7. Contextual ambidexterity in the subsidiary: how exploration and exploitation interact to drive subsidiary strategic initiatives and innovation

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INTRODUCTION

The synergistic returns of multinational enterprises (MNEs) are generated by sourcing and harnessing new and responsive initiatives from their dispersed intra-organisational network of subsidiaries. For those subsidiaries without a mandated R&D role, autonomous initiative taking provides an opportunity to manage internal competition and to 'stretch their boundaries of operation or mandates vis-à-vis the corporate centre' (Strutzenberger & Ambos, 2014: 314).

Broadly, subsidiary initiatives are deemed as innovation in action and are characterised as a 'proactive, autonomous and risk-taking' approach at the subsidiary level (Schmid, Dzedek & Lehrer, 2014: 201). The culmination of such initiatives (when successful) includes new product development, new service provision, and radical changes to both organisational processes and configurations. An early example of a subsidiary-driven initiative is the development of the modern Automated Teller Machine by the Scottish subsidiary of NCR (Ambos, Andersson & Birkinshaw, 2010); another example is Bailey's Irish Cream developed by an Irish subsidiary of what is now Diageo (Delany, 2000).

Explorative trajectories (and the subsidiary management championing them), are credited with pioneering new innovative ideas; with entrepreneurship taking centre stage among the key factors driving subsidiary initiatives (Birkinshaw, 1997; Birkinshaw, Hood & Young, 2005; Williams, 2009; Verbeke, Chrisman & Yuan, 2007). Indeed, a large body of research attests to the positive relationship between subsidiary entrepreneurship and initiative generation (Boojihawon, Dimitratos & Young, 2007; Hakala, Sirén & Wincent, 2016).

In this chapter, we argue that current perspectives overlook the importance of subsidiary exploitative behaviour, notably formal analysis of ideas and options in the generation of initiatives. Exploitative behaviour is further characterised by and encompassing the refinement of existing competencies and processes of 'selection, implementation, [and] execution' (March, 1991: 71). We draw attention to the merits of examining complementarity in the simultaneous pursuit of traditional explorative/entrepreneurial approaches with more exploitative behaviour, or ambidexterity (Duncan, 1976; Birkinshaw & Gibson, 2004; Gibson & Birkinshaw, 2004).

Adopting an ambidexterity lens as our theoretical framing (Duncan, 1976; Birkinshaw & Gibson, 2004; Gibson & Birkinshaw, 2004; Eisenhardt, Furr & Bingham, 2010; Vahlne & Jonsson, 2017; Reilly & Sharkey Scott, 2016), we examine how the interaction of exploitation and exploration may help to explain why some subsidiaries are more prolific at generating strategic initiatives than others. The implications of these findings for initiative and innovation at MNEs are also discussed.

SUBSIDIARY-DRIVEN INITIATIVE GENERATION

In recent decades, the roles of subsidiaries have become more specialised and focused. To avoid duplication of activities and resources, many MNEs have carved up global value chains to ensure that activities are placed in optimal locations. The underlying rationale is that it is better for subsidiary units to focus on a small number of activities, and to do them well – rather than trying to undertake a broad array of activities at individual locations. A steady stream of research has captured this global phenomenon by focusing on value chain disaggregation (Buckley, Craig & Mudambi, 2018; Nell, Kappen & Laamanen, 2017). Disaggregation represents 'modularization of the value chain' (Beugelsdijk, Pedersen & Petersen, 2009: 129) via the organising and allocation of MNE activities into smaller components, which are then located in locations that have either cost- or knowledge-based advantages. This 'fine-slicing' of MNE activities can facilitate a greater focus at the individual subsidiary level and the scope to innovate within a more refined area of expertise. Labelled the 'global factory' (Buckley, 2009a, 2009b, 2011; Buckley & Ghauri, 2004), this is now a common 'structure through which multinational enterprises integrate their global strategies through a combination of innovation, distribution and production of both goods and services' (Buckley, 2009b: 131). By leveraging comparative advantages between locations, global factories may allow for rapid innovation – where product cycles are reduced, and standardisation allows for greater economies of scale (Buckley, 2009b).

For some subsidiaries, a shift towards more specialised roles provides an opportunity for greater initiative taking. The merits of such approaches to the organisational configuration of MNEs, including specialisation and the 'fine-slicing' of activities, have long been lauded by researchers who highlight the roles of 'centres of excellence' and 'superstar subsidiaries' within MNE networks (Andersson & Forsgren, 2000; Blomkvist, Kappen & Zander, 2014; Moore, 2001). While subsidiary-driven innovation is not a new phenomenon, we highlight that centres of excellence were once considered outlier cases, or *the exception to the rule* within MNEs, but are now becoming more prominent and deliberate, (albeit within narrower bundles of activities) and reflective of significant global changes in MNE organisational configurations.

However, in this chapter, we argue that specialisation and modularity can represent a double-edged sword – highlighting how a narrower focus may also reduce the breadth of value-addition activities in which the subsidiary can compete in. The counter-argument to the potential for subsidiary initiative within global factories is that by design, MNEs are a network of geographically distant, multifaceted, and highly independent and interdependent subsidiaries. The basis of MNE advantage is that individual subsidiaries are responsible for driving new sources of organisational advantage by leveraging local knowledge within each specific site. Location-based advantages, for example, are a critical consideration in configuring MNE networks and determining sources of innovation. Research has highlighted how subsidiary embeddedness, capturing inclusion and exposure to local business networks, can enhance subsidiary knowledge creation (Andersson, Bjorkman & Forsgren, 2005), with external embeddedness ultimately credited as an enabler in driving subsidiary led initiatives (Ciabuschi, Holm & Martín, 2014; Figueiredo, 2011; Nieto & Santamaría, 2007).

Previous research has captured this concern by highlighting how the scope for subsidiaries to build the combinative capabilities required for generating initiatives is 'replaced by a potential reality of disjointed value chain activities and greater internal competition' (Reilly & Sharkey Scott, 2014: 199). Without significant collaboration between subsidiary units (which may be no longer necessitated, or at least significantly reduced due to narrower subsidiary roles) the scope to leverage intra-organisational networks becomes diminished, as is the opportunity to seek and provide 'intelligence about innovation opportunities around the world and serve as the organizational base for acquiring relevant knowledge' (Rycroft & Kash, 2004: 188).

While headquarters ultimately controls and coordinates all MNE activities and determines overall MNE strategy – within that overall strategy, subsidiaries have traditionally enjoyed varying degrees of latitude to develop specific strategies to meet demands from their local contexts, and at the same time to respond to and exploit external local opportunities. This relative autonomy and decision-making latitude enables subsidiaries to access knowledge, ideas and opportunities within their specific environments (Andersson, Forsgren & Holm, 2002), underpinning subsidiary contribution to generating knowledge and initiatives at the MNE level for diffusion and exploitation across the wider organisation (Teigland & Wasko, 2009; Williams & Lee, 2011). As highlighted, the scope to develop initiatives at the subsidiary level also hinges on an ability to leverage organisational knowledge and combinative capabilities within the MNE network.

With fewer opportunities to contribute to value chain activities comes a heightened burden to ensure that only the most promising of opportunities are pursued and that risks taken at the subsidiary management level are carefully calculated. It thus becomes apparent that the 'fine-slicing' of MNE activities is not a recipe that works for all subsidiaries in terms of developing initiatives. It is this realisation that prompts the research undertaken in this chapter. As researchers, we wanted to examine if individual subsidiaries could pursue initiative taking whilst simultaneously managing to curb headquarters concerns over risk-taking. We identify a tension between the need to focus on entrepreneurial/explorative activities whilst simultaneously engaging in structured exploitative activities, guided by the more formal analysis required to address headquarter concerns over unnecessary risk-taking at the local subsidiary level.

WHAT IS AMBIDEXTERITY AND WHY IS IT IMPORTANT FOR SUBSIDIARY INITIATIVE-TAKING?

