SUBSIDIARY DECISION-MAKING AUTONOMY: REVIEW AND FUTURE RESEARCH FRONTIER

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Abstract: *This paper reviews the literature concerning the determinants of subsidiary decision-making autonomy. Based on this, we offer future research guidance which includes a set of common determinants relating to the following factors: subsidiary's strategic role, organizational complexity, decision control structure, and multinational firm characteristics. For each of these clusters of determinants we identify a core set of independent variables and their measures. This leads to a new determinant-model of subsidiary decision-making autonomy. Our new model makes it easier to specify the research frontier in this field.*

Keywords: *decision-making autonomy, subsidiary, multinational enterprises.*

I. INTRODUCTION

Rapid changes in the nature of global competition have caused international managers and management researchers to search for new ways to manage multinational enterprises (MNEs) effectively (O'Donnell, 2000). Several authors have pointed out that the subsidiary is playing an increasingly important role in generating MNE competitive advantage (Edwards et al., 2002; Rabbiosi, 2010). However, the subsidiary often requires a degree of decision-making autonomy that the parent opposes (Johnston and Menguc, 2007). Subsidiary decision-making autonomy has been identified as one of the critical issues for researchers and managers (Young and Tavares, 2004).

According to Brooke (1984: 9) decision-making autonomy refers to an organization "in which units and sub-units possess the ability to take decisions for themselves on issues which are reserved to a higher level in comparable organizations". Roth and Morrison (1992) define decision-making autonomy as "the extent to which the subsidiary managers are able to make decisions without headquarters' involvement". O'Donnell (2000) states that autonomy is "the degree to which the foreign subsidiary of the MNEs has strategic and operational decision-making authority". Young and Tavares (2004) relate subsidiary autonomy to the constrained freedom or independence available to or acquired by a subsidiary, which enables it to take certain decisions on its own behalf. Taggart (1997) proposes that "autonomy may be regarded as a decision-based process that evolves through bargaining between the center and periphery in an organization". Subsidiary autonomy in general refers to "the degree to which an MNE subunit may make significant decisions, referring to the whole spectrum of inter-and intra-firm relationships, with or without the consent of the headquarters" (Manolopoulos, 2006).

Our paper reviews the literature of subsidiary decision-making autonomy and suggests concrete directions for future research. First, a variety of theoretical perspectives is applied to examine the determinants of subsidiary autonomy.

We identify seven leading theoretical frameworks:

1. integration-responsiveness framework
2. resource dependence view,

3. agency theory,

4. institutional theory,

5. business network theory,

6. the headquarters view, and

7. information-processing theory.

We argue that the key predictions of these theories are often the same.

Second, the paper provides a comprehensive review of empirical studies explaining differences in the level of subsidiary autonomy. We identify five clusters of determinants:

1. the subsidiary's strategic role,

2. organizational complexity,

3. decision- and control structure,

4. general MNE characteristics, and

5. industry-country-level features.

For each of these clusters we identify a core set of independent variables and suggest proper operational measures. This leads to what we call a determinant-model of subsidiary autonomy.

Our model presents two ways of measuring the degree of subsidiary decision-making autonomy, and identifies a set of key determinants found to be robust predictors of decision-making autonomy. Developing such a determinant-model reduces interpretational ambiguity and increases methodological robustness. Practically, this increases transparency, comparability, and allows management scholars to more effectively define the research frontier in this field. Based on our literature review and the subsequent conclusion that the prediction of the theories used so far tend to converge, the determinant-model can be used to develop a more nuanced theory of the determinants of subsidiary decision-making autonomy. The development of a determinant-model allows scholars to more efficiently examine the relative importance of the determinants of subsidiary decision-making autonomy, and possible mediating effects.

Our paper provides a systematic review of the leading journals in the fields of management, strategy and international business, such as the Journal of International Business Studies, Journal of Management Studies, Strategic Management Journal, Journal of Management, Organization Studies, Academy of Management Review, Academy of Management Journal, International Business Review, Journal of World Business, Management International Review and Journal of International Management. The review is from January 1980 to December 2015. Our search key words included subsidiary autonomy, subsidiary centralization/decentralization, decision-making autonomy, decision-making authority, controlling subsidiary and subsidiary. We cross-validated our search results by checking other references of the journals ("snowballing effect") and with a keyword search for monographs and Ph.D. theses via both Picarta and EBSCO Host. Our search yielded a large number of theoretical contributions and a more limited set of 20 large scale empirical studies explaining differences in levels of subsidiary decision-making autonomy.

