansen, 1995). That is, the local environment plays an important role in defining the cognitive models and behaviors of an entrepreneur and molds his or her identity (Mathias et al., 2015; McKeever, Jack, & Anderson, 2015). This local imprinting can lead former host-country entrepreneurs to feel out of place in an internationally diverse subsidiary management team, making social integration more difficult (Gong, 2003). While host-country entrepreneurs are likely to draw from local knowledge and experience, subsidiaries with internationally diverse management are less likely to be embedded in the host country than subsidiaries with more homogeneous management since they are likely to have a weaker local, subsidiary-based identity (Gong, 2003).

Consequently, former host-country entrepreneurs, due to their strong local imprint, can feel less psychologically linked to a subsidiary with such a managerial team and, consequently, be constrained in the way they develop their activities (Milliken & Martins, 1996). This lack of social integration taken together with the higher tendency of entrepreneurs to draw on representativeness is likely to increase the prevalence of affective conflicts in a subsidiary with internationally diverse management (Busenitz & Barney, 1997). Hence, former host-country entrepreneurs are comparatively more likely to avoid conflicts with other nationals holding distinct viewpoints and thus are less willing to accept divergent information to find elaborate solutions (Elron, 1997). As a result, discussions about subsidiary resource reconfigurations can be delayed, postponed, or not occur at all.

These mechanisms lead us to expect that the increased capacity of subsidiary managers with entrepreneurial skills from hiring host-country entrepreneurs for subsidiary performance is weaker for subsidiaries with a high level of international diversity in management. That is, we predict that subsidiaries with internationally diverse management have difficulty in taking advantage of the increase in capacity of entrepreneurial skills associated with the hiring of host-country entrepreneurs. Thus, we propose:



Hypothesis 3: MNC subsidiaries hiring host-country entrepreneurs as managers have higher performance than MNC subsidiaries without these managers, and this positive effect decreases with the degree of international diversity in the subsidiary's management.

Host-country dynamism

Finally, we refer to host-country dynamism as a moderating factor affecting resource reconfiguration from an increased capacity of entrepreneurial skills in subsidiary management. In line with previous definitions of environmental dynamism (Miller & Friesen, 1983; Schilke, 2014; Dess & Beard, 1984), we refer to dynamism in host-country environments as the extent to which these environments are both unpredictable (i.e., the degree of uncertainty) and changing quickly and often (i.e., the degree of volatility). Typical sources of dynamism are fluctuating customer preferences, shifting technologies, and unstable demands for products as well as supplies of materials (Jansen, Van Den Bosch, & Volberda, 2006). High levels of environmental dynamism can erode the value of existing subsidiary resources and offerings in host-country markets (Fainshmidt et al., 2016). Following dynamic capabilities logic (Helfat et al., 2007; Zollo & Winter, 2002), such changes and instabilities require firms to reconfigure their resource base and find new resource applications to stay aligned with local developments (Fainshmidt et al., 2016).

We argue that subsidiaries can potentially rely on a broad set of resources to address these changes, but we emphasize that not all subsidiaries are equally able to realize this potential. Specifically, we believe that subsidiaries hiring former host-country entrepreneurs as managers are better positioned to capitalize on shifting conditions in their host-country environment for mainly three reasons. First, subsidiaries with larger capacities of managers with entrepreneurial skills can gain first-mover advantages over other subsidiaries and domestic firms in the pursuit of innovation, which is a central benefit for coping with dynamic environments (Miller & Friesen, 1983; Wilden, Guderhan, Nielsen, & Lings, 2013). Experienced entrepreneurs have developed entrepreneurial alertness, which can be understood as a habitual or chronic psychological schema that automatically guides the perception and information processing toward potential innovations (Gaglio & Katz, 2001). This alertness allows noticing

opportunities quickly and accurately without actively searching for them – even under ambiguous circumstances (Gaglio & Katz, 2001). Thus, compared with subsidiaries without managers with entrepreneurial skills, subsidiaries with former host-country entrepreneurs as managers can recognize opportunities for new resource combinations and applications much earlier than those without such entrepreneurs (cf. Gruber et al., 2012).

Second, managers with entrepreneurial skills can effectively support subsidiaries in addressing the dynamism of local markets. As prior dynamic capabilities research highlights (Helfat et al., 2007; Winter, 2003), frequent adaptations of the resource base to novel situations in the environment can create significant costs due to the degradation of structural reproducibility (Schilke, 2014). Former host-country entrepreneurs in subsidiary management can ensure that the gains from continuous exploitation of opportunities for new resource combinations outweigh the costs. In a study exploring new opportunity evaluation by individuals with different degrees of entrepreneurial experience, Baron and Ensley (2006) show that inexperienced individuals overemphasize the technical novelty and superiority aspects of an opportunity. In contrast, experienced entrepreneurs have already built more refined cognitive representations of opportunities and focus more on the business value of an opportunity, such as its possibilities to solve a customer problem and quickly generate positive financial returns (see also Gruber et al., 2008). Thus, to benefit most from changing host-country environments, prior entrepreneurs may help their subsidiaries not only to rapidly find new resource opportunities but also to exploit them effectively and efficiently.

Third, dynamic environments create windows of opportunity that require fast decision-making from subsidiary management. Having coped with uncertainties in the creation of a new venture, experienced entrepreneurs tend to base their decisions more on heuristics and biases (Busenitz & Barney, 1997). In information-limited situations, when making thorough decisions is impossible, such decision-making behavior can facilitate appropriate decisions (Busenitz & Barney, 1997). In sum, while we suggest that subsidiaries benefit from hiring host-country entrepreneurs as managers in any host-country environment, we predict that this advantage is particularly pronounced in local environments that are increasingly dynamic. Hence, we hypothesize:



Hypothesis 4: MNC subsidiaries hiring host-country entrepreneurs as managers have higher performance than MNC subsidiaries without these managers, and this positive effect increases with the dynamism of the host-country environment.

EMPIRICAL STUDY

Data

We test our theoretical predictions for foreign MNC subsidiaries in Portugal. Keeping the host-country constant allows us to eradicate potential sources of bias at the country level. Several studies in leading international business and strategy journals have used MNC subsidiaries in Portugal as empirical settings (Sofka, Preto, & de Faria, 2014a; Mata & Freitas, 2012; Mata & Portugal, 2000). Given that Portugal has been a member of the European Union since 1986 and has used the single European currency euro since its inception in 1999, its institutional framework (e.g., with regard to the IPR regime) is very similar to the rest of Europe (de Faria & Sofka, 2010) and biasing effects from exchange rate fluctuations are limited. At the same time, Portugal is an excellent environment for testing our theoretical predictions since it is both highly dynamic in terms of the creation of start-ups as well as due to foreign direct investments (FDI). While R&D investment as a share of GDP in Portugal was at 1.3% in 2016 compared with an EU average of 2% (Eurostat, 2018), Portugal is an important recipient of FDI, with net FDI inflows accounting for 4.6% of GDP in 2016, significantly above the average of OECD member states of 3.3% (World Bank, 2018).

The dynamism of the Portuguese start-up economy is illustrated by a relatively high enterprise birth rate (15% in 2016, the 4th highest in the EU) and share of total employment in new enterprises (in 2016, it was the only EU country above 5%; Eurostat, 2019). Driven by governmental and private initiatives, a wave of entrepreneurship has been sweeping Portugal over the past years (Forbes, 2015). For example, since 2012, Portugal Ventures, the national investment agency focused on supporting firms in the seed and early stages, has evaluated more than 1600 projects and invested more than 128 million euros in 96 new start-ups. This investment agency together with a number of business incubators and accelerators, like Startup

Lisboa and Lisbon Challenge, have helped the creation of a group of very successful start-ups (Forbes, 2015). Firms like Talkdesk, a cloud-based contact center and artificial intelligence software developer, Feedzai, a company that focuses on the prevention of fraud in on-line commerce and Unbabel, a company that provides multilingual customer service across digital channels are examples of high-growth start-ups that were able to reach global markets and are illustrative examples of the entrepreneurial nature of the Portuguese economy (Partnership, 2015). While there has been an increasing level of entrepreneurial activity in the country, previous studies on the Portuguese labor market have also revealed that in their further careers many prior business founders leave start-ups (e.g., Amaral, Baptista, & Lima, 2011) and take up managerial positions at established firms (e.g., Baptista, Lima, & Preto, 2012), indicating a high degree of mobility of former entrepreneurs towards other organizational contexts.