The concept of ambidexterity was first coined by Duncan (1976) in explaining how organisations manage the tensions created when they face two competing (and seemingly contradictory) goals. Just as individuals may need to prioritise between two objectives (which may be mutually exclusive), the same can be said for organisations in deciding to pursue one course of action over an alternative. The basic premise of ambidexterity is that there can be a significant benefit in managing competing goals via either structural separation (assigned organisational units with different tasks) or by attempting to balance two goals simultaneously.

As an illustrative example, we could observe how an organisation with limited resources (such as automobile manufacturers) must decide to focus efforts either on the exploitation of existing technologies in a mature market (via a traditional focus on automobiles using fossil fuels) or should they instead focus efforts on more explorative technologies (such as green technologies). The returns allowed by the former are more immediate but may be limited in duration. In contrast, pursuing the latter will not provide a significant return on investment for quite some time, and will also require both a seismic shift in engineering capability and an increase in adoption by consumers. With such a focus on emerging technologies, there is also the risk that first-mover advantages by incumbent firms present in the market will create obstacles and that subsequent waves of engineering innovation could render their efforts obsolete. In this example, while it may be possible to pursue both goals simultaneously, it would likely require very significant structural separation within the organisation with different units focusing on two starkly different objectives.

Gibson & Birkinshaw (2004) distinguish between both approaches to ambidexterity, with ‘structural ambidexterity’ requiring the need for trade-offs (either/or) between pursuing two goals, in contrast to ‘contextual ambidexterity’ where both goals are pursued simultaneously (via a both/and approach). While structural ambidexterity is built on the premise of ‘dual structures’ (Duncan, 1976) implemented by separate business units focusing on specific goals, the alternative contextual approach recognises the need for a balance at the business unit level in the pursuit of opposing demands. Gibson & Birkinshaw (2004: 209) highlight that it is termed *contextual* ‘because it arises from features of its organizational context’ and includes a ‘behavioural capacity’ to simultaneously pursue two competing goals across an entire business unit.

It is important also to highlight the concept of ‘punctuated equilibrium’ which encompasses sequential sequencing of two alternative approaches (Burgelman, 2002; Gupta, Smith & Shalley, 2006). Such approaches are evidenced in studies such as Adler, Goldoftas & Levine (1999) in which they examined sequencing of objectives and periodic changeovers at Toyota where the focus shifted between the competing goals of flexibility and efficiency in a cyclical manner (and aligned with periodic automobile model changeovers). Although similar in terms of fulfilling two competing objectives the approach taken is in sharp contrast to a contextual approach that advocates for the ‘balancing’ of two goals simultaneously.

The traditional concept of ambidexterity has been applied to several organisational tensions and dilemmas including responsiveness and integration (Bartlett & Ghoshal, 1989; Harzing, 2000; Taggart, 1997), or the pursuit of flexibility and efficiency (Adler, Goldoftas & Levine, 1999; Eisenhardt, Furr & Bingham, 2010). Further, many researchers have examined the balancing of exploitation and exploration (Gupta, Smith & Shalley, 2006; He & Wong, 2004; O’Reilly & Tushman, 2004), yet none have done so at the subsidiary unit level, nor has research examined implications of examining subsidiary ambidexterity in the context of initiative-generation and subsidiary-led innovation.

We see value in adopting an ambidexterity lens to examining subsidiary initiatives and broader organisational innovation because of the unique context in which subsidiary units must operate and compete. A steady stream of research recognises competence creation at the subsidiary level as a driver behind organisational innovation (Cantwell & Mudambi, 2005). Further, highlighting the importance of subsidiary-driven innovation we observe many subsidiaries’ role ‘at the nexus of MNC driven innovation based on its unique ability to diffuse locally acquired knowledge which can ultimately upgrade the MNC as a whole (Reilly & Sharkey Scott, 2014: 190). Described as ‘an insider in two systems’ (Collinson & Wang, 2012: 1516) the national subsidiary is uniquely positioned to leverage both internal and external networks through multiple embeddedness (Andersson & Forsgren, 1996, 2000) and to be equally a source and recipient of MNE innovations and initiatives. The maintaining of the existing assigned subsidiary mandate must be balanced however with adding new value through the generation of initiatives – indicating that the capacity to be ambidextrous is a critical determinant in subsidiary sustainability.

HYPOTHESIS DEVELOPMENT

Exploitative Behaviour: Formal Analysis

'The essence of exploitation is the refinement and extension of existing competencies, technologies, and paradigms. Its returns are positive, proximate, and predictable' (March, 1991: 85). At the subsidiary level, we attribute this behaviour to encompass formal analysis*,* or the constant re-evaluation of plans and strategies in response to new understandings of market signals concerning what the subsidiary is already doing (Anderson, Covin & Slevin, 2009; Grinstein, 2008). Menon et al. (1999) contend that the generation of alternative strategic options – associated with a formal analytic style – allows subsidiary managers to better assess the value and viability of their available choices (Miller, 1993) given their existing capabilities. We suggest that those units exhibiting such behaviour, engaging in formal analysis, routinely scanning, and evaluating dynamic market activities are better positioned to generate alternative scenarios. Further, we propose that entrepreneurial subsidiaries which engage in formal analysis will be more likely to generate strategic initiatives.

In addition to assessing alternative scenarios, there is a need for screening ideas for viability and killing ideas deemed to be either too risky or misaligned with MNE strategic goals. In accordance, we propose that subsidiaries which adopt methodical approaches to examining strategic alternatives via robust formal analysis will be more likely to pursue initiatives.

Hypothesis 1. Formal analysis has a positive impact on the generation of subsidiary initiatives.

Explorative Behaviour: Entrepreneurial Orientation

Exploration is inextricability linked with initiative and encompasses 'the pursuit and acquisition of new knowledge' via learning (Gupta, Smith & Shalley, 2006: 693). March (1991: 73) refers to the 'vulnerability of exploration' in that returns gained from exploration are less certain, and more distant when compared to the returns associated with exploitation. In contrast to exploitation where returns are proximate and predictable, exploration brings uncertainty, risk and the potential for greater rewards and new possibilities (March, 1991; Schumpter, 1934).

At the subsidiary level, we build on previous work which examines entrepreneurial orientation – capturing pro-activeness, risk-taking and innovativeness (Covin et al., 2006). We argue that this local innovativeness, at the subsidiary level, is a product of subsidiary context and contributes to the development of strategic initiatives with the scope to drive wider organisational innovation. Pro-activeness, risk-taking and innovativeness become critical to the development of initiatives and will drive exploration of alternatives and engage the subsidiary in their realisation.

Contextual ambidexterity is shaped by behaviours within an organisation context (Gibson & Birkinshaw, 2004). Examining the subsidiary context, this suggests that there is a need for initiative at the local meso level to achieve innovative output at the macro level (e.g. in terms of new processes, products and organisational innovations) which can be diffused at the wider, global MNE level. There is a rich history of research capturing how entrepreneurial subsidiaries can be global innovative providers and the source of new ideas, products and processes which are subsequently diffused across MNE networks (see Birkinshaw, 1997; Birkinshaw, Hood & Jonsson, 1998; Andersson et al., 2002, 2007; Ghoshal & Bartlett, 1988; Gupta & Govindarajan, 1991, 2000).

Additionally, pro-activeness within subsidiary units is critical to subsidiaries in responding to environmental change. This drives the subsidiary's attempts to 'shape the environment' (Lumpkin & Dess 1996: 147) ensuring that relevant knowledge of market demand and opportunities are constantly updated and positioned for. Finally, we argue that risk-taking is a prerequisite to driving subsidiary initiatives. Previous research has captured the phenomenon of subsidiaries *bending the rules*, engaging in the development of initiatives without the express permission of the parent organisation (Delany, 2000). When such initiatives are successful the subsidiary may subsequently seek forgiveness (after the fact) and be rewarded in terms of expanding their role or mandate. By contrast, for evidence of less successful initiatives, there is a very significant and inherent risk that the subsidiary is deemed as wasteful of resources, or guilty of rent-seeking behaviour which could have a longer-term negative impact on subsidiary operations. In accordance, we highlight how risk plays a critical part in the pursuit of initiative-taking. In summary, we highlight that subsidiary entrepreneurial orientation will contribute to the development of initiatives.