II. THEORETICAL PERSPECTIVES

2.1. Integration-responsiveness framework

One framework used to understand the degree of autonomy granted subsidiaries was initiated by Prahalad and Doz (1987). It focuses on management centralization versus local market responsiveness. Jarillo and Martinez (1990) extended the original framework by using the degree of localization (i.e., whether the extent of activities such as R&D and purchasing are performed in the host country) and the degree of integration. Their study has

three important characteristics. First, it demonstrates the value of integration and autonomy as analytical variables. Second, it characterizes the strategic role of each subsidiary type in their framework. Third, it identifies autonomous strategy (a subsidiary using a market strategy relatively independent of its parent's strategy) as an important node in examining subsidiary autonomy in the MNE network. This framework predicts that the subsidiary's level of integration within the MNE network is negatively associated with subsidiary autonomy. This is because subsidiaries face several pressures from the local market, e.g., differences in customer preferences or host government. Thus, the lower the level of the subsidiary's integration, the lower the global interdependence is. The higher the local market embeddedness, the more local managers require decision-making autonomy to meet these distinctive local market requirements.

Simoes et al. (2002) and Taggart & Hood (1999) argue that competent subsidiaries that possess local knowledge can respond quicker to local market forces leading to higher levels of independence (Bartlett and Ghoshal, 1989). This especially holds for knowledge-seeking investments in subsidiaries. This is related to the argument that in high-technology industries, close relationships with local suppliers or customers play a more important role than in low-technology industries (Gates and Egelhoff, 1986; Katrin et al., 2005).

A subsidiary's decision-making autonomy is positively related to the geographic and cultural distance between home and host countries (Hennart, 2000). When geographic distance increases, control of subsidiaries becomes costlier and complex, potentially leading to higher levels of subsidiary autonomy. When cultural differences between home and host countries increase, the amount of decision-making autonomy granted to a subsidiary can be expected to increase (Prahalad and Doz, 1987).

2.2. Resource dependence view

The resource-dependent view of the firm argues that firms obtain competitive advantages by acquiring firm-specific resources that are rare, hard to copy, and for which few substitutes are available (Barney, 1991). The main prediction is that the degree of central control over subsidiaries is conditioned by the mutual dependency of resources that headquarter and subsidiaries provide to each other. As resource levels of the subsidiary rise, interests with headquarters may diverge. As a result, dependency on the subsidiary may increase. This implies that, as the subsidiary matures, it develops increasingly heterogeneous sets of relationships with other organizations and intra-firm units (Pfeffer and Salancik, 1978). Then it becomes autonomous with regard to its most needed resources (Prahalad and Doz, 1987).

A crucial resource affecting subsidiary decision-making autonomy is knowledge that enables subsidiaries to execute value-creating strategies that improve effectiveness and efficiency (Barney, 1991). Rabbiosi (2010) argues that flows of knowledge between the subsidiary and the rest of the MNE network would recognize the subsidiary's decision-making autonomy. The distinctive resources and capabilities of subsidiaries provide other subunits with the opportunities to perform independent productive roles. Subsidiaries with considerable knowledge of inputs and outputs are more autonomous. Subsidiaries that rely upon knowledge provided by the parent's technological platform and operational procedures have less autonomy.

Several studies (e.g.,Gates and Egelhoff, 1986; Johnston and Menguc, 2007) used the resource-based view to argue that when the subsidiary is large, its bargaining position will be better. Subsidiary size implies the ability to support a full management staff, thus leading to more decentralization of decision-making because of its bargaining strength. Although larger size implies that the subsidiary can develop its own resources and become less dependent on central management, a very large subsidiary is likely of great importance to the overall

company, and may therefore require much attention from the parent firm (Hedlund, 1981). However, large size is associated with increased coordination complexity. The increased information flows and the ensuing volume expansion and increased decision complexity require increasing managerial input from parent. This in turn brings about increased headquarter influence (Shen, 1970).

If an MNE's size is large, and hence has more difficulty exercising direct control over foreign subsidiaries, it will reduce demands of the control task, and turn to indirect methods of control (Garnier, 1982; Gates and Egelhoff, 1986; Hedlund, 1981; Katrin et al., 2005). In addition, the larger the MNE, the less sensitive it is to risk, and thus more likely to grant autonomy to its subsidiaries. As a result, it is predicted that size of the parent company is positively correlated with a subsidiary's decision-making autonomy.

Another prediction of the resource-based view is that the parent firm's internal and external complexity is positively correlated with decentralization. External complexity requires an organization to establish new structural units to confront uncertain factors in the environment, thereby decentralizing decision-making. In empirical models that explain autonomy, it is therefore common to incorporate measures of internal or external complexity such as the degree of parent's foreign product diversity, or the extent of outside ownership in foreign subsidiaries (Garnier, 1982; Gates and Egelhoff, 1986; Hedlund, 1981).

Birkinshaw and Hood (2000) argue that subsidiaries established in leading-edge clusters will develop relationships with local customers and suppliers, experiment with new ideas, and transfer some of their new knowledge to the parent. This requires a significant level of decision-making autonomy as predicted by the integration-responsiveness framework. In addition, after some level of self-determination is achieved, the subsidiary is in a more powerful position vis-a-vis its parent, since it controls valuable local resources (Pfeffer and Salancik, 1978; Prahalad and Doz, 1981). This gives it even greater degrees of freedom, and thus the possibility to further enhance its local embeddedness.

