The multi-level effects of corporate entrepreneurial orientation on business unit radical innovation and financial performance

THE MULTI-LEVEL EFFECTS OF CORPORATE ENTREPRENEURIAL ORIENTATION ON BUSINESS UNIT RADICAL INNOVATION AND FINANCIAL PERFORMANCE

Mathew Hughes

Loughborough University, School of Business and Economics, Loughborough, Leicestershire LE11 3TU, United Kingdom
t: +44 (0) 1509 223263, e: m.hughes2@lboro.ac.uk

Yi-Ying Chang

National Taiwan University of Science and Technology, Department of Business Administration, 43 Keelung Road, Section 4, Taipei 106, Taiwan
e: y.chang@mail.ntust.edu.tw

Ian Hodgkinson

Loughborough University, School of Business and Economics, Loughborough, Leicestershire LE11 3TU, United Kingdom
t: +44 (0)1509 223865, e: I.R.Hodgkinson@lboro.ac.uk

Paul Hughes

De Montfort University, Leicester Castle Business School, Leicester LE1 5WH, United Kingdom
t: +44 (0)116 2257 7031, e: paul.hughes@dmu.ac.uk

Che-Yuan Chang

National Taiwan University of Science and Technology, Department of Business Administration, 43 Keelung Road, Section 4, Taipei 106, Taiwan
e: a161622@gmail.com

Corresponding author: **Yi-Ying Chang**, National Taiwan University of Science and Technology, Department of Business Administration,
Email: y.chang@mail.ntust.edu.tw

THE MULTI-LEVEL EFFECTS OF CORPORATE ENTREPRENEURIAL ORIENTATION ON BUSINESS UNIT RADICAL INNOVATION AND FINANCIAL PERFORMANCE

ABSTRACT

Corporate enterprises must support its business units to adapt to changes that are increasingly dramatic and complex. In response, corporate entities must organize to embed a *corporate* entrepreneurial orientation (EO) that pervades the actions of its *business units* to create the radical innovations needed to thrive in these circumstances. By developing a global willingness–local ability framework, we test a multi-level model of corporate EO by conceptualizing its effects on business unit radical innovation and business unit financial performance, moderated by business unit R&D resourcing and business unit absorptive capacity. With data from 2820 business units of 1290 Taiwanese corporations from two separate surveys, we find support for our theoretical expectations and contribute much-needed knowledge of the multi-level effects of EO and the conditions to turn EO into actual innovation activity and profit from it.

Keywords: entrepreneurial orientation; multi-level; radical innovation; resources; absorptive capacity; R&D; corporation; business unit; willingness and ability.

THE MULTI-LEVEL EFFECTS OF CORPORATE ENTREPRENEURIAL ORIENTATION ON BUSINESS UNIT RADICAL INNOVATION AND FINANCIAL PERFORMANCE

INTRODUCTION

Can a corporate entrepreneurial orientation benefit business unit financial performance? Defined as the actions taken by senior managers to set a strategic posture emphasizing risk-taking, innovativeness, and proactiveness (Covin and Slevin, 1989; Lomberg et al., 2017; Putniņš and Sauka, 2019; Wales, 2016), scholars have historically attached EO solely to the *single firm* (or otherwise *business unit*) level (Covin and Slevin, 1989, 1991; Wales, 2016). However, scholars recognize that EO holds ramifications for business practices at other organizational levels (Ireland et al., 2009), giving attention to individual matters (Kraus et al., 2019) and its organizational pervasiveness (Wales et al., 2011). Though EO dominates corporate entrepreneurship research (Covin and Wales, 2019), it is only recently that the prospect of a *corporate*-level EO has emerged, occurring inadvertently in an effort to develop objective financial proxies of EO (Miller and Le Breton-Miller, 2011) and through text analysis of corporate investor material (Grühn et al., 2017; Titus et al., 2019). Indirectly, these studies move EO to the corporate level of analysis, but the seeds of which lie as far back as Zahra (1993) who explicitly argued that "entrepreneurship activities occur at (and cut across) multiple levels within a firm, and… a generic model of firm-level entrepreneurship—such as Covin and Slevin's—should account for these multiple levels in conceptualizing the entrepreneurship–performance relationship" (p. 7). Zahra (1993) contends that understanding entrepreneurship at the SBU-level requires an examination of factors at the corporate and unit levels. Zahra et al. (2014) repeated this call for research. Despite over 30 years of progress since Miller's (1983) and Covin and Slevin's (1989) seminal works on EO, the corporate level has remained largely untouched, alien from the fact that well-established companies commonly have different businesses, each of which might exhibit entrepreneurship and innovation differently.

THE MULTI-LEVEL EFFECTS OF CORPORATE ENTREPRENEURIAL ORIENTATION ON BUSINESS UNIT RADICAL INNOVATION AND FINANCIAL PERFORMANCE

We see three important aspects to this research gap. First, the organizational pervasiveness of corporate EO relies on the organization replicating the properties of the EO strategic posture by disseminating decision-making practices, managerial philosophies, and strategic behaviors that are entrepreneurial in nature with relatively little difficulty. Innovation within business units is a vital instance of corporate entrepreneurship (Sharma and Chrisman, 1999). Yet, while corporate EO defines a corporate global willingness towards entrepreneurship within the corporation, it does not necessarily translate into local innovations among its business units due to resourcing and organizational demands (Arzubiaga et al., 2018; Lumpkin and Dess, 1996). Second, there is an assumption that business unit innovation activity is consistent and stable so long as corporate EO is consistent and stable (Covin and Slevin, 1991; Wales, 2016). However, a corporate EO does not automatically translate into actual innovation outcomes (Arzubiaga et al., 2018; Kollmann and Stöckmann, 2014), suggesting that contingencies at the business unit level motivate and enable unit innovation activity and augment the business unit's ability to profit financially. Third, research at the firm-level finds that EO has a generally positive but inconsistent relationship with firm performance (Rauch et al., 2009; Wiklund and Shepherd, 2011), and is more complicated when examining across organizational levels (Monsen and Boss, 2009; Wales et al., 2011). The conditions to turn corporate EO into business unit financial performance are little understood in theory and practice. We answer the following research question: *What are the contingencies of the relationship between a corporate EO and business unit financial performance?*

Building on resource-based theory and its capabilities extension, we develop a theoretical model detailing the effects of two categories of contingencies on the global willingness and local ability of business units to act on corporate EO and achieve improvements in business unit performance. First, resourcing is vital to turn a corporate emphasis on entrepreneurship (EO) into

innovation behavior by their business units (Ambos and Birkinshaw, 2010; Birkinshaw, 1997) since such activity is resource intensive (Kyriakopoulos et al., 2016). While corporate EO provides a corporate-level, *global willingness* and motivation for business units to radically innovate, the *local ability* of the business unit to radically innovate is contingent on financial investment in the business unit's research and development (R&D). Second, accounting for the learning capability available to the business unit to convert radical innovation into financial performance is necessary (Hull and Covin, 2010; Patel et al., 2015; Slater et al., 2014). Driven by a corporate orientation towards entrepreneurship, radical innovation places business units in positions of considerable uncertainty in which failures are expected. We propose that the ability of the business unit to convert radical innovation activity inspired by corporate EO into financial performance depends on its absorptive capacity. Business units possessing an absorptive capacity as a capability to acquire, assimilate, and transform knowledge are better placed to detect and correct errors in their actions and decision-making to derive value from their inventions (Engelen et al., 2014; Wang, 2008). Accordingly, we examine how business unit radical innovation mediates the relationship between corporate EO and business unit financial performance and that each half of this linkage is contingent on business unit R&D resourcing and absorptive capacity.

We test for these effects with data from 2820 business units of 1290 Taiwanese corporations from two separate surveys. We provide three contributions to the literature on corporate entrepreneurship and strategic entrepreneurship. First, Ireland et al. (2009) remind us that EO is a key part of corporate entrepreneurship strategy. But these scholars also argue that research into the multi-level effects of EO is needed to address the unanswered question of where within the corporation related entrepreneurial behaviors originate in ways that increase business unit performance. We give primacy to corporate EO and show that it has a bearing on the innovation

of business units, but this bearing is conditioned by vital moderators. Second, the EO behavior pattern is expected to pervade an organization at all levels (Covin and Slevin, 1991). But Wales et al. (2011) argue that the manifestation of strategic behaviors across organizational levels motivated by EO is unlikely to be consistent among business units. By developing a global willingness–local ability framework, we explain theoretically the potential for corporate EO to affect business units, and provide the first empirical test of the organizational pervasiveness of EO. Third, while studies acknowledge the multi-level implications of EO for organizational performance (Ireland et al., 2009; Wales, 2016; Wales et al., 2011; Zahra, 1993; Zahra et al., 2014), little theoretical or empirical treatment exists to delineate its multi-level effects or contingencies. We reveal boundary conditions to a productive relationship between corporate EO and business unit radical innovation and financial performance, correcting for where our knowledge is at its thinnest, and extend the emerging conversation on EO and variables that are causally adjacent to it (Arzubiaga et al., 2018; Covin and Wales, 2019; Hughes et al., 2018a).

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Corporate EO and Business Unit Performance: A Review

EO has its home in corporate entrepreneurship and strategy (Covin and Lumpkin, 2011; Wales, 2016; Zahra, 1993). In strategic entrepreneurship research, EO has an inescapable link with strategy (Dess et al., 1997) and corporate entrepreneurship strategy, in particular (Ireland et al., 2009). EO is seen as providing thematic direction to a company's operations (Kuratko and Audretsch, 2009) and can serve as a core defining component of corporate strategy (Kuratko et al., 2001), forming an organizational dominant logic that informs decision-making and resource allocation decisions (Morris et al., 2008). An EO shapes an organization's decision-making

practices, managerial philosophies, and strategic behaviors towards entrepreneurship (Anderson et al., 2009), and aspires to set the organization as a whole on a relatively stable entrepreneurial trajectory (Covin and Lumpkin, 2011). Each organization can be plotted against its dimensions (Covin and Slevin, 1991). For example, EO places emphasis on risk-taking (bold moves into unknown or uncertain business areas), innovativeness (experimentation with new ideas to initiate new products and services), and proactiveness (opportunity-seeking action to anticipate customer demands) and is expected to pervade an organization at all levels (Covin and Slevin, 1991) to motivate acts of corporate entrepreneurship (Corbett et al., 2013; Covin and Wales, 2019), and particularly among its business units (Wales et al., 2011). Various forms of corporate entrepreneurship exist (Sharma and Chrisman, 1999) including internal or external corporate venturing (Miles and Covin, 2002; Titus et al., 2019), sustained regeneration (i.e., continuous, incremental innovation) (Covin and Miles, 1999), rejuvenation of value chain activities (Dess et al., 2003), and strategic renewal and domain redefinition through truly new, radical innovation (Covin and Miles, 1999). It is the latter that is most indicative of a strong EO (Lumpkin and Dess, 1996), and particularly one that has permeated the business (Arzubiaga et al., 2018).

The potential consequences of corporate EO for business unit financial performance are not clear. In general, studies on firm/unit-level EO tend to report positive results (Rauch et al., 2009). But persistent criticisms exist (Gupta and Wales, 2017; Yang et al., 2019) with Wiklund and Shepherd (2011) arguing that EO can escalate experimentation in ways that produce large increases and large decreases in performance. Patel et al. (2015) evidence this effect, further finding that absorptive capacity increases and manages variations in innovation outcomes en-route to firm performance. Radical innovations encompassing products that are new or different to what has come before are themselves prone to failure (Kyriakopoulos et al., 2016; Slater et al., 2014).

THE MULTI-LEVEL EFFECTS OF CORPORATE ENTREPRENEURIAL ORIENTATION ON BUSINESS UNIT RADICAL INNOVATION AND FINANCIAL PERFORMANCE

The literature on corporate headquarters and business units suggests a competition for resources that escalates difficulties in converting a corporate EO into business unit performance. For example, a greater corporate EO suggests the likelihood that units are given autonomy around strategic choice, to voice ideas for investments in its markets, and to pitch for investment from the corporation (Ambos and Birkinshaw, 2010). Corporate headquarters are reliant on their units to seize rent-generating opportunities (Ambos and Birkinshaw, 2010; Luo, 2003), but doing so requires access or possession of critical strategic resources for such endeavors (Astley and Sachdeva, 1984; Birkinshaw, 1997). Moreover, while corporate EO may set a general corporate strategy for business units in the pursuit of new opportunities for revenue growth, business units are often new, self-contained, and individual with their own particular, different, and discrete focus, products, processes, markets, customers, industries and geographies (Kazanjian and Drazin, 1987; Wales et al., 2011). The resource intensity of EO-inspired behavior points to resources and capabilities as essential in facilitating the EO-performance relationship (Engelen et al., 2014). In sum, we take the view that the corporate senior management team sets a global (organization-wide) willingness toward entrepreneurship, but it is the business unit that must manifest the local ability to be entrepreneurial through its innovative behavior if corporate EO is to benefit business unit performance. To date, the potential relationship between corporate EO, business unit activity and its financial performance remains unresolved empirically and theoretically. We now move to posit a global willingness–local ability framework grounded in the resource-based view of the firm to explain the potential of corporate EO for business units.

Corporate EO, Business Unit Willingness-Ability to Radically Innovate, and Unit Performance: A Resource-based View

THE MULTI-LEVEL EFFECTS OF CORPORATE ENTREPRENEURIAL ORIENTATION ON BUSINESS UNIT RADICAL INNOVATION AND FINANCIAL PERFORMANCE

The willingness and ability of corporations to leverage the innovative and entrepreneurial potential of their business units represents a long-standing strategic imperative (Ambos and Birkinshaw, 2010; Bartlett and Ghoshal, 1989; Birkinshaw, 1997). Corporate EO sets a global (i.e., within the organization) *willingness* towards entrepreneurship, but this only reflects only how a corporation operates (or desires to operate) rather than what its business units do or achieve locally (i.e., within the unit itself) (e.g., Arzubiaga et al., 2018; Lumpkin and Dess, 1996).[1] Corporate headquarters infused with corporate EO, for their part, will strive to stimulate commensurate behaviors across their business units that manifest in actions to do with seeking out and responding to market signals, trends, and changes with new innovations. Business units, for their part, compete for resourcing to augment their market mandate. Resources are vital.