Hypothesis 2. An Entrepreneurial Orientation will have a positive impact on the generation of subsidiary initiatives.

Contextual Ambidexterity: Complementarity in the Approach

In the above sections, we have addressed the critical role of explorative and exploitative approaches to driving initiative creation at the subsidiary level. We argue that through creating an entrepreneurial context and engaging in formal analysis, subsidiaries can more fully exploit the value of their proximity to local markets and networks (Boehe, 2007). In isolation, both of these factors are important, yet the subsidiary and MNE context is a unique one and for subsidiaries is shaped by conflicting objectives of adding new value (via explorative approaches) and simultaneously maintaining existing mandates (driven by exploitative approaches). Ultimately, for many subsidiaries, there is pressure to maintain the mandate through traditional exploitative roles including servicing the local market or focusing on specific value chain activities – but this should not overshadow the need to simultaneously add value through generating new knowledge and identifying contemporary solutions to new opportunities in external markets.

This requirement points to the need for complementarity in the approach taken, that subsidiaries achieve ambidexterity, or the interaction and blending of both exploitative and explorative strategies (Vahlne & Jonsson, 2017). Following this, we present our final hypothesis.

Hypothesis 3. Ambidexterity: capturing the interaction and blending of both exploitative and explorative strategies will lead to greater strategic initiative generation in the subsidiary.

METHODS, DATA AND ANALYSIS

Data was collected using a postal questionnaire targeted at the entire population of over 1,100 MNE subsidiaries located in Ireland. As a cross-sectional study, the data collected comes from several industries including electronics, I.T., pharmaceuticals, medical devices, chemicals, food and beverages, and telecommunications.

A comprehensive database was developed based on the website of the Industrial Development Authority Ireland (the Irish National Development Agency, which is tasked with attracting foreign direct investment). Following a postal questionnaire, data were collected from 258 subsidiary managers (with an approximate response rate of 23 per cent). Before data collection, a draft questionnaire was pre-tested on a mix of experienced commercial managers and academics. Seven-point Likert scales (anchored at 1= 'not at all' and 7 = 'to a very great extent') were utilised throughout, and existing measures were utilised (modified where necessary to reflect the subsidiary as the unit of analysis) to increase content validity. Responses were reverse-scored to address any tendency towards acquiescence – the 'tendency to agree with attitude statements regardless of content' (Podsakoff et al., 2003: 883). The sample used includes subsidiaries based in a number of globally dispersed MNEs headquarted in Australia, Austria, Chile, China, Germany, India, Spain, U.K. and U.S.A. The average age of subsidiaries sampled is 21 years. Measurements used to collect data are outlined below with further detail provided in Table 7A.1 in the Appendix.

Strategic Initiatives (as the dependent variable and measure of subsidiary driven innovation): A three-item scale, adapted from Birkinshaw et al. (1998), was used to capture the range of strategic initiatives subsidiaries can undertake including new product development. Respondents were asked to measure the items over the previous five years: higher-level scores indicate greater levels of initiatives over the period.

Exploration: A nine-item scale was adapted to suit the subsidiary analysis level from Covin & Slevin's (1989) widely accepted entrepreneurial orientation scale. Higher scores indicate an entrepreneurial rather than a conservative orientation.

Exploitation: An original scale suggested by Bailey et al. (2000) for measuring formal planning was adapted to relate specifically to the development of exploitation at the subsidiary level, and to capture the subsidiary's approach to scanning and developing plans: higher scores indicate more rigid and mechanistic approaches to strategy development.

Control Variables: We adopted three control variables: subsidiary size, age, and environmental dynamism. Size (measured as the total number of subsidiary employees) was log-transformed to overcome any skewness in our data, as was age – the number of years the subsidiary had existed. Research has demonstrated the strong influence of an organisation's external environment on stimulating entrepreneurship (Covin & Slevin, 1991; Karagozoglu & Brown, 1988; Russell, 1999), suggesting it should be included as a control variable. We operationalised the level of environmental turbulence using Menon et al.'s (1999) market-related measures, which reflected the degree of change in market competition, opportunities and the rate of change in product technology.

We conducted a structural equation modelling (SEM) analysis to determine the impact of explorative and exploitative behaviours on initiative generation (as the dependent variable).

Additionally, an ordinary least squares (OLS) regression analysis was conducted to ensure methodological robustness within this selection process. Interaction effects were examined in line with our primary hypothesis: '*Ambidexterity: capturing the interaction and blending of both exploitative and explorative strategies will lead to greater strategic initiative generation in the subsidiary*. To this effect, each subsidiary, as the relevant unit of analysis, was subsequently mapped in a 2x2 cluster matrix of low/high, high/high, low/low and high/low based on their relative scorings for explorative/exploitative behaviour (Figure 7.1). Each quadrant contains between 57 and 68 units of analysis, indicating a relatively even spread of subsidiaries. This approach allowed us to examine each quadrant and the complementarity effects of both explorative/exploitative behaviour across the subsidiaries included within our sample. The SEM model captures the position of each subsidiary within each quadrant and factors in control variables including subsidiary age, the number of employees, environmental dynamism, and the industry type. The purpose of the SEM structure is to specifically account for variation and covariation of the measured variables, where confirmatory factor analysis tests the models of these estimated relationships between latent variables.

Owing to different levels of ambidexterity expected across subsidiaries we examine ambidexterity as a latent variable based on observations of levels of both exploitative and explorative in the model. Therefore, to verify Hypothesis 3, we estimate the above quadrants, seeking specific differentials based on the quadrant reflective of both high exploitation and high exploration (the top-right quadrant in Figure 7.1). To analyse such comparative effects, the selected methodological structure is estimated based on the entire sample of observations, but then on a quadrant-by-quadrant basis, to observe comparative differentials. Estimations based on the terms $\gamma_{Exploit \to INT}$ and $\gamma_{EO \to INT}$ present estimations of influence upon initiative within each estimation sample, while controlling for subsidiary age, the number of employees, industry type and dynamism, through which influence can be compared.

FINDINGS

In the following section, we introduce the main findings of the study and discuss each of the hypotheses addressed. Hypotheses 1 and 2 were both supported showing the positive impact of both factors on the generation of initiatives at the subsidiary level. Additionally, our findings reveal the positive complementarity effects of ambidexterity (the balancing and simultaneous pursuit of exploration and exploitation) on the generation of initiatives at the subsidiary level, showing support for Hypothesis 3.

Figure 7.1 captures the 258 subsidiaries mapped in a 2x2 cluster matrix of low/high, high/high, low/low and high/low based on their relative scorings for explorative/exploitative behaviour.

Table 7.1 captures the summary statistics for the entire sample denoted by differentials in Exploitation and Exploration. The table includes results from each of the four clusters, denoting low/high, high/high, low/low and high/low based on their relative scorings for explorative/exploitative behaviour and the control variables.