To test our hypotheses, we use the Quadros de Pessoal (QP), a longitudinal matched employer–employee database that relies on information collected by the Portuguese Ministry of Labor, Solidarity, and Social Security in an annual survey sent to all establishments with at least one employee in Portugal. This database contains detailed firm and employee information, as well as figures on firm performance over time. The database has been used in earlier studies for identifying foreign MNC subsidiaries (Sofka et al., 2014a; Mata & Freitas, 2012; Mata & Portugal, 2000). We follow Sofka et al. (2014a) and sample firms as foreign MNC subsidiaries if they have at least 1% of foreign equity ownership, while accounting for the absolute level of foreign ownership through control variables.

The database also includes rich information about the careers of employees, allowing us to identify individuals who were entrepreneurs before they were hired by the MNC subsidiary and their role within it. In this study, we use data from 1995 to 2015 and are able to follow a total of 5587 MNC subsidiaries during the period covered, which provides us with 25,978 subsidiary-year observations. Employment records are available from 1989, and we use this earlier information to identify managers who were entrepreneurs before joining MNC subsidiaries.



Measures

Dependent variable

Our dependent variable is the performance of the focal subsidiary calculated as the logarithm of *sales per employee in the subsequent year ($t + 1$)*. This measure allows us to differentiate MNC subsidiaries according to their resource productivity. This variable is in line with the dynamic capabilities literature and the Penrosian view proposing that performance differences between firms are associated with how firms deploy their resources and not necessarily with the inherent quality of those resources (Foss et al., 2008). We test alternative performance measures such as market share in the host-country (two-digit NACE level) and subsidiary sales as well as the number of employees, and find consistent results in terms of the effect of hiring host-country entrepreneurs as subsidiary managers.

Independent and moderating variables

Our main independent variable is the number of top managers hired in a given year by a foreign MNC subsidiary that had owned and operated a firm in Portugal before joining the MNC subsidiary. The longitudinal nature of the database allows us to follow individuals to discern if they were business owners in their prior careers. We identify subsidiary top managers based on QP information about the hierarchy level occupied by each employee within the subsidiary. We use the highest level defined by the survey, describing tasks such as the definition of the firm's general policy or strategic planning (Baptista et al., 2012). We rely on the highest hierarchical level, since these managers have the most opportunities to assess and execute resource decisions that affect the subsidiary as a whole, compared with functional or professional experts, who are more likely responsible only for particular areas. This information allows us to identify host-country entrepreneurs with at least 1 year of experience in the period prior to their career at the subsidiary and that are hired as subsidiary managers. Accordingly, we construct our main variable of interest: the *number of hired host-country entrepreneurs* in the subsidiary's management team in a given year. We discard cases in which entrepreneurs join MNCs because their venture is acquired by the MNC. Discarding these cases allows us to focus precisely on hiring decisions instead of being a by-product of acquisitions. We also include the *number of other hired managers* (i.e., non-entrepreneurs) in the subsidiary's management team

in a given year and the total number of managers already existing in the management team in the preceding year as control variables.

In Hypotheses 2–4, we theorize on three moderating factors and include their main effects in the empirical model. More specifically, Hypothesis 2 proposes a positive moderating effect from the knowledge intensity of a subsidiary. Knowledge intensity is mainly dependent on the knowledge embodied in individuals working for the organization (Von Nordenflycht, 2010). Along this line, we follow Mata and Portugal (2000) by testing Hypothesis 2 using the *share of subsidiary employees with a college degree* as a proxy for the quality of a firm's human capital and consequently of its knowledge intensity.

To test Hypothesis 3, we measure the degree of *international diversity in a subsidiary's management* with the logarithm of the number of nationalities other than Portuguese among the subsidiary managers hired in the previous 5 years. Nationality is a commonly used variable, since it allows differentiating individuals according to their cultural backgrounds and values, and it is analytically tractable (Hambrick et al., 1998). Consequently, the number of nationalities among subsidiary managers allows us to capture the degree of international diversity in a subsidiary's management.

In Hypothesis 4, we predict that the effect of hiring host-country entrepreneurs as managers on subsidiary performance is stronger when the level of environmental dynamism in the host country is high. Following Dess and Beard (1984) and Schilke (2014), we measure *host-country dynamism* by regressing sales for each industry for a period of 2 years prior to the focal year on a variable representing the time period, dividing the standard errors of the regression by the mean level of the dependent variable. As a consistency check, we use a period of 3 years.

Control variables

We control for several subsidiary- and industry-related factors that may influence the performance and hiring decisions of foreign MNC subsidiaries. We follow Mata and Portugal (2000) and Sofka et al. (2014a) to define and operationalize most of these variables. Subsidiary size is expected to influence its performance (Dikova & Brouthers, 2016), so we control for it using the logarithm of the *number of employees* and logarithm of the *number of plants* in Portugal. Foreign MNC subsidiaries are heterogeneous regarding the degree to which they are



controlled by the MNC. Since we expect these differences to affect performance and decision-making at the subsidiary level, we control for the *share of foreign equity* in the subsidiary. Similarly, differences in compensation policies have been found to affect management performance with variable pay components being most consequential (i.e., pay for performance) (Gerhart, Rynes, & Fulmer, 2009). We control for *pay-for-performance remuneration* at the management level as the percentage of salary paid to managers in the subsidiary that is tied to their performance (e.g., a bonus).

Subsidiary performance differences can occur because of hiring practices. Prior work experience with other MNCs has been identified as an attractive hiring attribute (Sofka et al., 2014b). Hence, we control for the *share of employees with previous experience in other MNC subsidiaries*. The legal nature of a firm is also expected to influence its performance (Mata & Portugal, 2000). Therefore, we include a dummy variable that identifies whether the MNC subsidiary is a *limited liability corporation*. Expatriate managers are important building blocks for connecting headquarters with subsidiaries (Cerdin, Diné, & Brewster, 2014; Edstrom & Galbraith, 1977), and their presence is expected to influence a subsidiary's performance, as they can ensure knowledge transfer from headquarters (Chang, Gong, & Peng, 2012). We follow Sofka et al. (2014a) by identifying expatriates in management positions as foreign nationals without prior employment records in Portugal and with top managerial functions in the subsidiary. We use this definition and create a variable controlling for *the share of expatriate managers* in the management of the subsidiary.

Furthermore, we control for a set of dimensions that proxy the entrepreneurial nature of the MNC subsidiary. More specifically, we include controls for the risk-taking propensity of the subsidiary, as well as how aggressively it expands its business (*percentage of new establishments added in last 3 years*), whether the managers have equity ownership in the subsidiary (dummy variable identifying *management ownership*), and the position of the subsidiary in the business cycle (dummy variable identifying subsidiaries in the initialization phase, that is, *subsidiaries younger than 5 years*). We also control for the hierarchical structure of the firm (*flat hierarchy*), measured as the number of hierarchy levels in each subsidiary. We reverse code this variable, since flatter hierarchies in firms have been linked to entrepreneurial decision-making

structures (Colombo & Grilli, 2013), and we expect that former host-country entrepreneurs will have a larger impact on foreign MNC subsidiaries with this kind of structure.

In addition to host-country dynamism, we also control for other industry-level dimensions. In order to assess the level of competition faced by a subsidiary, we include the logarithm of the *number of MNC subsidiaries in the industry*, the Herfindahl–Hirschman concentration index (*HHI*) of firms in the focal subsidiary's industry as well as the *entry, growth, and exit rates* of MNC subsidiaries in the industry. To capture the extent to which the environment is favorable in terms of resource availability and sustained growth, we control for the *munificence* of the host-country environment by dividing the rate of sales growth (i.e., the regression coefficient of time on yearly sales for each industry) by the mean value of industry sales for the period of the study (Nielsen & Nielsen, 2013; Dess & Beard, 1984). "Appendix 1" summarizes all variables used in this study.