The basis for the importance of resources, both tangible (e.g., financial resources) and intangible (e.g., knowledge), to the linkage between corporate EO and business unit performance is based on the resource-based view (RBV) and the capabilities framework as an extension of the RBV. According to the RBV, firms are made up of uniquely distributed bundles of resources (Wernerfelt, 1984) in which resource heterogeneity persists over time (Barney, 1991). While tangible resources can be bought in part on factor markets, intangible resources are harder to acquire, being less prone to imitation and substitution (Barney, 1991). Entrepreneurial organizations are more reliant on their ability to fully utilize resources than other types of firms (Kreiser, 2011), but also rely on particular types of resources (Song et al., 2007) to achieve entrepreneurially-oriented outcomes. EO describes what an organization aspires to strategically,

---

[1] We thank an anonymous reviewer for recommending to us the global/local nomenclature. For clarity, 'global willingness' refers to the organization-wide strategic posture set by the corporate headquarters for its units to act in particular ways; 'local ability' refers to the subsequent ability of the business units itself to act on that corporate willingness.

and resources and capabilities capture how this strategy may ultimately be achieved. Without resources and capabilities, EO lacks the means to be realized (e.g., Engelen et al., 2014).

The capabilities extension makes up for the inability of the RBV to predict performance from resource advantages (Barreto, 2010; Wang and Ahmed, 2007; Wang et al., 2015). Business units require distinctive capabilities to make better use of its resources (Penrose, 1959). We use the capability framework to explain what changes resources into productive outcomes and when facing new conditions (Eisenhardt and Martin, 2000). Capabilities are the organizational and strategic routines through which resources are reconfigured to new activities (Winter, 2003), and studies of EO suggest their importance as enabling mechanisms to leverage the entrepreneurial potential of business units (Covin and Lumpkin, 2011). Conceptually, we see tangible resources of financial investment in R&D (Hurmelinna-Laukkanen et al., 2008) and capabilities in the form of radical innovation (Leifer et al., 2001; Slater et al., 2014; Wilden et al., 2013) and absorptive capacity (Berghman et al., 2013; Engelen et al., 2014; Patel et al., 2015) as vital to the corporate EO–business unit performance relationship.

First, Subramaniam and Youndt (2005) define radical innovation as "the capability to generate innovations that significantly transform existing products and services" (p. 452). Through radical innovation, new products are introduced with substantially different or new technologies that typically offer higher customer benefits over previous products in the industry (Kyriakopoulos et al., 2016). Such innovations are characterized by high market and technological uncertainty but with greater payoff potential than incremental innovation (Hurmelinna-Laukkanen et al., 2008). Radical innovation among business units is a manifestation of their local ability to be entrepreneurial, motivated by the corporate parent's global willingness or inclination towards entrepreneurship. However, in the RBV, resource endowment is the basis for action (Barney and

Arikan, 2001; Priem and Butler, 2001; Wernerfelt, 1984). Any business unit activity originating from corporate EO will be resource intensive (Covin and Slevin, 1991; Engelen et al., 2014). Business units acting on corporate EO by radically innovating will eventually exhaust their resources unless direct or adjacent resources are appropriately funded and replenished. Greater resourcing may then strengthen the corporate EO–unit innovation relationship. For business unit radical innovation to manifest from the corporate strategic posture towards entrepreneurship, enough R&D resourcing is needed at the business unit level to cement its ability to act. We expect that sufficient supply of financial resources into business unit R&D (the source at which unit radical innovation capability enacts) will affect the linkage between corporate EO and business unit radical innovation.

Second, performance outcomes originating from EO relationships may depend on learning-related processes contained in learning capabilities (Covin and Lumpkin, 2011). Business units frequently face difficulties in profiting from radical innovation (Kyriakopoulos et al., 2016; Rubera and Kirca, 2012). While we expect corporate EO encourages business units' radical innovation activity to produce high-potential inventions, these may ultimately be unrewarding if the unit's commercialization and launch strategy are inadequate (Talke and Hultink, 2010), faulty market vision (Reid and de Brentani, 2010), or weak technology vision (Reid and Roberts, 2011). Knowledge deficits are commonly at the root cause of these problems and can cause business units to underperform despite a radical innovation capability (Slater et al., 2014; Snihur and Wiklund, 2019). Thus, business units require an absorptive capacity, the capability to acquire, assimilate, and use knowledge about markets to successfully exploit innovations generated in the course of its business activities (Cohen and Levinthal, 1990; Zahra and George, 2002). Absorptive capacity

sets the routines of variation, selection, and retention needed to augment the ability to innovate with the ability to profit from it.

We present our multi-level model in Figure 1.

Insert Figure 1 about here

Hypotheses Derivation

Corporate EO is distant to the financial performance of the business unit, and we expect business unit radical innovation to mediate the relationship between the two. Corporate EO serves as an instrument or mechanism that provides direction to the actions of business unit. It sets the emphasis and tone of corporate entrepreneurship strategy (Ireland et al., 2009). Higher corporate EO demonstrates to the business unit a global corporate willingness for more innovative, risky projects as a pathway to corporate goals. In response, this corporate strategic posture creates an internal market for headquarter attention among business units (Haas and Hansen, 2001) in which only commensurate business unit initiatives can compete for strategic resources, pitch for investment, and maintain unit autonomy (Ambos and Birkinshaw, 2010). In resource-based terms, the capability to produce new innovation initiatives represents the unit's achieved entrepreneurial actions and contributory local role in light of corporate entrepreneurial strategy (Ambos and Birkinshaw, 2010). Distinctive capabilities are an engine for business unit growth (Birkinshaw, 1996), and business unit radical innovation advances new ways for the corporation to make use of or expand its resources (Birkinshaw, 1997) to ultimately seize new rents through the endeavors of its business units. Ceteris paribus, units will strive for a higher level of corporate attention (as a resource in its own right) (Ambos and Birkinshaw, 2010). Because business units have path dependency, resource constraints, and a well-formed understanding of its existing markets, its

ability to perform in response to a corporate willingness for risk-taking, innovativeness, and proactiveness comes from its capability to radical innovate – shifting attention from existing opportunities toward the new (Eshima and Anderson, 2017). With higher corporate EO, more innovative, risky, uncertain projects are likely to be undertaken across its business units (Covin and Slevin, 1989, 1991; Zahra, 1993; Zahra and Covin, 1995), thereby increasing the potential for sizeable returns to the business unit. Thus, we hypothesize that business unit radical innovation mediates the relationship between corporate EO and business unit performance:

Hypothesis 1: Business unit radical innovation positively mediates the relationship between

corporate EO and business unit financial performance.

The performance consequences of available strategic resources are consistently identified as central to the RBV of the firm (Kouropalatis et al., 2012). Within the rubric of corporate strategy, business units have local latitude over resource allocation but also rely on pitching for and securing strategic resources from the corporate headquarter. The business unit cannot undertake an infinite number of activities in response to priorities set by a corporate EO. Moreover, previous studies suggest that an EO may inspire innovative behavior that is either explorative or exploitative (Arzubiaga et al., 2018), resembling new entry (Lumpkin and Dess, 1996) or acts of renewal (Covin and Miles, 1999), or other forms of market activity (Miller, 1983) including mere incremental innovation. Entrepreneurially-oriented behavior (Engelen et al., 2014; Wiklund and Shepherd, 2011) and radical innovation (Hurmelinna-Laukkanen et al., 2008; Kyriakopoulos et al., 2016) are resource intensive, and the business unit's ability to undertake radical innovation is dependent on the provision and commitment of resources that fund its directly-related and adjacent activities.

Under the RBV then, corporate EO sets a global willingness and set of priorities around business unit behavior, but only when sufficient resources are available to the business unit can actions with the potential to drive competitive advantages truly form (Barney and Arikan, 2001; Priem and Butler, 2001). Implementation support is a recognized 'strategic' resource under the RBV and concerns the allocation of necessary resources for such actions to occur (Hughes and Morgan, 2007). A lack of support is highlighted by Menon et al. (1999) as a key reason why in practice many organizational intentions fail to be realized, since weak or insufficient resource allocation constrains implementation and, thus, damages performance returns (Hughes and Morgan, 2007). For example, corporations that pursue exploration embed effective resource support structures to enhance market responsiveness and ensure performance gains (Kouropalatis et al., 2012). Given the focus on realizing business unit radical innovation from corporate EO, R&D investment becomes central to the organizational narrative.

We therefore expect that the local ability of a business unit to effectively generate radical innovation initiatives mandated under a corporate EO depends on sufficient business unit R&D resourcing to enable long-term development and offset sunk costs. Higher R&D resourcing then steers the attention of the business unit further towards radical innovation instead of the alternative outcomes possible from a corporate EO (Hurmelinna-Laukkanen et al., 2008). The intensity of investment in business unit R&D resourcing provides the lifeblood for new product development initiatives and support organizational efforts to generate a radical innovation capability (Hughes et al., 2019; Slater et al., 2014). Thus, we expect higher amounts of business unit R&D resource intensity to positively moderate the relationship between corporate EO and business unit radical innovation:

Hypothesis 2: Business unit R&D resourcing intensity positively moderates the relationship

between corporate EO and business unit radical innovation.

Returns to business unit financial performance from its radical innovations are uncertain, with

the success rates of new innovations often modest (Rubera and Kirca, 2012) and failing to yield

the sort of sales growth anticipated when creating new products that envision genuinely new uses

or markets. In the capabilities extension to the RBV, this disappointment can be attributed to weak

learning capabilities. A failure to learn and apply knowledge appropriately in the

commercialization process (Kyriakopoulos et al., 2016) coupled with knowledge deficits due to

poor organizational learning (Slater et al., 2014) can lead to the inappropriate use of business

models to new circumstances (Snihur and Wiklund, 2019). Absorptive capacity as a critical

learning capability can soften the tendency for extreme variation resulting from EO-inspired

behavior (Patel et al., 2015).

The value of organizational learning is realized when firms can effectively process a large

volume of data as a precursor to action, but this process of interpretation is open to error, as

discussed by Morgan and Turnell (2003). Nevertheless, "it is imperative for firms to acquire and

use external knowledge to advance innovation and enhance performance" (Tzokas et al., 2015, p.

134), and here lies the need for an absorptive capacity capability (e.g. Zahra and George, 2002).

As a dynamic capability, absorptive capacity can provide business units with constant access to

new knowledge and information (Wang and Ahmed, 2007), enabling employees to better

evaluate opportunities for commercialization (Cohen and Levinthal, 1990), draw appropriate

conclusions (Zahra and George, 2002), enhance the entrepreneurial process (Sirén et al., 2017)

and lend confidence to their ability to handle risk (Engelen et al., 2014). A business unit with a

higher absorptive capacity exhibits a greater ability to identify, assimilate, transform, and apply new knowledge to its commercial activities. This enables business unit members to detect and correct errors in its commercial activities more rapidly (Cohen and Levinthal, 1990), make better informed decisions when faced with uncertainty and incomplete information (Engelen et al., 2014), and build new or revised market visions when commercializing radical innovation (Reid and de Brentani, 2010; Slater et al., 2014). It is therefore expected that a dynamic absorptive capacity capability will enable business units to better capture and translate opportunities in a dynamic environment into profitable products and services (Tzokas et al., 2015). On the other hand, a business unit with low absorptive capacity has fewer knowledge stocks to rely on and few routines to augment its knowledge stocks when faced with situations that are new and emergent (Wang, 2008). Such a business unit is more likely to misread markets or fail to appreciate reactions to radical innovations that compromise performance. Thus, given the centrality of absorptive capacity to a unit's ability to commercialize innovations for increased profitability (e.g. Tzokas et al., 2015), we expect a business unit's absorptive capacity to positively moderate the relationship between its radical innovation and its financial performance:

Hypothesis 3: Business unit absorptive capacity positively moderates the relationship between business unit radical innovation and business unit financial performance.

METHODOLOGY

Sample

We carried out our study in Taiwan. Taiwan is an ideal context for examining corporate entrepreneurship, business unit radical innovation, and business unit performance. Taiwanese organizations drive industrial transformation through their entrepreneurial activities (Chang et al.,

2017), evidenced by Taiwanese manufacturers' capability to adopt new product innovation for
economic growth (Tseng and Goo, 2005). Their entrepreneurial activity plays a crucial role in
fostering economic development and growth in Asian economies (Hughes et al., 2018b).

We identified a list of multi-unit corporations from the database of the Taiwan Economic
Journal (TEJ). Three sectors including high technology, biotechnology and traditional
manufacturing in Taiwan were deemed especially suitable for this study. These sectors prioritize
excellent performance by quickly responding to change to confront fierce competition in the
domestic and international market. Thus, we assumed that Taiwanese corporations in these sectors
will exhibit EO, will invest financial resources in R&D activity, rely on the ability to encounter
and absorbing external knowledge, and generate innovations as part of their business units'
performance. Organizations in these three sectors invest in a technology portfolio, focus on
expanding current businesses to new geographic regions, and develop new products. We chose
business units of large diversified Taiwanese corporations from these three sectors as a unit of
analysis. These business units are in different geographic regions (i.e., Taiwan and Jiangsu
Province in China) and pursue product innovation. Each business unit has its management team
and is typically a profit center. Each business unit has its R&D department, typically, to develop
novel products and services. The headquarters (HQs) of business units typically delegates power
to the business units to make decisions about which innovative products and services to develop
or pursue. The HQs typically play a role in supporting business units to develop novel products
and services but do not get involved in their implementation or production.

We invited the Chief Executive Officer (CEO) of each corporation to provide the contact
information of a key individual with administrative responsibilities (e.g., director of human
resources) who could further assist us in identifying supervisor-subordinate dyads in the

organization. With the assistance of the administrative contact from each corporation's headquarters, we identified (1) senior corporate managers in the corporation to receive our survey, and (2) two business unit managers including one general manager and one operations manager in each business unit to receive our survey. The administrative contact distributed the surveys to the identified senior corporate managers and business unit managers along with an introductory letter from the CEO explaining the purpose of the study and encouraging staff to take part in the research study. We included a return envelope in this package. This process resulted in an initial, randomly-selected sampling pool of 5000 senior managers at the corporate level and 5800 business unit managers at the unit level. We promised a copy of the findings to the participants. Each participant will receive USD 30 dollars by answering the questionnaire. We collected data across two different time periods in early 2013 and mid-2013. In early 2013 (Time 1), we sent the survey to the 5000 senior corporate managers randomly-selected for participation (at the corporate level), and in mid-2013 (Time 2, six months later), we sent the survey to the 5800 business unit managers randomly-selected for participation (at the business unit level). The surveys were developed in English and translated into Chinese using the back-translation method (Brislin, 1980).