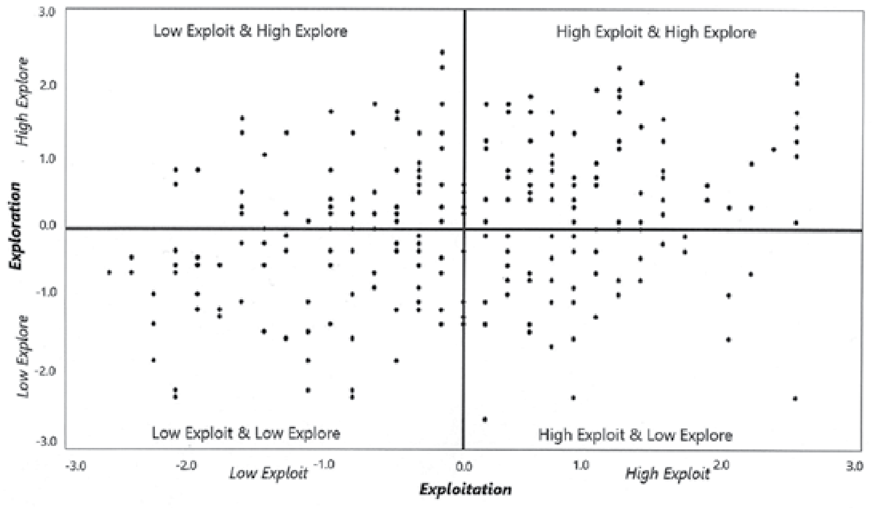

Figure 7.1 *Cluster matrix for all 258 subsidiaries in sample*

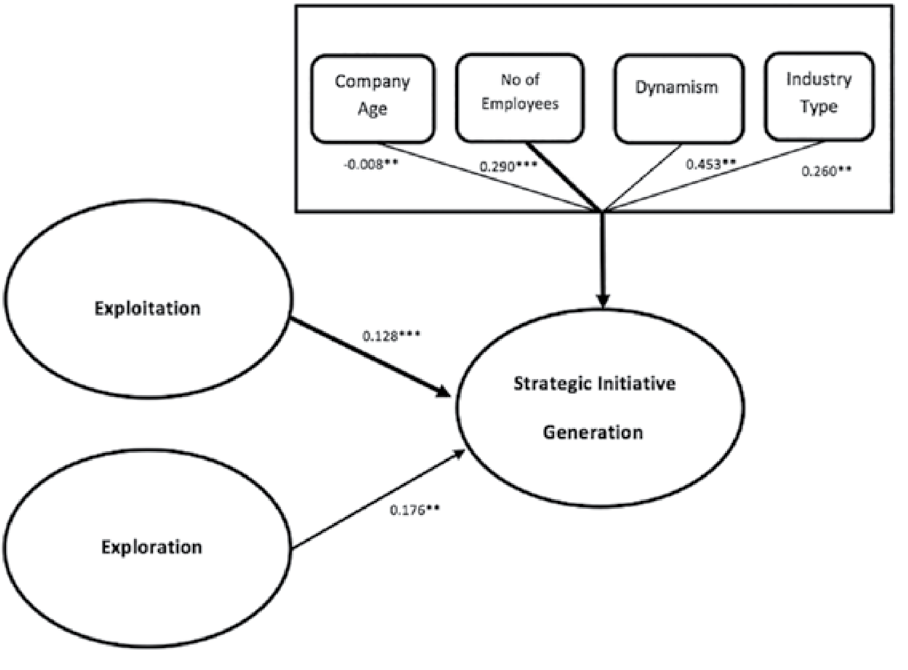

Figure 7.2 *SEM analysis for the entire sample*

Table 7.1 Summary statistics for the entire sample

	Mean	Min	Max	Std. Dev.	Skew	Kurt
Total Grouping (n = 258)						
Subsidiary Age	21.262	0.000	215.000	28.168	4.734	27.777
Employee Number (ln)	4.273	1.000	8.294	1.533	0.138	-0.488
Dynamism	4.444	0.000	6.500	0.958	−0.764	2.869
Exploitation	4.533	1.833	7.000	1.217	−0.073	−0.564
Exploration / Entrepreneurial Orientation	4.318	0.000	6.700	1.141	−0.747	1.647
High Exploitation – High EO (n = 68)						
Subsidiary Age	27.441	0.000	200.000	39.793	3.604	13.499
Employee Number (ln)	4.560	1.386	7.601	1.557	0.109	−0.683
Dynamism	4.748	3.333	6.333	0.768	0.253	−0.765
Exploitation	5.645	4.667	7.000	0.703	0.604	−0.639
Exploration / Entrepreneurial Orientation	5.256	4.400	6.500	0.566	0.416	−0.802
High Exploitation – Low EO (n = 62)						
Subsidiary Age	20.809	0.000	70.000	16.993	1.260	1.375
Employee Number (ln)	3.998	1.099	6.551	1.278	−0.337	−0.346
Dynamism	4.004	0.000	5.667	0.997	−1.311	4.465
Exploitation	5.383	4.667	7.000	0.582	0.831	0.291
Exploration / Entrepreneurial Orientation	3.481	0.000	4.400	0.926	−2.441	7.239
Low Exploitation – High EO (n = 57)						
Subsidiary Age	15.319	0.000	75.000	13.764	1.856	6.171
Employee Number (ln)	4.496	1.386	8.294	1.693	0.193	−0.635
Dynamism	4.901	3.167	6.500	0.767	−0.122	−0.490
Exploitation	3.773	2.333	4.667	0.641	−0.762	−0.469
Entrepreneurial Orientation	5.130	4.500	6.700	0.582	0.850	−0.082
Low Exploitation – Low EO (n = 71)						
Subsidiary Age	20.103	0.000	215.000	27.587	5.471	37.719
Employee Number (ln)	4.021	1.000	7.601	1.545	0.135	−0.681
Dynamism	4.100	0.000	6.000	0.979	−0.876	3.646
Exploitation	3.422	1.833	4.500	0.778	−0.391	−1.072
Exploration / Entrepreneurial Orientation	3.462	0.000	4.400	0.790	−1.812	5.105

Figure 7.2 captures the entire model generated by the SEM analysis, including control variables. Findings relating to Hypotheses 1 and 2 are also derived from this.

Hypothesis 1 is supported throughout all analysed observations, including those of the sub-groups based on both high and low estimates of both Exploitation and EO, respectively. In all analysed groupings, there exist both positive and significant estimated values, that can be identified in Table 7.2. The scale of each estimate, and associated significance, varies quite substantially across each methodological structure. However, the estimated value remains positive throughout each form.

Hypothesis 2 is also supported by the data and is evidenced by the results presented in Table 7.2, where there exist both positive and significant estimates for each SEM structure which is defined by overall estimates and subgroups.

Hypothesis 3 is also supported. The grouping for subsidiaries with high exploitation and high exploration (included in Table 7.1 and Figure 7.3) is of particular interest to Hypothesis 3. Within this grouping, we can see that while explorative behaviour plays an important role in the generation of initiatives, subsidiaries that also simultaneously demonstrated high levels of exploitation as demonstrated by their formal analysis were almost twice as likely to generate

Table 7.2 Results of SEM analysis with controlled variables and defined sub-groupings

Path coefficients (t-value in parentheses)	OLS	SEM
Panel A: Overall Results		
$\gamma_{Exploit \rightarrow INT}$	0.126*** (4.81)	0.128*** (5.04)
$\gamma_{EO \rightarrow INT}$	0.148* (1.79)	0.176** (2.08)
$\gamma_{AGE \rightarrow INT}$	−0.008 ** (−2.26)	−0.008** (−2.30)
$\gamma_{EMPL \rightarrow INT}$	0.289*** (4.64)	0.290*** (4.71)
$\gamma_{IND \rightarrow INT}$	0.453** (2.35)	0.453** (2.38)
$\gamma_{DYN \rightarrow INT}$	0.261** (2.50)	0.260**(2.53)
Panel B: High Exploit – High EO		
$\gamma_{Exploit \rightarrow INT}$	0.233* (1.81)	0.231* (1.83)
$\gamma_{EO \rightarrow INT}$	0.478*** (4.21)	0.477*** (4.29)
$\gamma_{AGE \rightarrow INT}$	−0.003 (−0.65)	−0.003 (−0.69)
$\gamma_{EMPL \rightarrow INT}$	0.316*** (3.26)	0.319*** (3.29)
$\gamma_{IND \rightarrow INT}$	0.578*** (4.29)	0.579*** (4.38)
$\gamma_{DYN \rightarrow INT}$	0.327* (1.82)	0.325* (1.92)
Panel C: High Exploit – Low EO		
$\gamma_{Exploit \rightarrow INT}$	0.119** (2.29)	0.119** (2.31)
$\gamma_{EO \rightarrow INT}$	0.126 *** (3.00)	0.148*** (3.09)
$\gamma_{AGE \rightarrow INT}$	−0.138 (−0.96)	−0.137 (−1.04)
$\gamma_{EMPL \rightarrow INT}$	0.362** (2.11)	0.381** (2.28)

