

International Establishment Mode Choice: Past, Present and Future

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Abstract Despite over three decades of research focusing on the choice multinational enterprises make between establishing foreign operations through either cross-border acquisitions or greenfield start-ups our understanding of the issues that impact this choice and the performance outcomes of making this decision is still unclear. To help improve knowledge in this area we provide a comprehensive review of the empirical studies on international establishment mode choice published between 1980 and 2015. Through this method we gain a greater understanding of the theories used, the variables employed, and the empirical results. In this way we can detect inconsistencies and offer suggestions for future research. We identify a number of issues that future studies need to address: changes to the models, introducing new theories or combining theories, applying new or better methods, and most importantly linking this choice to performance. Hence, our study consolidates knowledge in this area and highlights several ways to improve our understanding of the international establishment mode decision.

Keywords International establishment mode choice · Greenfield · Acquisition · Literature review

1 Introduction

Creating effective foreign market subsidiary units is arguably one of the more critical international business decisions (Brouters and Hennart 2007). It is therefore not surprising that there has been substantial scholarly interest in the determinants of

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these business decisions particularly because the choice of establishment mode (a firm's decision to set up a foreign subsidiary via an acquisition or a greenfield startup venture) is difficult and costly to reverse, and has a direct impact on subsequent subsidiary performance (Shaver 1998; Shrader 2001). Establishing a foreign subsidiary via an acquisition, for example, requires a sizeable upfront payment to cover the acquisition value and a premium (King et al. 2004; Krishnan et al. 2007); it often entails difficulties with the integration of the acquired unit (Cording et al. 2008) which may negatively impact firm performance. Yet the alternative mode choice, a new startup (greenfield) venture can also significantly influence performance because starting a new venture takes time which can lead to lost opportunities (Pennings et al. 1994) and the entrance of a new player can impact capacity, generating fierce retaliation from incumbents (Hennart and Reddy 1997). So how should firms make this important decision? Under what circumstances would a greenfield (or an acquisition) establishment mode lead to better firm performance?

The motivation for this review is twofold. First, the literature on establishment mode choice has cut across various fields including international business, strategy, marketing, economics, finance, and entrepreneurship. Authors have drawn on diverse theoretical perspectives and used various ways to conceptualize predictors of the choice between greenfields and acquisitions. As a result, there is a clear need to consolidate this disparate knowledge and more clearly identify exactly what we know and what still needs to be explored. Past attempts to do so have, however, only examined a fraction of the published research and presented only a few theoretical lenses used in establishment mode studies (Slangen and Hennart 2007; Dikova and Brouthers 2009). In contrast, we identify, tabulate and provide detailed information on all theories and constructs used in empirical international establishment mode studies published in academic journals in the period 1980–2015.¹

Second, despite our rich knowledge of the choice firms make between a non-equity or equity mode of entry and between an equity-based joint venture or wholly owned subsidiary (see reviews by Brouthers and Hennart 2007; Ahsan and Musteen 2011), our understanding of how a firm establishes its equity interest in a foreign subsidiary unit and the performance implications of this choice is far less clear. Neither of the previous reviews of the establishment mode literature (Slangen and Hennart 2007; Dikova and Brouthers 2009) addresses the issue of performance, yet we know that firm performance is affected by the establishment mode choice as it requires a significant investment abroad which is difficult to reverse without incurring substantial loss (Shaver 1998; Reus and Lamont 2009). Inconsistent results from both establishment mode research (e.g. Shaver 1998; Vermeulen and Barkema 2001; Slangen and Hennart 2008) and studies of acquisition performance (Reus and Lamont 2009; Chakrabarti et al. 2009) indicate that our knowledge of when acquisitions outperform greenfields is still limited. Thus, there is a growing need to explore further how establishment modes are chosen and how this impacts subsequent subsidiary performance.

¹ Only papers published in the first quarter of 2015 are considered.

Our review of the international establishment mode choice literature adds to knowledge in several important ways. First, we make an essential contribution by consolidating and summarizing past research in the area. For over 30 years, scholars have explored this issue. Yet there is little consensus about what factors really make a difference and what theories can explain this strategic choice. Previous work (Dikova and Brouthers 2009; Slangen and Hennart 2007) has attempted to improve our knowledge in this area but suffer from several shortcomings such as a limited review of the literature and a lack of focus on moderating effects. Our more extensive review of about 104 studies provides much more detail and helps clarify what we know about the establishment mode choice.

Second, we investigate the link between establishment mode choice and performance (Shaver 1998). Choosing an appropriate establishment mode can allow a firm to balance its need for resources and knowledge about the foreign market with the costs involved in entering foreign markets, thus generating value (Meyer et al. 2009). Understanding this link between establishment mode choice and performance can help managers make better decisions. Our review helps advance our understanding of contextual issues and strategic choices that can lead to superior performance outcomes for foreign subsidiary units.

Finally, we contribute by identifying gaps in the literature. Through our review of the literature exploring this subject, we are able to identify significant areas where knowledge is lacking. As such we help move the literature forward, providing specific guidance to future researchers that can help improve our understanding of one critically important international business decision. By making recommendations about how to push forward the boundaries of international establishment mode research we help focus attention on critically important deficiencies in our knowledge.

To achieve these objectives, our paper is structured as follows. First, we provide a brief overview of the international establishment choice decision. Then we discuss our method and how we went about locating all the published establishment mode choice literature. Following that, we review the literature, focusing on the theories and variables used to predict establishment mode choice. Past research tends to explore four groups of variables: firm-level, country-level, industry-level and subsidiary-level. In an integrated fashion we examine these four types of variables and the related theoretical frameworks. We then focus attention on the moderating relationships included in past studies and the performance implications of making this choice. Finally, our paper ends with the identification and discussion of future research directions and how scholars can extend and expand our understanding of the international establishment mode choice decision.

2 Background and Method

Internationalizing firms can establish an equity interest in a foreign operation either by acquiring that interest in an existing organization or by setting up a new greenfield venture. Both methods of establishing the foreign venture can be used by firms to create a wholly owned subsidiary (WOS) or a joint venture (JV) with a

partner that typically contributes complementary resources and skills (Brouthers and Hennart 2007). In general the choice of an acquisition versus a greenfield establishment mode depends on the investing firm's competitive advantage. For example, research shows that firms establish greenfield subsidiaries to exploit proprietary technology abroad while acquisitions are preferred as a means of overcoming technological barriers in R&D intensive industries or as a way to enter new markets quickly (Anand and Delios 2002; Kogut and Singh 1988).

Both greenfields and acquisitions create certain advantages and disadvantages for the investing firm. Although acquisitions offer speedy foreign market penetration, they often suffer from cross-cultural, organizational and technological mismatches between the acquirer and the target firm thus causing post-acquisition integration challenges or even failure (Dikova et al. 2010). Greenfield ventures provide an opportunity to preserve and replicate valuable corporate resources and capabilities abroad, however, this mode requires a longer period to become operational compared to acquisitions and more corporate attention may be required to set up the mechanisms for efficient knowledge transfer (Hennart and Park 1993). Because of this, choosing the best establishment mode requires consideration of parent firm-specific advantages, the potential to access complementary resources in the foreign market, industry-specific characteristic, and country-specific environmental contingencies.

We began our investigation of this important topic by searching online databases and article reference lists to identify all empirical papers published on international establishment mode choice between 1980 and 2015. Among the key words we used were foreign market entry, entry modes, establishment modes, diversification mode, greenfields, startups, acquisitions. We decided to restrict our review to published empirical studies, and therefore exclude theoretical or descriptive papers, qualitative case studies, working papers, papers dealing with economic modeling without data analysis and conference proceedings. We included studies examining the dichotomous establishment mode choice between a greenfield and an acquisition as well as studies looking at the choice between greenfield, acquisition and a joint venture [denoted with an asterisk (*) in all the tables]. We chose to include the latter group of studies because of the valuable insights they offer in the establishment mode choice of multinationals. We however excluded studies that did not have both acquisitions and greenfield choices as dependent variables, such as the studies by Hennart and Reddy (1997) and Meyer and Nguyen (2005) both of which examined the choice between an acquisition and a joint venture.

In total we identified 104 empirical papers which were included in our review. Of this total, 75 studies focus on the international establishment mode choice decision (Table 1) and 29 studies compare the performance of greenfields and acquisitions, often without analyzing the determinants of the establishment mode choice (Table 2). Establishment mode choice papers were published in 41 different academic journals (Table 1), but five journals, *Journal of International Business*

Table 1 Sources of establishment mode studies

Journals	Articles	References
Journal of International Business Studies	10	Meyer et al. (2014), Tan (2009), Chen (2008), Slangen and Hennart (2008), Dikova and van Witteloostuijn (2007), Padmanabhan and Cho (1999), Anand and Delios (1997)*, Anand and Kogut (1997)*, Kogut and Singh (1988)*, Wilson (1980)
Strategic Management Journal	7	Lee and Lieberman (2010), Meyer et al. (2009)*, Anand and Delios (2002), Harzing (2002), Chang and Rosenzweig (2001)*, Brouthers and Brouthers (2000), Yip (1982)
International Business Review	7	Hennart et al. (2015), Georgopoulos and Preusse (2009), Drogendijk and Slangen (2006), Somlev and Hoshino (2005)*, Hashai and Almor (2004), Mudambi and Mudambi (2002), Padmanabhan and Cho (1995)
Journal of Management Studies	4	Slangen (2011), Brouthers and Dikova (2010), Estrin et al. (2009), Herrmann and Datta (2006)*
Management International Review	4	Dow and Larimo (2011), Demirbag et al. (2008), Solocho and Soskin (1994), Buckley and Mathew (1980)
Academy of Management Journal	2	Vermeulen and Barkema (2001), Barkema and Vermeulen (1998)
Emerging Markets Review	2	Nagano (2013), Hryckiewicz and Kowalewski (2010)
Journal of Business Research	2	Ruiz-Moreno et al. (2007), Larimo (2003)
Journal of East West Business	2	Haar and Marinescu (2014), Dikova (2012)*
Journal of International Management	2	Alvarez and Marin (2010)*, Elango and Sambharya (2004)*
Management Science	2	Shaver (1998), Hennart and Park (1993)
Asia Pacific Journal of Management	1	Song (2014)
Canadian Journal of Admin. Sciences	1	Cheng (2006)*
Eastern European Economics	1	Klimek (2011)
Economics of Transition	1	Poghosyan and Poghosyan (2010)
Emerging Markets Finance and Trade	1	Bhaumik and Gelb (2005)
European Planning Studies	1	Williams (2005)
Global Strategy Journal	1	Slangen (2013)
International Journal of Hospitality and Tourism	1	Choi and Parsa (2015)*
International Journal of Commerce Management	1	Tsai and Cheng (2004)
International Journal of Research in Marketing	1	Chen and Zeng (2004)
Journal of Economics and Man. Strategy	1	Raff et al. (2012)*
Journal of Global Marketing	1	Arslan and Larimo (2011)
Journal of Industrial Economics	1	Zejan (1990)

Table 1 continued

Journals	Articles	References
Journal of International Marketing	1	Slangen and Dikova (2014)
Journal of Management and Governance	1	Lopez-Duarte and Garcia-Canal (2002)
Journal of Mergers and Acquisitions	1	Vencappa and Thi (2007)
Journal of Operations Management	1	Elango (2005)
Journal of the Asia Pacific Economy	1	Rienda et al. (2013)
Journal of Transnational Man. Development	1	Elango (2003)
Journal of World Business	1	Demirbag et al. (2007)
Long Range Planning	1	Petrou (2009)*
National Tax Journal	1	Hebous et al. (2011)
Regional Science and Urban Economics	1	Roberto (2004)
Regional Studies	1	O Huallachain and Reid (1997)
Research Policy	1	Kuemmerle (1999)
Review of Economic Studies	1	Nocke and Yeaple (2008)
Scandinavian Journal of Economics	1	Andersson and Svensson (1994)
The IUP Journal of Business Strategy	1	Neto et al. (2010)
The Review of Economics and Statistics	1	Kogut and Chang (1991)*
Transnational Corporations	1	Wes and Lankes (2001)
Competition in Global Industries (book)	1	Caves and Mehra (1986)

Studies (JIBS), Strategic Management Journal (SMJ), International Business Review (IBR), Journal of Management Studies (JMS) and Management International Review (MIR) published about 40 % of all these papers. The number of empirical papers published in the 1980s is 5, we observe an increase in the 1990s to 13 published papers, the majority of establishment mode studies were published in the period 2000–2009, 34 papers in total, and the remaining 23 were published from 2010 onward. This indicates a recent surge in interest in this topic, thus creating a greater need to consolidate and understand what has already been done. We attempted to include all published empirical studies dealing with this topic; we offer our apologies to those authors who have made an important contribution to this area but whose work is not included in our review.