In each instance, we surveyed at least two senior managers at the headquarters of each corporation and at least two business units and at least two managers from each business unit. After four weeks with three rounds of reminders, we received responses from 4775 senior managers at the corporate level (95.5% response rate) and 5650 business unit managers (97.4% response rate) from 1290 corporations and 2820 business units. Of these 2820 business units, 1410 business units were in high technology (50.0%) (e.g., information technology, semiconductor), 780 business units were biotechnology (27.7%) (e.g., bioengineering, biomedical engineering), and 630 business units were in traditional (e.g., food and drink) manufacturing (22.3%). The

percentage of business units in Taiwan is 66.7%. The percentage of business units in Jiangsu province in China is 33.3%.

To construct our final dataset, we did not include business units from which we received usable responses from fewer than two managers. Our final dataset was then composed of 4770 senior managers and 5640 business unit managers from 1290 corporate headquarters and 2820 business units. The average number of business units of each corporation surveyed were 2.19 units (s.d. 0.15), the average number of managers of a business unit surveyed were 2.00 managers (s.d. 0.00), and the average number of senior corporate managers of each firm surveyed was 3.70 (s.d. 1.46).

We compared the corporations included in our final sample with those removed through the process described above. We found no significant differences regarding the number of full-time general managers or the number of business units. Of the business unit managers in our sample, their average age was 43 years; 64.4 percent had bachelor degrees, 24.8 percent had master degrees and above, and 10.8 percent of unit managers had a diploma; their average tenure was 7.71 years, and the percentage of male business unit managers was 60.8%. The average corporation size was 1984.77 employees. The average corporation age was 23.4 years.

Using multiple sources of data across two time periods reduce the danger of common method variance. At Time 1 (early 2013), 5000 senior corporate managers drawn from each sampled corporation's headquarters were chosen at random to rate corporate EO. At Time 2 (six months later), 5800 business unit managers were randomly selected from the 2820 business units of the 1290 corporations. These business unit managers were instructed to answer the questionnaire to rate their business unit's absorptive capacity and radical innovation. We collected the business unit R&D intensity data from the TEJ database. One year after the data collection and three years after

the data collection, we obtained two time-lagged objective financial performance data on each business unit from the TEJ database (the years 2014 and 2016). TEJ is one of the leading research agents in Taiwan (equivalent to Standard and Poor's and Moody's in the United States). TEJ provides the most comprehensive financial database in Taiwan, and it is regularly used for scholarly research examining the innovation behavior and performance of Taiwanese-listed companies (Hsu et al., 2013). Prior studies have shown TEJ to be a reliable source of financial information for listed companies in Taiwan (Hwang et al., 2012).

Measures

The *corporate-level EO* scale was sourced from Covin and Slevin (1989) and included all 9 items measured on a 7-point agreement scale. Covin and Slevin's (1989) measure of EO is the most-widely used and validated measures of EO (Covin and Wales, 2012). While its items were originally set at the business unit level, they are readily applicable to corporate strategy and form the basis of recent efforts to establish financial or text-based equivalents (Miller and Le Breton-Miller, 2011; Short et al., 2009). Following earlier studies, we accounted for the measurement error of our variables by forming parcels of indicators for each latent construct using the random assignment technique (Gong and Fan, 2006). Our theorized model with four randomly created parcels under each factor fit the data well ($\chi^2 = 69.31$, df = 2, RMSEA = 0.08, CFI = 0.99, GFI = 0.99, TLI = 0.92) (Cronbach's $\alpha = 0.70$). Tests revealed that the senior managers from the same corporation had high agreement regarding corporate EO (mean $r_{wg(j)} = 0.91$, ICC(1) = 0.12, ICC(2) = 0.49, $F(1289,3480) = 1.59$, $p < .05$).

The *business unit-level radical innovation* scale was adapted from Subramaniam and Youndt (2005) and included all three items measured on a 7-point agreement scale. Consistent with our

definition, and with our theorizing from an RBV and its capabilities extension, Subramaniam and Youndt's (2005) items measure radical innovation activity as a business unit's capability to make current product/service lines obsolete. These items were "Innovation at the unit level that make your prevailing product/service lines obsolete; Innovations at the unit level that fundamentally change your prevailing products/services; Innovations at the unit level that make your existing expertise in prevailing products/services obsolete." Tests revealed that business unit managers from the same corporation and business unit had a high level of agreement regarding business unit-level radical innovation (mean $r_{wg(j)}$ = 0.77, ICC(1) = 0.17, ICC(2) = 0.28, $F(2819,2820)$ = 1.36, p < .05) (Cronbach's α = 0.84).

The *business unit-level absorptive capacity* scale was adapted from Jansen et al. (2005) and included 6 items measured on a 7-point scale. Consistent with our treatment of absorptive capacity as a capability, these measures focus in the extent to which the business unit can acquire and assimilate new external knowledge, and the extent to which it can effectively transform and exploit new external knowledge. Our theorized model with four randomly created parcels under each factor fit the data well (χ^2 = 20.10, df = 2, RMSEA = 0.04, CFI =0.99, GFI = 0.99, TLI = 0.98) (Cronbach's α = 0.73). As before, tests revealed that managers from the same business unit had a high level of agreement regarding business unit-level absorptive capacity (mean $r_{wg(j)}$ = 0.99, ICC(1) = 0.12, ICC(2) = 0.21, $F(2819,2820)$ = 1.11, p < .05).

We defined *business unit-level R&D intensity* as the value of financial resources invested in R&D activity and obtained from the publicly available database maintained by TEJ. Financial investment in R&D is a necessary investment to support innovation capabilities (Hughes et al., 2019), and particularly radical innovation (Hurmelinna-Laukkanen et al., 2008) to occur over and above more simple forms of innovation. We recognize that different business units operate in areas

that differ in the degree of R&D expenditure required to compete successfully. Although R&D

intensity is difficult to define and measure precisely, it is related to technological opportunity. Weak

investment in the business unit's R&D suggests low levels of R&D activity commensurate with a

low yield of noticeable innovation. We view R&D intensity as company-financed business unit

research and development expenditures as a percentage of business unit sales and transfers during

2013 (Bromiley et al., 2017).

We obtained *business unit-level financial performance* data from a publicly available

database maintained by TEJ. TEJ includes information about the revenue of each reportable

business division. The requirement for listed Taiwanese companies to disclose business unit-level

information originates from International Financial Reporting Standard 8 (IFRS, 2008) and

Taiwan's Generally Accepted Accounting Principles (Taiwan GAAP, 2011). This type of

information has been available in TEJ since 2011. Consistent with prior studies, we used sales

growth as the measure of business unit financial performance and measured this at T_0, T_1 (one year

after survey data collection), and T_2 (three years after survey data collection) to allow for a possible

time lag effect of corporate EO on business unit outcomes (e.g., Zahra and Covin, 1995). Business

unit sales growth is vital for corporations because it is evidence of their ability to seize rents from

market opportunities and forms the core return to the corporation.

We included several control variables as covariates. We included several control variables as

covariates. First, we controlled for a *size effect* (the number of employees of a corporation

[*corporation size*], number of a business unit's employees [*business unit size*], and number of

members of the top management team [*corporate TMT size*] in a corporation), *environmental

complexity* and *industry sectors* (traditional manufacturing, high technology, biotechnology) as

dummy variables to reflect changing resource contexts (Covin and Slevin, 1989). Second, we

controlled for *corporate age* and *business unit age* because these variables are related to corporate and unit entrepreneurship (Hayton, 2005). Third, we controlled for *business unit-level managers' tenure* since this is related to business unit-level entrepreneurial activity (Simsek, 2007). Fourth, we controlled for *business unit autonomy (vertical and horizontal)* with items adapted from Hill and Birkinshaw (2014). The *business unit-level vertical autonomy* (the extent to which unit managers had the authority to make various types of investment decisions) scale included all 4 items measured on a 7-point agreement scale. The *business unit-level horizontal autonomy* (how extensively other business units within the parent company were involved in decision-making on the unit's investments) scale included all 3 items measured on a 7-point agreement scale. We controlled for both vertical and horizontal autonomy because these affect the independent power of business units to create novel products and services (Hill and Birkinshaw, 2014). Fifth, we controlled for *business unit EO* to represent the independent local willingness of the business unit to engage in entrepreneurship. We sourced items from Covin and Slevin (1989) and included all 9 items measured on a 7-point agreement scale. Finally, we controlled for *business units in Taiwan* and *business units in Jiangsu Province in China*.

RESULTS

Table 1 contains the descriptive statistics and correlations. We used Mplus (version 6.0; Muthén and Muthén, 2010) and followed the one-stage procedure used by Croon and Van Veldhoven (2007). This procedure simultaneously estimates the unique contributions of direct, mediating (via business unit-level radical innovation), and moderating pathways (business unit-level R&D intensity and business unit-level absorptive capacity) in explaining business unit-level financial performance from corporate EO. Table 2 shows the Mplus results of the effects of corporate EO

on business unit radical innovation and business unit financial performance. To further verify the findings (Table 2), we also applied the Monte Carlo Bootstrapping approach (MacKinnon et al., 2004) and bootstrapped 20,000 estimations of our expected mediation and moderation effects.

Hypothesis 1 predicts that business unit-level radical innovation mediates the relationship between corporate EO and business unit financial performance. The analysis followed the process suggested by Kenny et al. (1998) to test the mediating role of business unit radical innovation. First, research findings presented in Part A reveal that corporate EO was significantly related to business unit financial performance (2014 direct effect = .04, $p < .05$, 2016 direct effect = 0.05, $p < .01$). Second, the results of Part B demonstrate a significant, positive mediating relationship between corporate EO and business unit financial performance (2014 mediating effect = 0.16, $p < .01$, 2016 mediating effect = 0.11, $p < .01$, Table 2). Hypotheses 1 is supported.

Hypothesis 2 proposes that business unit-level R&D resourcing intensity positively moderates the relationship between corporate-level EO and business unit-level radical innovation. The results of Part C show that R&D resourcing intensity significantly moderates this relationship (moderating = 0.93, $p < .01$, Table 2), supporting Hypothesis 2.

Hypothesis 3 proposes that business unit-level absorptive capacity positively moderates the relationship between business unit-level radical innovation and business unit-level financial performance. The results of Part C show that business unit-level absorptive capacity significantly moderates this relationship (2014 moderating effect = 0.72, $p < .01$, 2016 moderating effect = 0.81, $p < .01$, Table 2). Hypothesis 3 is supported.

We also performed simple slope tests. The indirect effect of corporate-level EO on business unit-level radical innovation at low and high levels of business unit-level R&D intensity is significant (t = 12.01, $p < .01$, Figure 2). The indirect effect of corporate-level EO (via business

unit radical innovation) on business unit-level financial performance at low and high levels of business unit-level absorptive capacity (2014: t = 32.66, *p* < .01, 2016: t = 25.15, *p* < .01) is also significant (Figures 3). Additionally, we plotted the moderating effects business unit-level R&D intensity (Figure 2) and business unit-level absorptive capacity (Figures 3) as per Cohen et al. (2003), and the results are further consistent with Hypotheses 2 and 3. We further discuss the meaning of the slopes in the section titled Managerial Implications.

Insert Tables 1 and 2 about here
Insert Figure 2 and 3 about here

Robustness analyses

Table 3 to Table 5 show the Mplus results of the effects of corporate EO on business unit radical innovation and business unit financial performance across high technology, biotechnology, and traditional manufacturing industries.

For Hypothesis 1, the results of Part B demonstrate a significantly positive mediating relationship between corporate-level EO and business unit-level financial performance [high technology: (2014 mediating effect = 0.07, *p* < .05; 2016 mediating effect = 0.14, *p* < .01; Table 3); biotechnology: (2014 mediating effect = 1.60, *p* < .01; 2016 mediating effect = 1.05, *p* < .01; Table 4); traditional manufacturing: (2014 mediating effect = 0.16, *p* < .05; 2016 mediating effect = 0.10, *p* < .05; Table 5)]. Hypotheses 1 is further supported.

For Hypothesis 2, the results of Part C show that R&D resourcing intensity significantly moderates this relationship [high technology: (moderating effect = 0.44, *p* < .01; Table 3); biotechnology: (moderating effect = 0.43, *p* < .01; Table 4); traditional manufacturing: (moderating effect = 0.46, *p* < .01; Table 5)]. Hypothesis 2 is further supported.

For Hypothesis 3, the results of Part C show that business unit-level absorptive capacity significantly moderates this relationship [high technology: (2014 moderating effect = 0.11, $p < .05$; 2016 moderating effect = 0.94, $p < .05$; Table 3); biotechnology: (2014 moderating effect = 0.35, $p < .01$; 2016 moderating effect = 0.64, $p < .01$; Table 4); traditional manufacturing: (2014 moderating effect = 0.47, $p < .01$; 2016 moderating effect = 0.59, $p < .01$; Table 5)]. Hypotheses 3 is further supported.

We performed additional simple slope tests. The indirect effect of corporate-level EO on business unit-level radical innovation at low and high levels of business unit-level R&D intensity are significant across the three industries (high technology: t = 20.17, $p < .01$, Figure 4; biotechnology: t = 26.05, $p < .01$, Figure 6; traditional manufacturing: t = 12.06, $p < .01$, Figure 8). The indirect effect of corporate-level EO (via business unit radical innovation) on business unit-level financial performance at low and high levels of business unit-level absorptive capacity across these industries are also significant (high technology: [2014: t = 33.41, $p < .01$, Figure 5; 2016: t = 41.41, $p < .01$, Figure 5]; biotechnology: [2014: t = 42.24, $p < .01$, Figure 7; 2016: t = 35.52, $p < .01$, Figure 7]; traditional manufacturing: [2014: t = 20.57, $p < .01$, Figure 9; 2016: t = 18.80, $p < .01$, Figure 9]). The results are further consistent with Hypotheses 2 and 3. We conclude our results are robust to industry.