Path coefficients (t-value in parentheses)	OLS	SEM
$\gamma_{IND \to INT}$	0.652** (2.30)	0.649** (2.25)
$\gamma_{DYN \to INT}$	0.081 (1.33)	0.089 (1.36)
Panel D: Low Exploit – High EO		
$\gamma_{Exploit \to INT}$	0.329** (2.38)	0.342** (2.39)
$\gamma_{EO \to INT}$	0.268* (1.81)	0.256* (1.78)
$\gamma_{AGE \to INT}$	−0.014 (−1.01)	−0.015 (−1.10)
$\gamma_{EMPL \to INT}$	0.255* (1.99)	0.256** (2.16)
$\gamma_{IND \to INT}$	0.223** (2.31)	0.223** (2.27)
$\gamma_{DYN \to INT}$	0.242 (0.86)	0.243 (0.93)
Panel E: Low Exploit – Low EO		
$\gamma_{OPA \to INT}$	0.527*** (2.80)	0.421*** (3.95)
$\gamma_{EO \to INT}$	0.061** (2.47)	0.082* (1.89)
$\gamma_{AGE \to INT}$	−0.008* (1.77)	−0.008* (1.71)
$\gamma_{EMPL \to INT}$	0.179* (1.86)	0.178* (1.96)
$\gamma_{IND \to INT}$	0.229 (0.78)	0.231 (1.13)
$\gamma_{DYN \to INT}$	0.158* (1.79)	0.155** (2.13)

Notes: T-values are presented in parentheses. ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively. INT denotes the relationship with strategic initiative generation as our dependent variable. To investigate Hypothesis 3, based on the increased blending of both exploitative and explorative strategies, testing specifically as to whether they will lead to greater strategic initiative generation in the subsidiary, we observe that in Panel B, the estimated coefficients are significantly positive at 0.233 and 0.478 for exploitative and explorative strategies, respectively. This result indicates substantial, simultaneous improvements upon that of the baseline methodology presented in Panel A. OLS estimations add both methodological and estimate robustness.

initiatives (compared to the average subsidiary in the model). Our findings, therefore, highlight the role of complementarity in the approach taken and support the contextual approach to ambidexterity whereby there is a balance between the dual objectives of both exploitative and explorative behaviour. For subsidiaries, this indicates that initiative generation is not only contingent upon traditional explorative approaches but should also encompass more exploitative behaviours including formal analysis involving the routine scanning and evaluation of market activities and generation of strategic alternatives. Below we now outline the control variables used within the study.

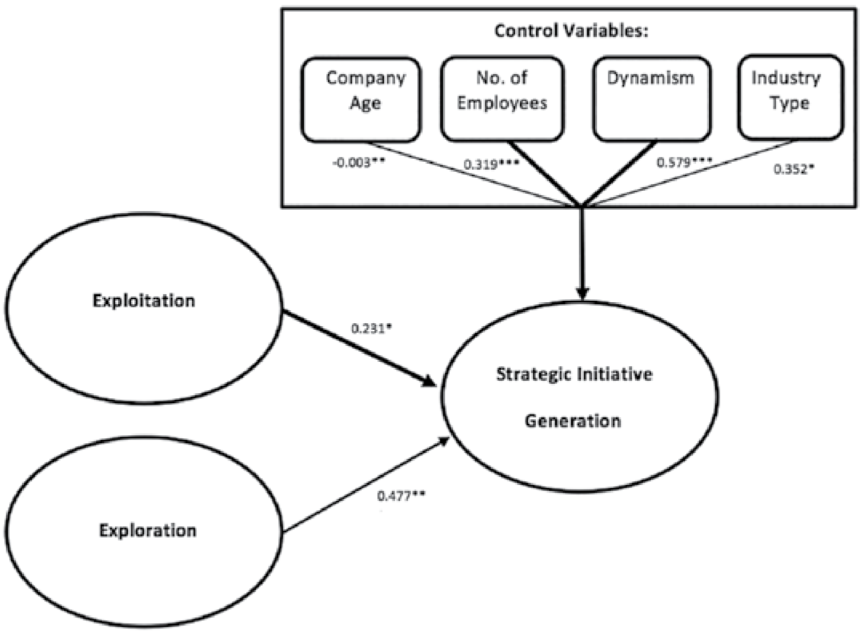

Figure 7.3 SEM analysis of high exploitation and high exploration grouping

Control Variables

The control variables 'Size' and 'Age' were both key factors in determining differences between the low/low grouping and the high/high grouping. As the high/high grouping was the most prolific at generating initiatives this presents an interesting finding for both theory and practice. For size, we would expect that higher numbers of employees would lead to greater potential for developing initiatives. This suggests that subsidiaries limited by size may find it particularly difficult to leverage smaller numbers of personnel to effectively manage both exploitation and exploration strategies simultaneously. An alternative approach, which may be more suitable for such subsidiaries is that of 'punctuated equilibrium' or sequential sequencing approach, which promotes a temporary focus on one of two alternative approaches (Burgelman, 2002).

Regarding ‘Age’, we could attribute differences between the high/high and low/low groupings to more path-dependent knowledge developed on-site in the former, along with greater leveraging of external networks which are a typical source of new knowledge (Achcaoucaou, Miravitlles & Leon-Darder, 2014). We suspect that age is likely a major contributory factor in determining the extent of a subsidiary’s embeddedness both locally and within the MNE network, which in turn has been positively linked with initiative generation in previous studies (Garcia-Pont et al. 2009). However, we should also be cognisant of bureaucracy and the barriers to responsiveness in older organisations (Ranger-Moore, 1997).

For ‘Industry Dynamism’ (capturing change and responsiveness in the broader environment), there is little differential in observations based on our sample of subsidiaries. Noting that the average estimate for industry dynamism is 4.44, estimates range between 4.00 and 4.90. However, we must also note that in sub-groups inclusive of low EO, there exists evidence of negative skewness and positive kurtosis of results relating to industry dynamism, which is similar to the estimates of the total grouping, where skewness it found to be −0.76, and kurtosis 2.87. Whereas, for sub-groups inclusive of high EO estimates, skewness is found to be close to zero, or positive, and dynamism kurtosis in both sub-group estimates is found to be positive. Such findings support the idea that subsidiary initiatives should be conceptualised as multi-level phenomena; including both the organisation and external network in which the subsidiary is embedded (Strutzenberger & Ambos, 2014).

Finally, for industry type, we observed some variation based on different sectors using Standard Industrial Classification (SIC) codes based on ten observations of industry type. However, given the uneven spread of subsidiaries across these multiple industry types, we omitted these observations from the research findings.

DISCUSSION AND IMPLICATIONS FOR MANAGEMENT

Managing Dual Objectives and Harnessing the Potential for Subsidiary-driven Innovation

Decades of research have highlighted the unique role of subsidiary units in driving wider MNE innovation (Ghoshal & Bartlett, 1988; Gupta & Govindarajan, 1991, 2000). More recently, researchers have highlighted how shifts in the configuration of global value chains have changed the way MNE initiatives arise (Reilly & Sharkey Scott, 2014). In this chapter, we highlight how the scope to generate subsidiary initiative benefits from an organisational context whereby subsidiary units can balance both exploitative and explorative behaviour. More specifically, we highlight the role of formal analysis, encompassing an ability to routinely scan and evaluate market activities along with more traditional entrepreneurial approaches of risk-taking, pro-activeness and innovation.