Analytical Method

We apply regression models to test our hypotheses. Hypothesis 1 is supported if the coefficient of the variables capturing the number of former host-country entrepreneurs hired as subsidiary managers is positive and significant. For testing Hypotheses 2–4, we add multiplicative interaction effects. These regression models could potentially suffer from two kinds of biases: omitted variables and selection biases. We address the former by including subsidiary fixed effects in all regressions, which allows us to control for unobserved factors potentially influencing subsidiary performance such as its strategy. The goal of fixed-effect approaches is to hold the subsidiary context constant and assess performance effects "within" a given subsidiary over time, as opposed to comparing subsidiaries.

Selection biases would imply that non-random factors exist that both influence the hiring of host-country entrepreneurs as subsidiary managers as well as subsidiary performance. We address this potential concern by pre-balancing the sample based on the likelihood of hiring host-country entrepreneurs as subsidiary managers. More precisely, we apply entropy balancing, which creates a "synthetic" control group based on weighting each observation so that treatment (i.e., hiring host-country entrepreneurs as subsidiary managers) and control group are as similar as possible based on a predefined set of covariates and their moments

(Abadie, Diamond, & Hainmueller, 2010). Entropy balancing relies on an algorithm that recalibrates observation weights so that a statistical area of common support is created for subsidiaries having hired host-country entrepreneurs and the rest (Malesky & Taussig, 2017). The process is nonparametric in nature (i.e., it does not require assumptions on a functional form). This nonparametric preprocessing has the advantage of reducing the degree of model dependence in subsequent parametric causal interference (Ho, Imai, King, & Stuart, 2007), (i.e., when we estimate performance effects). Re-weighting is performed using a set of pre-treatment variables that are likely to influence the hiring of host-country entrepreneurs by MNC subsidiaries.

We use the following covariates for achieving balance between subsidiaries having hired host-country entrepreneurs as managers and the control group: Average salary of all top managers in the subsidiary ($t - 1$), variable pay of manager salary in the subsidiary ($t - 1$), subsidiary size ($t - 1$), subsidiary growth ($t - 1, t$), one-digit industry, and observation year. The balance is based on the mean of these variables. This procedure allows us to minimize the risks from selection biases originating, for example, from host-country entrepreneurs who may have chosen particularly large or strongly growing subsidiaries because of their ability to appropriate MNC resources (Mudambi & Navarra, 2004). "Appendix 2" compares treatment and control observations before and after entropy balancing. While there are significant differences before balancing, there are no remaining significant differences afterward. Hence, the entropy-balancing weights perform as intended. Our approach has the caveat of all approaches relying on balancing on observables: the degree of balancing on unobservables cannot be verified (Malesky & Taussig, 2017).

Subsequently, the entropy-balancing weights are included in all regressions, thereby minimizing the likelihood of selection biases in hiring host-country entrepreneurs as managers (Hainmueller, 2012). Relying on these weights has the advantage that observations that cannot be matched do not have to be discarded, as would be the case in propensity score matching approaches, which increases the efficiency of the estimation procedure. Taken together, we combine a nonparametric preprocessing approach based on entropy balancing with the subsequent use of parametric regression analysis incorporating the balancing weights for reducing potential selection biases while preserving

efficiency. Such approaches have been used frequently in leading academic journals (e.g., Bansak, Hainmueller, & Hangartner, 2016; Malesky & Taussig, 2017).

RESULTS

Table 1 provides descriptive statistics that allow for the characterization of the average foreign MNC subsidiary in our sample. The average subsidiary has 133 employees, and foreign investors own 83.1% of its equity. The average subsidiary has around 12 managers in its management team, and 30.7% of its employees have a college degree. The relatively high average values of the variables measuring the number of top managers hired annually by each subsidiary (0.83 former host-country entrepreneurs and 0.33 others) indicate that MNCs use hiring as a strategic tool.

Table 2 provides correlation coefficients for all independent variables. The correlation values give no indication for the existence of multicollinearity problems. Moreover, the average (2.32) and maximum (3.10) variance inflation factor values (shown in "Appendix 3") are well below the common multicollinearity thresholds of 5 and 10 (Greene, 2012). Given that our data is longitudinal, we perform tests for serial correlation, heteroscedasticity, and reverse causality. The results of these tests do not point to any serious endogeneity or autocorrelation issues.

Table 3 presents the results of the subsidiary fixed-effect regression models using weights derived from the entropy balancing. Model 1 is the baseline model and includes the control variables and the main independent variable allowing for testing Hypothesis 1. In models 2 through 4, we add the interaction terms necessary to test Hypotheses 2, 3, and 4. Model 5 includes all interaction terms at a time.

In Hypothesis 1, we predict that hiring host-country entrepreneurs as managers helps MNC subsidiaries to increase their performance. The results lend support to our prediction, since the coefficient of the variable measuring the number of host-country entrepreneurs hired as managers is positive and significant (Model 1: $\beta = 0.003$, $p < 0.10$; Model 5: $\beta = 0.009$, $p < 0.001$). We find that a standard deviation change in this variable leads to approximately 0.2% improvement in subsidiary performance. While the magnitude of this effect is comparatively low, it is noteworthy to compare it to the effect of the number of the other

**Table 1** Descriptive statistics

Variable	Mean	SD
Sales per employee in $t + 1$ (log)	11.911	1.309
No. of hired host-country entrepreneurs as managers	0.829	6.463
No. of other hired managers	0.333	2.582
Industry entry rate	0.088	0.054
Industry exit rate	0.089	0.088
Expatriates in management (s)	0.190	0.364
Employees with college degree (s)	0.307	0.284
Host-country dynamism	0.166	2.667
International diversity in management	0.245	0.968
No. of employees	133.141	521.226
No. of existing managers in $t - 1$	12.019	69.984
No. of plants	4.017	30.067
Foreign equity (s)	0.831	0.283
Limited liability corporation (d)	0.889	0.314
Employees with MNC experience (s)	0.066	0.114
Pay-per-performance remuneration (s)	0.143	5.345
Flat hierarchy	4.070	1.976
HHI	0.032	0.060
Industry growth rate	0.024	0.335
No. of MNC subsidiaries in industry	321.431	415.355
Munificence	22.414	61.019
MNC subsidiary younger than 5 years (d)	0.248	0.432
Management ownership (d)	0.202	0.401
New establishments in the last 3 years (s)	0.044	0.146

(d) indicates dummy variable and (s) indicates share variable.

subsidiary managers that were hired by the same subsidiary, which is negative and significant. Hence, subsidiary performance potentials rest with the group of former host-country entrepreneurs hired as managers.

The other hypotheses propose conditions affecting the strength of the relationship hypothesized in Hypothesis 1. We predict that the positive effect of the number of host-country entrepreneurs hired as managers on subsidiary performance increases with the knowledge intensity of the subsidiary (Hypothesis 2), decreases with the degree of international diversity in the subsidiary's management (Hypothesis 3), and increases with the level of dynamism of the host-country environment (Hypothesis 4). Contrary to what we predicted in Hypothesis 2, we find a negative and significant interaction between the number of hired host-country entrepreneurs as managers and the share of employees with college degrees (Model 2: $\beta = -0.020$, $p < 0.001$; Model 5: $\beta = -0.018$, $p < 0.01$). We had reasoned that hiring host-country entrepreneurs as subsidiary managers is particularly beneficial for subsidiaries in which other employees are trained to identify and realize opportunities for resource combinations. However, we find the

opposite. This empirical finding suggests that hiring host-country entrepreneurs is especially useful in comparatively less knowledge-intensive subsidiaries. We will further discuss this unexpected finding in the "Discussion and Conclusion" section.

In line with Hypothesis 3, our results show a negative and statistically significant interaction between the number of hired host-country entrepreneurs as managers and the degree of international diversity in a subsidiary's management (Model 3: $\beta = -0.001$, $p < 0.001$; Model 5: $\beta = -0.001$, $p < 0.01$). This supports our reasoning that the impact of hiring host-country entrepreneurs as managers will be limited in subsidiaries that have a highly international diverse management, as miscommunication and affective conflicts are more likely to occur. We conduct additional, exploratory empirical tests for non-linearity of this interaction effect and find indications for decreasing slopes of the negative interaction effect with international diversity of subsidiary management.