Insert Tables 3 to 5 about here
Insert Figure 4 to 9 about here

Table 6 to Table 7 show the Mplus results of the effects of corporate EO on business unit radical innovation and business unit financial performance across the corporation age.

For Hypothesis 1, the results of Part B demonstrate a significantly positive mediating relationship between corporate-level EO and business unit-level financial performance [high

corporation age: (2014 mediating effect = 0.13, $p < .05$; 2016 mediating effect = 0.16, $p < .01$; Table 6); low corporation age: (2014 mediating effect = 0.16, $p < .01$; 2016 mediating effect = 0.06, $p < .05$; Table 7)]. Hypotheses 1 is further supported.

For Hypothesis 2, the results of Part C show that R&D resourcing intensity significantly moderates this relationship [high corporation age: (moderating effect = 0.87, $p < .01$; Table 6); low corporation age: (moderating effect = 0.96, $p < .01$; Table 7)]. Hypothesis 2 is further supported.

For Hypothesis 3, the results of Part C show that business unit-level absorptive capacity significantly moderates this relationship [high corporation age: (2014 moderating effect = 0.32, $p < .01$; 2016 moderating effect = 0.54, $p < .01$; Table 6); low corporation age: (2014 moderating effect = 0.67, $p < .01$; 2016 moderating effect = 0.85, $p < .01$; Table 7)]. Hypotheses 3 is further supported.

We performed additional simple slope tests. The indirect effect of corporate-level EO on business unit-level radical innovation at low and high levels of business unit-level R&D intensity are significant across the corporation age (high corporation age: t = 29.35, $p < .01$, Figure 10; low corporation age: t = 33.88, $p < .01$, Figure 12). The indirect effect of corporate-level EO (via business unit radical innovation) on business unit-level financial performance at low and high levels of business unit-level absorptive capacity across the corporation age are also significant (high corporation age: [2014: t = 20.52, $p < .01$, Figure 11; 2016: t = 27.79, $p < .01$, Figure 11]; low corporation age: [2014: t = 33.06, $p < .01$, Figure 13; 2016: t = 28.46, $p < .01$, Figure 13]). The results are further consistent with Hypotheses 2 and 3. We conclude our results are robust to corporation age.

Insert Tables 6 to 7 about here
Insert Figure 10 to 13 about here

Table 8 to Table 9 show the Mplus results of the effects of corporate EO on business unit radical innovation and business unit financial performance across the business units in Taiwan and Jiangsu province in China.

For Hypothesis 1, the results of Part B demonstrate a significantly positive mediating relationship between corporate-level EO and business unit-level financial performance [business units in Taiwan: (2014 mediating effect = 0.16, $p < .01$; 2016 mediating effect = 0.11, $p < .01$; Table 8); Jiangsu province in China: (2014 mediating effect = 0.16, $p < .01$; 2016 mediating effect = 0.10, $p < .01$; Table 9)]. Hypotheses 1 is further supported.

For Hypothesis 2, the results of Part C show that R&D resourcing intensity significantly moderates this relationship [business units in Taiwan: (moderating effect = 0.93, $p < .01$; Table 8); Jiangsu province in China: (moderating effect = 0.92, $p < .01$; Table 9)]. Hypothesis 2 is further supported.

For Hypothesis 3, the results of Part C show that business unit-level absorptive capacity significantly moderates this relationship [business units in Taiwan: (2014 moderating effect = 0.72, $p < .01$; 2016 moderating effect = 0.81, $p < .01$; Table 8); Jiangsu province in China: (2014 moderating effect = 0.74, $p < .01$; 2016 moderating effect = 0.82, $p < .01$; Table 9)]. Hypotheses 3 is further supported.

We performed additional simple slope tests. The indirect effect of corporate-level EO on business unit-level radical innovation at low and high levels of business unit-level R&D intensity are significant across the business units in Taiwan and Jiangsu province in China (business units in Taiwan: t = 37.70, $p < .01$, Figure 14; Jiangsu province in China: t = 26.88, $p < .01$, Figure 16). The indirect effect of corporate-level EO (via business unit radical innovation) on business unit-level financial performance at low and high levels of business unit-level absorptive capacity across

the business units in Taiwan and Jiangsu province in China are also significant (business units in

Taiwan: [2014: t = 38.31, p < .01, Figure 15; 2016: t = 35.56, p < .01, Figure 15]; Jiangsu province

in China: [2014: t = 26.45, p < .01, Figure 17; 2016: t = 24.50, p < .01, Figure 17]). The results are

further consistent with Hypotheses 2 and 3. We conclude our results are robust to business units in

Taiwan and Jiangsu province in China.

Insert Tables 8 to 9 about here
Insert Figure 14 to 17 about here

DISCUSSION

Theoretical implications

To date, we know surprisingly little about whether EO manifest at the corporate level can bear

effects on the corporation's business units. We answer two urgent questions: (1) can a corporate

entrepreneurial orientation benefit business unit financial performance, and (2) what are the

contingencies of this relationship? At first glance, the answer to the first question is 'yes': multi-

unit corporations should embed a corporate EO that permeates the actions of its business units to

create the radical innovations needed to grow business unit financial performance. We find that

corporate EO contributes indirectly to a business unit's financial performance by stimulating

business unit radical innovation. Moreover, our results reveal that the magnitude of the benefit

relies on resource-based and capability-based moderators at the business unit level. Business unit

R&D intensity moderates the relationship between corporate EO and business unit radical

innovation activity, and business unit absorptive capacity moderates the relationship between that

innovation activity and business unit financial performance. We provide three contributions to the

corporate entrepreneurship and strategic entrepreneurship literatures.

THE MULTI-LEVEL EFFECTS OF CORPORATE ENTREPRENEURIAL ORIENTATION ON
BUSINESS UNIT RADICAL INNOVATION AND FINANCIAL PERFORMANCE

First, we contribute much-needed new knowledge to the multi-level implications of EO. EO
is a key part of corporate entrepreneurship strategy, yet Ireland et al. (2009) argue that the question
of 'where' within organization related entrepreneurial behaviors originate in ways that increase
performance has remained unanswered. We distil this problem as one of appreciating EO as an
attribute of the organization's global willingness for entrepreneurship versus the discrete local
corporate entrepreneurial activities that then take place (or not) within the wider organization. As
far back as Zahra (1993), as a field we know that entrepreneurship activities can and do occur at
(and cut across) multiple levels within a firm (see also Zahra et al., 2014). In spite of this fact,
research on EO has remained stubbornly at the business unit level, taking for granted that Covin
and Slevin's (1989) original position on EO as a business unit phenomenon meant that this must
be to the exclusion of all other levels of analysis. Contemporary studies show that this is not so
(e.g., Hughes et al., 2018a; Kraus et al., 2019), and appreciation has grown of the potential
ramifications of EO at other levels of analysis (Ireland et al., 2009; Wales et al., 2011), with studies
pointing to the corporate level as particularly salient (Grühn et al., 2017; Titus et al., 2019). This
shift occurred perhaps inadvertently due to efforts to create new metrics for EO arising from
financial or investor materials (Miller and Le Breton-Miller, 2011; Short et al., 2009). Despite over
30 years of progress since Miller's (1983) and Covin and Slevin's (1989) seminal works on EO,
the corporate level has remained stagnant, disconnected from the well-established fact that
companies commonly have different businesses, each of which might exhibit entrepreneurship and
innovation differently due to the strategic posture of the corporate parent. Our study is the first to
give primacy to corporate EO and reveal the positive bearing it has on the entrepreneurship and
performance of business units. In doing so, we offer a platform from which to dramatically move
forward the conversation on EO and embrace new levels of analysis long called for among

corporate entrepreneurship scholars (Zahra, 1993; Zahra et al., 2014).

Second, we provide theory and empirical evidence to explain how and when business units will profit financially from a corporate EO. Covin and Slevin (1991) propose that EO represents a strategic posture against which all organizations can be plotted. However, Wales et al. (2011) and Wales (2016) caution that EO will manifest activities heterogeneously across business units, such that its effects on business unit performance are unlikely to be consistent. This suggests that boundary conditions exist in the corporate–unit EO–performance relationship. We reveal the conditions. Corporate EO indirectly affects business unit financial performance through the mediating effect of unit radical innovation. Moreover, we reveal two new moderators that explain why the manifestation of corporate EO-inspired strategic behaviors across the organization is unlikely to be consistent among its business units or profit those units to the same degree. Sufficient business unit R&D resourcing and business unit absorptive capacity are resource-based and capability-based boundary conditions that moderate the manifestation of corporate EO into business unit radical innovation and into unit financial performance, respectively. This new information is essential to overcome the theoretical leap from willingness to ability scholars have relied on to date to predict the organizational performance effects of EO. There is a distinct difference between the *willingness* and inclination towards entrepreneurship and the *ability* to execute entrepreneurial behavior in the form of innovation (Arzubiaga et al., 2018; Kollmann and Stöckmann, 2014; Lumpkin and Dess, 1996). A strong corporate EO represents an organizational strategic posture (a global corporate willingness) to pursue 'high risk/reward' as a corporate and competitive strategy (Covin and Slevin, 1991). As Wales et al. (2011) reasoned, this suggests that a corporate EO permeates the organization widely and is capable of inspiring specific strategic behaviors the corporation's business units; but it relies on conditions in the business unit to perform

those commensurate entrepreneurial activities (its local ability). We explain the potential for corporate EO to pervade the wider organization and provide the first set of empirical evidence that tests this thesis.

Third, we respond to repeated yet unanswered calls among scholars for multi-level treatments of EO (Covin and Slevin, 1991; Ireland et al., 2009; Wales, 2016; Wales et al., 2011; Zahra, 1993; Zahra et al., 2014) by detailing the global willingness–local ability mechanism between the corporation and business unit. In revealing boundary conditions to a productive relationship between corporate EO, business unit radical innovation activity, and financial performance, we correct for where our theoretical and empirical knowledge is at its thinnest, extending the emerging conversation on EO to variables that are causally adjacent to it (e.g., Arzubiaga et al., 2018; Covin and Wales, 2019; Hughes et al., 2018a; Kollmann and Stöckmann, 2014). Corporate EO sets the scene for corporate strategic decision-making processes and establishes its direction of travel, inciting innovation activity among business units. For example, corporate EO incites actions to do with seeking out and responding innovatively to market signals. Realizing such a benefit, however, relies on additional business unit conditions. Business unit R&D resourcing is needed to steer the implementation of corporate EO at the business-unit level specifically into high risk and high reward radical innovation, without which the unit may merely engage in exploitative incremental innovation (Arzubiaga et al., 2018). Absorptive capacity is subsequently crucial. Business units with a better absorptive capacity increase their stock of intellectual capital such that they can convert opportunities and market visions about entrepreneurship and radical innovation into outcomes that make valuable financial contributions to the unit. The unit's absorptive capacity—its ability to acquire, assimilate, and transform knowledge to make appropriate decisions about commercialization—also allows the business unit

to detect and correct errors in its actions, necessary to refining commercialization activity. This dynamic is central to the corporation, who profits when its units are effective at seizing rents from new opportunities. The triad among firm EO, business unit resourcing, and business unit learning capability answers why the willingness towards entrepreneurship (EO) does not automatically develop or translate into innovative behavior when transcending levels of analysis (Arzubiaga et al., 2018; Dess and Lumpkin, 2005; Hughes et al., 2018a; Ireland et al., 2009; Kollmann and Stöckmann, 2014; Lumpkin and Dess, 1996). This contribution, and accompanying global willingness–local ability framework, deepens our understanding of how the multi-level effects of corporate EO on business unit innovation and performance occur.

Managerial implications

Corporate managers can stimulate business unit performance through a corporate EO. However, while corporate EO is *intended* to be an organization-wide strategic posture, and provides senior managers with an essential means to inspire business unit radical innovation to increase business unit financial performance, the extent to which a corporate EO does so depends on R&D resourcing and absorptive capacity as contingencies at the business unit level. Senior corporate managers can work with business unit managers to ensure sufficient financial investment in the unit's R&D activities. Resource provision is a primary function of a corporate board. Corporate managers can provide company-financed business unit R&D expenditures but also monitor those business units granted greater autonomy to ensure sufficient investment in R&D. A common mistake is to assume that corporate EO automatically ensures innovative behavior occurs. It does not. Moreover, other outcomes from a global corporate willingness towards entrepreneurship (EO) are possible including incremental innovation. R&D resourcing helps fuel the capabilities associated with

radical innovation necessary to convert the corporate EO into a benefit for business units' financial performance. Business unit managers can also lobby senior corporate managers with this information for additional resources given that senior managers cannot afford a disparity to arise between the rhetoric for EO (their global willingness to support entrepreneurship) and the (local) ability of its business units to act innovatively.

Business unit managers must also create routines to acquire, assimilate, and transform knowledge it holds internally and encounters, externally so that lessons from such knowledge can be learned for business unit's innovation activity. That is, business unit managers must set in place the routines and procedures for absorptive capacity. Absorptive capacity will leverage the financial performance of the business unit's radical innovation. By shifting established routines and procedures towards the acquisition and assimilation of new knowledge, business units will realize the potential gains of corporate EO at the business unit level.

Further managerial insights come from our moderation charts (Figures 2 and 3). Significantly increasing business unit R&D intensity is unhelpful unless coupled with high corporate EO. For business unit financial performance, developing a high level of business unit absorptive capacity is also only of great benefit when coupled with high business unit radical innovation activity. When radical innovation activity in the business unit is low, unit managers sacrifice performance if they over-invest in absorptive capacity. Accordingly, corporate-level and business unit-level managers must realize that trading-off business unit innovation activity with absorptive capacity, or corporate EO with unit R&D investments, is not possible to bring about financial success. Commensurate commitments in business unit resourcing and capabilities should follow a commitment to corporate EO.

Limitations and future research

We collected data at two different points in time, from multiple respondents across different organizational levels including senior managers from corporate headquarters and the managers of their business units, and sourced an objective measure of performance. Some limitations remain and these present opportunities for future research. First, our sample consists of high-technology, biotechnology, and manufacturing firms in Taiwan. Taiwan is the fifth largest economy in Asia, is classed as an advanced economy by the International Monetary Fund, and its economic growth relies on innovation and technological advancement. Because of possible institutional, cultural, and economic differences, some of our findings and conclusions may not carry over directly to other economies. A multi-economy study and studies capturing international elements of subsidiaries may resolve this problem. Still, our theorization and hypotheses do not rely on or indicate any sensitivity among our constructs to country of origin. We believe our findings will be robust across other advanced economies.