Table 2 Sources of studies on performance of establishment modes

Journals	Articles	References
Strategic Management Journal	7	Moatti et al. (2015), Mata and Portugal (2000), Sharma (1998), Busija (1997), Shaver et al. (1997), Barkema et al. (1996), Li (1995)
Academy of Management Journal	2	Tsang and Yip (2007), Pennings et al. (1994)
Journal of International Business Studies	2	Woodcock et al. (1994), Li and Guisinger (1991)
Economics of Transition	2	Havrylychuk and Jurzyk (2011), Poghosyan and Poghosyan (2010)
Applied Economics	1	Benito (1997)
Applied Economics Letters	1	Ashraf and Herzer (2014)
Asia Pacific Journal of Management	1	Song (2014)
European Financial Management	1	Lozano-Vivas and Weill (2012)
Icfai Journal of Mergers and Acquisitions	1	Vencappa and Thi (2007)
International Business Review	1	Williams (2003)
Journal of Applied Econ. and Bus. Research	1	Zhuang (2012)
Journal of International Economics	1	Branstetter (2006)
Journal of International Management	1	Chung and Beamish (2005)
Journal of Transnational Management	1	Dadzie et al. (2014)
Kyklos	1	Wang and Wong (2009)
Management International Review	1	Nitsch et al. (1996)
Perspectives on Global Development and Technology	1	Nanda (2009)
Review of World Economics	1	Kejzar (2011)
The World Economy	1	Moden et al. (2008)
Transnational Corporations	1	Zemplerova and Jarolim (2001)

3 What We Already Know

Through our analysis we identified fifteen distinct theoretical perspectives used to explain establishment mode choice (see Table 3). Theories most often employed include the resource-based view (RBV) and organizational learning (17 papers in total), institutional theory (7 papers), transaction cost economics (TCE) and industrial organization (5 papers each). Yet a large number of the studies included in our review (29 in total) do not specifically apply a particular theoretical framework but rather test a set of variables (often chosen with respect to past literature). We also noted a large number of predictor (and control) variables in past research. All these variables are included in tables in the Appendices, but without indicating the direction of the relationship to the dependent variable or the significance of the result (doing otherwise would increase the size of the tables significantly). Below we summarize our findings based on four distinct variable groups: firm-level, country-level, industry-level, and subsidiary-level. We also look at the moderating variables (interactions) researchers have explored and at the performance

Table 3 Theories used in establishment mode studies

Theory	Studies	References
Resource based view (RBV)	11	Choi and Parsa (2015)*, Lee and Lieberman (2010), Meyer et al. (2009)*, Petrou (2009)*, Chen (2008), Cheng (2006)*, Chen and Zeng (2004), Elango (2003), Anand and Delios (1997*, 2002), Anand and Kogut (1997)*
Institutional theory	7	Meyer et al. (2014), Dikova (2012)*, Arslan and Larimo (2011), Alvarez and Marin (2010), Meyer et al. (2009)*, Estrin et al. (2009), Dikova and van Witteloostuijn (2007)
Knowledge based view (Org. learning, organizational experience)	6	Dow and Larimo (2011), Elango (2005), Vermeulen and Barkema (2001), Chang and Rosenzweig (2001)*, Padmanabhan and Cho (1999), Barkema and Vermeulen (1998)
Transaction cost theory	5	Cheng (2006)*, Tsai and Cheng (2004), Larimo (2003), Brouthers and Brouthers (2000), Hennart and Park (1993)
Industrial organization perspective	5	Cheng (2006)*, Elango and Sambharya (2004), Zejan (1990), Yip (1982), Wilson (1980)
Global strategy (HQ-subsidiary relations/subsidiary autonomy)	3	Slangen and Dikova (2014), Slangen and Hennart (2008), Harzing (2002)
Real options theory	2	Slangen (2013), Brouthers and Dikova (2010)
Theory of the growth of the firm	2	Tan (2009), Hennart and Park (1993)
Economic geography	2	Roberto (2004), O Huallachain and Reid (1997)
Mergers and acquisition theory	1	Hennart and Park (1993)
Communication-based theory	1	Slangen (2011)
Vernon's product cycle theory	1	Kogut and Chang (1991)*
Dunning's OLI framework	1	Hennart et al. (2015)
Assignment theory	1	Nocke and Yeaple (2008)
Process (Uppsala) theory	1	Hashai and Almor (2004)

The remaining 29 empirical papers do not apply a specific theoretical framework but test various predictors of establishment mode choice reflected in the [Appendix](#) tables

consequences of using establishment modes. We integrate the theoretical perspectives with our discussion of the examined variables, reflect on the outcomes found in previous studies, and suggest explanations for the conflicting results we observe.

3.1 Firm-Level Variables

A large number of firm-level variables have been included in previous studies of establishment mode choice (see Table 6 in [Appendix](#)). For example, most studies include *Parent firm (organizational) size* either as a main predictor or as a control. According to industrial organization economics, larger parent firms use greenfield ventures because they have greater resources which allow them to overcome direct

entry barriers and greenfield modes reduce antitrust objections that may accompany an acquisition (Yip 1982). However, RBV (Barney 1991) and TCE (Williamson 1975) logic suggests that larger firms are more capable of making an acquisition (Larimo 2003). It is worth noting that the lack of clarity in the relationship between firm size and establishment mode choice is reflected in the conflicting results. Only three studies find firm size related to the use of greenfield ventures (Lopez-Duarte and Garcia-Canal 2002; Tsai and Cheng 2004; Dikova 2012) while others find a significant relation with acquisitions (Andersson and Svensson 1994; Elango 2003; Vermeulen and Barkema 2001; Ruiz-Moreno et al. 2007; Larimo 2003; Arslan and Larimo 2011; Klimek 2011; Slangen 2011; Mudambi and Mudambi 2002; Brouthers and Dikova 2010; Meyer et al. 2014) or no relation to establishment choice at all (Yip 1982; Rienda et al. 2013; Bhaumik and Gelb 2005; Barkema and Vermeulen 1998; Padmanabhan and Cho 1995, 1999; Chang and Rosenzweig 2001; Shaver 1998; Dow and Larimo 2011; Drogendijk and Slangen 2006; Demirbag et al. 2008; Herrmann and Datta 2006). Clearly, firm size cannot explain in a meaningful way the establishment mode choice of firms: it merely indicates availability of resources which can be committed to either of the establishment modes. Perhaps a more meaningful measure of firm resources (assets) would help clarify the discussion about how the possession of such specific resources (assets) influences establishment mode choice.

According to TCE and Organizational learning logic *Product diversification* (typical for firms active in multiple industries) also impacts establishment mode choice. Highly diversified firms have developed sophisticated management control systems, or management expertise embedded in senior managers. Such firm-specific intangible assets can lower the costs involved in acquiring new subsidiaries, adapting their processes and resources, and operating these entities as quasi-independent subsidiary operations (Hennart and Park 1993). Furthermore, highly diversified firms have often developed unique financial controls which allow them to more easily and efficiently integrate acquired units (Barkema and Vermeulen 1998). For the most part establishment mode studies find that highly diversified firms demonstrate a preference for acquisitions rather than greenfield entries, although Barkema and Vermeulen (1998) report a diminishing (curvilinear) effect.

Investment relatedness is the set of variables examining whether the foreign investment is made in a related or unrelated business. TCE theory suggests that when investing firms lack the product/industry-specific knowledge required to successfully operate in a new business, they show a preference for acquisitions as the most efficient way of accessing critical business knowledge (Hennart and Park 1993). Likewise, according to Organizational learning theory (Nelson and Winter 1982), unrelated foreign expansion limits the possibilities to build on current routines thus prompting the investing firm to take over an existing organization and acquire the needed capabilities (Barkema and Vermeulen 1998). Despite strong theoretical arguments, empirical support for this variable is weak. A few studies find a positive relation between relatedness and greenfield ventures (Chen and Zeng 2004; Estrin et al. 2009; Larimo 2003; Drogendijk and Slangen 2006; Chen 2008) while most studies do not find a significant relation between investment relatedness and establishment mode choice. The inconsistency in findings here is not so much

driven by conflicting theoretical reasoning but it is likely due to methodological shortcomings. Most studies employ a dichotomous variable (0–1) to capture investment relatedness (Table 6 in Appendix) which leads to a loss of critical information as business relatedness is better measured by continuous or a complex categorical variable. For example, the subsidiary can be established in either the primary industry of the parent, the secondary industry or in an industry where the parent firm has no prior activities (Slangen 2011).

Technological intensity is typically the proxy used for either asset specificity (TCE) or intangible resources (RBV). According to TCE and RBV proponents parent firms seeking to exploit superior technological competences tend to choose a greenfield entry (Chen and Zeng 2004; Hennart and Park 1993). By establishing a greenfield operation the parent firm reduces the chances of dissemination of firm-specific advantages and avoids the costs of retraining the existing workforce (Brouthers and Brouthers 2000). Firms that lack proprietary technology prefer acquisition modes which reduces the time and costs of developing such knowledge (Chen 2008; Wernerfelt 1984). The majority of studies provide empirical evidence that greenfields are associated with high technological intensity however several studies report insignificant results (Klimek 2011; Shaver 1998; Dikova and van Witteloostuijn 2007; Brouthers and Dikova 2010; Meyer et al. 2009; Bhaumik and Gelb 2005; Hennart et al. 2015) and one study shows that investor's technological intensity leads to a preference for an acquisition mode (Lopez-Duarte and Garcia-Canal 2002). The latter finding is based on the observation that Spanish firms with higher technological competences typically invest in acquisitions in search for new technological knowhow to match international competitors (Lopez-Duarte and Garcia-Canal 2002). Hennart et al. (2015) suggest that whether a parent will exploit its technological innovation through a greenfield or acquisition depends on whether the technology transferred is modular (i.e., can be superimposed onto a target, in which case the choice will be acquisition). A parent's R&D intensity does not tell us whether the technology is of a modular type or not therefore it cannot adequately explain the establishment mode choice.