The motivation behind this study was to examine the reasons why some subsidiaries are better at generating strategic initiatives than others. With significant implications for innovation at the MNE level, we examine the contextual approach to ambidexterity, whereby efforts are made to balance two objectives (Gibson & Birkinshaw, 2004) via the simultaneous pursuit of both explorative and exploitative strategies at the subsidiary level. The high-performing subsidiaries in the sample (denoted as those that scored high on both dimensions) were significantly more likely (almost twice as likely) to generate strategic initiatives when compared with the average subsidiary within our model. Our SEM analysis, therefore, captures how complementarity in approaches to exploration and exploitation can manifest in the creation and development of new and novel initiatives at the subsidiary level. We highlighted how initiative taking at the subsidiary level can be considered as innovation in action. While the focus of much research has traditionally been on explorative and entrepreneurial approaches to driving innovation, we advance that exploitative roles, including approaches that encompass formal analysis, and the leveraging of existing knowledge, are of critical importance for many subsidiaries.

The capacity to be ambidextrous, encompassing the behavioural ability to balance both exploitative and explorative behaviour helps explain why some subsidiaries are better positioned to generate initiatives and contribute to their MNE, but we also need to examine the wider MNE context and view the subsidiary as a product of that environment. Our study took place in Ireland, deemed to be a high-cost location and one where subsidiary units arguably had a greater onus to demonstrate significant initiatives to continue to justify their existence. Dynamism in local industries is also a factor to consider, cognisant of the adage that *a rising tide lifts all boats*, it is generally understood that highly competitive and dynamic markets are a more frequent source of new innovations. Many of the industries included in this study (such as electronics, I.T. and telecommunications) are characterised as highly competitive and dynamic environments. Therefore, local environments, including relative levels of environmental dynamism, are also likely to play a significant role in determining why some subsidiaries may be better than others at generating initiatives. Finally, we must also recognise that engagement by subsidiary managers in MNE strategy development not only paves the way for subsidiaries to contribute to wider organisational strategy (O’Brien et al., 2018) but also gives subsidiary managers a seat at the table – and a potential opportunity to lobby for greater autonomy required to pursue subsidiary-driven initiatives. To seize new opportunities, and to maximise their contributions, subsidiary units will require this freedom (Ciabuschi & Martín, 2011; Ghoshal & Bartlett, 1988; Hedlund, 1986; Gammelgaard et al., 2012).

Structural Ambidexterity and Nested Innovation in MNEs

We view the modern MNE as a network, where the individual subsidiary is positioned within a nested network (an individual node with both intra-organisational and inter-organisational connections). For example, within the intra-organisational network subsidiaries engage in collaborative efforts to build combinative capabilities – with breakthroughs often developed in tandem with multiple units working together – showcasing an ability to leverage knowledge-sharing across MNE networks (Reilly & Sharkey Scott, 2014; Tippmann et al. 2018). Interdependencies between subsidiary units ensure that they must work together to develop new and innovative solutions for both the challenges and opportunities facing the MNE. When successful, such initiatives are diffused across subsidiaries and ready to be exploited across the MNE network.

Intra-organisational networks are not the only networks that subsidiary units can tap into, however. Exploration of new and novel solutions may also come from the local external environment, via inter-organisation connections with external stakeholders. Proximity to local environments and the experience garnered from those local environments can in itself be considered as ‘external boundary-spanning capability’ and drives innovation for subsidiaries that have the autonomy to pursue opportunities for innovation (Nuruzzaman, Gaur & Sambharya, 2019: 92). We also highlight how previous research captures the unique benefits that multiple embeddedness affords subsidiaries in terms of seizing new opportunities for initiative (Andersson & Forsgren, 1996, 2000).

While many subsidiaries sampled in this study appear capable of managing the dual objectives of exploitation and exploration, recent trends of MNEs' restructuring activities point to increasing value chain disaggregation and the fine-slicing of MNE activities globally (Beugelsdijk, Pedersen & Petersen, 2009; Buckley, Craig & Mudambi, 2019; Nell, Kappen & Laamanen, 2017). Modularisation of value chain activities ensures greater efficiencies by removing duplication of activities across MNE networks, yet also reduces the scope for subsidiary driven initiatives. In accordance, it is expected that we will begin to observe greater levels of structural ambidexterity (involving the separation of distinct organisation units to achieve different objectives) across many MNEs as they shift from the traditional national, or miniature-replica subsidiary (Gupta & Govindarajan, 1991; White & Poynter, 1984) towards networks of subsidiaries focusing specifically on specialised exploitative or explorative roles. The increasing prevalence of dedicated 'centres of excellence' and 'superstar subsidiaries' (Andersson & Forsgren, 2000; Blomkvist, Kappen & Zander, 2014; Moore, 2001) captures this phenomenon in terms of dedicated exploratory roles and raises some important implications for managing innovation within the MNE.

Firstly, while some subsidiaries may secure their position within the MNE network as a centre of excellence, for others, sustained efforts to fine-slice activities across global value chains may result in more transactional approaches to the allocation of MNE activities. Subsidiaries with a specialised remit may not have the same opportunities to contribute to MNE innovations due to a narrower knowledge of wider, related MNE activities.

Secondly, for subsidiaries with primarily exploitative roles, if MNEs choose to focus almost exclusively on lower costs of production, they may not allow the autonomy necessary for initiative generation. Capturing these concerns, Reilly and Sharkey Scott (2014: 194) highlight the dangers of such approaches, stressing how 'collaborative subsidiary efforts pave the way for incremental approaches to innovation'. This is particularly relevant for the sustainability of subsidiaries in developing economies. Research increasingly recognises the role of subsidiaries in emerging economies as a growing source of innovation (Agarwal, Brem & Dwivedi, 2020). There is also, however, a growing trend of MNEs opting to re-shore activities (Delis, Driffield & Temouri 2019). If the allocation of MNE mandates becomes more short-lived and/or increasingly triggered by wider macro-environmental concerns, this may threaten the ability of many MNEs to fully leverage the innovative potential of subsidiaries in emerging economies.

CONCLUSION

Within MNE networks, comprising different activities and mandates across the globe, initiatives generated locally must have global applicability and be capable of being exploited across the network. The management challenge, at the subsidiary, is to adopt an ambidextrous approach, exploiting their existing capabilities while entrepreneurially generating new initiatives, ultimately adding value to the wider network to justify their continued existence.