Second, implicit in the reasoning for our sample design is that technology-based organizations bear the brunt of the effects associated with the contemporary competitive landscape. Nuances and contingencies to this landscape may affect organizations differently. We also expect strategically entrepreneurial organizations to take some action to at least shield or lessen the effects of some such conditions. In our case, it is through the leveraging of EO across organizational levels. We call for a research program that unpacks the contingencies associated with converting the corporate willingness to engage in entrepreneurship with actual innovation behavior elsewhere in the organization and among business units.

Third, we only considered one specific resource condition (the financial investment afforded to the business unit's R&D activity) and one specific capability (its absorptive capacity). Recent

works (e.g., Kyriakopoulos et al., 2016) have shown that radical innovation activity is affected differently by groups of resources and sets of resources may be more or less valuable when examining for their effects on both motivating innovation activity and deriving value from it. Given that any business unit activity inspired by a corporate EO is likely to be resource intensive, understanding the role of a fuller set of resources in the relationships contained within our theoretical framework is essential for future research. Our work set expectations around the nomological network of corporate EO as it crosses to the business unit level. We call for a research program that unpacks the effects of resources on the ability of business units to enact a corporate EO in rent-generating ways.

Fourth, we did not examine the internal organizational environment conditions of the corporation and its business units. The extent to which corporate EO benefits business units may depends on whether unit managers buy into corporate entrepreneurial strategy (e.g., Ireland et al., 2009), which may itself rely on the effective management of human and social capital across the organization through pro-entrepreneurship architecture (e.g., Mustafa et al., 2018). The ability of the business unit to harness the attention of corporate managers to pitch for and secure investment is a feature of this internal environment warranting scrutiny (e.g., Ambos and Birkinshaw, 2010). Concurrently, more work is needed to unpack the willingness to act entrepreneurially locally within the business unit and contingencies of its willingness. For example, a global willingness set by corporate EO might not generate a local willingness among business units unless business unit managers can associate entrepreneurial behavior with reward, or themselves possess entrepreneurial self-efficacy.

Conclusion

THE MULTI-LEVEL EFFECTS OF CORPORATE ENTREPRENEURIAL ORIENTATION ON BUSINESS UNIT RADICAL INNOVATION AND FINANCIAL PERFORMANCE

We address longstanding and repeated calls among scholars for a better understanding and theorizing of the multi-level consequences of EO and the contingencies of its effects. We are among the first studies to provide theoretical and empirical evidence demonstrating the effects of corporate EO at other organizational levels. We conclude that the value of corporate EO for business unit performance relies on three conditions: (1) the extent to which the organizational pervasiveness of corporate EO rewards business unit performance depends on replicating and disseminating entrepreneurial practices associated with EO—business unit radical innovation activity mediates the relationship between corporate EO and business unit performance, providing the missing (local) 'ability' dimension to complement the (global) 'willingness' dimension set by corporate EO; (2) the extent to which corporate EO rewards business unit performance depends on internal contingencies moderating the relationship between corporate EO, business unit radical innovation and business unit performance—the stability and consistency of the indirect relationship depends on R&D intensity as a resource-based moderator and absorptive capacity as a capability-based moderator, both at the business unit level; (3) a positive payoff for business units ensues from corporate EO but the effect is stronger when conditions (1) and (2) are satisfied.

REFERENCES

Ambos, T.C., Birkinshaw, J., 2010. Headquarters' attention and its effect on subsidiary performance. Management International Review, 50 (4), 449–469.

Anderson, B.S., Covin, J.G., Slevin, D.P., 2009. Understanding the relationship between entrepreneurial orientation and strategic learning capability: An empirical investigation. Strategic Entrepreneurship Journal, 3 (3), 218–240.

Arzubiaga, U., Kotlar, J., De Massis, A., Maseda, A., Iturralde, T., 2018. Entrepreneurial orientation and innovation in family SMEs: Unveiling the (actual) impact of the Board of Directors. Journal of Business Venturing, 33 (4), 455–469.

Astley, W.G., Sachdeva, P.S., 1984. Structural sources of intraorganizational power: A theoretical synthesis. Academy of Management Review, 9 (1), 104–113.

Barney, J., 1991. Firm resources and sustained competitive advantage. Journal of Management, 17 (1), 99–120.

Barney, J., Arikan, A.M., 2001. The resource-based view: Origins and implications, in: Hitt, M.A., Freeman, R.E., Harrison, J.S. (Eds.), Handbook of Strategic Management. Blackwell, Oxford, UK, pp. 124–188.

Barreto, I., 2010. Dynamic capabilities: A review of past research and an agenda for the future. Journal of Management, 36 (1), 256–280.

Bartlett, C.A., Ghoshal, S., 1989. Managing across Borders: The Transnational Solution. Harvard Business School Press, Cambridge, MA.

Berghman, L. Matthyssens, P., Streukens, S., Vandenbempt, K., 2013. Deliberate learning mechanisms for stimulating strategic innovation capacity. Long Range Planning, 46 (1–2), 39–71.

Birkinshaw, J., 1996. How multinational subsidiary mandates are gained and lost. Journal of International Business Studies, 27 (3), 467–495.

Birkinshaw, J., 1997. Entrepreneurship in multinational corporations: The characteristics of subsidiary initiatives. Strategic Management Journal, 18 (3), 207–229.

Brislin, R.W., 1980. Translation and content analysis of oral and written material, in: Triandis, H.C., Berry, J.W. (Eds.), Handbook of Cross-Cultural Psychology, vol. 2. Allyn and Bacon, Boston, MA, pp. 389–444.

Bromiley, P., Rau, D., Zhang, Y., 2017. Is R&D risky? Strategic Management Journal, 38 (4), 876–891.

Chang, Y.-Y., Chang, C.-Y., Chen, C.-W., 2017. Transformational leadership and corporate entrepreneurship: Cross-level mediation moderation evidence. Leadership & Organization Development Journal, 38 (6), 812–833.

Cohen, J., Cohen, P., West, S.G., Aiken, L.S., 2003. Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences, third ed. Lawrence Erlbaum Associates, Mahwah, NJ.

Cohen, M.W., Levinthal, D.A., 1990. Absorptive capacity: A new perspective on learning and innovation. Administrative Science Quarterly, 35 (1), 128–152.

Corbett, A.J., Covin, J.G., O'Connor, G.C., Tucci, C.L., 2013. Corporate entrepreneurship: State-of-the-art research and a future research agenda. Journal of Product Innovation Management, 30 (5), 812–820.

Covin, J.G., Lumpkin, G.T., 2011. Entrepreneurial orientation theory and research: Reflections on a needed construct. Entrepreneurship Theory and Practice, 35 (5), 855–872.

Covin, J.G., Miles, M.P., 1999. Corporate entrepreneurship and the pursuit of competitive advantage. Entrepreneurship Theory and Practice, 23 (3), 47–63.

Covin, J.G., Slevin, D.P., 1989. Strategic management of small firms in hostile and benign
environments. Strategic Management Journal, 10 (1), 75–87.

Covin, J.G., Slevin, D.P., 1991. A conceptual model of entrepreneurship as firm behavior.
Entrepreneurship Theory and Practice, 16 (1), 7–25.

Covin, J.G., Wales, W.J., 2012. The measurement of entrepreneurial orientation. Entrepreneurship
Theory and Practice, 36 (4), 677–702.

Covin, J.G., Wales, W.J., 2019. Crafting high-impact entrepreneurial orientation research: Some
suggested guidelines. Entrepreneurship Theory and Practice, 43 (1), 3–18.

Croon, M.A., van Veldhoven, M.J., 2007. Predicting group-level outcome variables from variables
measured at the individual level: A latent variable multilevel model. Psychological Methods,
12 (1), 45–57.

Dess, G.G., Ireland, R.D., Zahra, S.A., Floyd, S.W., Janney, J.J., Lane, P.J., 2003. Emerging issues
in corporate entrepreneurship. Journal of Management, 29 (3), 351–378.

Dess, G.G., Lumpkin, G.T., 2005. The role of entrepreneurial orientation in stimulating effective
corporate entrepreneurship. Academy of Management Executive, 19 (1), 147–156.

Dess, G.G., Lumpkin, G.T., Covin, J.G., 1997. Entrepreneurial strategy making and firm
performance: Tests of contingency and configurational models. Strategic Management Journal,
18 (9), 677–695.

Eisenhardt, K.M., Martin, J.A., 2000. Dynamic capabilities: What are they? Strategic Management
Journal, 21 (10–11), 1105–1121.

Engelen, A., Kube, H., Schmidt, S., Flatten, T.C., 2014. Entrepreneurial orientation in turbulent
environments: The moderating role of absorptive capacity. Research Policy, 43 (8), 1353–1369.

Eshima, Y., Anderson, B., 2017. Firm growth, adaptive capability, and entrepreneurial orientation.

Strategic Management Journal, 38 (3), 770–779.

Gong, Y., Fan, J., 2006. Longitudinal examination of the role of goal orientation in cross-cultural adjustment. Journal of Applied Psychology, 91 (1), 176–184.

Grühn, B., Strese, S., Flatten, T.C., Jaeger, N.A., Brettel, M., 2017. Temporal change patterns of entrepreneurial orientation: A longitudinal investigation of CEO successions. Entrepreneurship Theory and Practice, 41 (4), 591–619.

Gupta, V.K., Wales, W.J., 2017. Assessing organisational performance within entrepreneurial orientation research: Where have we been and where can we go from here? The Journal of Entrepreneurship, 26 (1), 1–26.

Haas, M.R., Hansen, M.T., 2001. Competing for attention in knowledge markets: Electronic document dissemination in a management consulting company. Administrative Science Quarterly, 46 (1), 1–28.

Hayton, J.C., 2005. Promoting corporate entrepreneurship through human resource management practices: A review of empirical research. Human Resource Management Review, 15 (1), 21–41.

Hill, S.A., Birkinshaw, J., 2014. Ambidexterity and survival in corporate venture units. Journal of Management, 40 (7), 1899–1931.

Hsu, C.W., Lien, Y.C., Chen, H., 2013. International ambidexterity and firm performance in small emerging economies. Journal of World Business, 48 (1), 58–67.

Hughes, M., Hughes, P., Yan, J., Sousa, C.M.P., 2019. Marketing as an investment in shareholder value. British Journal of Management, 30 (4), 943–965.

Hughes, M., Rigtering, J.P.C., Covin, J.G., Kraus, S. Bouncken, R., 2018a. Innovative behaviour, trust and perceived workplace performance. British Journal of Management, 29 (4), 750–768.

Hughes, P., Hodgkinson, I.R., Arshad, D., Hughes, M., Leone, V., 2018b. Planning to improvise?
The role of reasoning in the strategy process: Evidence from Malaysia. Asia Pacific Journal of
Management, 35 (2), 449–470.

Hughes, P., Morgan, R.E., 2007. A resource-advantage perspective of product–market strategy &
strategic capital in high technology firms. Industrial Marketing Management, 36 (4), 503–517.

Hull, C.E., Covin, J.G., 2010. Learning capability, technological parity, and innovation mode use.
Journal of Product Innovation Management, 27 (1), 97–114.

Hurmelinna-Laukkanen, P., Sainio, L.-M., Jauhiainen, T., 2008. Appropriability regime for radical
and incremental innovations. R&D Management, 38 (3), 278–289.

Hwang, R.C., Chung, H.J., Siao, S., Lin, C.L., 2012. Does the local rating agency provide reliable
credit ratings? An empirical analysis from an emerging market. The Journal of Fixed Income,
22 (1), 41–51.

IFRS, 2008. The International Financial Reporting Standard. U.S. State of Delaware: International
Accounting Standards Foundation (IASF).

Ireland, R.D., Covin, J.G., Kuratko, D.F., 2009. Conceptualizing corporate entrepreneurship
strategy. Entrepreneurship Theory and Practice, 33 (1), 19–46.

Jansen, J.J.P., van den Bosch, F.A.J., Volberda, H.W., 2005. Managing potential and realized
absorptive capacity: How do organizational antecedents matter? Academy of Management
Journal, 48 (6), 999–1015.

Kazanjian, R.K., Drazin, R., 1987. Implementing internal diversification: Contingency factors for
organization design choices. Academy of Management Review, 12 (2), 342–354.

Kenny, D.A., Kashy, D.A., Bolger, N., 1998. Data analysis in social psychology, in: Gilbert, D.,
Fiske, S.T., Lindzey, G. (Eds.), Handbook of Social Psychology, fourth ed. McGraw-Hill, New

York, pp. 233–265.

Kollmann, T., Stöckmann, C., 2014. Filling the entrepreneurial orientation-performance gap: The mediating effects of exploratory and exploitative innovations. Entrepreneurship Theory and Practice, 38 (5), 1001–1026.

Kraus, S., Breier, A., Jones, P., Hughes, M., 2019. Individual entrepreneurial orientation and intrapreneurship in the public sector. International Entrepreneurship and Management Journal, 15 (4), 1247–1268.

Kreiser, P., 2011. Entrepreneurial orientation and organizational learning: The impact of network range and network closure. Entrepreneurship Theory and Practice, 35 (5), 1025–1050.

Kuratko, D.F., Audretsch, D.B., 2009. Strategic entrepreneurship: Exploring different perspectives of an emerging concept. Entrepreneurship Theory and Practice, 33 (1), 1–17.

Kuratko, D.F., Ireland, R.D., Hornsby, J.S., 2001. Improving firm performance through entrepreneurial actions: Acordia's corporate entrepreneurship strategy. Academy of Management Executive, 15 (4), 60–71.

Kyriakopoulos, K., Hughes, M., Hughes, P., 2016. The role of marketing resources in radical innovation activity: Antecedents and payoffs. Journal of Product Innovation Management, 33 (4), 398–417.

Kouropalatis, Y., Hughes, P., Morgan, R.E., 2012. Pursuing "flexible commitment" as strategic ambidexterity: An empirical justification in high technology firms. European Journal of Marketing, 46 (10), 1389–1417.