According to studies applying TCE, *Advertising intensity* or marketing knowledge represents a firm-specific advantage that can be successfully combined with an acquisition (Hennart and Park 1993). For example, the acquirer's marketing skills can be profitably utilized to sell newly acquired local brands (Yip 1982). However, RBV studies present a counter argument suggesting that home-market advertising and marketing skills would discourage investors from choosing an acquisition because they can enjoy reputation spillovers abroad and build brand recognition in foreign markets through greenfield ventures (Chen and Zeng 2004). Six studies find that advertising investments are associated with greenfields (Chen and Zeng 2004; Tsai and Cheng 2004; Cheng 2006; Brouthers and Dikova 2010; Dikova 2012; Choi and Parsa 2015) while two studies report an insignificant relationship (Hennart and Park 1993; Dikova and van Witteloostuijn 2007) and one study shows that advertising intensity is related to acquisitions (Chen 2008). Most studies relied on subjective (survey) measures of advertising intensity (Table 6 in Appendix). Yet, due to variations in advertising spending across industries, the magnitude of advertising intensity is different across industries. For example, surveyed managers

from consumer industries and manufacturing goods industries may indicate high annual advertising expenditures at firm level, yet their responses are not comparable because consumer product firms spend much more on advertising than manufacturing goods firms (Zinkhan and Cheng 1992). This can possibly explain the inconsistency of findings in establishment mode studies. Thus separately examining specific industries may increase our understanding of the impact of advertising intensity on establishment mode choice.

Two separate but complementary theoretical arguments have been offered about the *International experience* of the parent firm. First, using TCE, scholars maintain that firms with longer overseas experience accumulate knowledge about specific foreign market conditions (Brouthers and Brouthers 2000). Internationally inexperienced firms consider entry through an acquisition as a substitute for experience while experienced firms are more inclined to establish greenfield ventures. Second, RBV scholars argue that international experience helps firms develop organizational routines which generate a firm-specific advantage that can be more easily exploited through greenfield ventures, rather than incurring the difficulties of transferring such advantages to acquired units (Padmanabhan and Cho 1999). Despite the popularity of this variable, many studies report either insignificant results (Wilson 1980; Zejan 1990; Larimo 2003; Dow and Larimo 2011; Padmanabhan and Cho 1995, 1999; Herrmann and Datta 2006; Ruiz-Moreno et al. 2007; Kogut and Singh 1988; Meyer et al. 2009, Hennart et al. 2015) or opposite results (Andersson and Svensson 1994; Harzing 2002; Mudambi and Mudambi 2002). Dow and Larimo (2011) refine the measure by distinguishing between the experience from similar and dissimilar locations and conclude that similar international experience leads to acquisitions while dissimilar international experience results in greenfields. We observe that general international experience is captured by a variety of measures such as number of years and number of countries of international activities, number of foreign subsidiaries, ratio of export sales to total sales and years of manufacturing activities (Table 6 in Appendix). This raises two issues, on the one hand, a comparison of results across the wide range of estimates is problematic and on the other hand, the mere presence in foreign markets cannot meaningfully explain the preference for either a greenfield or an acquisition. We suggest that a finer-grained measure of international experience is needed, as for example the experience with international greenfields or acquisitions which captures specific skills required to successfully setup an international greenfield or an acquisition.

TCE studies suggest that *Host country experience* or general knowledge of the local economy is tacit which makes purchasing it in disembodied form subject to high transaction costs (Hennart and Park 1993). Therefore investors with little or no host country experience would likely acquire firms embedded in the local economy. Yet TCE studies report insignificant results (Hennart and Park 1993; Larimo 2003). Chen (2008) uses RBV theory and suggests that locally inexperienced firms are likely to procure complementary capabilities such as host country experience through the acquisition of local businesses. Chen (2008) and Chang and Rosenzweig (2001) find empirical support but most studies report insignificant results (Dow and Larimo 2011; Bhaumik and Gelb 2005; Ruiz-Moreno et al. 2007; Meyer et al. 2009; Kogut and Singh 1988; Slangen 2011; Estrin et al. 2009). A few others find that host

country experience is related to acquisitions (Andersson and Svensson 1994; Rienda et al. 2013; Barkema and Vermeulen 1998; Shaver 1998; Drogendijk and Slangen 2006; Slangen and Hennart 2008; Demirbag et al. 2008). The problem here is similar to what we discussed previously: experience is captured by a variety of measures such as years of operating in the host country, various composite measures or a dummy (Table 6 in Appendix). This makes a comparison of results across the estimates problematic. Furthermore, the mere presence in a market cannot meaningfully explain the specific set of circumstances that could lead to a preference for either a greenfield or an acquisition. Refining the measure to reflect more industry- and location-specific circumstances may improve the explanatory power of this variable.

A number of other firm-level variables have been examined by very few studies. We limit our discussion to those based on theoretical arguments. First, *Mode experience* (e.g. number of previous greenfield or acquisition foreign entries) according to Organizational learning theory leads to a preference for the same mode in the future because of path-dependent behavior—firms try to reapply the learning from prior experience in similar choices to reduce risk (Chang and Rosenzweig 2001). Second, based on the integration/responsiveness framework (Prahalad and Doz 1987), Harzing (2002) and Dikova and van Witteloostuijn (2007) suggest that firm *International strategy* (e.g. global or multidomestic) influences establishment mode choice so that firms following a global strategy generally opt for greenfield investments while firms following a multi-domestic strategy prefer acquisitions.

Third, building on the RBV Meyer and colleagues (Meyer et al. 2009) look at *Intrafirm resource flows* and find that greater flows lead to the use of acquisitions. Similarly, from a RBV perspective Choi and Parsa (2015) note that firms characterized by HR-efficiency prefer acquisitions over greenfields because of reduced deal-complexity and stimulated learning in acquisitions. Fourth, industrial organization theory maintains that *Investment intensity* is a proxy for the need to commit large amounts of capital for entry (Yip 1982). Greater capital requirements discourage greenfield investments because they rely primarily on the use of internally generated funds. Fifth, a couple of studies use upper echelon theory to link *CEO characteristics* to establishment mode choice suggesting that the choice between greenfield, acquisition (and JV) is based on the risk-aversion of the CEO and their strategic orientation (Herrmann and Datta 2006; Dikova 2012). Sixth, one study suggests that although greenfield entries provide a real option alternative to acquisitions, the possession of *strategic flexibility* reduces the downside risks of making an acquisition (Brouthers and Dikova 2010). One study (Hennart and Park 1993) uses Mergers and acquisition theory to suggest that acquisitions will be preferred if ‘bargains’ can be obtained in the market for firms or when acquisitions offer benefits which cannot be obtained through greenfields (e.g. complementary inputs, market power, speed of entry). According to the theory of the growth of firms (Penrose 1959), when interdependence within a multinational network is strong and complex greenfield ventures are preferred because acquisitions consume more headquarters-level managerial resources (Tan 2009).

A large number of firm-level variables are included as controls, or as predictors without any specific theoretical relationship to establishment mode choice; these are

also presented in Table 6 of Appendix without specifying the outcome or the significance of the results.

3.2 Country-Level Variables

The second group of variables included in establishment mode studies is country-level variables (Table 7 in Appendix). Again we limit our discussion to those country-level variables that are theoretical derived. For example, most studies include *Cultural distance* as a main predictor or as a control variable. Kogut and Singh (1988) introduced the concept and the mathematical formula used to calculate this measure. Theoretically studies rely on TCE to explain the role of culture but offer two opposing sets of arguments. Most suggest that when distance is great, the costs of managing an acquisition are high, discouraging its use (Kogut and Singh 1988). Greenfield ventures however allow firms to carefully select employees who fit the national culture of the investor easing management issues (Drogendijk and Slangen 2006). A large number of studies find support for this association (Kogut and Singh 1988; Chang and Rosenzweig 2001; Larimo 2003; Tsai and Cheng 2004; Drogendijk and Slangen 2006; Dow and Larimo 2011), even studies that only include cultural distance as a control variable (Barkema and Vermeulen 1998; Vermeulen and Barkema 2001; Harzing 2002; Bhaumik and Gelb 2005; Elango 2005; Herrmann and Datta 2006; Cheng 2006; Ruiz-Moreno et al. 2007). Two studies, however, posit an alternative TCE-based hypothesis; that acquiring a local firm may be an efficient way of obtaining local knowledge and reducing the transaction costs related to environmental uncertainties. But these studies fail to find empirical support (Brouthers and Brouthers 2000; Rienda et al. 2013).

Institutional theory (institutional distance and institutional development or advancement) also has been used in a number of studies. Meyer and colleagues (Meyer et al. 2009) suggest that institutions—the rules of the game—in the host economy shape firm strategies such as establishment mode choice. Transactions are facilitated by the institutional framework of a country that guarantees transparency, predictability and contract enforcement (Peng and Heath 1996) therefore acquisitions are discouraged in economies with underdeveloped institutions (Meyer et al. 2009). Similarly, studies report that institutional quality (advancement) is associated with acquisitions (Dikova and van Witteloostuijn 2007; Bhaumik and Gelb 2005; Meyer et al. 2009; Alvarez and Marin 2010). Finally, studies like Arslan and Larimo (2011), Slangen (2011) and Dikova (2012) find that *institutional distance* is associated with greenfield ventures.

Slangen (2011) uses Communication theory and argues that verbal communication between the parent firm and the subsidiary occurs for several reasons: exchange of technology, coordination and monitoring of subsidiary's activities and socializing the subsidiary's workforce. Obstacles to communication, such as *linguistic and geographic barriers*, cause an increase in the costs which means that greenfield ventures are used in countries that are geographically distant and where the native language is very different from the home country (Slangen 2011). Using Assignment theory, Nocke and Yeaple (2008) demonstrate that as production-cost differences become small, nearly all FDI takes the form of acquisitions but the

propensity of firms in high-cost countries to engage in acquisitions decreases with the relative supply of corporate assets in low-cost countries.

A large number of other country-level variables are included as controls, without any specific theoretical relationship to establishment mode choice; these are also listed in Table 7 of [Appendix](#).

3.3 Industry-Level Variables

Industry-level variables represent the third group of variables included in previous studies of establishment mode choice (see Table 8 in [Appendix](#)). The main theory used to explain industry predictors is Industrial organization theory. The underlying argument is that the choice between greenfields and acquisitions is influenced by entry barriers created by the market structure. For example, according to traditional considerations entry barriers prevalent in an industry protect all firms in that industry from new entrants (Bain 1956). Establishment mode literature has discussed several industry barriers that pose disadvantages to (foreign) firms relative to market incumbents.

Industry growth rate reduces the impact of barriers by creating disequilibrium conditions (Yip 1982). In fast growing markets firms can use greenfield ventures because there is room for all firms. In contrast in slow growing industries entries via acquisitions are preferred because incumbent firms are likely to react adversely against new entrants as newly added capacity threatens their opportunities to grow (Elango and Sambharya 2004) while the acquisition of an existing firm does not increase the number of firms competing in the marketplace (Zejan 1990). The majority of studies find that industry growth is associated with greenfield entries (Shaver 1998; Brouthers and Brouthers 2000; Mudambi and Mudambi 2002; Elango and Sambharya 2004; Somlev and Hoshino 2005; Drogendijk and Slangen 2006; Slangen and Hennart 2008; Slangen 2011). However, some studies find no effect (Anand and Delios 2002; Dikova and van Witteloostuijn 2007; Dikova 2012; Hennart et al. 2015), and Chang and Rosenzweig (2001) report that acquisitions are preferred in high growth industries. Hennart and Park (1993) and Chen (2008) present evidence that sheds some light on the contradictory findings: by focusing on industry growth deviation, results suggest that acquisitions are favored at either very high-growth or very low-growth industries as they can speed up entries in fast growing sectors or control capacity expansions in slow-growing sectors.