2.3. Agency theory

A dominant perspective is agency theory. It postulates that monitoring is more difficult when the relationship between the agent and the principal is characterized by information asymmetry (Akerlof, 1970; Rajagopalan & Finkelstein, 1992). Based on agency theory, scholars have argued that subsidiary autonomy is a key structural attribute of MNEs, and allows the subsidiary to exercise greater discretion in dealing with the demands of the local market (Edwards et al., 2002; O'Donnell, 2000; Vachani, 1999). A foreign subsidiary may be given more autonomy because it has a better position than headquarters to evaluate the needs and demands of the particular market that it serves. In addition, MNEs are thought to develop multi-focal strategies where responsiveness and integration are weighted for each decision separately. The subsidiaries may adopt different stances on the integration versus localization dilemma. In this context, headquarters are likely to have superior information about strategic issues but the subsidiary is likely to have better information about operational issues.

2.4. Institutional theory

Another dominant perspective is institutional theory. It focuses on the role of isomorphism. In order to survive, firms need to obtain legitimacy and do so through isomorphism with salient institutions. That is, they tend to conform to the culture prevailing in their environment (DiMaggio and Powell, 1983) – a process also referred to as normative rationality (Oliver, 1997). These theorists argue that subsidiaries experience conformity pressures from both their internal (parent) and external (host country) environments. This means that they experience pressures for global integration to achieve internal consistency on the one hand, and a need for a local

orientation to achieve local external legitimacy on the other (Kostova, 1999; Kostova and Zaheer, 1999; Rosenzweig and Singh, 1991). Although agency theory is similar to the integration-responsiveness framework, there is a key difference: in institutional theory the reason for being locally responsive stems from need for legitimacy.

The above argument is made by Fenton-O'Creevy, et al. (2008). They use Hall and Soskice (2001)'s distinction concerning different institutional systems and the subsequent impact on firms. According to Hall and Soskice, the production regimes of advanced economies can be classified into two main patterns, "coordinated market economies" (CMEs) and "liberal market economies" (LMEs). Firms operating in CMEs are more institutionally constrained than those in LMEs because they operate where legal frameworks and industrial relations constrain managers' autonomy in applying market-driven or technologically contingent management practices (Fenton-O'Creevy et al., 2008).

2.5. Business network theory

Business network theory assumes that business networks exist both within and without the subsidiary. This implies that each subsidiary differs in terms of its history, quality, and level of embeddedness inside and outside to the MNE group (Forsgren et al., 2005; Forsgren, 2008). The key argument is that subsidiaries are highly embedded in their local business networks, which make the MNE "distributed" when it comes to knowledge and control. In this view, the headquarters is always outside the business networks of the subsidiaries (Ciabuschi et al., 2011). This creates a continuing difference between the knowledge levels of headquarters and subsidiary (Andersson et al., 2007; Ciabuschi et al., 2011; Forsgren et al., 2005). This implies that a subsidiary's embeddedness decreases the parent's influence on the subsidiary. This in turn enhances the subsidiary's understanding of the local business environment (Andersson & Forsgren, 2000; Birkinshaw et al., 1998), and its local business legitimacy (Bartlett and Ghoshal, 1989; Prahalad and Doz, 1987). As a result, the subsidiary can actively obtain new knowledge needed for innovation potential (Ambos et al., 2011, Vo, 2013).

2.6. The headquarters view

Another perspective relates to the role of headquarters in subsidiary operations (see Ciabuschi et al., 2011; Ciabuschi et al., 2012). This perspective assumes that the headquarters has a reasonable possibility of controlling value-creation processes at the subsidiary level. Headquarters has been described as the unit responsible for the long-term strategic planning of the MNE and for administration and monitoring (Ciabuschi et al., 2012). Headquarters plays a crucial role as a controller and coordinator of various innovation processes within MNEs. Although headquarters has constrained knowledge of subsidiary operations (as business network view and integration-responsiveness theory suggest), it is thought to have a reasonable understanding of what knowledge it lacks, and of how to organize subsidiary operations. Based on this understanding, headquarters can choose which subsidiary innovation processes to support. It also has access to the subsidiary's innovation expertise, and finds interventions to guarantee proper application of its knowledge at the subsidiary level (Ciabuschi et al., 2012). This perspective predicts that the lower the level of subsidiary decision-making autonomy, the higher the level of subsidiary innovation. This perspective shows that, to obtain the optimal level of subsidiary innovation, the level of subsidiary decision-making autonomy may decrease.