Finally, we find a positive and significant interaction effect between the number of host-country entrepreneurs hired as managers and host-country dynamism (Model 4: $\beta = 0.004$, $p < 0.10$; Model 5:

Table 2 Correlation matrix of main variables

	1	2	3	4	5	6	7	8	9	10	11	12
1 Sales per employee $t + 1$ (log)	1.00											
2 No. of hired host-country entrepr. as manag.	0.02	1.00										
3 No. of other hired managers	- 0.01	0.44	1.00									
4 Industry entry rate	- 0.10	0.03	0.06	1.00								
5 Industry exit rate	- 0.03	- 0.01	0.00	0.05	1.00							
6 Expatriates in management (s)	- 0.11	- 0.02	- 0.01	0.22	0.04	1.00						
7 Employees with college degree (s)	0.25	0.05	0.07	0.04	- 0.03	- 0.15	1.00					
8 Host-country dynamism	- 0.01	0.00	0.00	0.05	0.02	- 0.01	0.02	1.00				
9 International diversity in management	0.01	0.09	0.09	- 0.12	0.00	0.11	0.04	0.00	1.00			
10 No. of employees (log)	- 0.09	0.18	0.16	- 0.07	0.00	- 0.04	- 0.30	0.00	0.23	1.00		
11 No. of existing managers in $t - 1$	0.02	0.37	0.28	0.07	0.01	- 0.02	0.06	0.00	0.10	0.21	1.00	
12 No. of plants (log)	0.03	0.24	0.16	0.03	- 0.01	- 0.03	- 0.09	0.00	0.10	0.49	0.26	1.00
13 Foreign equity (s)	0.09	- 0.06	- 0.03	- 0.07	0.01	0.01	- 0.01	- 0.02	0.11	0.04	- 0.06	- 0.01
14 Limited liability corporation (d)	- 0.05	0.02	0.02	0.09	0.02	0.03	- 0.14	0.00	0.00	0.13	0.03	0.03
15 Employees with MNC experience (s)	0.00	0.11	0.04	0.09	0.00	- 0.01	0.12	0.00	- 0.03	- 0.07	0.02	- 0.01
16 Pay-per-performance remuneration (s)	0.00	0.00	0.00	- 0.01	0.00	- 0.01	0.01	0.00	0.00	0.00	0.00	0.00
17 Flat hierarchy	0.10	- 0.06	- 0.06	0.07	- 0.01	- 0.01	0.38	0.00	- 0.12	- 0.79	- 0.09	- 0.32
18 HHI	0.10	0.09	0.05	- 0.13	0.04	- 0.06	0.14	0.00	0.09	0.10	0.10	0.09
19 Industry growth rate	- 0.03	0.00	0.00	- 0.02	- 0.07	- 0.01	- 0.03	0.00	- 0.02	0.02	0.00	- 0.01
20 No. MNC subsidiaries in industry (log)	0.19	- 0.05	- 0.04	0.06	- 0.05	- 0.04	0.16	- 0.05	- 0.08	- 0.27	- 0.05	- 0.05
21 Munificence	0.06	- 0.01	0.00	0.26	0.04	- 0.06	0.01	- 0.16	- 0.06	- 0.09	0.00	- 0.01
22 MNC subsidiary younger than 5 years (d)	- 0.09	- 0.02	0.00	0.09	0.00	- 0.02	0.01	0.00	- 0.11	- 0.14	- 0.03	- 0.05
23 Management ownership (d)	- 0.15	- 0.03	- 0.03	0.07	0.01	0.15	- 0.09	0.00	- 0.05	- 0.25	- 0.04	- 0.13
24 New establishments in the last 3 years (s)	- 0.03	0.08	0.07	0.06	0.00	0.00	- 0.05	- 0.01	0.01	0.19	0.09	0.41

	13	14	15	16	17	18	19	20	21	22	23	24
1 Sales per employee $t + 1$ (log)												
2 No. of hired host-country entrepr. as manag.												
3 No. of other hired managers												
4 Industry entry rate												
5 Industry exit rate												
6 Expatriates in management (s)												
7 Employees with college degree (s)												
8 Host-country dynamism												



Table 2 continued

	13	14	15	16	17	18	19	20	21	22	23	24
9 International diversity in management												
10 No. of employees (log)												
11 No. of existing managers in $t - 1$												
12 No. of plants (log)	1.00											
13 Foreign equity (s)	-0.18	1.00										
14 Limited liability corporation (d)				1.00								
15 Employees with MNC experience (s)	-0.04	0.00	1.00									
16 Pay-per-performance remuneration (s)	0.01	0.00	0.00	1.00								
17 Flat hierarchy	-0.01	-0.15	0.09	0.00	1.00							
18 HHI	-0.03	-0.09	0.01	0.00	-0.01	1.00						
19 Industry growth rate	-0.02	0.02	0.00	0.00	-0.03	-0.01	1.00					
20 No. MNC subsidiaries in industry (log)	0.07	-0.04	0.03	0.01	0.23	-0.35	-0.04	1.00				
21 Munificence	0.02	0.05	0.03	0.00	0.07	-0.15	-0.02	0.42	1.00			
22 MNC subsidiary younger than 5 years (d)	-0.12	0.04	0.02	0.00	0.11	-0.03	0.01	0.02	0.08	1.00		
23 Management ownership (d)	-0.25	0.10	0.03	-0.01	0.20	-0.09	0.01	0.04	0.02	0.12	1.00	
24 New establishments in the last 3 years (s)	-0.01	0.01	0.07	0.00	-0.14	0.01	0.00	-0.01	0.02	0.05	-0.04	1.00

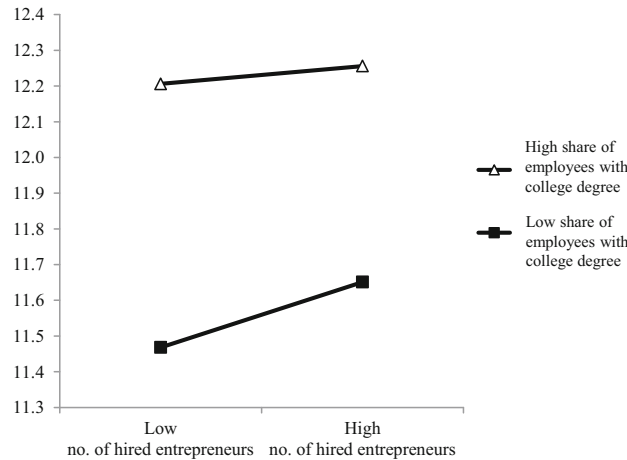


Figure 1 Interaction effect of number of hired host-country entrepreneurs with share of employees with college degree on subsidiary performance.

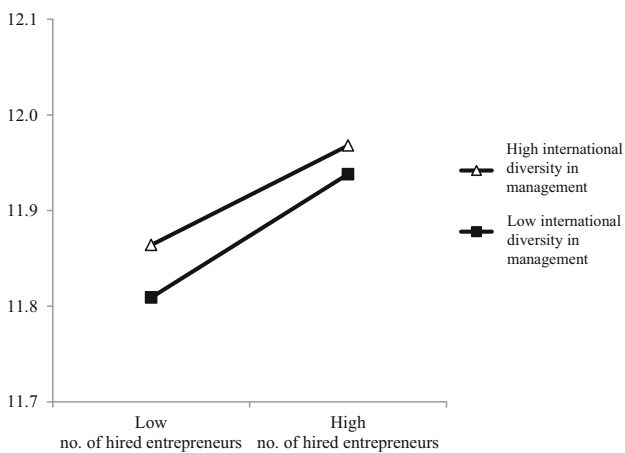


Figure 2 Interaction effect of number of hired host-country entrepreneurs with international diversity in management on subsidiary performance.