Industry concentration captures the extent of competition in the industry. If the industry is highly concentrated, increasing the number of firms may provoke a competitive response from incumbents which could lead to a drop in prices and decreased profits (Cheng 2006; Hennart and Park 1993; Yip 1982). Therefore, firms prefer to enter concentrated industries through acquisitions (Elango and Sambharya 2004). Only two studies found support for this perspective (Cheng 2006; Dikova 2012) while another group of studies finds that concentration is related to greenfield ventures; suggesting that the small number of potential targets in concentrated industries makes acquisitions more difficult to negotiate (Kogut and Chang 1991; Solocha and Soskin 1994; Shaver 1998; Chang and Rosenzweig 2001; Elango and Sambharya 2004; Chen and Zeng 2004; Chen 2008). Many studies however, find no

significant relation between industry concentration and establishment mode choice (Yip 1982; Hennart and Park 1993; Anand and Delios 2002; Mudambi and Mudambi 2002; Bhaumik and Gelb 2005; Dikova and van Witteloostuijn 2007; Slangen 2011; Brouthers and Dikova 2010). The measures used to capture concentration vary widely and include either largest firm concentration ratio or subjective measures of the intensity of local competition (Table 8 in Appendix). This clearly limits the comparability of results across studies. We also question the capacity of industry concentration to explain establishment mode choice. For example, local industry concentration may be irrelevant in global industries. In a similar vein, competing successfully in certain industries demands substantial local adaptation or depends on close customer relationships (e.g. beer, food, retail banking). This in turn leads to the use of acquisitions for international expansion, regardless of the level of local industry concentration.

High *industry advertising intensity* reflects the level of brand or product awareness in a particular country and hence the ability of a firm to build brand recognition abroad (Chen and Zeng 2004). Acquisition modes help foreign firms gain access to new markets through the provision of well recognized local brands and established distribution channels (Anand and Delios 2002). Several studies find an association between *industry advertising intensity* and acquisitions (Anand and Kogut 1997; Anand and Delios 2002; Chen 2008; Chen and Zeng 2004; Herrmann and Datta 2006) but other studies report insignificant results (Elango and Sambharya 2004; Kogut and Singh 1988; Yip 1982). These mixed results suggest that some other processes might be taking place. For example, industry advertising intensity might be important for firms with less international experience but for firms with established global brands it might be less relevant. Hence, future research could explore the interplay between industry advertising intensity and other variables such as firm brand experience or international experience.

In a relatively recent study, Brouthers and Dikova (2010) apply real options theory to suggest that *industry-level demand uncertainty* will impact establishment mode choice. When demand is uncertain investing firms are unsure as to the viability of the investment. In these situations firms prefer greenfield ventures. Through greenfields firms have the ability to make small upfront commitments, gain access to the market but defer further investment until more information is obtained and uncertainty is reduced. Brouthers and Dikova (2010) find support for this contention.

Hennart et al. (2015) extend the OLI framework and test the impact of available complementary local inputs (measured by the number of available local suppliers) on establishment mode choice. The results suggest that when the number of potential suppliers is small, the foreign investor will enter through acquisitions.

Using Vernon's product cycle explanation, Kogut and Chang (1991) suggest that industries with declining relative shares of R&D are eventually forced to withdraw from exports and shift overseas; entries by new plants (greenfields) therefore occur in industries where the home-country R&D expenditures are not growing quickly.

Other industry-level variables, included mostly as controls and without any specific theoretical link to establishment mode choice, are also listed in Table 8 of Appendix.

3.4 Subsidiary-Level Variables

In comparison to the other three categories, only a few subsidiary-level variables have been included in previous studies of establishment mode choice (see Table 9 in Appendix). Rooted in the RBV and Theory of the growth of the firm, scholars theorize that when a firm intends to establish a relatively large subsidiary it may experience a shortage of financial and/or managerial resources (Hennart and Park 1993). There is a maximum rate at which firms can recruit and train managers so if a firm is short of personnel it cannot make greenfield investments (Penrose 1959). Through acquisition additional resources can be obtained (Brouthers and Brouthers 2000). Most studies examining *relative size* provide support for this perspective; firms making a large investment use acquisitions (Brouthers and Brouthers 2000; Cheng 2006; Dikova and van Witteloostuijn 2007; Harzing 2002; Hennart and Park 1993; Drogendijk and Slangen 2006; Slangen and Hennart 2008; Slangen 2011).

Using the integration/responsiveness framework (Prahalad and Doz 1987), three studies look at *subsidiary autonomy* and find that investors planning to grant little autonomy to their subsidiaries choose greenfields while those planning on granting much autonomy opt for acquisitions (Drogendijk and Slangen 2006; Slangen and Hennart 2008; Slangen 2011). Slangen and Dikova (2014) use subsidiary autonomy in marketing to measure the level of planned marketing adaptation (standardization) and find that marketing adaptation leads to a preference for acquisition over greenfield. Another study shows that when there is high *subsidiary dependence* on the parent's resources, firms choose greenfields over acquisitions to enable efficient knowledge transmission between the units (Demirbag et al. 2008).

The remaining subsidiary-level variables, included mostly as controls and without any specific theoretical link to establishment mode choice, are also presented in Table 9 of Appendix.

3.5 Interactions Between Variables

While most establishment mode studies examine only direct relationships, a few researchers have recognized that this choice may be more complex and therefore look at how various factors interact with each other and influence establishment mode choice (see Table 4). For instance, one study explores how institution-based and resource-based variables complement and interact to predict establishment mode choice (Meyer et al. 2009). The findings suggest that stronger institutions in emerging economies encourage acquisitions (rather than greenfields) when multinationals seek intangible resources in the host market. In a similar vein, Estrin et al. (2009) combine organizational learning (RBV) and institutional theory to develop arguments about the effect of institutional and human resource (HR) distance on the establishment mode choice of experienced and inexperienced investors. They find that inexperienced investors enter HR- and institutionally-distant locations via greenfields, while experienced investors prefer to enter HR-distant markets via acquisitions. Meyer et al. (2014) suggest that two specific host-country conditions, technological and institutional, shape the level of institutional pressures faced by

Table 4 Interactions in establishment mode studies

Interacting variables	References
Firm level/firm level	
R&D difference \times host country experience	Chang and Rosenzweig (2001)
Product diversification \times host country experience	Chang and Rosenzweig (2001)
Int. experience \times host country experience	Chang and Rosenzweig (2001)
Int. experience \times diversification	Barkema and Vermeulen (1998)
Desired control \times local resource requirement	Petrou (2009)*
Firm level/country level	
Cultural distance \times host country experience	Chang and Rosenzweig (2001)
Host country experience \times institutional distance	Estrin et al. (2009)
State ownership \times rule of law	Meyer et al. (2014)
State ownership \times shareholder protection	Meyer et al. (2014)
State ownership \times host-country technology	Meyer et al. (2014)
Tangible resources \times institutional distance	Meyer et al. (2009)*
Intangible resources \times institutional distance	Meyer et al. (2009)*
R&D intensity \times institutional advancement	Dikova and van Witteloostuijn (2007)
International strategy \times institutional advancement	Dikova and van Witteloostuijn (2007)
International experience \times cultural distance	Slangen and Hennart (2008)
Mode experience \times cultural distance	Slangen and Hennart (2008)
CEO experience \times institutional distance	Dikova (2012)*
Host country experience \times policy uncertainty	Slangen (2013)
Industry level/country level	
Industry demand growth \times policy uncertainty	Slangen (2013)
Country level/country level	
Policy uncertainty \times religious distance	Slangen (2013)
Firm level/subsidiary level	
Strategic flexibility \times subsidiary size	Brouthers and Dikova (2010)
Industry experience \times subsidiary autonomy	Slangen and Dikova (2014)
Industry level/subsidiary level	
Industry growth \times subsidiary ownership	Chen (2008)
Industry concentration \times subsidiary ownership	Chen (2008)
Demand uncertainty \times subsidiary size	Brouthers and Dikova (2010)
Country level/subsidiary level	
Communication barriers \times subsidiary autonomy	Slangen (2011)
Communication barriers \times subsidiary ownership	Slangen (2011)
Policy uncertainty \times subsidiary autonomy	Slangen (2013)
Economic development \times subsidiary autonomy	Slangen and Dikova (2014)
Subsidiary level/subsidiary level	
Relative subsidiary size \times subsidiary autonomy	Slangen and Dikova (2014)

state-owned multinational firms, which in turn affects their establishment mode choice.

Combining TCE, global strategy and institutional theory, Dikova and van Witteloostuijn (2007) suggest that institutional advancement in transition economies has both a direct and a moderating effect on establishment mode choice. The authors find that institutional advancement has a positive moderating effect on the tendency of technologically intensive firms to establish greenfield subsidiaries and a positive moderating effect on the tendency of multi-domestic firms to establish acquisitions.

Dikova (2012) combines upper echelon theory and institutional theory to suggest that institutional distance moderates the relation between CEO characteristics and establishment mode choice. The author finds that in institutionally closer locations, firms managed by risk-averse CEOs choose acquisitions while in institutionally distant locations they opt for greenfields. Dikova (2012) also finds that when institutional distance is small, firms managed by internationally experienced CEOs prefer acquisitions while these same CEOs choose greenfield ventures in institutionally distant locations.

Slangen and Hennart (2008) look at the interaction between cultural distance and two other variables: international experience and subsidiary autonomy. They find that internationally experienced firms are more likely to make acquisitions in culturally distant locations than their inexperienced counterparts. Furthermore, they note that firms planning to grant the subsidiary autonomy are more likely to enter culturally distant countries through acquisitions compared to firms wishing to integrate the foreign subsidiary. In a similar vein, Slangen and Dikova (2014) show that the link between a subsidiary's level of autonomy in marketing and establishment mode choice is moderated by the subsidiary's relative size, parent-firm industry experience, and the level of economic development of the host country; the moderators reflect the risks managers associate with implementing local marketing adaptation. Slangen (2011) also looks at subsidiary autonomy and communication barriers. He finds that the positive effect of communication barriers on the likelihood of greenfield entry is greater for subsidiaries with higher planned autonomy than for subsidiaries with lower planned autonomy.

Brouthers and Dikova (2010) apply real options theory and explore the moderating impact of investment size. They find that demand uncertainty is negatively associated with the use of acquisitions; however, this relationship is stronger for larger investments than for smaller investments. Furthermore, strategic flexibility is positively associated with the use of acquisitions; however, this relationship is weaker for larger investments than for smaller investments. Slangen (2013) also applies real option theory to suggest that the relationship between policy uncertainty and a greenfield establishment is weaker at higher levels of planned subsidiary autonomy and higher level of industry demand growth, for entries made by multinational parents with much host country experience and into religiously closer countries.

Chang and Rosenzweig (2001) apply an organizational learning lens and examine the moderating impact of multiple entries. They find that superior technological capabilities are associated with a greenfield mode for the first entry of the firm, however this tendency disappears in subsequent entries. Second, they note that

diversification entry is more strongly associated with acquisition in subsequent entries. Third, initial investments in culturally distant countries are made through greenfields, however this association is much weaker for subsequent entries. Fourth, prior international experience is associated with greenfield ventures for the first entry, however international experience has no effect on establishment mode choice in subsequent entries. Similarly, Barkema and Vermeulen (1998) suggest a curvilinear relationship between the degree of diversification and the propensity to choose greenfield establishments. They find that diversified firms foster innovation and therefore choose to enter foreign markets through greenfields, however this effect becomes weaker at higher levels of multinational diversity. Finally, using RBV theory Chen (2008) demonstrates that for partially owned subsidiaries only, industry growth has a positive impact on the likelihood of choosing acquisitions while industry concentration has a negative impact on the probability of establishing acquisitions.