Leifer, R., O'Connor, G.C., Rice, M., 2001. Implementing radical innovation in mature firms: The role of hubs. Academy of Management Executive, 15 (3), 102–113.

Lomberg, C., Urbig, D., Stockmann, C., Marino, L.D., Dickson, P.H., 2017. Entrepreneurial

orientation: The dimensions' shared effects on explaining firm performance. Entrepreneurship Theory and Practice, 41 (6), 973–998.

Lumpkin, G.T., Dess, G.G., 1996. Clarifying the entrepreneurial orientation construct and linking it to performance. Academy of Management Review, 21 (1), 135–172.

Luo, Y., 2003. Market-seeking MNEs in an emerging market: How parent-subsidiary links shape overseas success. Journal of International Business Studies, 34 (3), 290–309.

MacKinnon, D.P., Lockwood, C.M., Williams, J., 2004. Confidence limits for the indirect effect: Distribution of the product and resampling methods. Multivariate Behavioral Research, 39 (1), 99–128.

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), 18–40.

Miles, M.P., Covin, J.G., 2002. Exploring the practice of corporate venturing: Some common forms and their organizational implications. Entrepreneurship Theory and Practice, 26 (3), 21–40.

Miller, D., 1983. The correlates of entrepreneurship in three types of firms. Management Science, 29 (7), 770–791.

Miller, D., Le Breton-Miller, I., 2011. Governance, social identity, and entrepreneurial orientation in closely held public companies. Entrepreneurship Theory and Practice, 35 (5), 1051–1076.

Monsen, E., Boss, R.W., 2009. The impact of strategic entrepreneurship inside the organization: Examining job stress and employee retention. Entrepreneurship Theory and Practice, 33 (1), 71–104.

Morgan, R.E., Turnell, C.R., 2003. Market-based organizational learning and market performance gains. British Journal of Management, 14 (3), 255–274.

Morris, M.H., Kuratko, D.F., Covin, J.G., 2008. Corporate Entrepreneurship and Innovation.
Thomson/South-Western Publishers, Mason, OH.

Mustafa, M., Gavin, F., Hughes, M., 2018. Contextual determinants of employee entrepreneurial
behavior in support of corporate entrepreneurship: A systematic review and research agenda.
Journal of Enterprising Culture, 26 (3), 285–326.

Muthén, L.K., Muthén, B.O., 2010. Mplus User's Guide: Statistical Analysis with Latent Variables:
User's Guide, sixth ed. Muthén & Muthén, Los Angeles, CA.

Patel, P.C., Kohtamäki, M., Parida, V., Wincent, J., 2015. Entrepreneurial orientation-as-
experimentation and firm performance: The enabling role of absorptive capacity. Strategic
Management Journal, 36 (11), 1739–1749.

Penrose, E.T., 1959. The Theory of the Growth of the Firm. John Wiley, New York.

Priem, R.L., Butler, J.E., 2001. Is the resource-based view a useful perspective for strategic
management research? Academy of Management Review, 26 (1), 22–40.

Putniņš, T.J., Sauka, A., 2019. Why does entrepreneurial orientation affect company performance?
Strategic Entrepreneurship Journal, in press. https://doi.org/10.1002/sej.1325

Rauch, A., Wiklund, J., Lumpkin, G.T., Frese, M., 2009. Entrepreneurial orientation and business
performance: An assessment of past research and suggestions for the future. Entrepreneurship
Theory and Practice, 33 (3), 761–787.

Reid, S.E., de Brentani, U., 2010. Market vision and market visioning competence: Impact on early
performance for radically new, high-tech products. Journal of Product Innovation Management,
27 (4), 500–518.

Reid, S.E., Roberts, D.L., 2011. Technology vision: A scale development. R&D Management, 41
(5), 427–442.

Rubera, G., Kirca, A.H., 2012. Firm innovativeness and its performance outcomes: A meta-analytic review and theoretical integration. Journal of Marketing, 76 (2), 130–147.

Sharma, P., Chrisman, J.J., 1999. Toward a reconciliation of the definitional issues in the field of corporate entrepreneurship. Entrepreneurship Theory and Practice, 23 (3), 11–28.

Short, J.C., Payne, G.T., Brigham, K.H., Lumpkin, G.T., Broberg, J.C., 2009. Family ownership and entrepreneurial orientation in publicly traded firms: A comparative analysis of the S&P 500. Family Business Review, 22 (1), 9–24.

Simsek, Z., 2007. CEO tenure and organizational performance: An intervening model. Strategic Management Journal, 28 (6), 653–662.

Sirén, C., Hakala, H., Wincent, J., Grichnik, D., 2017. Breaking the routines: Entrepreneurial orientation, strategic learning, firm size, and age. Long Range Planning, 50 (2), 145–167.

Slater, S.F., Mohr, J.J., Sengupta, S., 2014. Radical product innovation capability: Literature review, synthesis, and illustrative research propositions. Journal of Product Innovation Management, 31 (3), 552–566.

Snihur, Y., Wiklund, J., 2019. Searching for innovation: Product, process, and business model innovations and search behavior in established firms. Long Range Planning, 52 (3), 305–325.

Song, M., Di Benedetto, C.A., Mason, R.W., 2007. Capabilities and financial performance: The moderating effect of strategic type. Journal of the Academy of Marketing Science, 35 (1), 18–34.

Subramaniam, M., Youndt, M.A., 2005. The influence of intellectual capital on the types of innovative capabilities. Academy of Management Journal, 48 (3), 450–463.

Taiwan GAAP, 2011. Generally Accepted Accounting Principles (GAAP). Taiwan: Taipei.

Talke, K., Hultink, E.J., 2010. The impact of the corporate mindset on new product launch strategy

and market performance. Journal of Product Innovation Management, 27 (2), 220–237.

Titus, Jr.V., Parker, O., Covin, J.G., 2019. Organizational aspirations and external venturing: The contingency of entrepreneurial orientation. Entrepreneurship Theory and Practice, in press. https://doi.org/10.1177/1042258719838473

Tseng, C.-Y., Goo, Y.-J. J., 2005. Intellectual capital and corporate value in an emerging economy: Empirical study of Taiwanese manufacturers. R&D Management, 35 (2), 187–201.

Tzokas, N., Kim, Y.A., Akbar, H., Al-Dajani, H., 2015. Absorptive capacity and performance: The role of customer relationship and technological capabilities in high-tech SMEs. Industrial Marketing Management, 47, 134–142.

Wales, W.J., 2016. Entrepreneurial orientation: A review and synthesis of promising research directions. International Small Business Journal, 34 (1), 3–15.

Wales, W.J., Monsen, E., McKelvie, A., 2011. The organizational pervasiveness of entrepreneurial orientation. Entrepreneurship Theory and Practice, 35 (5), 895–923.

Wang, C.L., 2008. Entrepreneurial orientation, learning orientation, and firm performance. Entrepreneurship Theory and Practice, 32 (4), 635–656.

Wang, C.L., Ahmed, P.K., 2007. Dynamic capabilities: A review and research agenda. International Journal of Management Reviews, 9 (1), 31–51.

Wang, C.L., Senaratne, C., Rafiq, M., 2015. Success traps, dynamic capabilities and firm performance. British Journal of Management, 26 (1), 26–44.

Wernerfelt, B., 1984. A resource-based view of the firm. Strategic Management Journal, 5 (2), 171–180.

Wiklund, J., Shepherd, D., 2011. Where to from here? EO-as-experimentation, failure, and distribution of outcomes. Entrepreneurship Theory and Practice, 35 (5), 925–946.

Wilden, R., Gudergan, S.P., Nielsen, B.B., Lings, I., 2013. Dynamic capabilities and performance: Strategy, structure and environment. Long Range Planning, 46 (1–2), 72–96.

Winter, S.G., 2003. Understanding dynamic capabilities. Strategic Management Journal, 24 (10), 991–995.

Yang, H., Dess, G.G., Robins, J.A., 2019. Does entrepreneurial orientation always pay off? The role of resource mobilization within and across organizations. Asia Pacific Journal of Management, 36 (3), 565–591.

Zahra, S.A., 1993. A conceptual model of entrepreneurship as firm behavior: A critique and extension. Entrepreneurship Theory and Practice, 17 (4), 5–21

Zahra, S.A., Covin, J.G., 1995. Contextual influence on the corporate entrepreneurship–performance relationship: A longitudinal analysis. Journal of Business Venturing, 10 (1), 43–58.

Zahra, S.A., George, G., 2002. Absorptive capacity: A review, reconceptualization, and extension. Academy of Management Review, 27 (2), 185–203.

Zahra, S.A., Wright, M., Abdelgawad, S.G., 2014. Contextualization and the advancement of entrepreneurship research. International Small Business Journal, 32 (5), 479–500.

Table 1
Means, Standard Deviations, and Correlations

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Business unit size	37.69	46.45	-																				
2. Business unit age	17.66	12.41	-0.31***	-																			
3. Business unit manager tenure in the current job	7.71	5.54	-0.23***	0.41***	-																		
4. Business unit in Taiwan	0.67	0.47	0.00	0.00	0.00	-																	
5. Business unit in Jiangsu province in China	0.33	0.47	0.00	0.00	0.00	-1.00**	-																
6. Corporation size	1984.77	4132.85	0.20***	0.29***	0.12***	0.00	0.00	-															
7. Corporation age	23.43	17.25	-0.33***	0.63***	0.38***	0.00	0.00	0.18***	-														
8. Corporate TMT size	116.84	231.12	-0.25***	0.27***	-0.04**	0.00	0.00	0.29***	0.13***	-													
9. Environmental complexity	5.36	0.57	0.24***	-0.15***	-0.08***	0.00	0.00	-0.14***	0.00	-0.14***	-												
10. Manufacturing industry	0.22	0.42	-0.03*	0.01	0.04***	0.00	0.00	0.10***	0.00	-0.03	-0.23***	-											
11. High technology industry	0.50	0.50	0.01	-0.12***	-0.08***	0.00	0.00	-0.06***	-0.14***	-0.04**	-0.00	-0.54***	-										
12. Biotechnology industry	0.28	0.45	0.02	0.13***	0.06***	0.00	0.00	-0.03*	0.16***	0.07***	0.22***	-0.33***	-0.62***	-									
13. Business unit autonomy (horizontal)	5.90	0.42	0.004	-0.012	-0.008	-0.01	0.01	0.006	-0.001	-0.001	0.01	-0.05**	0.02	0.03	-								
14. Business unit autonomy (vertical)	5.63	0.44	-0.003	0.015	0.006	-0.003	0.003	0.03	0.02	0.004	-0.001	-0.03	0.001	0.02	0.34**	-							
15. Business unit entrepreneurial orientation	4.51	0.87	-0.001	-0.01	0.01	-0.03	0.03	-0.001	-0.01	0.001	-0.01	0.01	-0.03**	0.03*	0.02	0.03**	-						
16. Business unit radical innovation	5.57	0.28	0.00	0.02	-0.07***	0.00	0.00	0.02	-0.07***	0.13***	-0.01	-0.09***	0.04***	0.04***	0.02	0.03*	0.06***	-					
17. Business unit R&D intensity	1.91	2.30	0.06***	-0.05***	0.05***	0.00	0.00	-0.21***	-0.04***	-0.20***	0.12***	-0.10***	-0.05***	0.16***	0.01	-0.001	0.02	-0.01	-				
18. Business unit absorptive capacity	5.04	0.19	-0.01	0.08***	0.03**	0.00	0.00	0.01	0.05***	0.00	0.08***	-0.11***	0.10***	-0.01	-0.009	0.003	0.00	0.01	0.14***	-			
19. Corporate-level entrepreneurial orientation	4.78	0.18	-0.14***	0.05***	0.05***	0.00	0.00	0.05***	0.07***	0.12***	-0.18***	0.14***	-0.17***	0.06***	-0.005	0.005	0.10***	0.07***	-0.01	0.01	-		
20. Business unit performance (2014)	26.98	145.23	-0.05***	0.01	0.04***	0.00	0.00	0.02	0.03*	0.03**	-0.12***	0.08***	-0.08***	0.02	0.02	0.01	0.08***	0.09***	0.00	0.03**	0.11***	-	
21. Business unit performance (2016)	58.45	1426.40	-0.05***	0.01	0.01	0.00	0.00	0.02	0.03*	0.03**	-0.12***	0.08***	-0.08***	0.02	0.004	-0.0003	0.09***	0.10***	0.02	0.04**	0.12***	0.45***	-

$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$, TMT = top management team.