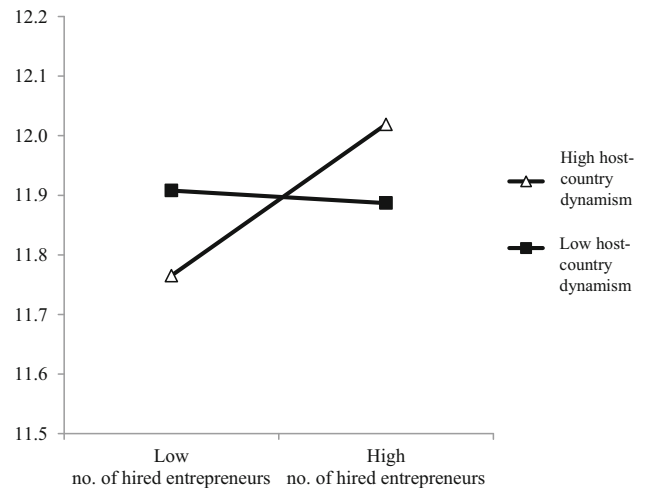


Figure 3 Interaction effect of number of hired host-country entrepreneurs with host-country dynamism on subsidiary performance.

$\beta = 0.004, p < 0.10$). Also, when using a 3-year window for the dynamism measure, we obtain consistent results for this interaction effect ($\beta = 0.016, p = 0.06$; the full table is available upon request). Thus, this supports Hypothesis 4, in which we have reasoned that hiring host-country entrepreneurs as subsidiary managers will be more effective and efficient in making use of opportunities for resource combinations that dynamic host-country environments provide.

In addition, we perform simple slope tests and plot the interactions to assess their form (Aiken & West, 1991). The effect of the number of host-country entrepreneurs hired as managers is

computed at one standard deviation below and above the mean of the respective moderating variables (i.e., share of subsidiary employees with a college degree, international diversity in management, and host-country dynamism). Although the effect of the number of hired host-country entrepreneurs on subsidiary performance is positive when the share of subsidiary employees with a college degree is high ($\beta = 0.004, p = 0.001$), this positive effect increases when the share of subsidiary employees with a college degree is low ($\beta = 0.014, p = 0.000$). This result is also illustrated in Figure 1.

**Table 3** Fixed effects regressions on sales per employee (log) in $t + 1$

	Model 1	Model 2	Model 3	Model 4	Model 5
No. of hired host-country entrepr. as manag.					
Coef.	0.003	0.011	0.002	0.002	0.009
SE	0.001	0.003	0.001	0.001	0.002
$P > z $	0.065	0.000	0.055	0.121	0.000
No. of hired host-country entrepr. as manag. \times employees with college degree (s)					
Coef.		- 0.020			- 0.018
SE		0.005			0.005
$P > z $		0.000			0.001
No. of hired host-country entrepr. as manag. \times International diversity in management					
Coef.			- 0.001		- 0.001
SE			0.000		0.000
$P > z $			0.000		0.006
No. of hired host-country entrepr. as manag. \times Host-country dynamism					
Coef.				0.004	0.004
SE				0.002	0.002
$P > z $				0.081	0.090
No. of other hired managers					
Coef.	- 0.015	- 0.012	- 0.015	- 0.015	- 0.012
SE	0.005	0.005	0.005	0.005	0.005
$P > z $	0.002	0.023	0.002	0.002	0.021
Industry entry rate					
Coef.	- 5.617	- 5.600	- 5.577	- 5.609	- 5.563
SE	0.375	0.375	0.378	0.375	0.377
$P > z $	0.000	0.000	0.000	0.000	0.000
Industry exit rate					
Coef.	- 0.499	- 0.499	- 0.492	- 0.498	- 0.492
SE	0.111	0.110	0.111	0.111	0.111
$P > z $	0.000	0.000	0.000	0.000	0.000
Expatriates in management (s)					
Coef.	- 0.540	- 0.541	- 0.548	- 0.540	- 0.548
SE	0.058	0.058	0.058	0.058	0.058
$P > z $	0.000	0.000	0.000	0.000	0.000
Employees with college degree (s)					
Coef.	1.172	1.191	1.163	1.173	1.182
SE	0.066	0.066	0.066	0.066	0.066
$P > z $	0.000	0.000	0.000	0.000	0.000
Host-country dynamism					
Coef.	0.005	0.005	0.005	- 0.001	- 0.001
SE	0.002	0.002	0.002	0.006	0.006
$P > z $	0.018	0.021	0.018	0.830	0.883
International diversity in management					
Coef.	0.020	0.021	0.022	0.020	0.022
SE	0.005	0.005	0.005	0.005	0.005
$P > z $	0.000	0.000	0.000	0.000	0.000
No. of employees (log)					
Coef.	- 0.050	- 0.051	- 0.053	- 0.051	- 0.053
SE	0.015	0.016	0.016	0.015	0.016
$P > z $	0.001	0.001	0.001	0.001	0.001
No. of existing managers in $t - 1$					
Coef.	0.000	- 0.000	0.000	0.000	- 0.000
SE	0.001	0.001	0.001	0.001	0.001
$P > z $	0.778	0.957	0.761	0.810	0.967
No. of plants (log)					
Coef.	0.132	0.131	0.129	0.133	0.128
SE	0.017	0.017	0.017	0.017	0.017



Table 3 (Continued)

	Model 1	Model 2	Model 3	Model 4	Model 5
$P > z $	0.000	0.000	0.000	0.000	0.000
Foreign equity (s)					
Coef.	0.244	0.245	0.247	0.244	0.247
SE	0.036	0.036	0.036	0.036	0.036
$P > z $	0.000	0.000	0.000	0.000	0.000
Limited liability corporation (d)					
Coef.	0.154	0.154	0.159	0.153	0.157
SE	0.036	0.036	0.036	0.036	0.036
$P > z $	0.000	0.000	0.000	0.000	0.000
Employees with MNC experience (s)					
Coef.	- 0.418	- 0.416	- 0.454	- 0.418	- 0.445
SE	0.107	0.107	0.108	0.107	0.108
$P > z $	0.000	0.000	0.000	0.000	0.000
Pay-per-performance remuneration (s)					
Coef.	- 0.001	- 0.001	- 0.001	- 0.001	- 0.001
SE	0.001	0.001	0.001	0.001	0.001
$P > z $	0.075	0.073	0.075	0.075	0.073
Flat hierarchy					
Coef.	0.018	0.018	0.017	0.017	0.017
SE	0.011	0.011	0.011	0.011	0.011
$P > z $	0.122	0.118	0.136	0.125	0.132
HHI					
Coef.	2.369	2.342	2.350	2.368	2.330
SE	0.247	0.248	0.247	0.247	0.248
$P > z $	0.000	0.000	0.000	0.000	0.000
Industry growth rate					
Coef.	- 0.110	- 0.111	- 0.110	- 0.110	- 0.110
SE	0.034	0.034	0.034	0.034	0.034
$P > z $	0.001	0.001	0.001	0.001	0.001
No. MNC subsidiaries in industry (log)					
Coef.	0.174	0.174	0.174	0.175	0.175
SE	0.008	0.008	0.008	0.008	0.008
$P > z $	0.000	0.000	0.000	0.000	0.000
Munificence					
Coef.	0.000	0.000	0.000	0.000	0.000
SE	0.000	0.000	0.000	0.000	0.000
$P > z $	0.337	0.339	0.336	0.475	0.466
MNC subsidiary younger than 5 years (d)					
Coef.	- 0.239	- 0.239	- 0.242	- 0.239	- 0.242
SE	0.026	0.026	0.026	0.026	0.026
$P > z $	0.000	0.000	0.000	0.000	0.000
Management ownership (d)					
Coef.	- 0.270	- 0.270	- 0.270	- 0.270	- 0.270
SE	0.029	0.029	0.029	0.029	0.029
$P > z $	0.000	0.000	0.000	0.000	0.000
New establishments in the last 3 years (s)					
Coef.	- 0.347	- 0.339	- 0.348	- 0.347	- 0.341
SE	0.067	0.067	0.067	0.067	0.067
$P > z $	0.000	0.000	0.000	0.000	0.000
Constant					
Coef.	11.884	11.881	11.904	11.883	11.895
SE	0.149	0.148	0.149	0.149	0.148
$P > z $	0.000	0.000	0.000	0.000	0.000
Observations	25,978	25,978	25,978	25,978	25,978
Dummy for years	Yes	Yes	Yes	Yes	Yes