Although relatively few studies have considered interactions, we observe a wide variety of moderating variables across all four levels of analysis: parent-firm level, host country-, industry- and subsidiary levels (Table 3). The high number of significant interaction effects suggests that other potential variables could have an influence on other variables in a way that impacts the choice between greenfields or acquisitions. This in turn could partially explain many of the inconsistencies we noted above in the results reported by various studies when only direct effects are considered. Furthermore, studies that look at interactions note that all interactions improve significantly the predictability of the models of establishment mode choice (e.g. Brouthers and Dikova 2010; Slangen 2013; Slangen and Dikova 2014; Chen 2008). Therefore, it is important that future studies should pay more attention to the interaction effects of various predictors of establishment mode choice.

3.6 Performance of Establishment Modes

Firms make the choice between acquisitions and greenfield ventures in an attempt to create a foreign subsidiary unit that provides superior performance. Several papers look at this issue but these studies tend to compare the performance of greenfields versus the performance of acquisitions without exploring the theoretical underpinnings of the establishment mode choice (Table 2). This leads to mixed results with some of these studies suggesting that greenfields perform better than acquisitions because of lower control and integration costs (Woodcock et al. 1994; Nitsch et al. 1996; Havrylchuk and Jurzyk 2011; Dadzie et al. 2014). Other studies find the opposite to be true—acquisitions are more likely to succeed because they do not suffer from liability of newness that plague greenfield operations (Pennings et al. 1994) or because foreign acquirers target local value-generating assets or the most efficient local firm (Haar and Marinescu 2014; Georgopoulos and Preusse 2009).

In addition studies attribute differences in establishment mode performance to specific conditions. Anand and Delios (1997) suggest that when the proportion of production occurring at the time of consumption is low, greenfields outperform acquisitions but when the proportion of production at the time of consumption is high, acquisitions outperform greenfields. Vermeulen and Barkema (2001) suggest

that the survival of both greenfields and acquisitions is positively related to the number of preceding related acquisitions and negatively related to the number of preceding related greenfields. Li and Guisinger (1991), Li (1995), and Shaver, Mitchell and Yeung (1997) find that acquisitions exhibit higher market-exit hazards than greenfields because of integration difficulties offsetting any of the potential benefits associated with reduced uncertainty in a foreign market. Similarly, Song (2014) shows that partial acquisitions exhibit the highest exit rate among all four modes (e.g. partial- and fully-owned greenfields and partial- and fully-owned acquisitions).

Benito (1997) reports that foreign expansion by acquisition (as opposed to greenfields) increases the likelihood of subsequent divestment, possibly because of failed 'double layered acculturation' (Barkema et al. 1996). Double layered acculturation is important because in international acquisitions firms need to overcome both national cultural as well as organizational cultural differences. Unsuccessful 'double layered acculturation' is suggested as an explanation for decreasing longevity of acquisitions (as opposed to greenfields) by Barkema et al. (1996).

Other scholars provide additional explanations of the 'performance' differences between greenfield ventures and acquisitions. According to Mata and Portugal (2000), an acquisition signals that the business is not owner-specific to any great extent which makes it more likely to be sold. Tsang and Yip (2007) suggest that economic distance between the home and the host country has a significant negative effect on the hazard rates of acquisitions making this establishment mode a more efficient way of accessing strategic assets. Chung and Beamish (2005) find that wholly-owned greenfield subsidiaries are better positioned than acquisitions to utilize multinational flexibility during times of economic crisis. When local markets collapse, greenfields are more likely to survive while acquisitions' deep integration into local markets explains their higher failure rates.

Slangen and Hennart (2008) find that acquisitions perform better than greenfields at low levels of subsidiary integration while at high levels of subsidiary integration greenfields outperform acquisitions. Similarly, Tan (2009) shows that acquisitions result in lower growth in MNEs characterized by strong and complex interdependencies. According to Sharma (1998) industry structure does not affect the survival of acquisitions but affects greenfields' survival. Busija (1997) concludes that firms using both greenfields and acquisitions outperform those relying on greenfields only. But Moatti et al. (2015) report that greenfields help improve overall performance. In contrast, acquisitions decrease overall firm performance, hurt efficiency but increase the bargaining power of firms.

Lozano-Vivas and Weill (2012) note that foreign greenfields are less profitable than domestic (foreign) firms or foreign acquisitions, possibly due to the startup costs of a new organization in a foreign country. However, foreign greenfield ventures increase cost efficiency while acquired units do not show any significant improvement in efficiency in the years following the acquisition (Lozano-Vivas and Weill 2012; Poghosyan and Poghosyan 2010; Vencappa and Thi 2007). Moden et al. (2008) also find that foreign greenfield ventures show the highest labor productivity, likely because of newer technology used when building plants from

scratch. In contrast, Zemplerova and Jarolim (2001) show that foreign acquisitions achieve higher productivity than greenfield establishments.

Another group of studies focus on the different macroeconomic impact of greenfields and acquisitions. One study finds that greenfield ventures produce relatively larger employment effects, while the effects of acquisitions are mostly negative (Williams 2003). Kejzar (2011) indicates that greenfields crowd-out domestic firms. In the same study, greenfields were also associated with a greater probability of exiting, possibly because MNEs tend to acquire firms that are larger, younger, with higher export propensity, higher skill-intensity and higher profitability (Kejzar 2011). Similarly, Ashraf and Herzer (2014) find that greenfield FDI has a large negative effect on domestic investment, while acquisitions do not. Wang and Wong (2009) and Nanda (2009) discovered that greenfields have a positive impact on economic growth, while acquisitions show a negative effect. Branstetter (2006) finds positive knowledge spillover effects for greenfields but not for acquisitions. Finally, Balsvik and Haller (2011) report that foreign greenfield investments have a negative effect on the productivity of domestic firms in the same industry while acquisitions have a positive impact.

As our review of the literature indicates, most establishment mode/performance (outcome) studies imply a universally 'best' establishment mode exists. Yet we know from entry mode research (e.g. the choice between a wholly owned subsidiary and a JV) that such a situation is unlikely (see Brouthers 2013 for a quick review). Entry mode research indicates that one entry mode is not superior to another but that firms garner superior performance from an entry mode only if that mode is aligned with the theoretically predicted entry mode. Considering the significant number of studies that take this approach (Brouthers 2013), it comes as a surprise that only two establishment mode studies have raised this issue.

Shaver (1998) and later on Tan (2009) have challenged the notion of establishment mode performance universality by addressing the issue of strategy self-selection and endogeneity. Because firms choose strategies that are expected to yield the greatest return (self-selection), when we observe some firms choosing one strategy and others choosing differently we cannot conclude that one strategy unconditionally leads to superior performance (Shaver 1998). Both Shaver (1998) and Tan (2009) demonstrate that controlling for self-selection changes the interpretation of how establishment mode choice affects subsidiary survival—the establishment mode choice variable (greenfield or acquisition) loses significance when the self-selection variable is included in the analysis. This suggests that the establishment mode choice that in many studies appears to affect performance may not truly reflect performance differences due to the influence of hard-to-measure or unobservable firm characteristics that affect both establishment mode choice and performance (Shaver 1998). Future research needs to focus efforts on exploring this critically important issue.

4 Future Research Directions and Conclusion

Our review of the empirical literature on international establishment mode choice shows that a large number of theories and variables have been examined. Despite this effort there are many contradictory findings which lead to unanswered questions. Part of this is due to the fact that there are few replication studies. Many variables and theories have been tested in only one or two studies and so the generalizability of the findings is still in question. Other issues revolve around the methods employed. In addition, with only two exceptions past studies do not look at the performance consequences of making establishment mode choices according to the proposed theory. These deficiencies provide opportunities for new research. Below we discuss numerous avenues through which researchers can make important contributions to our knowledge of international establishment mode choice. We begin by focusing on how current models and theories can be improved upon. Following that we highlight theories and issues that have not been applied to establishment mode choice but might help us gain a greater understanding of this decision process. Finally, we discuss important shortcomings in methods and measures providing recommendations for improvement.

4.1 Changes to Current Models

Although the studies we reviewed have made significant contributions to our knowledge, we believe that changes in the way we model international establishment mode choice can provide even more progress. For example, most past studies looked at the determinants of mode choice but ignored the issue of performance. It is unrealistic to imply that there is one universally superior establishment mode based on any theory, the focus of future research should be on finding whether an alignment between theoretically-predicted establishment modes and the choice firms make in practice leads to improved subsidiary performance. The comparison of greenfields and acquisitions based on performance indicators should integrate theory-driven determinants of the establishment mode choice as a first-step of the analysis and only then discuss subsequent performance implications. To provide useful tools for managers, it is important to expand on the work of Shaver (1998), who suggests that performance differences often stem from unobservable firms characteristics. Future studies can add to our understanding of how establishment mode choice affects subsidiary performance by accounting for strategy self-selection and examining firm performance. Doing so will help us determine what factors lead to superior performance and what factors do not.

In addition, some of the more recent studies of international establishment mode choice have combined theoretical perspectives to gain greater insights (e.g. Meyer et al. 2009; Dikova 2012). These studies challenge the implicit assumption that all explanatory variables suggested by a given theory have the same effect on the establishment mode choice. For example, Meyer et al. (2009) combine RBV with institutional theory to show that MNEs typically relying on resource exploitation via greenfield establishments may choose differently across various

institutional contexts because their firm-specific advantages (capabilities) are not universally useful. Studies like these provide valuable insights but we suggest that researchers need to take this work further and look at other theoretical combinations.

Future research can build on this approach and blend insights from real option theory, TCE and RBV, for instance, to help us gain a better view of how cost minimization (the focus of TCE), capability exploration or exploitation (the focus of RBV) and value creation (the focus of real option theory) considerations can jointly influence strategic decisions. Furthermore, combining RBV and industrial organization theories could help improve our understanding of the impact of firm-specific advantages and industry characteristics on establishment mode choice. This approach can help us clarify inconclusive evidence on the influence of industry (e.g. concentration, growth) and establishment mode choice—firms with certain capabilities, for instance, might opt for greenfields in highly concentrated industries while firms with different capabilities might prefer acquisitions in such industries. In general we suggest researchers take a new look at the theories behind the strategic choice of establishment mode structure.

This leads to other observations about conflicting results. As we outlined above, for many of the variables included in multiple studies results tend to be contradictory. In these cases researchers have found the same variable to be linked to both acquisitions and greenfield ventures. This suggests that moderation or mediation may be occurring. The possibility that some variable moderates the relationship between a specific firm, industry, or contextual characteristic and establishment mode choice has received some attention (see the studies in Table 4), however, the possibility of a specific mediation is missing in present studies. It could be that certain factors only affect establishment mode choice through other factors. Future research can make an important contribution by taking these conflicting results and determining why we observe two different outcomes. It is quite possible that new theory or as discussed above combining theories will be required to advance our knowledge.

In addition, the issue of whether establishment mode choice and entry mode choice (i.e., the choice between wholly-owned and JV modes) are sequential or simultaneous decisions needs much more work. Only one study shows evidence that the ownership decision precedes the establishment mode decision (Ruiz-Moreno et al. 2007). Two types of research may contribute here. First, qualitative research is needed to understand more fully how firms actually make the establishment mode decision. Is this a first choice (before entry mode), second choice (after entry mode) or are these simultaneous decisions? Second, both theoretical explanations of the choice and empirical testing will be needed and new methodological instruments like structural equation modeling may help.