2.7. Information-processing theory

The Information processing theory argues that MNE strategy can be expressed in terms of the categories of information-processing requirements it creates (Egelhoff, 1993). These include technology, size, environmental change, environmental complexity, subunit interdependency, and goals. Similarly, the features of an organization's design, such as structure, degree of centralization, planning and control systems, and interpersonal communication patterns, must be expressed in terms of the information-processing capacity they provide.

Several scholars have used information-processing theory to argue that subsidiary decision-making autonomy is affected by global diversification, organization features (Vachani, 1999), or of environmental conditions (Luo, 2006). For example, MNEs with larger geographic diversification have economies of scale ("spillover") effects such as those in advertising (Daniels and Radebaugh, 1998), or lower regional technology transfer costs (Vachani, 1999). Such companies can reduce coordination cost via the physical and cultural proximity among a group of countries and by similarities in their level of economic development (Grant, 1987). Companies that choose to reduce coordination costs will probably decentralize decision-making, since subsidiaries are more likely to have the information necessary to take advantage of regional synergy (Vachani, 1999).

In summary, these theoretical perspectives are similar. The differences are not so much the specific determinant(s) of subsidiary autonomy, but the causal chain through which a particular determinant operates on autonomy. For example, all perspectives predict that subsidiary autonomy increases when the need for local embeddedness increases. According to the integration-responsiveness framework, this is because the subsidiary has to respond to changes in the local environment. The resource-based view argues that, in order to effectively use local resources, a subsidiary has to have more decision-making power. Agency theory argues that information asymmetry explains increasing subsidiary autonomy. Institutional theory argues that greater subsidiary autonomy derives from the need to be locally embedded, plus isomorphic pressures.

III. EMPIRICAL FINDINGS

Table 1 provides an overview of twenty empirical studies using various theories to explain the determinants of decision-making autonomy.[1] These studies all measure subsidiary decision-making autonomy with multi-item scales. Some studies (e.g., Katrin et al., 2005) measure subsidiary decision-making autonomy indirectly via an assessment of subsidiary business functions. Others (e.g., Johnston and Menguc, 2007, Gammelgaard et al., 2012) directly assess the degree of decision-making. Earlier studies focused on business functions. More recent studies use actual decision-making authority. By identifying the most common characteristics of the independent variables defined in these studies, we divide the determinants of decision-making autonomy into the five clusters mentioned in the paper's introduction. Within each of these clusters, scholars have used a specific independent variable associated with the degree of subsidiary decision-making autonomy. For example, a subsidiary's strategic role has been operationalized by world product mandate (Ambos et al., 2011; Edwards et al., 2002) but also by market scope (Fenton-O'Creevy et al., 2008; Simões et al., 2002).

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[1] We initially identified twenty-six empirical studies. Six of these twenty-six studies (Aylmer, 1970; Bowman et al., 2000; Garnier et al., 1979; Goehle, 1980; Picard, 1977; Stopford and Wells, 1972) were excluded because these were merely descriptive studies, making it difficult to identify statistically significant variables and compare their findings with other studies. We also excluded the study of Johnston (2005) because it is virtually similar to Johnston and Menguc (2007).

Table 1. Main Characteristics of Large Scale Empirical Subsidiary Autonomy Studies

	Author(s)	Main variables	Home market(s)	Host Market(s)	Empirical method	Autonomy measure
1	Hedlund (1981)	Subsidiary and parent size; subsidiary performance; parent's international experience; entry mode, subsidiary export; local environment.	Sweden	Various	OLS	Five point Likert scales on 16 decisions.
2	Garnier (1982)	Parent- and subsidiary size; parent's ownership policy; subsidiary performance subsidiary age; R&D; integration; local environment.	U.S	Various	OLS	A global index.
3	Gate & Egelhoff (1986)	Subsidiary- and parent size; product diversity; local environment; subsidiary age; and entry mode; parent's ownership policy.	Various	Various	OLS	Three scales on 22 different decisions concerning financial, manufacturing, and marketing.
4	Taggart & Hood (1999)	Subsidiary age; subsidiary size; subsidiary's export; R&D; market scope.	Various	Various	OLS, Logit	Four scales on decisions concerning the markets it serves and the product range it supplies.
5	Vachani (1999)	(Un) related product diversity; subsidiary structure; (un)related geographic diversification.	Various	Various	OLS	Seven point scale on marketing, human resources, manufacturing and financial decisions.
6	O'Donnell (2000)	HQs' supervision of foreign subsidiary managers; (bureaucratic) monitoring mechanisms.	U.S	Various	OLS	Four point scales on 16 decisions regarding capital investment, manufacturing processes and training methods.
7	Birkinshaw & Hood (2000)	Industry group (high versus low technology).	Various	Various	Cluster analysis	Three point scales on three decisions.
8	Edward et al. (2000)	Integration; world product mandate; subsidiary owned information; geographic distance; subsidiary's product specialization level.	Various	Malaysia	OLS	Five point Likert scales on 17 business activities (1 is subsidiary only and 5 is parent only).
9	Simoes et al. (2002)	R&D; subsidiary age; market scope; subsidiary size; integration.	Various	Portugal	Logit	Four point scales on 11 dimensions.
10	Katrin et al. (2005)	Subsidiary size; MNE national origin; industry groups.	Various	Various	ANOVA & MANOVA	Three point scales on 13 business functions. Then, using factor analysis to create four autonomy indexes.
11	Johnston & Menguc (2007)	Subsidiary size.	Various	Australia	Post hoc analysis	Five point scales on nine items, then using factor analysis to create an autonomy index.
12	Slangen & Hennart (2008)	Cultural difference between home and host countries.	The Netherlands	Various	Logistic regression	Five point scales on 12 functions, then creating a summated autonomy scale.