Table 3 (Continued)

	Model 1	Model 2	Model 3	Model 4	Model 5
R-squared	0.171	0.172	0.172	0.172	0.173
F-statistic	82.18	80.78	80.40	79.98	77.39

While for a high degree of international diversity in a subsidiary's management, the performance effect of the number of hired host-country entrepreneurs is positive ($\beta = 0.008$, $p = 0.000$), it is still lower than the performance effect of the number of hired host-country entrepreneurs when international diversity is low ($\beta = 0.010$, $p = 0.000$). This comparison is displayed in Figure 2 and is in line with our prediction made in Hypothesis 3. As visualized in Figure 3, for a high level of host-country dynamism, the performance effect of the number of host-country entrepreneurs hired as managers is positive ($\beta = 0.020$, $p = 0.005$). On the other hand, for a low level of host-country dynamism, this effect is negative, although non-significant ($\beta = -0.002$, $p = 0.825$). This finding provides additional evidence supporting Hypotheses 4.

While we had not developed hypotheses for the control variables, we briefly discuss some interesting patterns. The share of employees with a college education has a positive and significant effect on the performance of a subsidiary. That is, high levels of knowledge intensity contribute to improving the performance of MNC subsidiaries. However, two other human capital variables included in our models have surprising results: the shares of employees with MNC experience and of expatriate managers in the top management team have a negative effect on performance. We can only speculate that in comparative terms, local experience with the host-country environment is more valuable. In line with our expectations, the dynamism variable, as well as the industry growth and exit rates, have a negative impact on performance. Subsidiaries in unstable environments face additional challenges that have an impact on their performance.

Consistency Checks

To further explore the consistency of our results, we conduct several extra analyses. Estimation tables are available from the authors upon request if not explicitly referenced otherwise. First, we

rerun all regression models without pre-balancing the sample, based on the likelihood of hiring host-country entrepreneurs as subsidiary managers. As reported in Table 4, the results remain consistent with those obtained when using the balanced sample, and thus are not influenced by the application of the entropy-balancing procedure.

Second, we test potential interaction effects between each of our moderation variables (i.e., share of subsidiary employees with college degrees, international diversity in the subsidiary's management, and host-country dynamism) and the other hired managers that have no prior entrepreneurial experience, while keeping the hypothesized interactions with host-country entrepreneurs hired as subsidiary managers in the respective model. Across all three alternatives, the interactions with non-entrepreneurs were non-significant, while those with the hired host-country entrepreneurs remain significant and qualitatively consistent with the main results. This provides additional support for our theoretical argument that hiring former entrepreneurs and non-entrepreneurs have distinct effects on a subsidiary's performance.

Third, while we include the munificence of the host-country environment as a control variable in our main analysis, we further explore its interaction with the hired host-country entrepreneurs, given the resource-based perspective of our study. We do not find a significant interaction with munificence. This implies that hiring host-country entrepreneurs may be equally valuable in both resource-rich and resource-limited host-country environments. While the hired entrepreneurs can help their subsidiaries to exploit the richness of the opportunities for resource combinations in highly munificent environments, their ability to engage in entrepreneurial bricolage might be similarly useful in less-munificent environments.

Finally, we re-estimate our models using alternative performance measures ($t + 1$) [i.e., subsidiary market share in the host-country industry (two-digit NACE level) and subsidiary sales (in logs)], as well as the number of subsidiary employees (in



Table 4 Consistency check regressions on sales per employee (log) in $t + 1$ without entropy balancing

	Model 1	Model 2	Model 3	Model 4	Model 5
No. of hired host-country entrepr. as manag.					
Coef.	0.003	0.011	0.003	0.003	0.009
SE	0.001	0.003	0.001	0.001	0.002
$P > z $	0.020	0.000	0.010	0.033	0.000
No. of hired host-country entrepr. as manag. × Employees with college degree (s)					
Coef.		- 0.018			- 0.015
SE		0.004			0.004
$P > z $		0.000			0.000
No. of hired host-country entrepr. as manag. × International diversity in management					
Coef.			- 0.001		- 0.001
SE			0.000		0.000
$P > z $			0.000		0.001
No. of hired host-country entrepr. as manag. × Host-country dynamism					
Coef.				0.003	0.003
SE				0.002	0.001
$P > z $				0.046	0.057
No. of other hired managers					
Coef.	- 0.011	- 0.008	- 0.012	- 0.011	- 0.009
SE	0.004	0.004	0.004	0.004	0.004
$P > z $	0.002	0.031	0.002	0.002	0.024
Industry entry rate					
Coef.	- 5.322	- 5.309	- 5.326	- 5.314	- 5.306
SE	0.241	0.241	0.241	0.241	0.241
$P > z $	0.000	0.000	0.000	0.000	0.000
Industry exit rate					
Coef.	- 0.478	- 0.477	- 0.474	- 0.477	- 0.473
SE	0.108	0.108	0.108	0.108	0.108
$P > z $	0.000	0.000	0.000	0.000	0.000
Expatriates in management (s)					
Coef.	- 0.510	- 0.512	- 0.516	- 0.510	- 0.517
SE	0.037	0.037	0.038	0.037	0.038
$P > z $	0.000	0.000	0.000	0.000	0.000
Employees with college degree (s)					
Coef.	0.971	0.981	0.967	0.971	0.976
SE	0.035	0.035	0.035	0.035	0.035
$P > z $	0.000	0.000	0.000	0.000	0.000
Host-country dynamism					
Coef.	0.005	0.005	0.005	0.001	0.001
SE	0.002	0.002	0.002	0.005	0.004
$P > z $	0.058	0.061	0.055	0.821	0.757
International diversity in management					
Coef.	0.018	0.018	0.019	0.018	0.019
SE	0.003	0.003	0.003	0.003	0.003
$P > z $	0.000	0.000	0.000	0.000	0.000
No. of employees (log)					
Coef.	- 0.125	- 0.125	- 0.127	- 0.125	- 0.127
SE	0.009	0.009	0.009	0.009	0.009
$P > z $	0.000	0.000	0.000	0.000	0.000
No. of existing managers in $t - 1$					
Coef.	0.002	0.002	0.002	0.002	0.002
SE	0.001	0.001	0.001	0.001	0.001
$P > z $	0.040	0.078	0.038	0.042	0.074
No. of plants (log)					
Coef.	0.158	0.155	0.156	0.158	0.154
SE	0.011	0.011	0.011	0.011	0.011



Table 4 (Continued)