Finally, with the exception of Herrmann and Datta (2006) and Dikova (2012), researchers have tended to ignore the human element in the international establishment mode decision-process, taking instead a rational choice perspective. Decisions are indeed made by managers and are taken in specific organizational contexts but are all management decisions rational? Decision-making research suggests otherwise (Schwenk 1984). The literature examining strategic decisions

tends to indicate that these decisions are influenced by various aspects of the top management team (TMT) (Carpenter et al. 2004). Including dimensions of the TMT such as cultural diversity, international experience, education and gender will help push our knowledge forward by indicating how TMT composition affects the establishment mode choice of the firm.

Furthermore, managerial attitudes toward foreign firms and people could also influence establishment mode choice. Based on the concepts introduced by Perlmutter (1969), managers with ethnocentric views might use greenfield ventures because their organizational culture is based on the concept that domestic ways of doing business are superior and hence acquiring “inferior” foreign operations would be a waste of resources. Contrary to this, firms with more geocentric organizational cultures might prefer acquisition modes hoping to benefit from the knowledge and expertise embedded in foreign firms. Future research could make important contributions to both the establishment mode and decision-making literatures by combining insights from more traditional rational establishment mode choice models with managerial/cognitive decision-making models.

4.2 New Theories and Issues

While a large number of theories have been applied to the international establishment mode choice decision (see Table 3), other theoretical perspectives also hold promise for advancing our knowledge. For example, network theory suggests that firms and managers are embedded in a network of firms and people that can supply information, access to resources, and knowledge (Brass et al. 2004). Since establishment mode choice is dependent, at least in part, on knowledge, resources, and information it might be that network relationships play a role in determining the decisions made by firms. Some types of networks (firm-level versus government-level, for example) and network relationship (strong versus weak ties) might be more useful for establishing greenfield operations while other types of networks (domestic versus international) or network relationships (network position) may provide information leading to a preference for acquisition modes. Future research taking a network perspective can help improve our understanding about how a firm’s position in the larger interrelated world influences its establishment mode decision.

Taking a corporate social responsibility (CSR) perspective may also advance our knowledge of international establishment mode choice (Campbell 2007). Since foreign subsidiaries are established not only to make sales but also for production and sourcing purposes, it might be that firm-level CSR attitudes and beliefs could be a driving force behind the establishment mode used. As an example, a firm building its reputation on ‘fair trade’ issues might use greenfield modes to help start ‘fair trade’ organizations in different countries, because no such organizations exist at the present time.

Finally, since establishment mode choice deals exclusively with the decision to undertake an acquisition or not, it is surprising to note that scholars looking at acquisition performance have not included this decision-frame in their work. Research that combines insights from both acquisition performance (Nadolska and Barkema 2007; Reus and Lamont 2009; Dikova and Rao Sahib 2013) and

establishment mode choice can help both areas move closer together and improve our understanding of why many acquisitions fail (King et al. 2004).

4.3 New Methods and Measures

One key issue that makes comparison of results and development of future research difficult is the lack of clarity in defining greenfield and acquisition modes. For example some studies clearly state that they examine only wholly owned greenfield and acquisition modes (Brouthers and Brouthers 2000). Other studies consider the choice between three alternatives—wholly owned greenfield, wholly owned acquisition and a JV (Anand and Delios 1997; Chang and Rosenzweig 2001; Lopez-Duarte and Garcia-Canal 2002; Elango and Sambharya 2004; Somlev and Hoshino 2005; Meyer et al. 2009; Dikova 2012; Raff et al. 2012). A significant number of studies are less clear about their mode choices (Wilson 1980; Yip 1982; Zejan 1990; Andersson and Svensson 1994; Shaver 1998; Barkema and Vermeulen 1998; Harzing 2002; Mudambi and Mudambi 2002; Chen and Zeng 2004; Elango 2005; Estrin et al. 2009; Alvarez and Marin 2010; Klimek 2011; Rienda et al. 2013). These studies simply state that they examine greenfield and acquisition, without noting if these are wholly owned or partially owned entities. Brouthers and Hennart (2007) suggest that there are four types of establishment modes: Wholly-owned greenfield, wholly-owned acquisition, joint venture greenfield, and joint venture acquisition (also called partial acquisition). As Brouthers and Hennart (2007) suggest researchers are beginning to find that there are significant differences in the factors driving the selection of each of these mode types (Chen 2008; Ruiz-Moreno et al. 2007). Therefore, future research needs to clearly define and differentiate these mode types.

Another important measurement issue has to do with the way researchers proxy different constructs from different theories. Take for example asset specificity from transaction cost theory and resources from the resource-based view. Many studies tend to use the same proxy (R&D intensity) to measure both asset specificity (Hennart and Park 1993; Brouthers and Brouthers 2000) and resources (Chen 2008; Chen and Zeng 2004). Can this truly be the case? Can R&D intensity really represent both the specificity of the assets employed in a foreign market as well as a valuable, rare, un-imitable resource? It is important that in the future researchers take more care in developing proxies for the theoretical constructs they are using. Without this care it will be hard to determine if studies make a new contribution or simply test old relationships dressed-up as new ideas.

Future research might also look at another critical method issue, sample selection. This deals with the investors' country of origin (home country), the investment location (host country) and the type of industry to be studied (see Table 5). A significant number of studies look at western locations both as home countries (Japan and the Netherlands especially) and as the target location (the USA). We know far less about firms entering into or coming from transitional or emerging markets. For example, only one study focuses on the establishment mode

Table 5 Sample size, home and host country, and industry type

References	Sample size	Home/host countries	Industry
Solocha and Soskin (1994)	216	Canada/USA	Multiple
Meyer et al. (2014)	298	China/multiple	Unspecified
Arslan and Larimo (2011)	343	Finland/multiple	Manufacturing
Hebous et al. (2011)	2831	Germany/multiple	Multiple
Rienda et al. (2013)	117 (91 firms)	India/multiple	Unspecified
Hashai and Almor (2004)	53 SMEs	Israel/multiple	Multiple
Nagano (2013)	20,367	Japan/Asia and Oceania	Manufacturing
Brouthers and Brouthers (2000)	136	Japan/Europe	Manufacturing
Somlev and Hoshino (2005)	751 (405 firms)	Japan/Europe	Manufacturing
Anand and Delios (1997)	1609	Japan/multiple	Service (retail)
Chen and Zeng (2004)	269	Japan/multiple	Manufacturing
Padmanabhan and Cho (1995)	1519	Japan/multiple	Manufacturing
Padmanabhan and Cho (1999)	605	Japan/multiple	Manufacturing
Raff et al. (2012)	412 (204 firms)	Japan/multiple	Service (retail)
Chen (2008)	269	Japan/USA	Unspecified
Hennart and Park (1993)	270	Japan/USA	Manufacturing
Kogut and Chang (1991)	825	Japan/USA	Unspecified
Tan (2009)	278	Japan/USA	Manufacturing
Brouthers and Dikova (2010)	154	Multiple/CEE	Manufacturing and service
Dikova and van Witteloostuijn (2007)	160	Multiple/CEE	Manufacturing and service
Dikova (2012)	156	Multiple/CEE	Manufacturing and service
Hryckiewicz and Kowalewski (2010)	129	Multiple/CEE	Finance/banking
Wes and Lankes (2001)	134	Multiple/CEE	Unspecified
Bhaumik and Gelb (2005)	114	Multiple/Egypt, S. Africa	Manufacturing and service
Meyer et al. (2009)	336	Multiple/Egypt, India, S. Africa, Vietnam	Unspecified
Roberto (2004)	1330	Multiple/Italy	Unspecified
Alvarez and Marin (2010)	Unspecified	Multiple/multiple	Unspecified
Estrin et al. (2009)	769	Multiple/multiple	Multiple
Harzing (2002)	287 (104 firms)	Multiple/multiple	Multiple
Lee and Lieberman (2010)	1719	Multiple/multiple	Telecommunications
Kuemmerle (1999)	156	Multiple/multiple	Pharmaceuticals, Electronics
Petrou (2009)	124	Multiple/multiple	Finance/banking
Demirbag et al. (2008)	145	Multiple/Turkey	Multiple
Mudambi and Mudambi (2002)	576	Multiple/UK	Multiple
Anand and Delios (2002)	2175	Multiple/USA	Unspecified
Anand and Kogut (1997)	1371	Multiple/USA	Unspecified

Table 5 continued

References	Sample size	Home/host countries	Industry
Caves and Mehra (1986)	66	Multiple/USA	Unspecified
Chang and Rosenzweig (2001)	816	Multiple/USA	Electronics and chemicals
Elango and Sambharya (2004)	336	Multiple/USA	Manufacturing and service
Elango (2003)	340	Multiple/USA	Manufacturing and service
Elango (2005)	682	Multiple/USA	Manufacturing
Kogut and Singh (1988)	506	Multiple/USA	Manufacturing and service
Shaver (1998)	213 (177 firms)	Multiple/USA	Manufacturing
Wilson (1980)	389	Multiple/USA	Unspecified
Yip (1982)	59	Multiple/USA	Manufacturing
Barkema and Vermeulen (1998)	829 (25 firms)		Netherlands/multiple
Unspecified			
Drogendijk and Slangen (2006)	246 (157 firms)		Netherlands/multiple
Manufacturing and service			
Slangen and Dikova (2014)	150 (105 firms)		Netherlands/multiple
Manufacturing and service			
Slangen and Hennart (2008)	246 (157 firms)		Netherlands/multiple
Manufacturing and service			
Slangen (2011)	231 (150 firms)		Netherlands/multiple
Manufacturing and service			
Slangen (2013)	172 (122 firms)		Netherlands/multiple
Manufacturing and service			
Vermeulen and Barkema (2001)	1349 (25 firms)		Netherlands/multiple
Unspecified			
Dow and Larimo (2011)	1473 (242 firms)	Nordic/multiple	Manufacturing
Larimo (2003)	3524 (382 firms)	Nordic/multiple	Manufacturing
Klimek (2011)	135 (50 firms)	Polish/multiple	Manufacturing
Andersson and Svensson (1994)	1000	Sweden/multiple	Manufacturing
Zejan (1990)	250 (77 firms)	Sweden/multiple	Manufacturing
Lopez-Duarte and Garcia-Canal (2002)	315	Spain/multiple	Manufacturing and service
Ruiz-Moreno et al. (2007)	252 (141 firms)	Spain/multiple	Manufacturing
Cheng (2006)	466	Taiwan/multiple	Manufacturing
Tsai and Cheng (2004)	188	Taiwan/multiple	Manufacturing
Buckley and Mathews (1980)	54	UK/Australia	Multiple
Hennart et al. (2015)	297	USA/Brazil	Multiple
Herrmann and Datta (2006)	380	USA/multiple	Manufacturing
Choi and Parsa (2015)	284	USA/multiple	Hospitality industry
Nocke and Yeaple (2008)	853	USA/multiple	Manufacturing

choices of Chinese multinationals (Meyer et al. 2014), while no one considered China as a host country. This comes as a surprise considering that China is both the home to and a base for a substantial amount of international activity (Cui and Jiang 2010). A few studies have looked at transitional countries as host locations (Brouthers and Dikova 2010; Dikova and van Witteloostuijn 2007), at emerging markets as host markets (Demirbag et al. 2008; Meyer et al. 2009; Bhaumik and Gelb 2005; Hennart et al. 2015) or as home country (Klimek 2011; Cheng 2006; Tsai and Cheng 2004; Rienda et al. 2013). The international expansion of firms originating from the BRIC countries is severely understudied with only two studies looking at Indian firms (Meyer et al. 2009; Rienda et al. 2013) and one looking at mode choices in Brazil (Hennart et al. 2015).