Table 1. Main Characteristics (continued)

	Author(s)	Main variables	Home market(s)	Host Market(s)	Empirical method	Autonomy measure
13	Fenton-O'Creevy et al. (2008)	Unionization; market scope.	Various	Various	Negative binomial regression	Count on the six cores HRM categories (centralized control index that ranges from 0 to 6)
14	Takeuchi et al. (2008)	Parent's foreign subsidiary operation experience; global integration pressures.	Various	Various	Moderated regression	Five points scales on three items taken from Barlett and Ghoshal (1989).
15	Jindra et al. (2009)	The extent and intensity of vertical linkages.	Various	Various	OLS	Four point scales on business functions.
16	Björkman and Piekkari (2009)	Subsidiary's language competences.	Various	Finland, China	OLS	Five point scales on the strategic goals of the subsidiary.
17	De Jong and Vo (2010)	Home- and host country institutions.	Various	Various	OLS, negative binomial regression	Count on the 10 business functions such as R&D, manufacturing, sales, and marketing (overall index ranging from 0 to 10).
18	Ambos et al. (2010)	Past subsidiary initiatives, headquarter monitoring.	The US, France, Germany, Japan	Australia, Canada, the UK	Structural equation modeling	A five point scale on three items , i.e., entering new markets, investing in manufacturing capacity, and (beyond budget) expenditures for R&D.
19	Rabbiosi (2010)	Reverse transfer knowledge	Italy	Various	Ordered probit regression	A five point scale on four items, the final measure is the average of responses to the four items
20	De Jong et al. (2015)	Country context distance	CEE countries	Various	OLS	A four point scale on seven items, the final measure is the average of responses to the seven items

Table 2 distinguishes between the sign of the estimated parameter coefficient and its statistical significance. Our assessment shows conversion of results for the first three clusters, and mixed results for the fourth and fifth. Our review indicates that strategic role, organizational complexity, control structure, and general MNE characteristics are key determinants of subsidiary decision-making autonomy. For the first cluster, we identified eleven independent variables used to proxy the strategic role of a subsidiary. Almost all eighteen studies include measures of a subsidiary's strategic role, either by measuring the level of integration in the value chain (four studies) or by measuring the degree of host market orientation (four studies). For these and other variables – such as the percentage of a subsidiary's purchases from the parent, or the presence of a world product mandate – the findings are in line with the theoretical predictions.

Most of the twenty studies incorporate variables capturing the relationship between subsidiary decision-making autonomy and the MNE organizational complexity, by means of variables such as size, degree of diversification, and subsidiary-owned information. Eight different variables are included in eighteen studies yielding forty-nine different results. The results for most study variables are mixed. For example, most studies report both a significant positive and a negative relationship between a subsidiary's research competence and decision-making autonomy (e.g., Ambos et al., 2011; Gainer, 1982; Johnston & Menguc, 2007; Luo, 2006; Taggart & Hood, 1999). With respect to size, theory predicts a non-linear effect, which is reflected in our results (e.g., Hedlund, 1981; Johnston & Menguc, 2007). Similar to the results for the proxy variables for a subsidiary's strategic role, the organizational complexity results are consistent with theoretical predictions.

The third cluster of variables concerns the MNE's decision- and control structure. Five different proxies (e.g., the number of parent representatives on the subsidiary's board or the extent of parent ownership) have been used to capture this. The results are consistent with theory. Most studies found a negative relationship between decision-making autonomy and more intense monitoring and control systems (Chiao&Ying, 2013; Gammelgaard et al., 2012; Garnier, 1982; Gates & Egelhoff, 1986; Luo, 2006). All but Johnston and Menguc (2007), found a negative effect of parent ownership on subsidiary decision-making autonomy (e.g., Garnier, 1982; Schüler-Zhou & Schüller, 2013).