Table 2
Two-Level Moderated Mediation Model: Paths, Estimate, and Their Significance[a]

Part A: Direct effect (standardized estimates)	Estimate	SE[b]	LLCI[c]	UCLI[c]	Monte Carlo (unstandardized estimates)	
					LLCI[c]	UCLI[c]
Corporate-level EO → Business unit performance (2014)	0.04**	0.02	0.01	0.07	0.002	0.04
Corporate-level EO → Business unit performance (2016)	0.05***	0.01	0.02	0.08	0.01	0.04
Corporate-level EO → Business unit radical innovation	0.30***	0.04	0.23	0.37	0.12	0.17
Business unit radical innovation → Business unit performance (2014)	0.55***	0.04	0.47	0.63	0.63	0.66
Business unit radical innovation → Business unit performance (2016)	0.37***	0.05	0.28	0.46	0.35	0.48
Business unit EO → Business unit performance (2014)	0.02**	0.01	0.01	0.03	0.01	0.07
Business unit EO → Business unit performance (2016)	0.02**	0.01	0.01	0.03	0.01	0.07
Corporate-level EO → Business unit EO	0.18**	0.09	0.02	0.34	0.02	0.06
Business unit size → Business unit performance (2014)	0.01	0.01	-0.01	0.01	-0.01	0.01
Business unit age → Business unit performance (2014)	0.03	0.03	-0.02	0.08	-0.01	0.01
Business unit manager tenure in the current job → Business unit performance (2014)	-0.02	0.02	-0.05	0.01	-0.04	0.01
Business unit in Taiwan → Business unit performance (2014)	0.13	0.11	-0.05	0.32	-0.07	0.46
Business unit in Jiangsu province in China → Business unit performance (2014)	0.12	0.10	-0.06	0.31	-0.08	0.45
Corporation size[d] → Business unit performance (2014)	-0.01	0.01	-0.03	0.01	-0.02	0.01
Corporation age → Business unit performance (2014)	-0.01	0.01	-0.03	0.01	-0.02	0.01
Corporate TMT size → Business unit performance (2014)	-0.01	0.01	-0.04	0.01	-0.02	0.01
Environmental complexity → Business unit performance (2014)	-0.01	0.01	-0.03	0.01	-0.03	0.01
Manufacturing industry → Business unit performance (2014)	0.02	0.02	-0.01	0.05	-0.01	0.07
High technology industry → Business unit performance (2014)	0.03	0.03	-0.01	0.07	-0.02	0.08
Biotechnology industry → Business unit performance (2014)	0.02	0.02	-0.01	0.05	-0.02	0.08
Business unit autonomy (horizontal) → Business unit performance (2014)	0.01	0.02	-0.03	0.04	-0.04	0.07
Business unit autonomy (vertical) → Business unit performance (2014)	-0.04	0.04	-0.07	0.01	-0.11	0.02
Business unit size → Business unit performance (2016)	0.01	0.01	-0.01	0.03	-0.01	0.01
Business unit age → Business unit performance (2016)	0.04	0.03	-0.01	0.10	-0.01	0.01
Business unit manager tenure in the current job → Business unit performance (2016)	-0.01	0.02	-0.04	0.03	-0.03	0.03
Business unit in Taiwan → Business unit performance (2016)	0.18***	0.05	0.10	0.26	0.16	0.41
Business unit in Jiangsu province in China → Business unit performance (2016)	0.17***	0.04	0.09	0.25	0.15	0.39
Corporation size[d] → Business unit performance (2016)	0.02	0.02	-0.01	0.05	-0.01	0.01
Corporation age → Business unit performance (2016)	-0.02	0.02	-0.05	0.01	-0.01	0.01
Corporate TMT size → Business unit performance (2016)	-0.02	0.02	-0.05	0.01	-0.01	0.01
Environmental complexity → Business unit performance (2016)	-0.01	0.01	-0.03	0.01	-0.03	0.01
Manufacturing industry → Business unit performance (2016)	0.02	0.02	-0.02	0.04	-0.03	0.01
High technology industry → Business unit performance (2016)	0.05	0.03	-0.01	0.10	-0.02	0.08
Biotechnology industry → Business unit performance (2016)	0.03	0.03	-0.03	0.09	-0.04	0.10
Business unit autonomy → Business unit performance (2016) (horizontal)	0.01	0.02	-0.03	0.04	-0.05	0.08
Business unit autonomy (vertical) → Business unit performance (2016)	-0.02	0.02	-0.06	0.02	-0.11	0.03
Part B: Indirect effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Corporate-level EO → Business unit radical innovation → Business unit performance (2014)	0.16***	0.01	0.13	0.19	0.08	0.11
Corporate-level EO → Business unit radical innovation → Business unit performance (2016)	0.11***	0.01	0.08	0.14	0.05	0.07
Part C: Moderated effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Business unit R&D intensity → Business unit radical innovation	0.21***	0.02	0.16	0.26	0.15	0.21
Corporate-level EO × Business unit R&D intensity → Business unit radical innovation	0.93***	0.02	0.89	0.97	0.39	0.42
Business unit AC → Business unit performance (2014)	0.02	0.01	0.00	0.04	0.00	0.03
Business unit AC → Business unit performance (2016)	0.04	0.03	0.00	0.08	0.00	0.07
Business unit radical innovation × Business unit AC → Business unit performance (2014)	0.72***	0.01	0.70	0.74	0.22	0.24
Business unit radical innovation × Business unit AC → Business unit performance (2016)	0.81***	0.01	0.79	0.83	0.24	0.26

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

[a]n = 2820 at the business unit level (level 1); n = 1290 at the corporate level (level 2). [b]SE = standard error of estimate. [c]CI = confidence interval; LLCI = lower level of the 95% confidence interval; UCLI = upper level of the 95% confidence interval. [d]Log number of full-time employees. EO, corporate-level entrepreneurial orientation; AC, business unit-level absorptive capacity; performance, business unit-level objective performance (sales growth).

Table 3
Robustness Check (High Technology): Two-Level Moderated Mediation Model: Paths, Estimate, and Their Significance[a]

Part A: Direct effect (standardized estimates)	Estimate	SE[b]	LLCI[c]	UCLI[c]	Monte Carlo (unstandardized estimates)	
					LLCI[c]	UCLI[c]
Corporate-level EO → Business unit performance (2014)	0.10**	0.05	0.01	0.19	0.01	0.03
Corporate-level EO → Business unit performance (2016)	0.24**	0.12	0.02	0.46	0.01	0.10
Corporate-level EO → Business unit radical innovation	0.19***	0.06	0.09	0.29	0.05	0.13
Business unit radical innovation → Business unit performance (2014)	0.32***	0.12	0.12	0.52	0.06	0.16
Business unit radical innovation → Business unit performance (2016)	0.62***	0.20	0.28	0.96	0.20	0.36
Business unit EO → Business unit performance (2014)	0.08**	0.04	0.01	0.15	0.01	0.03
Business unit EO → Business unit performance (2016)	0.14**	0.06	0.01	0.27	0.01	0.06
Corporate-level EO → Business unit EO	0.08**	0.04	0.01	0.15	0.01	0.11
Business unit size → Business unit performance (2014)	0.14	2.12	-3.35	3.62	-0.01	0.01
Business unit age → Business unit performance (2014)	0.49	0.75	-0.75	1.72	-0.01	0.01
Business unit manager tenure in the current job → Business unit performance (2014)	0.04	0.04	-0.02	0.10	-0.01	0.03
Business unit in Taiwan → Business unit performance (2014)	-0.14	0.10	-0.30	0.02	-0.15	0.01
Business unit in Jiangsu province in China → Business unit performance (2014)	-0.14	0.10	-0.30	0.02	-0.15	0.01
Corporation size[d] → Business unit performance (2014)	0.01	0.04	-0.06	0.07	-0.01	0.01
Corporation age → Business unit performance (2014)	-0.09	0.08	-0.23	0.05	-0.01	0.01
Corporate TMT size → Business unit performance (2014)	-0.34	6.88	-11.66	10.97	-0.01	0.01
Environmental complexity → Business unit performance (2014)	-0.28	0.37	-0.89	0.32	-0.03	0.01
Business unit autonomy (horizontal) → Business unit performance (2014)	-0.01	0.03	-0.06	0.04	-0.03	0.02
Business unit autonomy (vertical) → Business unit performance (2014)	-0.01	0.04	-0.06	0.05	-0.03	0.03
Business unit size → Business unit performance (2016)	0.17	0.66	-0.90	1.25	-0.01	0.01
Business unit age → Business unit performance (2016)	-0.35	0.33	-0.90	0.20	-0.03	0.01
Business unit manager tenure in the current job → Business unit performance (2016)	0.06	0.06	-0.03	0.15	-0.01	0.03
Business unit in Taiwan → Business unit performance (2016)	-0.11	0.16	-0.38	0.15	-0.35	0.14
Business unit in Jiangsu province in China → Business unit performance (2016)	-0.11	0.16	-0.38	0.15	-0.35	0.14
Corporation size[d] → Business unit performance (2016)	0.15	0.10	-0.02	0.32	-0.01	0.03
Corporation age → Business unit performance (2016)	0.14	0.09	-0.01	0.29	-0.01	0.03
Corporate TMT size → Business unit performance (2016)	-0.02	1.00	-1.66	1.62	-0.01	0.01
Environmental complexity → Business unit performance (2016)	-0.25	0.17	-0.54	0.04	-0.03	0.11
Business unit autonomy → Business unit performance (2016) (horizontal)	-0.02	0.03	-0.07	0.03	-0.07	0.03
Business unit autonomy (vertical) → Business unit performance (2016)	-0.01	0.03	-0.07	0.04	-0.07	0.04
Part B: Indirect effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Corporate-level EO → Business unit radical innovation → Business unit performance (2014)	0.07**	0.03	0.01	0.13	0.01	0.03
Corporate-level EO → Business unit radical innovation → Business unit performance (2016)	0.14***	0.04	0.07	0.21	0.01	0.05
Part C: Moderated effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Business unit R&D intensity → Business unit radical innovation	0.87***	0.12	0.67	1.07	0.92	1.28
Corporate-level EO × Business unit R&D intensity → Business unit radical innovation	0.44***	0.12	0.23	0.65	0.30	0.67
Business unit AC → Business unit performance (2014)	0.95**	0.42	0.25	1.65	0.24	0.35
Business unit AC → Business unit performance (2016)	1.54***	0.56	0.62	2.46	0.43	0.87
Business unit radical innovation × Business unit AC → Business unit performance (2014)	0.11**	0.05	0.01	0.21	0.01	0.13
Business unit radical innovation × Business unit AC → Business unit performance (2016)	0.94**	0.38	0.31	1.57	0.43	0.97

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

[a]n = 1410 at the business unit level (level 1); n = 630 at the corporate level (level 2). [b]SE = standard error of estimate. [c]CI = confidence interval; LLCI = lower level of the 95% confidence interval; UCLI = upper level of the 95% confidence interval. [d]Log number of full-time employees. EO, corporate-level entrepreneurial orientation; AC, business unit-level absorptive capacity; performance, business unit-level objective performance (sales growth).

Table 4
Robustness Check (Biotechnology): Two-Level Moderated Mediation Model: Paths, Estimate, and Their Significance[a]

Part A: Direct effect (standardized estimates)	Estimate	SE[b]	LLCI[c]	UCLI[c]	Monte Carlo (unstandardized estimates)	
					LLCI[c]	UCLI[c]
Corporate-level EO → Business unit performance (2014)	1.62***	0.08	1.47	1.77	1.10	1.34
Corporate-level EO → Business unit performance (2016)	1.32***	0.17	1.03	1.61	0.77	1.11
Corporate-level EO → Business unit radical innovation	0.89***	0.02	0.86	0.92	0.54	0.60
Business unit radical innovation → Business unit performance (2014)	1.79***	0.09	1.64	1.94	1.87	2.37
Business unit radical innovation → Business unit performance (2016)	1.16***	0.23	0.78	1.54	0.93	1.69
Business unit EO → Business unit performance (2014)	0.02**	0.01	0.01	0.03	0.01	0.07
Business unit EO → Business unit performance (2016)	0.05**	0.02	0.01	0.09	0.01	0.15
Corporate-level EO → Business unit EO	0.12**	0.06	0.02	0.22	0.01	0.11
Business unit size → Business unit performance (2014)	0.05	0.05	-0.04	0.14	-0.01	0.03
Business unit age → Business unit performance (2014)	0.05	0.05	0.03	0.13	-0.01	0.05
Business unit manager tenure in the current job → Business unit performance (2014)	-0.01	0.03	-0.05	0.04	-0.02	0.02
Business unit in Taiwan → Business unit performance (2014)	0.001	0.09	-0.14	0.14	-0.40	0.41
Business unit in Jiangsu province in China → Business unit performance (2014)	0.001	0.09	-0.14	0.14	-0.40	0.41
Corporation size[d] → Business unit performance (2014)	-0.02	0.06	-0.11	0.08	-0.07	0.05
Corporation age → Business unit performance (2014)	-0.04	0.03	-0.10	0.02	-0.03	0.01
Corporate TMT size → Business unit performance (2014)	-0.06	0.06	-0.16	0.04	-0.01	0.01
Environmental complexity → Business unit performance (2014)	-0.05	0.05	-0.14	0.04	-0.20	0.18
Business unit autonomy (horizontal) → Business unit performance (2014)	0.03	0.03	-0.03	0.08	-0.09	0.27
Business unit autonomy (vertical) → Business unit performance (2014)	-0.03	0.03	-0.09	0.02	-0.26	0.07
Business unit size → Business unit performance (2016)	0.09	0.09	-0.05	0.23	-0.01	0.03
Business unit age → Business unit performance (2016)	0.07	0.07	-0.04	0.18	-0.01	0.03
Business unit manager tenure in the current job → Business unit performance (2016)	-0.03	0.03	-0.09	0.02	-0.03	0.01
Business unit in Taiwan → Business unit performance (2016)	0.10	0.10	-0.06	0.25	-0.19	0.72
Business unit in Jiangsu province in China → Business unit performance (2016)	0.10	0.10	-0.06	0.25	-0.19	0.72
Corporation size[d] → Business unit performance (2016)	0.19	0.10	-0.01	0.39	-0.03	0.15
Corporation age → Business unit performance (2016)	-0.05	0.05	-0.14	0.04	-0.03	0.01
Corporate TMT size → Business unit performance (2016)	-0.13	0.08	-0.27	0.01	-0.03	0.01
Environmental complexity → Business unit performance (2016)	-0.06	0.06	-0.16	0.04	-0.32	0.08
Business unit autonomy → Business unit performance (2016) (horizontal)	0.03	0.03	-0.03	0.09	-0.10	0.29
Business unit autonomy (vertical) → Business unit performance (2016)	-0.03	0.04	-0.09	0.03	-0.26	0.09
Part B: Indirect effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Corporate-level EO → Business unit radical innovation → Business unit performance (2014)	1.60***	0.09	1.45	1.75	1.07	1.33
Corporate-level EO → Business unit radical innovation → Business unit performance (2016)	1.05***	0.20	0.72	1.38	0.54	0.94
Part C: Moderated effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Business unit R&D intensity → Business unit radical innovation	0.15***	0.02	0.11	0.19	0.16	0.26
Corporate-level EO × Business unit R&D intensity → Business unit radical innovation	0.43***	0.04	0.36	0.50	0.15	0.19
Business unit AC → Business unit performance (2014)	0.27***	0.05	0.18	0.36	0.18	0.33
Business unit AC → Business unit performance (2016)	0.48***	0.06	0.38	0.58	0.33	0.53
Business unit radical innovation × Business unit AC → Business unit performance (2014)	0.35***	0.07	0.22	0.48	0.07	0.13
Business unit radical innovation × Business unit AC → Business unit performance (2016)	0.64***	0.08	0.50	0.78	0.13	0.22

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
[a] n = 780 at the business unit level (level 1); n = 390 at the corporate level (level 2). [b] SE = standard error of estimate. [c] CI = confidence interval; LLCI = lower level of the 95% confidence interval; UCLI = upper level of the 95% confidence interval. [d] Log number of full- time employees. EO, corporate-level entrepreneurial orientation; AC, business unit-level absorptive capacity; performance, business unit-level objective performance (sales growth).