In addition, both service firms and manufacturing organizations have been included in past establishment mode studies (Table 5). Yet we could identify no comparison studies looking specifically at how service firm establishment mode choice may differ from the choice made by manufacturing firms. Several studies exist for the entry mode decision (Brouthers and Brouthers 2003; Erramilli and Rao 1993), providing valuable insights into industry specific differences. Research extending these ideas to establishment mode choice could help explain many of the contradictory findings of past studies.

Finally, new analytical methods might need to be used in future establishment mode studies. A focus on a single establishment mode choice of the firm and the resulting cross-sectional analysis is dominant in establishment mode literature. But cross-sectional analysis might not reflect a comprehensive understanding of a firm's bundle of establishment mode choices because most firms make multiple acquisition and greenfield foreign entries over a long period of time. Future research can help advance knowledge by collecting longitudinal data and conduct panel data analysis. This technique could reveal insights about how past establishment mode choices influence the current mode choice, which is ignored in cross-sectional studies. Methodologically, an examination of time-recurring acquisition and greenfield investments requires the application of techniques that account for within-firm correlation. Using such a method would also provide researchers with an opportunity to test how the performance of a firm that adopted a particular establishment mode compares with how that same firm performs when it adopts an alternative mode.

4.4 Conclusion

For over 30 years scholars have examined the factors that explain the choice between international acquisitions and greenfield start-ups without reaching a consensus on what really makes a difference. In this paper we bring together the published empirical research on international establishment mode choice in an attempt to move our knowledge forward. We make several important contributions. First, by systematically presenting and analyzing this literature we help identify what has been done and discover problems and issues that need to be resolved. Second, we explored the link between establishment mode choice and performance and identify the vital need for research that looks at the performance implication of

making theoretically consistent mode choices. Third, through our review we were able to identify gaps in the literature and discover areas where knowledge is lacking. By doing so, we help move the literature forward providing specific guidance that can help future research improve our understanding of one of the most critically important international business decisions managers face.

With the boom but under-performance of acquisitions in the past few decades, managers and researchers need to think about whether acquisitions are the best way to expand. International establishment mode research focuses directly on this question attempting to determine when acquisitions are superior to greenfield ventures. Yet much more work needs to be done in this area before a clear picture can be developed. Future research bringing in theories from other areas, developing more parsimonious models, and using more advanced analytical techniques can help develop our knowledge about this choice. Finally, making performance an integral part of these models is crucial if we really want to help managers understand where and when to use acquisitions as they expand abroad.

Appendix

See Tables 6, 7, 8 and 9.

Table 6 Firm-level predictors of establishment mode

Operationalization of variables	References
Organizational size	
Total turnover	Rienda et al. (2013), Bhaumik and Gelb (2005), Elango (2003), Lopez-Duarte and Garcia-Canal (2002)*, Andersson and Svensson (1994), Yip (1982)
(Log of) firm assets	Meyer et al. (2014), Nagano (2013), Hebous et al. (2011), Tan (2009), Ruiz-Moreno et al. (2007), Chang and Rosenzweig (2001)*, Vermeulen and Barkema (2001), Padmanabhan and Cho (1995, 1999), Barkema and Vermeulen (1998), Kogut and Singh (1988)*
(Log of) global sales	Slangen (2011, 2013), Dow and Larimo (2011), Arslan and Larimo (2011), Klimek (2011), Lee and Lieberman (2010), Drogendijk and Slangen (2006), Hashai and Almor (2004), Tsai and Cheng (2004), Larimo (2003), Mudambi and Mudambi (2002), Shaver (1998)
Capital	Petrou (2009)*
(Log of) MNE employees worldwide	Dikova (2012)*, Brouthers and Dikova (2010), Demirbag et al. (2008), Nocke and Yeaple (2008), Herrmann and Datta (2006)*, Elango and Sambharya (2004)*, Hashai and Almor (2004)

Table 6 continued

Operationalization of variables	References
Product diversification	
Herfindahl–Hirschman index (within different industry codes)	Nocke and Yeaple (2008), Chang and Rosenzweig (2001)*, Padmanabhan and Cho (1995, 1999), Hennart and Park (1993), Zejan (1990), Caves and Mehra (1986)
The number of different 3/4-digit industry codes of the parent	Slangen (2013), Dow and Larimo (2011), Slangen and Hennart (2008), Drogendijk and Slangen (2006), Larimo (2003), Harzing (2002), Vermeulen and Barkema (2001), Brouthers and Brouthers (2000), Barkema and Vermeulen (1998), Wilson (1980)
Dummy	Meyer et al. (2009)*, Kogut and Singh (1988)*, Hennart et al. (2015), Estrin et al. (2009), Tan (2009), Demirbag et al. (2008), Yip (1982)
Investment (un)relatedness	
Relatedness of all affiliates in host country	Lee and Lieberman (2010), Estrin et al. (2009), Chen and Zeng (2004)
Dummy	Slangen and Dikova (2014), Slangen (2011, 2013), Dikova (2012), Dow and Larimo (2011), Brouthers and Dikova (2010), Chen (2008, Slangen and Hennart (2008), Dikova and van Witteloostuijn (2007), Drogendijk and Slangen (2006), Larimo (2003), Chang and Rosenzweig (2001)*, Vermeulen and Barkema (2001), Brouthers and Brouthers (2000), Padmanabhan and Cho (1995, 1999), Shaver (1998), Hennart and Park (1993), Zejan (1990), Yip (1982)
Technological intensity	
Log of value of intangible assets	Nagano (2013), Klimek (2011)
Average R&D expenditures (to total assets)	Hennart et al. (2015), Lee and Lieberman (2010), Chen (2008), Nocke and Yeaple (2008), Chen and Zeng (2004), Hashai and Almor (2004), Elango (2003), Harzing (2002), Shaver (1998), Padmanabhan and Cho (1995, 1999), Andersson and Svensson (1994, Hennart and Park (1993), Brouthers and Brouthers (2000), Kuemmerle (1999)
Dummy	Lopez-Duarte and Garcia-Canal (2002)*
R&D expenditure to total assets (subjective)	Dikova (2012)*, Brouthers and Dikova (2010), Meyer et al. (2009)*, Dikova and van Witteloostuijn (2007), Cheng (2006)*, Bhaumik and Gelb (2005), Tsai and Cheng (2004)
Number of patents filed	Mudambi and Mudambi (2002)
R&D difference (firm minus industry-level R&D)	Chang and Rosenzweig (2001)
International experience	
(Log of) years of int. experience	Meyer et al. (2014), Harzing (2002), Mudambi and Mudambi (2002), Zejan (1990), Wilson (1980)
Number of manufacturing affiliates	Arslan and Larimo (2011), Dow and Larimo (2011), Hebous et al. (2011), Somlev and Hoshino (2005)*, Larimo (2003), Lopez-Duarte and Garcia-Canal (2002)*, Andersson and Svensson (1994), Caves and Mehra (1986)

Table 6 continued

Operationalization of variables	References
International to total (export) sales ratio of parent	Dikova (2012)*, Raff et al. (2012)*, Brouthers and Dikova (2010), Tan (2009), Nocke and Yeaple (2008), Herrmann and Datta (2006)*, Hashai and Almor (2004), Elango (2003), Brouthers and Brouthers (2000), Kuemmerle (1999), Padmanabhan and Cho (1999)
Number of countries in which MNE has subsidiaries	Hennart et al. (2015), Slangen and Dikova (2014), Nocke and Yeaple (2008), Ruiz-Moreno et al. (2007), Chang and Rosenzweig (2001)*, Vermeulen and Barkema (2001), Barkema and Vermeulen (1998), Kogut and Singh (1988)*
Years of operating an affiliate abroad	Meyer et al. (2009)*, Padmanabhan and Cho (1995)
Years and foreign countries of manufacturing activities	Tsai and Cheng (2004)
Host country experience	
Years of operating in the host country	Hennart et al. (2015), Slangen and Dikova (2014), Slangen (2011, 2013), Rienda et al. (2013), Arslan and Larimo (2011), Dow and Larimo (2011), Chen (2008), Bhaumik and Gelb (2005), Larimo (2003), Barkema and Vermeulen (1998), Shaver (1998), Andersson and Svensson (1994), Hennart and Park (1993)
Composite measure/dummy	Nagano (2013), Slangen (2011), Estrin et al. (2009), Meyer et al. (2009)*, Demirbag et al. (2008), Nocke and Yeaple (2008), Slangen and Hennart (2008), Ruiz-Moreno et al. (2007), Drogendijk and Slangen (2006), Kogut and Singh* (1988)
Advertising intensity	
Advertising expenditures	Choi and Parsa (2015), Chen (2008), Chen and Zeng (2004), Hennart and Park (1993)
% sales spent on marketing activities (subjective)	Dikova (2012)*, Brouthers and Dikova (2010), Tan (2009), Dikova and van Witteloostuijn (2007), Cheng (2006)*, Tsai and Cheng (2004)
Intrafirm resource flow	
Intended or realized transfer (assets sharing)	Slangen and Dikova (2014), Slangen (2011, 2013), Slangen and Hennart (2008), Drogendijk and Slangen (2006), Estrin et al. (2009), Chang and Rosenzweig (2001)*
Mode experience	
Past greenfields/acquisitions	Slangen and Dikova (2014), Slangen (2011, 2013), Dikova (2012)*, Slangen and Hennart (2008), Dikova and van Witteloostuijn (2007), Drogendijk and Slangen (2006), Padmanabhan and Cho (1999), Buckley and Mathews (1980)
International strategy	
Global/multidomestic (subjective)	Dikova (2012)*, Dikova and van Witteloostuijn (2007), Harzing (2002)
Market position	
Ratio of parent sales to total industry sales in core product market	Padmanabhan and Cho (1995, 1999)

Table 6 continued

Operationalization of variables	References
Investment intensity	
Average annual investment (physical, HR)	Klimek (2011), Elango (2005), Yip (1982)
Profitability/competitiveness	
Return on equity/assets/growth	Meyer et al. (2014), Lee and Lieberman (2010), Herrmann and Datta (2006)*, Elango (2003), Barkema and Vermeulen (1998), Yip (1982)
CEO characteristics	
Age, experience	Dikova (2012)*, Herrmann and Datta (2006)*
State ownership	
Ultimate controlling stake/dummy	Meyer et al. (2014)
Leverage/financial strength	
Ratio of long term debt to market value, market-to-book value	Elango (2003), Hennart and Park (1993), Nagano (2013), Lee and Lieberman (2010)
Relocation cost	
Expenditures for training and international relocation	Cheng (2006)*
Line of business size	
Size and strength of business relative to others in the firm	Chang and Rosenzweig (2001)*
Strategic flexibility	
Number of previous acquisitions in number of foreign countries	Brouthers and Dikova (2010)
Business experience	
Age of parent firm	Lee and Lieberman (2010), Mudambi and Mudambi (2002)
Tangible resources	
Buildings, equity, loans, machinery and equipment, patents, sales outlets and licenses	Meyer et al. (2009)*
Intangible resources	
Brands, networks, managerial, innovation and marketing capabilities, know-how, trade contracts	Meyer et al. (2009)*, Petrou (2009)*
HR endowment/overheads	
Availability of managers, personnel expenses	Choi and Parsa (2015), Hryckiewicz and Kowalewski (2010), Hennart and Park (1993)
Entrant motivation	
Composite index	Yip (1982), Wes and Lankes (2001)