For the fourth cluster of determinants, we found that almost all eighteen studies incorporate MNE characteristics such as firm age, performance, international experience, and divisional structure. The results here are less theoretically consistent than are the other three clusters. For example, a parent's international experience is expected to be negatively associated with decision-making autonomy, but the empirical findings report the opposite (Gates & Egelhoff, 1986; Luo, 2006). Regarding subsidiary performance, all studies except Garnier (1982) indicate that strong subsidiary performance is associated with autonomous subsidiary decision-making. Several studies found that subsidiary age is positively related to subsidiary decision-making autonomy (Ambos et al., 2011; Gates & Egelhoff, 1986), although some others report insignificant effects (e.g., Garnier, 1982; Taggart & Hood, 1999). The divisional structure of the MNE is the only variable in this cluster for which we found theoretically consistent results. MNEs with a functional divisional structure have lower levels of subsidiary decision-making autonomy. The variables in this cluster were usually only control variables.

The fifth cluster includes variables that proxy industry and country-level effects. Hedlund (1981), for example, found that Swedish and Japanese firms are more decentralized than U.S. firms. As foreign subsidiaries tend to conform to the culture in their local environment (DiMaggio & Powell, 1983), a subsidiary's decision-making autonomy varies according to the institutional setting of the parent's country.

Table 2. Results of Large Scale Empirical Subsidiary Autonomy Studies

	(1) Expected effect on autonomy	(2) Results: Negative (p<.05)	(3) Results: Negative (non sig.)	(4) Results: Positive (non sign.)	(5) Results: Positive (p<.05)	(6) Mixed results
Strategic role (22 results)						
* Subsidiary's level of integration in value chain	-	#1(24), #2(42)(FRAN), #2(62)(MEX-II), #10(71)	#2(40)(MEX-I), #4(177), #8(119)			
* Subsidiary's level of host market orientation	+		#2(42)(FRAN), #3(94)(FIN)	#2(40)(MEX-I), #3(94)(MAR)	#2(62)(MEX-II), #3(94)(MAN), #4(177), #14(187),#15(424), #3(94)(FIN)	
* Percentage of subsidiary's purchases from parent	-	#2(42)(FRAN), #2(40)(MEX-I), #2(62)(MEX-II), #3(94)(MAR, MAN), #4(177), #16(119)				
* Percentage of subsidiary's sales to parent	-	#2(42)(FRAN), #2(40)(MEX-I), #2(62)(MEX-II)	#4(177)			
* Presence of a world product mandate	+				#9(71)	
* Subsidiary's level of market share (market scope)	-	#1(24), #13(441)	#8(119), #16(119)			
* Subsidiary's scope of activities	-		#16(119)			
Organizational complexity (26 results)						
* Subsidiary's research competence (R&D over sales)	+		#2(40)(MEX-I), #8(119)	#2(42)(FRAN), #2(62)(MEX-II), #11(313)	#4(177), #7(229)	
* Subsidiary's reverse knowledge transfer	+				#19(280)	
* Subsidiary's marketing capabilities	+				#8(119)	
* Subsidiary's level of product specialization	+			#9(71)		
* Information owned by subsidiary	+				#9(71)	
* MNE degree of product diversification (the number of products or product lines manufactured by parent or by offered subsidiaries)	+	#2(40)(MEX-I)	#17(263)	#2(62)(MEX-II), #3(94)(MAN), #5(63)	#2(42)(FRAN), #3(94)(MAR, FIN)	
* Parent's degree of international geographic diversification (number of countries or fraction of foreign sales)	+ / -	#2(62)(MEX-II)	#2(42)(FRAN), #2(40)(MEX-I)	#3(94)(MAN, FIN)	#3(94)(MAR)	#5(63)
* Subsidiary size	+ / -		#4(177)(SALES)	#4(177)(EMP), #8(119), #13(441), #16(119)		#1(24), #2(42)(FRAN), #2(40)(MEX-I), 2(62)(MEX-II), #3(94)(MAR.MAN.FIN), #10(433), #11(313), #17(263)
* MNE size	+	#2(40)(MEX-I), #3(94)(MAR)	#2(42)(FRAN), #2(62)(MEX-II)	#3(94)(MAN)	#3(94)(FIN), #17(263)	

Table 2. Results (continued)

	(1) Expected effect on autonomy	(2) Results: Negative (p<.05)	(3) Results: Negative (non sig.)	(4) Results: Positive (non sign.)	(5) Results: Positive (p<.05)	(6) Mixed results
Industry- and country level variables (cont.)						
* Developed host country (versus less developed country)	+				#10(433), #13(441)	
* Intensity of local competition	-		#1(24), #12(313)			
* Competitive climate change	+	#3(94)(MAR)	#3(94)(MAN, FIN)			
* Uncertainty of subsidiary's environment	+			#1(24)		
* Local manager's perception of local laws on foreign investment	-	#2(40)(MEX-I)	#2(40)(MEX-I)	#2(42)(FRAN), #2(62)(MEX-II)		
* Local manager's perception of local government's attitude	-		#2(42)(FRAN),	#2(62)(MEX-II)		
* Local manager's perception of differences in executives' attitude, value, and beliefs.	-	#2(42)(FRAN), #2(40)(MEX-I), #2(62)(MEX-II)				
* Local manager's perception of value of local (business) education system	-	#2(42)(FRAN), #2(40)(MEX-I), #2(62)(MEX-II)				
* Proportion of material inputs sourced in the local economy	+			#4(177)	#8(119)	
* Parent's country of origin (Asia vs rest of the world)	+			#9(71)		#11(313)
* Institutional distance between home and host countries	+				#17(263)	
* Cultural distance between home and host countries	+			#16(119)		
* Economic distance	-	#20 (310)				
* Geographic distance	-	#20 (310)				