REFERENCES

Achcaoucaou, F., Miravitlles, P., & Leon-Darder, F. (2014). Knowledge sharing and subsidiary R&D mandate development: a matter of dual embeddedness. *International Business Review*, 23, 76–90.
Adler, P. S., Goldoftas, B., & Levine, D. I. (1999). Flexibility versus efficiency? A case study of model changeovers in the Toyota production system. *Organization Science*, 10, 43–68.
Ambos, T. C., Andersson, U., & Birkinshaw, J. (2010). What are the consequences of initiative-taking in multinational subsidiaries? *Journal of International Business Studies*, 42, 1099–118.
Anderson, B., Covin, J., & Slevin, D. P. (2009). Understanding the relationship between entrepreneurial orientation and strategic learning capability: an empirical investigation. *Strategic Entrepreneurship Journal* 3, 218–40.
Andersson, U., Bjorkman, I., & Forsgren, M. (2005). Managing subsidiary knowledge creation: the effect of control mechanisms on subsidiary local embeddedness. *International Business Review*, 522 (14), 521–38.
Andersson, U. & Forsgren, M. (1996). Subsidiary embeddedness and control in the multinational corporation. *International Business Review* 5 (5), 487–508.
Andersson, U. & Forsgren, M. (2000). In search of centres of excellence: network embeddedness and subsidiary roles in multinational corporations. *Management International Review*, 40(4), 329–50.
Andersson, U., Forsgren, M., & Holm, U. (2002). The strategic impact of external networks: subsidiary performance and competence development in the multinational corporation. *Strategic Management Journal*, 23 (11), 979–96.
Andersson, U., Forsgren, M., & Holm, U. (2007). Balancing subsidiary influence in the federative MNC – a business network perspective. *Journal of International Business Studies*, 38 (5), 802–18.
Agarwal, N., Brem, A., & Dwivedi, S. (2020). Frugal and reverse innovation for harnessing the business potential of emerging markets—the case of a Danish MNC. *International Journal of Innovation Management*, 24 (1). https://doi.org/10.1142/S1363919620500097.
Bailey, A., Johnson, J., & Daniels, K. (2000). Validation of a multi-dimensional measure of strategy development processes. *British Journal of Management*, 11 (2), 151–62.
Bartlett, C. A. & Ghoshal, S. (1989). *Managing Across Borders: The Transnational Solution*. Boston, MA: Harvard Business School Press.
Beugelsdijk, S., Pedersen, T., & Petersen, B. (2009). Is there a trend towards global value chain specialization? An examination of cross border sales of US foreign affiliates. *Journal of International Management*, 15 (2), 126–41.
Birkinshaw, J. M. (1997). Entrepreneurship in multinational corporations: the characteristics of subsidiary initiatives. *Strategic Management Journal*, 18 (3), 207–29.
Birkinshaw, J. M. & Gibson, C. (2004). Building ambidexterity into an organization. *MIT Sloan Management Review*, 45 (4), 47–55
Birkinshaw, J. M., Hood, N., & Jonsson, S. (1998). Building firm-specific advantages in multinational corporations: the role of the subsidiary initiative. *Strategic Management Journal*, 19, 221–241.
Birkinshaw, J. M., Hood, N., & Young, S. (2005). Subsidiary entrepreneurship, internal and external competitive forces, and subsidiary performance. *International Business Review*, 14, 227–48.
Blomkvist, K., Kappen, P., & Zander, I. (2014). Superstar inventors – towards a people-centric perspective on the geography of technological renewal in the multinational corporation. *Research Policy*, 43, 669–82.
Boehe, D. M. (2007). Product development in MNC subsidiaries: local linkages and global interdependencies. *Journal of International Management*, 23, 488–512.
Boojihawon, D. K., Dimitratos, P., & Young, S. (2007). Characteristics and influences of multinational subsidiary entrepreneurial culture: the case of the advertising sector, *International Business Review*, 16 (5), 549–72.
Buckley, P. J. (2009a). Internalisation thinking: from the multinational enterprise to the global factory. *International Business Review*, 18, 224–35.
Buckley, P. J. (2009b). The impact of the global factory on economic development. *Journal of World Business*, 44 (2), 131–43.
Buckley, P. J. (2011). International integration and coordination in the global factory. *Management International Review*, 51 (2), 269–83.

Buckley, P. J., Craig, T. D., & Mudambi, R. (2018). Time to learn? Assignment duration in global value chain organization. *Journal of Business Research*, 103, 508–18.
Buckley, P. J. & Ghauri, P. N. (2004). Globalisation, economic geography, and the strategy of multinational enterprises. *Journal of International Business Studies*, 35, 81–98.
Burgelman, R. A. (2002). Strategy as vector and the inertia of coevolutionary lock-in. *Administrative Science Quarterly*, 47, 325–57.
Cantwell, J., & Mudambi, R. (2005). MNE competence-creating subsidiary mandates. *Strategic Management Journal*, 26, 1109–28.
Ciabuschi, F., Holm, U., & Martín, O. (2014). Dual embeddedness, influence and performance of innovating subsidiaries in the multinational corporation. *International Business Review*, 23 (5), 897–909.
Ciabuschi, F. & Martín, O. M. (2011). Effects of subsidiary autonomy on innovation development and transfer intensities. In: Verbeke, A., Tavares-Lehmann, A. T. & Van Tulder, R. (eds.), *Entrepreneurship in the Global Firm*. Bingley: Emerald, 251–73.
Collinson, S. C. & Wang, R. (2012). The evolution of innovation capability in multinational enterprise subsidiaries: dual network embeddedness and the divergence of subsidiary specialisation in Taiwan. *Research Policy*, 41, 1501–18.
Covin, J. G., Green, K. M., & Slevin, D. P. (2006). Strategic process effects on the entrepreneurial orientation – sales growth relationship. *Entrepreneurship Theory and Practice*, 30 (1), 57–81.
Covin, J. G. & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal*, 10, 75–87.
Covin, J. G. & Slevin, D. P. (1991). A conceptual model of entrepreneurship as firm behaviour. *Entrepreneurship Theory and Practice*, 16 (1), 7–26.
Delany, E. (2000). Strategic development of the multinational subsidiary through subsidiary initiative-taking. *Long Range Planning*, 33, 220–44.
Delis, A., Driffield, N., & Temouri, Y. (2019). The global recession and the shift to re-shoring: myth or reality? *Journal of Business Research*, 103, 632–43.
Duncan, R. (1976). The ambidextrous organization: designing dual structures for innovation. In: Killman, R. H., Pondy, L. R., & Sleven, D. (eds.), *The Management of Organization*. New York: North Holland, 167–88.
Eisenhardt, K. M., Furr, N., & Bingham, N. (2010). Crossroads microfoundations of performance: balancing efficiency and flexibility in dynamic environments. *Organization Science*, 21 (6), 1263–73.
Figueiredo, P. N. (2011). The role of dual embeddedness in the innovative performance of MNE subsidiaries: evidence from Brazil. *Journal of Management Studies*, 48, 417–40.
Gammelgaard, J., McDonald, F., Stephan, A., Tüselmann, H., & Dörrenbächer, C. (2012). The impact of increases in subsidiary autonomy and network relationships on performance. *International Business Review*, 21, 1158–72.
Garcia-Pont, C., Canales, J. I., & Noboa, F. (2009). Subsidiary strategy: the embeddedness component. *Journal of Management Studies*, 46, 182–214.
Ghoshal, S. & Bartlett, C. A. (1988). Creation, adoption and diffusion of innovations by subsidiaries of multinational corporations. *Journal of International Business Studies*, 19, 365–88.
Gibson, C. B. & Birkinshaw, J. (2004). The antecedents, consequences, and mediating role of organizational ambidexterity. *Academy of Management Journal*, 47, 209–26.
Grinstein, A. (2008). The effect of market orientation and its components on innovation consequences: a meta-analysis. *Journal of the Academy of Marketing Science*, 36 (2), 166–73.
Gupta, A. K. & Govindarajan, V. (1991). Knowledge flows and the structure of control within multinational corporations. *Academy of Management Review*, 16 (4), 768–92.
Gupta, A. K. & Govindarajan, V. (2000). Knowledge flows within multinational corporations. *Strategic Management Journal*, 21 (4), 473–97.
Gupta, A. K., Smith, K. G., & Shalley, C. E. (2006). The interplay between exploration and exploitation. *Academy of Management Journal*, 49 (4), 693–706.
Hakala, H., Sirén, C., & Wincent, J. (2016). Entrepreneurial orientation and international new entry: the moderating role of autonomy and structures in subsidiaries. *Journal of Small Business Management*, 54, 90–112.
Harzing, A.-W. (2000). An empirical analysis and extension of the Bartlett and Ghoshal typology of multinational companies. *Journal of International Business Studies* 31 (1), 101–32.