Table 7 Country-level predictors of establishment mode

Operationalization of variables	References
Cultural distance	
Euclidean index based on Hofstede's cultural dimensions	Slangen and Dikova (2014), Rienda et al. (2013), Dow and Larimo (2011), Slangen (2011), Demirbag et al. (2008), Slangen and Hennart (2008), Ruiz-Moreno et al. (2007), Cheng (2006)*, Drogendijk and Slangen (2006), Herrmann and Datta (2006)*, Bhaumik and Gelb (2005), Elango (2005), Tsai and Cheng (2004), Elango (2003), Larimo (2003), Harzing (2002), Chang and Rosenzweig (2001)*, Vermeulen and Barkema (2001), Brouthers and Brouthers (2000), Padmanabhan and Cho (1995, 1999), Barkema and Vermeulen (1998), Anand and Delios (1997), Kogut and Singh (1988)*
Economic growth rate	
Average GDP growth rate	Rienda et al. (2013), Dow and Larimo (2011), Klimek (2011), Arslan and Larimo (2011), Alvarez and Marin (2010)*, Hryckiewicz and Kowalewski (2010), Demirbag et al. (2008), Herrmann and Datta (2006)*, Larimo (2003), Barkema and Vermeulen (1998), Andersson and Svensson (1994), Zejan (1990)
Level of economic development	
GDP/GDP per capita	Slangen and Dikova (2014), Nagano (2013), Slangen (2013), Hebous et al. (2011), Klimek (2011), Alvarez and Marin (2010)*, Hryckiewicz and Kowalewski (2010), Meyer et al. (2009)*, Nocke and Yeaple (2008), Herrmann and Datta (2006)*, Vermeulen and Barkema (2001), Barkema and Vermeulen (1998), Andersson and Svensson (1994), Zejan (1990)
Dummy (developed country)	Arslan and Larimo (2011), Slangen (2011), Larimo (2003), Padmanabhan and Cho (1995, 1999)
Legal restrictions/barriers	
Dummy (prior government approval needed for acquisition)	Slangen and Dikova (2014), Slangen (2013), Dow and Larimo (2011), Petrou (2009)*, Slangen and Hennart (2008), Chang and Rosenzweig (2001)*, Barkema and Vermeulen (1998), Padmanabhan and Cho (1995, 1999)
Communication barriers	
Language and geographic differences	Slangen (2011)
Country risk	
Euromoney, economic freedom index	Rienda et al. (2013), Arslan and Larimo (2011), Hryckiewicz and Kowalewski (2010), Demirbag et al. (2008), Cheng (2006)*, Mudambi and Mudambi (2002), Barkema and Vermeulen (1998)
Lack of acquisition targets	
Dummy	Slangen (2011), Slangen and Hennart (2008), Drogendijk and Slangen (2006)
Psychic distance	
Psychic/geographic/religious distance	Slangen and Dikova (2014), Slangen (2013), Raff et al. (2012)*, Dow and Larimo (2011), Hebous et al. (2011), Hryckiewicz and Kowalewski (2010), Petrou (2009)*, Nocke and Yeaple (2008), Hashai and Almor (2004), Solocho and Soskin (1994)

Table 7 continued

Operationalization of variables	References
Human resources/labor market	
Composite measure/labor cost	Raff et al. (2012)*, Alvarez and Marin (2010)*, Neto et al. (2010), Estrin et al. (2009), Somlev and Hoshino (2005)*, Roberto (2004), Wes and Lankes (2001)
Openness	
Exports and imports as % of GDP	Hebous et al. (2011), Alvarez and Marin (2010)*, Neto et al. (2010), Nocke and Yeaple (2008)
Institutions	
Institutional distance	Dikova (2012)*, Arslan and Larimo (2011), Slangen (2011), Hryckiewicz and Kowalewski (2010), Estrin et al. (2009)
Institutional development/strength	Meyer et al. (2014), Nagano (2013), Hebous et al. (2011), Alvarez and Marin (2010)*, Neto et al. (2010), Meyer et al. (2009)*, Dikova and van Witteloostuijn (2007), Bhaumik and Gelb (2005)
Investment incentives	
Dummy, foreign capital	Alvarez and Marin (2010)*, Demirbag et al. (2008), Dikova and van Witteloostuijn (2007), Mudambi and Mudambi (2002)
Quality/cost of resources	
Composite measure	Meyer et al. (2009)*, Demirbag et al. (2008), Wes and Lankes (2001)
Tax and exchange rates	
Corporate taxes, local exchange rate	Nagano (2013), Hebous et al. (2011), Hryckiewicz and Kowalewski (2010), Raff et al. (2012)*, Chang and Rosenzweig (2001)*, Solocho and Soskin (1994)
Political uncertainty	
POLCON index	Slangen (2013)
Agglomeration economies	
Number of manufacturing establishments	Roberto (2004), O Huallachain and Reid (1997)
Inflation	
Log consumer price index	Hryckiewicz and Kowalewski (2010)
Market capitalization	
Value of domestic equities as % GDP	Hryckiewicz and Kowalewski (2010), Neto et al. (2010)
Bilateral trade	
Exports value to host country % total trade	Nagano (2013)
Host technology	
Log of country's annual patent applications	Meyer et al. (2014)

Table 8 Industry-level predictors of establishment mode

Operationalization of variables	References
Industry growth rate	
Growth in sales	Hennart et al. (2015), Lee and Lieberman (2010), Somlev and Hoshino (2005)*, Elango and Sambharya (2004)*, Anand and Delios (2002), Mudambi and Mudambi (2002), Brouthers and Brouthers (2000), Kogut and Chang (1991)*, Caves and Mehra (1986), Yip (1982)
Expected product/industry demand growth (subjective)	Dikova (2012)*, Slangen (2011), Slangen and Hennart (2008), Dikova and van Witteloostuijn (2007), Drogendijk and Slangen (2006)
Demand/growth rate deviation (from sample mean)	Chen (2008), Chen and Zeng (2004), Elango and Sambharya (2004)*, Chang and Rosenzweig (2001)*, Shaver (1998), Hennart and Park (1993)
Average annual industry employment growth rate	Tan (2009)
Industry concentration	
Largest firm concentration	Hennart et al. (2015), Hryckiewicz and Kowalewski (2010), Lee and Lieberman (2010), Tan (2009), Chen (2008), Cheng (2006)*, Elango and Sambharya (2004)*, Chen and Zeng (2004), Roberto (2004), Anand and Delios (2002), Mudambi and Mudambi (2002), Shaver (1998), Anand and Kogut (1997), Solocha and Soskin (1994), Hennart and Park (1993), Caves and Mehra (1986), Yip (1982)
Intensity of local competition (subjective)	Dikova (2012)*, Slangen (2011), Brouthers and Dikova (2010), Dikova and van Witteloostuijn (2007), Bhaumik and Gelb (2005), Chang and Rosenzweig (2001)*
Industry advertising intensity	
Advertising expenses as % of sales in home/host countries, salesforce	Chen (2008), Herrmann and Datta (2006)*, Chen and Zeng (2004), Elango and Sambharya (2004)*, Anand and Delios (2002), Anand and Kogut (1997), Kogut and Singh (1988)*, Caves and Mehra (1986)
Industry technological intensity	
High tech/low tech industry dummy/survey	Rienda et al. (2013), Alvarez and Marin (2010)*, Tan (2009), Dikova and van Witteloostuijn (2007), Herrmann and Datta (2006)*, Somlev and Hoshino (2005)*, Anand and Kogut (1997), Solocha and Soskin (1994), Kogut and Chang (1991)*, Caves and Mehra (1986)
Industry size	
Average annual value of shipments	Elango and Sambharya (2004)*, Anand and Delios (2002), Kogut and Chang (1991)*
Total number of employees in the industry	Elango (2005)
Industry-value added Dummy	Raff et al. (2012)* Somlev and Hoshino (2005)*
Demand uncertainty	
Industry fragmentation	Brouthers and Dikova (2010)
Industry demand growth	
Likert-type scale survey	Slangen and Dikova (2014), Slangen (2013)

Table 8 continued

Operationalization of variables	References
Manufacturing/service industry	
Dummy	Slangen and Dikova (2014), Slangen (2013), Dikova (2012)*, Brouthers and Dikova (2010, Slangen and Hennart (2008), Dikova and van Witteloostuijn (2007), Drogendijk and Slangen (2006), Lopez-Duarte and Garcia-Canal (2002)*, Kogut and Singh (1988)*, Buckley and Mathew (1980)
Regulated sector	
Dummy	Lopez-Duarte and Garcia-Canal (2002)*, Kogut and Chang (1991)*
Oligopoly	
Dummy	Hennart and Park (1993), Caves and Mehra (1986)
Industry profitability	
Profit divided by industry sales	Elango and Sambharya (2004)*
Imports	
Total imports divided by industry shipments	Elango and Sambharya (2004)*, Anand and Kogut (1997)
Industry brand equity	
% of brand equity of all firms	Chen and Zeng (2004)
Consumer goods	
% of industry output shipped to end users	Chen and Zeng (2004)
Relative wage/unions	
Host industry wage differences	Raff et al. (2012)*, Roberto (2004), O Huallachain and Reid (1997)
Productivity	
Total factor productivity	Raff et al. (2012)*
Few suppliers	
Dummy	Hennart et al. (2015)
Scale economies	
Average number of workers in the industry	Tan (2009)
Customization	
Relative importance of goods made to order	Tan (2009)
Foreign competition	
Number of foreign-owned manufacturing plants	Roberto (2004)
Warehouse	
Concentration/presence of warehouse investment	Solocha and Soskin (1994)

Table 9 Subsidiary-level predictors of establishment mode

Operationalization of variables	References
Ownership level	
Dummy: WO versus JV	Arslan and Larimo (2011), Dow and Larimo (2011), Slangen (2011, Demirbag et al. (2008), Cheng (2006)*, Drogendijk and Slangen (2006), Larimo (2003), Vermeulen and Barkema (2001), Barkema and Vermeulen (1998), Caves and Mehra (1986)
Dummy: partial versus full entry	Chen (2008)
% of ownership in subsidiary	Brouthers and Dikova (2010)
Subsidiary size	
Initial number of employees	Slangen (2013), Dikova (2012)*, Brouthers and Dikova (2010), Mudambi and Mudambi (2002), Caves and Mehra (1986)
Amount of investment in mil. \$	Elango (2005), Elango (2003), Mudambi and Mudambi (2002), Anand and Delios (1997)
Absolute revenue in \$	Yip (1982)
Relative size	
Parent size divided by subsidiary size	Slangen and Dikova (2014), Estrin et al. (2009), Dikova and van Witteloostuijn (2007), Cheng (2006)*, Harzing (2002), Brouthers and Brouthers (2000), Padmanabhan and Cho (1995, 1999), Hennart and Park (1993), Yip (1982)
Planned size compared to parent size (subjective)	Slangen (2011), Slangen and Hennart (2008), Drogendijk and Slangen (2006)
Subsidiary dependency	
Subsidiary dependency on HQ	Demirbag et al. (2008)
Subsidiary autonomy	
Composite measure of planned autonomy (subjective)	Slangen and Dikova (2014), Slangen (2011, 2013), Slangen and Hennart (2008), Drogendijk and Slangen (2006)
Subsidiary scope	
Geographical output mandate (local, regional, global)	Mudambi and Mudambi (2002)
Subsidiary age	
Number of years	Anand and Delios (1997)
Desired control	
Need for control over strategy, dividend policy, marketing, technology, operations	Petrou (2009)*

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