Notes:

(1) The numbers mentioned in this table refer to the studies listed below. The sample size of each study is mentioned between brackets. Studies 2 (Garnier 1982) and 3 (Gates and Egelhoff, 1986) consist of multiple sub sample analyses for countries and industries, respectively.

(2) Study numbers: #1 Hedlund (1981), #2 Garnier (1982), #3 Gates and Egelhoff (1986), #4 Taggart and Hood (1999), #5 Vachani (1999), #6 O'Donnell (2000), #7 Birkinshaw and Hood (2000), #8 Simoes et al. (2002), #9 Edwards et al. (2002), #10 Katrin et al. (2005), #11 Johnston and Menguc (2007), #12 Slangen and Hennart (2008), #13 Fenton-O'Creevy et al. (2008), #14 Takeuchu et al. (2008), #15 Jindra et al. (2009), #16 Björkman and Piekkari (2009), #17 De Jong and Vo (2010), #18 Ambos et al. (2010), #19 Rabbiosi (2010), #20 De Jong et al. (2015).

Subsidiaries operating in an institutionally 'thick' context face more pressures than subsidiaries that operate where fewer isomorphic pressures exist. Hence, subsidiaries have levels of decision-making autonomy that depend on the national business systems in which they operate.

In summary, our review of the empirical literature around the determinants of decision-making autonomy indicates that most results for strategic role, organizational complexity and decision control structure are consistent with theory (See Table1.). Furthermore, although some studies included institutional context and geographic distance between home and host countries as control variables, very few studies capture these as main effects.

IV. A DETERMINANT-MODEL OF SUBSIDIARY DECISION-MAKING AUTONOMY

Given that the seven dominant theoretical perspectives do not yield opposing predictions, and that the empirical models have a common core, we suggest that future research applies a standard empirical model to explain differences in subsidiary autonomy. Such a standard model with a default set of independent variables makes it easier to specify the research frontier in this field. By using our standard model, one can more easily compare the results of different studies. Once scholars agree on a standard set of independent variables and their operationalization, transparency will increase. This is not impossible: the Handbook of Marketing Scales in marketing research has led to an impressive measurement convergence and common understanding of the appropriate construct, such as loyalty in marketing channels.

When constructs are measured in a similar way, the increased transparency reinforces the comparability of study results. This should improve the future quality of meta-analyses and simplify discussion, interpretation, and critical analysis. Empirical tests of theoretical advancements can be more easily done by simply adding one or more variables to an otherwise standard model. Doing so allows for a discussion of how existing determinants are affected, and also helps make explicit what is theoretically new. As such our determinant-model can be further developed and over time. In short, a determinant empirical model is a useful tool to improve methodological robustness. For these reasons, we develop such a model of the determinants of subsidiary autonomy. Table 3 presents it. It shows the two proxies used to measure subsidiary autonomy and the five clusters of determinants previously identified. Based on that analysis we list core independent variables in a regression model. These nine showed the most robust results. These variables are:

1. Subsidiary's level of integration within the MNE network. This reflects the degree of subsidiary's operational interdependence within the MNE group. In cases of high integration, theory predicts that subsidiary autonomy decreases. An appropriate measure is the percentage of subsidiary export to parent or to other subsidiaries (e.g., Taggart and Hood, 1999).

2. Percentage of subsidiary's purchases from parent or other subsidiaries. This variable captures the position of the subsidiary in the overall value chain. Subsidiary autonomy will decrease when mutual dependency increases (e.g., Garnier, 1982; Gates and Egelhoff, 1986). Together with the first variable, this variable captures the strategic role of the subsidiary.

3. Subsidiary knowledge/competence. Higher levels of competence are associated with higher levels of subsidiary autonomy. An appropriate measure is the proportion of R & D expenditure of total sales (Garnier, 1982).

4. Subsidiary size. This variable captures the relative bargaining power of the subsidiary. As argued before, the relationship with subsidiary autonomy is non-linear. An appropriate measure is the number of employees (De Jong et al., 2015; Johnston and Menguc, 2007).

5. Entry mode. Each specific entry mode (such as joint venture) is associated with an organizational structure that affects subsidiary autonomy. (De Jong et al., 2015).