He, Z. L. & Wong, P. K. (2004). Exploration vs. exploitation: an empirical test of the ambidexterity hypothesis. *Organization Science*, 15, 481–94.
Hedlund, G. (1986). The hypermodern MNC – a heterarchy? *Human Resource Management*, 25, 9–35.
Karagozoglu, N. & Brown, W. B. (1988). Adaptive responses by conservative and entrepreneurial firms. *Journal of Product and Innovation Management*, 5, 257–68.
Lumpkin, G. T. & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21, 135–72.
March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2 (1), 71–87.
Menon, A., Bharadwaj, S. G., Adidam, P. T., & Edison, S. W. (1999). Antecedents and consequences of marketing strategy making, a model and a test. *Journal of Marketing*, 63 (2), 18–31.
Miller, D. (1993). Configurations revisited. *Strategic Management Journal*, 17 (7), 505–12.
Moore, K. (2001). A strategy for subsidiaries: centres of excellence to build subsidiary specific advantages. *Management International Review*, 41 (3), 275–90.
Nell, P., Kappen, P., & Laamanen, T. (2017). Reconceptualising hierarchies: the disaggregation and dispersion of headquarters in multinational corporations. *Journal of Management Studies*, 54, 1121–43.
Nieto, M. J. & Santamaría, L. (2007). The importance of diverse collaborative networks for the novelty of product innovation. *Technovation*, 27 (6–7), 367–77.
Nuruzzaman, N., Gaur, A. S., & Sambharya, R. B. (2019). A microfoundations approach to studying innovation in multinational subsidiaries. *Global Strategy Journal*, 9 (1), 92–116.
O'Brien, D., Sharkey Scott, P., Andersson, U., Ambos, T., & Fu, N. (2018). The micro-foundations of subsidiary initiatives: how subsidiary-manager activities unlock entrepreneurship. *Global Strategy Journal*, 9 (1), 1–26.
O'Reilly, C. A. & Tushman, M. L. (2004). The ambidextrous organization. *Harvard Business Review*, 82, 74–81.
Podsakoff, P. M., MacKenzie, S.B., Lee, J., & Podsakoff, N. P. (2003). Common method variance biases in behavioural research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88 (5), 879–903.
Ranger-Moore, J. (1997). Bigger may be better, but is older wiser? Organizational age and size in the New York life insurance industry. *American Sociological Review*, 62, 903–20.
Reilly, M. & Sharkey Scott, P. (2014). Subsidiary driven innovation within shifting MNC structures: identifying new challenges and research directions. *Technovation*, 34 (3), 190–202.
Reilly, M. & Sharkey Scott, P. (2016). The ambidextrous subsidiary: strategies for alignment, adaption & managing allegiances. In: Ambos, T. C., Ambos, B., & Birkinshaw, J. (eds), *Research in Global Strategic Management*. Bingley: Emerald.
Russell, R. D. (1999). Developing a process model of intrapreneurial systems: a cognitive mapping approach. *Entrepreneurship Theory and Practice*, 23 (3), 65–84.
Rycroft, R. W. & Kash, D. E. (2004). Self-organizing innovation networks: implications for globalization. *Technovation*, 24, 187–97.
Schmid, S., Dzedek, L.R., & Lehrer, M. (2014). From rocking the boat to wagging the dog: a literature review of subsidiary initiative research and integrative framework. *Journal of International Management*, 20, 201–18.
Schumpter, J. A. (1934). *The Theory of Economic Development*. Cambridge, MA: Harvard University Press.
Strutzenberger, A. & Ambos, T. C. (2014). Unravelling the subsidiary initiative process: a multilevel approach. *International Journal of Management Reviews*, 16, 314–39.
Taggart, J. H. (1997). An evaluation of the integration-responsiveness framework: MNC manufacturing subsidiaries in the UK. *Management International Review*, 37, 295–318.
Teigland, R. & Wasko, M. (2009). Knowledge transfer in MNCs: examining how intrinsic motivations and knowledge sourcing impact individual centrality and performance. *Journal of International Management*, 15 (1), 15–31.
Tippmann, E., Scott, P. S., Reilly, M., & O'Brien, D. (2018). Subsidiary coopetition competence: navigating subsidiary evolution in the multinational corporation. *Journal of World Business*, 53, 540–54.

Vahlne, J.-E. & Jonsson, A. (2017). Ambidexterity as a dynamic capability in the globalization of the multinational business enterprise (MBE): case studies of AB Volvo and IKEA. *International Business Review*, 26 (1), 57–70.
Verbeke, A., Chrisman, J., & Yuan, W. (2007). A note on strategic renewal and corporate venturing in the subsidiaries of multinational enterprises. *Entrepreneurship Theory and Practice*, 31 (4), 585–600.
White, R. E. & Poynter, T. A. (1984). Strategies for foreign-owned subsidiaries in Canada. *Business Quarterly*, 48, 5–69.
Williams, C. (2009). Subsidiary-level determinants of global initiatives in multinational corporations. *Journal of International Management*, 15 (1), 92–104.
Williams, C. and Lee, S. H. (2011). Political heterarchy and dispersed entrepreneurship in the MNC. *Journal of Management Studies*, 48 (6), 1243–68.

APPENDIX

Table 7A.1 Survey measurements and questions

Main Contructs	Items	Question(s) (1 = 'Strongly disagree'; 7 = 'Strongly agree')	
Entrepreneurial orientation (Covin & Slevin, 1989) – used to measure explorative trajectories	Innovativeness	*In general, the top managers of my firm favour …*	
		A strong emphasis on the marketing of tried-and-true products and services (1) …	A strong emphasis on R&D, technological leadership, and innovations (7)
		How many new lines of products or services has your firm marketed in the past five years (or since its establishment)?	
		No new lines of products or services (1) Changes in product or service lines have been mostly of a minor nature (1)	Very many new lines of products or services (7) Changes in product or service lines have usually been quite dramatic (7)
	Proactiveness	*In dealing with its competitors, my firm …*	
		Typically responds to actions which competitors initiate (1) Is very seldom the first business to introduce new products /services, administrative techniques, operation technologies, etc. (1) Typically seeks to avoid competitive clashes, preferring a 'live-and-let-live' posture (1)	Typically initiates actions to which competitors then respond to (7) Is very often the first business to introduce new products/ services, administrative techniques, operating technologies, etc. (7) Typically adopts a very competitive, 'undo-the-competitors' posture (7)
	Risk-taking	*In general, the top managers of my firm have …*	
		A strong proclivity for low-risk project (with normal and certain rates of return) (1)	A strong proclivity for high-risk projects (with chances of very high return) (7)
		In general, top managers of my firm believe that …	
		Owing to the nature of environment, it is best to explore it gradually via cautious, incremental behaviour (1)	Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives (7)
		When confronted with decision-making situations involving uncertainty, my firm …	
		Typically adopts a cautious, 'wait-and-see' posture in order to minimise the probability of making costly decisions (1)	Typically adopts a bold, aggressive posture in order to maximise the probability of exploiting potential opportunities (7)

Main Contructs	Items	Question(s) (1 = 'Strongly disagree'; 7 = 'Strongly agree')
Planning (Bailey et al., 2000) – used to measure exploitative trajectories	Formal Analysis	(1 = 'Strongly disagree'; 7 = 'Strongly agree')
		- When we formulate a subsidiary strategy it is planned in detail - We have precise procedures for achieving strategic objectives - We have well-defined planning procedures to search for solutions to our subsidiary's strategic problems - We meticulously assess many alternatives when deciding on a subsidiary strategy - We evaluate potential strategic options against explicit subsidiary strategic objectives - We make strategic decisions based on a systematic analysis of our subsidiary's business environment
Environmental Turbulence (Menon, Bharadwaj, Adidam & Edison, 1999)		(1 = 'No Change'; 7 = 'Very Frequent Change')
		- Competitive intensity is high - Customer preferences and expectations are stable - There are many market opportunities - Production/process technology is changing rapidly - There is a high level of product/services innovations - Research and development activity is very intense
Initiatives (Birkinshaw, Hood & Jonsson, 1998)		*To what extent have the following activities occurred in your subsidiary over the past 5 years?* (1 = never, 7 = plentifully).
		- New products developed (in Ireland) and then sold internationally in last five years - Successful bids for new corporate investments in Ireland in last five years over the next five years - New international business activities that were first started in Ireland in last five years