	Model 1	Model 2	Model 3	Model 4	Model 5
$P > z $	0.000	0.000	0.000	0.000	0.000
Foreign equity (s)					
Coef.	0.273	0.274	0.278	0.272	0.277
SE	0.027	0.027	0.027	0.027	0.028
$P > z $	0.000	0.000	0.000	0.000	0.000
Limited liability corporation (d)					
Coef.	0.068	0.068	0.068	0.068	0.069
SE	0.026	0.026	0.026	0.026	0.026
$P > z $	0.009	0.008	0.009	0.009	0.008
Employees with MNC experience (s)					
Coef.	- 0.215	- 0.212	- 0.244	- 0.216	- 0.238
SE	0.087	0.087	0.087	0.087	0.087
$P > z $	0.013	0.014	0.005	0.013	0.007
Pay-per-performance remuneration (s)					
Coef.	- 0.001	- 0.001	- 0.001	- 0.001	- 0.001
SE	0.000	0.000	0.000	0.000	0.000
$P > z $	0.007	0.006	0.007	0.007	0.006
Flat hierarchy					
Coef.	- 0.026	- 0.026	- 0.026	- 0.026	- 0.026
SE	0.007	0.007	0.007	0.007	0.007
$P > z $	0.000	0.000	0.000	0.000	0.000
HHI					
Coef.	2.708	2.696	2.697	2.708	2.688
SE	0.188	0.188	0.188	0.188	0.188
$P > z $	0.000	0.000	0.000	0.000	0.000
Industry growth rate					
Coef.	- 0.114	- 0.115	- 0.114	- 0.114	- 0.114
SE	0.028	0.028	0.028	0.028	0.028
$P > z $	0.000	0.000	0.000	0.000	0.000
No. MNC subsidiaries in industry (log)					
Coef.	0.186	0.186	0.186	0.186	0.186
SE	0.007	0.007	0.007	0.007	0.007
$P > z $	0.000	0.000	0.000	0.000	0.000
Munificence					
Coef.	0.000	0.000	0.000	- 0.000	- 0.000
SE	0.000	0.000	0.000	0.000	0.000
$P > z $	0.923	0.917	0.920	0.906	0.928
MNC subsidiary younger than 5 years (d)					
Coef.	- 0.211	- 0.212	- 0.211	- 0.212	- 0.212
SE	0.018	0.018	0.018	0.018	0.018
$P > z $	0.000	0.000	0.000	0.000	0.000
Management ownership (d)					
Coef.	- 0.323	- 0.323	- 0.323	- 0.323	- 0.323
SE	0.020	0.020	0.020	0.020	0.020
$P > z $	0.000	0.000	0.000	0.000	0.000
New establishments in the last 3 years (s)					
Coef.	- 0.302	- 0.294	- 0.306	- 0.302	- 0.299
SE	0.055	0.055	0.055	0.055	0.055
$P > z $	0.000	0.000	0.000	0.000	0.000
Constant					
Coef.	12.272	12.268	12.290	12.270	12.283
SE	0.102	0.102	0.102	0.102	0.102
$P > z $	0.000	0.000	0.000	0.000	0.000
Observations	25,978	25,978	25,978	25,978	25,978
Dummy for years	Yes	Yes	Yes	Yes	Yes



Table 4 (Continued)

	Model 1	Model 2	Model 3	Model 4	Model 5
R-squared	0.165	0.166	0.166	0.165	0.166
F-statistic	125.81	122.82	122.97	123.16	118.51

logs)]. We find positive and significant results for hiring host-country entrepreneurs across those additional estimations.

DISCUSSION AND CONCLUSION

Our study aims at advancing the understanding of how MNC subsidiaries can build capabilities to effectively combine and recombine resources from within the MNC as well as host countries. Specifically, we explore the background of subsidiary managers and reason that hiring host-country entrepreneurs as subsidiary managers can increase a subsidiary's capacity of managers with entrepreneurial skills who can find superior resource configurations. The empirical data support our theoretical model, in which we integrate mechanisms from the literature on entrepreneurial experience (Campbell, 2013; Politis, 2005) into theoretical models of microfoundations of dynamic capabilities for explaining performance outcomes (Helfat & Peteraf, 2015; Teece, 2007).

The findings of our study show that subsidiaries hiring host-country entrepreneurs as managers achieve superior performance. Moreover, we find that this positive effect is stronger if subsidiaries operate in dynamic host-country environments. Then again, we also identify a boundary condition for the positive effect of hiring host-country entrepreneurs as subsidiary managers. We find that the performance effect is weaker in subsidiaries with internationally diverse management teams. Finally, we predicted that the positive performance effect of hiring host-country entrepreneurs is stronger for knowledge-intensive subsidiaries. This hypothesis is rejected by the empirical test. Instead, we find a significant, negative moderation effect. This finding indicates that the performance effect of hiring host-country entrepreneurs is stronger in less knowledge-intensive subsidiaries. We suspect that the opportunities for resource recombinations in knowledge-intensive subsidiaries are outweighed by the benefits of entrepreneurial experience in comparatively more resource-constrained environments comparable to young ventures (Baker & Nelson, 2005). Entrepreneurs develop a particular

set of skills while working for new ventures that make them particularly able to deal with resource-constrained environments (Busenitz & Barney, 1997; Campbell, 2013; Politis, 2005), like those present in less knowledge-intensive subsidiaries. Moreover, we also suspect that the entrepreneurs' socialization and adaptation to the MNC culture is more challenging in knowledge-intensive subsidiaries.

Our findings provide major implications for academic research along two dimensions. First, we contribute to theory on the microfoundations of dynamic capabilities (Felin et al., 2012) by integrating theoretical mechanisms from the entrepreneurial experience literature (Campbell, 2013). We explore how subsidiaries gain access to entrepreneurial skills in management for creating and deploying dynamic capabilities (Teece, 2016). Our theoretical reasoning rests on the idea that host-country start-ups offer an organizational context in which individuals develop a set of entrepreneurial skills and that subsidiaries can increase their capacity of managers with entrepreneurial skills by hiring host-country entrepreneurs. By identifying recruitment as an actionable way for MNC subsidiaries to develop dynamic capabilities, our findings are aligned with recent calls for incorporating more entrepreneurial thinking into a dynamic capabilities-based theory of the MNC (Al-Aali & Teece, 2014; Teece, 2014). Moreover, we explore dimensions of resource configuration that influence a subsidiary's ability to turn the increased capacity of managers with entrepreneurial skills into performance. We find that the performance effects of hiring host-country entrepreneurs are stronger when they join internationally homogeneous teams and when host-country environments change dynamically. We argue that homogeneous teams reduce the potential for conflict associated with making reconfiguration decisions, while host-country environments that change dynamically increase the need for resource reconfigurations. Our theoretical model can serve as the basis for theorizing about other hiring decisions that can advance a subsidiary's performance by changing resource configurations or routines from other



important host-country organizations such as non-governmental organizations (Grimpe, Kaiser, & Sofka, 2019) or identifying other boundary conditions apart from the international diversity of subsidiary management.

Second, we contribute to the international business literature that has largely acknowledged the career trade-offs for talented host-country individuals between becoming an entrepreneur or working for foreign MNC subsidiaries (De Backer & Sleuwaegen, 2003). Then again, MNC staffing literature does not provide insights into how hiring host-country entrepreneurs impacts subsidiary performance (Collings et al., 2009). We advance this stream of literature by adding a new diversity dimension (i.e., prior work experience in start-ups). In doing so, we contribute to the literature that explores the composition of the subsidiary management as a determinant for performance (Gong, 2006; Nielsen & Nielsen, 2013). Moreover, our results also add to the discussion on how diversity dimensions are interrelated. We find that a commonly considered dimension of diversity in subsidiary management teams, international diversity (Gong, 2003), constrains the degree to which newly hired host-country entrepreneurs can increase subsidiary performance. We argue that this negative moderation effect is explained by the fact that former host-country entrepreneurs draw mostly from local knowledge and experiences. Such high levels of embeddedness can be detrimental to decision-making processes about subsidiary resource reconfigurations in internationally diverse management teams. In sum, we present a theoretical model that can stimulate future researchers exploring the broader sets of MNC subsidiary hiring decisions based on host-country work experience.

These academic insights have immediate importance for management practice. First, we demonstrate that hiring decisions are crucial for subsidiary performance. Given the large-scale empirical evidence provided by our study, MNC managers should target host-country entrepreneurs as a particularly promising human resource pool. At a strategic level, these hiring decisions provide an avenue for MNCs to reinvent resource configurations and routines across subsidiaries. At a practical level, these insights provide incentives for MNC managers to engage with host-country start-ups and entrepreneurship networks for spotting and attracting promising talents. Second, we show that the expected performance effects from hiring former host-country entrepreneurs depend

crucially on the level of dynamism in the host-country environment. Put differently, hiring host-country entrepreneurs for subsidiaries in stable environments has disappointing performance effects. Similarly, subsidiaries with internationally diverse management teams are likely to experience lower performance effects from hiring host-country entrepreneurs. This finding suggests that MNC subsidiaries with internationally diverse management have more difficulty in integrating entrepreneurs and may need to implement measures to deal with the tensions that occur in management teams that combine international diversity and former entrepreneurs.