6. Degree of parent involvement. This variable indicates the subsidiary's (legal) dependence on the parent (Garnier, 1982). Two measures can be used. The first is the percentage of parent ownership in the foreign subsidiary. The second is the number of parent representatives on the board of management of the subsidiary (Björkman and Piekkari, 2009).

7. MNE characteristics. Our review suggests that, at least, the divisional structure needs to be controlled for. Thus, a dummy variable that reflects whether a functional structure exists is a minimum requirement.

8. Technological intensity of industry. Subsidiaries in knowledge intensive industries are expected to experience greater autonomy. R&D intensity is an appropriate measure of technological intensity. At minimum, any model explaining autonomy needs to include dummy variables to control for sectoral heterogeneity.

9. Host and home country context. National business system classifications (Hall and Soskice, 2001) are also appropriate dummy variables. At minimum, country context distance dummy variables should be included (De Jong et al., 2015).

As it is unclear whether direct measures of decision making autonomy or indirect proxies measuring business functions are best, ideally both are used. By using the above specified set of independent variables it is possible to perform a formal test of which is best, and under what conditions.

Table 3. A Determinant-Model of Subsidiary Decision-making Autonomy

Dependent variable	Independent variables		
Subsidiary autonomy	*Cluster*	*Suggested variables*	*Expected sign*
Direct measure of decision making and managerial discretion in subsidiary versus parent	1. Strategic role	1.1 Subsidiary's level of integration within the MNE network	-
		1.2 Percentage of subsidiary's purchases from the parent	-
	2. Organizational complexity	2.1 Subsidiary's knowledge competence	+
		2.2 Subsidiary size	Non-linear
	3. Decision- and control structure	3.1 Entry mode (greenfield or not)	-
		3.2 Degree of parent involvement.	-
Indirect measure of business functions of subsidiary	4. General MNE characteristics	4.1 Parent's division structure (functional or not)	-
	5. Industry- and country level features	5.1 Technological intensity of the subsidiary's industry	+
		5.2 Host / home country institutional thickness	+

V. SUMMARY AND CONCLUSIONS

In summary, the strategic changes in the subsidiary's position due to globalization create tension between the MNE's wish to control subsidiaries, and the need to grant subsidiaries decision-making autonomy. This paper discussed seven frameworks explaining the differences in levels of subsidiary autonomy. These are the integration-responsiveness framework, resource dependence theory, agency theory, institutional theory, business network theory, the headquarters view, and information-processing theory. Together these related perspectives broadly cover the

entire field of international business and management. Our review shows that these theoretical arguments are similar but that their predictions differ. The paper then discussed the empirical findings of twenty large empirical studies, and found results mostly consistent with theory. This led to a new determinant-model of subsidiary autonomy.

The paper identified five clusters determinants: subsidiary's strategic role, organizational complexity, decision- and control structure, and two clusters of independent, mostly control, variables, relating to MNE characteristics and industry/country factors. We identified two main ways of measuring subsidiary autonomy, one direct measure of decision making autonomy, and one indirect measure of a subsidiary's business functions. Our review not only serves as a "looking backward" study, but provides input to an ongoing discussion importantly shaping the literature on subsidiary autonomy.

Our model of subsidiary autonomy reflects field's current state of knowledge. The model allows researchers to specify the research frontier more effectively. By adding new variables to an otherwise standard model, scholars can explicitly test their importance. We envision a research agenda that specifically accounts for interrelationships between different drivers of subsidiary autonomy. Because subsidiaries are embedded in a MNE, an industry and a country; subsidiary autonomy is by definition a multi-level phenomenon. However, little is known about the relative importance of these levels. Equally little is known about the interaction among these drivers of subsidiary autonomy.

For example, theory predicts that the greater the level of integration in the value chain, the lower the level of subsidiary autonomy. Theory also predicts that subsidiaries in institutionally "thick" or in uncertain industries/countries require a relatively high level of autonomy. What is the relative importance of both factors? Given that subsidiaries of efficiency-seeking MNEs are often located in developing countries; do MNEs balance the need to control subsidiaries with the need to be responsive to local conditions? How is control of such integrated subsidiaries affected when operating in institutionally thick host countries?

Our review suggests that knowledge-intensive subsidiaries have relatively high autonomy. At the same time, the challenges associated with transferring knowledge within the MNE in such cases may result in a large number of parent managers on the subsidiary's board. Both knowledge-intensity and parent involvement are included as key factors in our model. Whereas high knowledge intensity requires a subsidiary to be actively and freely engaged in its host country environment, the involvement of "parent" managers may reduce a subsidiary's degrees of freedom. What is the relative importance of both? Is the need for involvement offsetting the need to be locally responsive?

Hence, new theories of subsidiary autonomy need to include interaction effects among variables. Our model is a step in that direction, and we invite other scholars to further it.

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