LIMITATIONS AND FUTURE RESEARCH

While conducting this research, we have learned about the boundaries of our own study and discovered fruitful pathways for future research. First, our study allows us to identify the performance effects of hiring host-country entrepreneurs as subsidiary managers for a large number of subsidiaries. This comes at the expense of tracing individual cognitive or decision-making processes within subsidiaries (e.g., perspective taking), which recent dynamic capability literature has delineated (Distel, 2019). Hence, a logical extension of our large-scale investigation is to study individual subsidiaries and decision-making processes in depth.

Second, in our theorizing, we do not distinguish between different sources of entrepreneurship experience. We study prior start-up experience as a particular source of human capital that can create or enable dynamic capabilities in MNC subsidiaries but we do not theoretically distinguish between different kinds of start-up experience. Future studies can explore how different sources of diversity in entrepreneurial experience, like industry context or level of success, influence the ability of host-country entrepreneurs to deploy dynamic capabilities in the context of an MNC subsidiary. Moreover, while start-ups are the most immediate context in which entrepreneurial skills originate (Gruber et al., 2012), other organizational contexts may have similar potentials. Future research can build on our theoretical reasoning and empirical approach by investigating, for example, whether prior career experience with management consultancies produces more effective subsidiary managers. Similarly, particular types of entrepreneurial experience (e.g., from specific technologies or with



new markets) are potentially valuable for subsidiary management. All these distinctions in entrepreneurship experience and in prior work experience of subsidiary managers deserve dedicated theorizing and research designs deepening the insights from our study.

Third, we apply an entropy-balancing approach to eliminate potential selection biases that make particular subsidiaries more or less attractive as employers for entrepreneurs. Future studies can focus on these selection mechanisms and develop dedicated research designs for the motivations and search patterns of entrepreneurs considering employment with MNC subsidiaries. Fourth, we benefit from rich information about education and work experience of subsidiary employees in Portugal. Future studies, though, may be able to merge host- and home-country data. This would allow for incorporating headquarters factors, especially through expatriates.

Fifth, while we find support for the overall positive effect of hiring host-country entrepreneurs on subsidiary performance, we suspect that former entrepreneurs may not seamlessly fit into MNCs' risk attitudes and job expectations. Dedicated studies may be able to explore potential frictions and remedies in detail. Similarly, dedicated studies might disentangle the recruitment process of subsidiaries by distinguishing among recruitment goals, implementation choices, and hiring outcomes. Sixth, we do not consider heterogeneity in terms of multinational experience among host-country entrepreneurs. We believe that a dedicated study exploring how the effect of host-country entrepreneurs on performance can depend on the length of their tenure within a subsidiary would be a valuable complement to our study.

Seventh, hiring host-country entrepreneurs can also impact MNC subsidiaries initiative taking. We do not theorize on this phenomenon since it would require a dedicated research design. Future studies could build on the work of Strutzenberger and Ambos (2014) or Decreton, Nell, and Stea (2019) and explore how the relationship between subsidiaries and MNC headquarters can be affected by potential changes in initiative taking associated to the hiring of host-country entrepreneurs at the subsidiary level.

Eighth, we rely on sales per employee as a performance measure that combines the performance goals of many subsidiaries and can capture

superior resource combinations in terms of both increased sales and lower employment needs. However, some subsidiaries may have specific roles within the MNC (e.g., acting as a corporate venture capital investor in particular locations such as Silicon Valley) (Monteiro & Birkinshaw, 2017). We suspect that the theoretical mechanisms for hiring host-country entrepreneurs in such settings differ from the average subsidiary and are more likely reflected in other performance measures. We encourage dedicated studies to test whether our logic and findings are transferable to such MNC subsidiaries.

Finally, we study a large number of subsidiaries in a single host country to hold country-level effects constant. Given that Portugal has been part of the European Union for some time, it shares many institutions with the rest of Europe (de Faria & Sofka, 2010). Nevertheless, Portugal has many national, institutional, economic, and cultural idiosyncrasies it from other host countries. We encourage comparative research that tests our predictions in alternative country settings such as high-tech country locations or emerging economies.

NOTE

¹This quote is taken from interviews with human resources managers from different foreign MNC subsidiaries that we conducted in addition to our quantitative study to gain further qualitative input on how and why MNC subsidiaries would hire entrepreneurs for their management.

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APPENDIX 1

See Table 5.

Table 5 Variables description

Variable	Description
Sales per employee in $t + 1$ (log)	Logarithm of sales per employee in $t + 1$
No. of hired host-country entrepreneurs as managers	Number of host-country entrepreneurs hired in the MNC subsidiary's management in $t = 0$
No. of other hired managers	Number of other managers hired in the MNC subsidiary's management in $t = 0$
Industry entry rate	Rate of new companies in each industry
Industry exit rate	Rate of companies that leave the market in each industry
Expatriates in management (s)	Share of expatriates in the MNC subsidiary's management
Employees with college degree (s)	Share of employees with a college degree in the MNC subsidiary
Host-country dynamism	Standard error of the industry sales regression divided by the mean of the dependent variable for a period of 2 years
International diversity in management	Logarithm of the number of foreign nationalities hired for the management team in the past 5 years
No. of employees (log)	Logarithm of the number of employees in the MNC subsidiary
No. of existing managers in $t - 1$	Existing number of managers in $t - 1$ in the MNC subsidiary's management
No. of plants (log)	Logarithm of the number of plants of the MNC subsidiary
Foreign equity (s)	Share of foreign equity in the MNC subsidiary
Limited liability corporation (d)	Dummy that identifies if the MNC subsidiary is a limited liability corporation
Employees with MNC experience (s)	Share of employees with experience in other MNC subsidiaries once in their work life
Pay-per-performance remuneration (s)	Share of remuneration that is paid as pay-per-performance bonus
Flat hierarchy	Number of hierarchy levels of the MNC subsidiary
HHI	Herfindahl–Hirschman Index
Industry growth rate	Variation of the number of companies in each industry
No. of MNC subsidiaries in industry (log)	Logarithm of the number of MNC subsidiaries in each industry
Munificence	Rate of growth coefficient of the industry sales regression divided by the mean of the dependent variable for the study period
MNC subsidiary younger than 5 years (d)	Dummy that identifies if the MNC subsidiary was established in the past 5 years
Management ownership (d)	Dummy that identifies if the MNC subsidiary managers have ownership in the company
New establishments in the last 3 years (s)	Share of new establishments opened in the last 3 years



APPENDIX 2

See Table 6.

Table 6 Treatment and control observations before and after entropy balancing

	Unweighted		Weighted	
	Treat Mean	Control Mean	Treat Mean	Control Mean
Average salary of all top managers in subsidiary ($t - 1$)	86,898	14,628	86,898	86,847
Pay-per-performance remuneration ($t - 1$)	0.121	0.132	0.121	0.121
No. of employees ($t - 1$)	3.869	2.968	3.869	3.868
Subsidiary growth ($t - 1, t$)	7.061	5.896	7.061	7.059
9 industry dummies			Balanced	
17 year dummies			Balanced	

APPENDIX 3

See Table 7.

Table 7 VIFs – Variance Inflation Factors

Variable	VIF	1/VIF
No. of hired host-country entrepreneurs as managers	1.240	0.807
No. of other hired managers	1.190	0.838
Industry entry rate	2.310	0.433
Industry exit rate	1.480	0.675
Expatriates in management (s)	1.410	0.709
Employees with college degree (s)	1.070	0.936
Host-country dynamism	2.890	0.346
No. of employees	1.210	0.829
No. of existing managers in $t - 1$	3.100	0.322
No. of plants	1.550	0.646
Foreign equity (s)	1.150	0.870
Limited liability corporation (d)	1.130	0.888
Employees with MNC experience (s)	1.080	0.930
Pay-per-performance remuneration (s)	1.000	0.999
Flat hierarchy	2.040	0.490
HHI	1.260	0.792
Industry growth rate	1.240	0.805
No. of MNC subsidiaries in industry	1.620	0.619
International diversity in management	1.380	0.723
Munificence	1.800	0.557
MNC subsidiary younger than 5 years (d)	1.080	0.925
Management ownership (d)	1.240	0.807
New establishments in the last 3 years (s)	1.120	0.895
Mean VIF	2.320	



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