THE MULTI-LEVEL EFFECTS OF CORPORATE ENTREPRENEURIAL ORIENTATION ON BUSINESS UNIT RADICAL INNOVATION AND FINANCIAL PERFORMANCE

Table 5
Robustness Check (Traditional Manufacturing): Two-Level Moderated Mediation Model: Paths, Estimate, and Their Significance[a]

Part A: Direct effect (standardized estimates)	Estimate	SE[b]	LLCI[c]	UCLI[c]	Monte Carlo (unstandardized estimates)	
					LLCI[c]	UCLI[c]
Corporate-level EO → Business unit performance (2014)	0.24**	0.12	0.04	0.44	0.01	0.04
Corporate-level EO → Business unit performance (2016)	0.32**	0.16	0.06	0.58	0.01	0.03
Corporate-level EO → Business unit radical innovation	0.22**	0.11	0.03	0.41	0.01	0.13
Business unit radical innovation → Business unit performance (2014)	0.69***	0.07	0.56	0.82	0.20	0.24
Business unit radical innovation → Business unit performance (2016)	0.47***	0.13	0.40	0.54	0.05	0.09
Business unit EO → Business unit performance (2014)	0.08**	0.04	0.01	0.15	0.01	0.03
Business unit EO → Business unit performance (2016)	0.16**	0.08	0.02	0.30	0.01	0.03
Corporate-level EO → Business unit EO	0.14**	0.07	0.01	0.27	0.03	0.17
Business unit size → Business unit performance (2014)	2.10	3.26	-3.25	7.46	-0.01	0.02
Business unit age → Business unit performance (2014)	-3.61	5.82	-13.18	5.97	-0.13	0.05
Business unit manager tenure in the current job → Business unit performance (2014)	-0.15	0.09	-0.31	0.01	-0.03	0.01
Business unit in Taiwan → Business unit performance (2014)	0.17***	0.06	0.07	0.26	0.03	0.10
Business unit in Jiangsu province in China → Business unit performance (2014)	0.17***	0.06	0.07	0.26	0.03	0.10
Corporation size[d] → Business unit performance (2014)	-2.15	2.39	-6.08	1.77	-0.44	0.10
Corporation age → Business unit performance (2014)	2.01	4.22	-4.93	8.95	-0.05	0.09
Corporate TMT size → Business unit performance (2014)	0.77	0.67	-0.34	1.88	-0.01	0.01
Environmental complexity → Business unit performance (2014)	-3.36	6.14	-13.45	6.73	-3.86	1.86
Business unit autonomy (horizontal) → Business unit performance (2014)	-0.04	0.05	-0.12	0.05	-0.05	0.02
Business unit autonomy (vertical) → Business unit performance (2014)	0.06	0.06	-0.03	0.16	-0.01	0.06
Business unit size → Business unit performance (2016)	1.92	5.62	-7.32	11.16	-0.01	0.01
Business unit age → Business unit performance (2016)	-2.70	8.89	-17.33	11.93	-0.08	0.05
Business unit manager tenure in the current job → Business unit performance (2016)	-0.16	0.09	-0.33	0.01	-0.03	0.01
Business unit in Taiwan → Business unit performance (2016)	0.13**	0.05	0.04	0.22	0.01	0.06
Business unit in Jiangsu province in China → Business unit performance (2016)	0.13**	0.05	0.04	0.22	0.01	0.06
Corporation size[d] → Business unit performance (2016)	-1.94	5.01	-10.19	6.31	-0.28	0.10
Corporation age → Business unit performance (2016)	1.39	5.63	-7.86	10.65	-0.04	0.06
Corporate TMT size → Business unit performance (2016)	0.15	0.14	-0.08	0.38	-0.01	0.01
Environmental complexity → Business unit performance (2016)	-3.07	9.72	-19.07	12.92	-2.57	1.46
Business unit autonomy → Business unit performance (2016) (horizontal)	-0.03	0.05	-0.11	0.05	-0.03	0.01
Business unit autonomy (vertical) → Business unit performance (2016)	0.06	0.06	-0.03	0.15	-0.01	0.05
Part B: Indirect effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Corporate-level EO → Business unit radical innovation → Business unit performance (2014)	0.16**	0.08	0.02	0.30	0.01	0.03
Corporate-level EO → Business unit radical innovation → Business unit performance (2016)	0.10**	0.05	0.01	0.19	0.01	0.03
Part C: Moderated effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Business unit R&D intensity → Business unit radical innovation	0.86***	0.03	0.80	0.92	0.20	0.23
Corporate-level EO × Business unit R&D intensity → Business unit radical innovation	0.46***	0.07	0.34	0.58	0.49	0.60
Business unit AC → Business unit performance (2014)	1.16***	0.05	1.07	1.25	0.11	0.13
Business unit AC → Business unit performance (2016)	1.45***	0.08	1.32	1.58	0.06	0.08
Business unit radical innovation × Business unit AC → Business unit performance (2014)	0.47***	0.04	0.24	0.70	0.11	0.13
Business unit radical innovation × Business unit AC → Business unit performance (2016)	0.59***	0.08	0.46	0.72	0.06	0.08

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

[a] n = 630 at the business unit level (level 1); n = 270 at the corporate level (level 2). [b] SE = standard error of estimate. [c] CI = confidence interval; LLCI = lower level of the 95% confidence interval; UCLI = upper level of the 95% confidence interval. [d] Log number of full-time employees. EO, corporate-level entrepreneurial orientation; AC, business unit-level absorptive capacity; performance, business unit-level objective performance (sales growth).

Table 6
Robustness Check (High Corporation Age): Two-Level Moderated Mediation Model: Paths, Estimate, and Their Significance[a]

Part A: Direct effect (standardized estimates)	Estimate	SE[b]	LLCI[c]	UCLI[c]	Monte Carlo (unstandardized estimates)	
					LLCI[c]	UCLI[c]
Corporate-level EO → Business unit performance (2014)	0.17***	0.04	0.09	0.25	0.02	0.06
Corporate-level EO → Business unit performance (2016)	0.10**	0.05	0.02	0.18	0.01	0.05
Corporate-level EO → Business unit radical innovation	0.26***	0.09	0.12	0.41	0.03	0.09
Business unit radical innovation → Business unit performance (2014)	0.47***	0.12	0.27	0.67	0.37	0.51
Business unit radical innovation → Business unit performance (2016)	0.53***	0.07	0.41	0.65	0.48	0.54
Business unit EO → Business unit performance (2014)	0.06**	0.01	0.02	0.10	0.03	0.05
Business unit EO → Business unit performance (2016)	0.06**	0.03	0.01	0.11	0.06	0.10
Corporate-level EO → Business unit EO	0.29**	0.14	0.05	0.53	0.02	0.10
Business unit size → Business unit performance (2014)	-0.04	0.09	-0.18	0.10	-0.003	0.002
Business unit age → Business unit performance (2014)	0.32***	0.07	0.21	0.44	0.002	0.01
Business unit manager tenure in the current job → Business unit performance (2014)	-0.34***	0.09	-0.49	-0.19	-0.02	-0.01
Business unit in Taiwan → Business unit performance (2014)	0.25**	0.11	0.04	0.47	0.03	0.28
Business unit in Jiangsu province in China → Business unit performance (2014)	0.25**	0.11	0.04	0.47	0.03	0.28
Corporation size[d] → Business unit performance (2014)	0.19**	0.09	0.05	0.34	0.01	0.04
Corporate TMT size → Business unit performance (2014)	-0.61***	0.21	-0.96	-0.26	-0.002	-0.001
Environmental complexity → Business unit performance (2014)	-0.24	0.15	-0.49	0.01	-0.23	0.01
Manufacturing industry → Business unit performance (2014)	-0.65***	0.12	-0.85	-0.46	-0.47	-0.38
High technology industry → Business unit performance (2014)	-0.44***	0.05	-0.53	-0.35	-0.29	-0.17
Biotechnology industry → Business unit performance (2014)	-0.29***	0.07	-0.41	-0.17	-0.19	-0.12
Business unit autonomy (horizontal) → Business unit performance (2014)	0.04	0.03	-0.01	0.09	-0.07	0.06
Business unit autonomy (vertical) → Business unit performance (2014)	-0.01	0.03	-0.06	0.05	-0.04	0.03
Business unit size → Business unit performance (2016)	-0.02	0.04	-0.08	0.05	-0.001	0.001
Business unit age → Business unit performance (2016)	0.11***	0.04	0.05	0.17	0.001	0.003
Business unit manager tenure in the current job → Business unit performance (2016)	-0.34***	0.12	-0.53	-0.15	-0.02	-0.01
Business unit in Taiwan → Business unit performance (2016)	0.23	0.13	-0.02	0.48	-0.02	0.32
Business unit in Jiangsu province in China → Business unit performance (2016)	0.23	0.13	-0.02	0.48	-0.02	0.32
Corporation size[d] → Business unit performance (2016)	0.54***	0.07	0.42	0.66	0.04	0.10
Corporate TMT size → Business unit performance (2016)	-0.97***	0.20	-1.31	-0.64	-0.03	-0.01
Environmental complexity → Business unit performance (2016)	-0.31***	0.08	-0.45	-0.18	-0.19	-0.09
Manufacturing industry → Business unit performance (2016)	-0.60**	0.28	-1.06	-0.15	-0.46	-0.31
High technology industry → Business unit performance (2016)	-0.19	0.22	-0.56	0.17	-0.23	0.04
Biotechnology industry → Business unit performance (2016)	-0.33**	0.14	-0.55	-0.10	-0.21	-0.13
Business unit autonomy → Business unit performance (2016) (horizontal)	0.04	0.03	-0.02	0.10	-0.01	0.07
Business unit autonomy (vertical) → Business unit performance (2016)	-0.01	0.04	-0.07	0.05	-0.05	0.04
Part B: Indirect effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Corporate-level EO → Business unit radical innovation → Business unit performance (2014)	0.13**	0.06	0.03	0.23	0.01	0.04
Corporate-level EO → Business unit radical innovation → Business unit performance (2016)	0.16***	0.05	0.06	0.25	0.02	0.05
Part C: Moderated effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Business unit R&D intensity → Business unit radical innovation	0.41***	0.15	0.15	0.66	0.16	0.39
Corporate-level EO × Business unit R&D intensity → Business unit radical innovation	0.87***	0.21	0.51	1.23	0.38	0.48
Business unit AC → Business unit performance (2014)	0.72***	0.15	0.46	0.98	0.18	0.31
Business unit AC → Business unit performance (2016)	1.15***	0.23	0.76	1.54	0.34	0.45
Business unit radical innovation × Business unit AC → Business unit performance (2014)	0.32***	0.12	0.11	0.53	0.04	0.22
Business unit radical innovation × Business unit AC → Business unit performance (2016)	0.54***	0.13	0.32	0.77	0.19	0.33

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

[a]High corporation age = 23.43 and above; n = 1350 at the business unit level (level 1); n = 630 at the corporate level (level 2). [b]SE = standard error of estimate. [c]CI = confidence interval; LLCI = lower level of the 95% confidence interval; UCLI = upper level of the 95% confidence interval. [d]Log number of full-time employees. EO, corporate-level entrepreneurial orientation; AC, business unit-level absorptive capacity; performance, business unit-level objective performance (sales growth).

Table 7
Robustness Check (Low Corporation Age): Two-Level Moderated Mediation Model: Paths, Estimate, and Their Significance[a]

Part A: Direct effect (standardized estimates)	Estimate	SE[b]	LLCI[c]	UCLI[c]	Monte Carlo (unstandardized estimates)	
					LLCI[c]	UCLI[c]
Corporate-level EO → Business unit performance (2014)	0.07***	0.02	0.04	0.10	0.02	0.06
Corporate-level EO → Business unit performance (2016)	0.02**	0.01	0.01	0.03	0.01	0.05
Corporate-level EO → Business unit radical innovation	0.29***	0.05	0.21	0.38	0.13	0.21
Business unit radical innovation → Business unit performance (2014)	0.55***	0.06	0.45	0.65	0.59	0.71
Business unit radical innovation → Business unit performance (2016)	0.20**	0.10	0.03	0.37	0.15	0.37
Business unit EO → Business unit performance (2014)	0.05**	0.02	0.04	0.06	0.01	0.05
Business unit EO → Business unit performance (2016)	0.04**	0.02	0.03	0.05	0.01	0.11
Corporate-level EO → Business unit EO	0.26**	0.13	0.05	0.47	0.01	0.07
Business unit size → Business unit performance (2014)	0.38***	0.03	0.34	0.42	0.005	0.01
Business unit age → Business unit performance (2014)	-0.38***	0.02	-0.42	-0.34	-0.06	-0.04
Business unit manager tenure in the current job → Business unit performance (2014)	0.30***	0.02	0.27	0.33	0.12	0.17
Business unit in Taiwan → Business unit performance (2014)	0.02	0.02	-0.02	0.06	-0.03	0.09
Business unit in Jiangsu province in China → Business unit performance (2014)	0.02	0.02	-0.01	0.04	-0.01	0.03
Corporation size[d] → Business unit performance (2014)	-0.15***	0.03	-0.20	-0.11	-0.13	-0.08
Corporate TMT size → Business unit performance (2014)	0.38***	0.03	0.34	0.43	0.004	0.01
Environmental complexity → Business unit performance (2014)	0.01	0.02	-0.03	0.05	-0.04	0.08
Manufacturing industry → Business unit performance (2014)	0.08***	0.02	0.05	0.11	0.11	0.24
High technology industry → Business unit performance (2014)	0.02	0.02	-0.02	0.05	-0.03	0.10
Biotechnology industry → Business unit performance (2014)	-0.07***	0.02	-0.10	-0.04	-0.22	-0.08
Business unit autonomy (horizontal) → Business unit performance (2014)	-0.02	0.03	-0.06	0.03	-0.13	0.06
Business unit autonomy (vertical) → Business unit performance (2014)	-0.05	0.03	-0.10	0.01	-0.21	0.01
Business unit size → Business unit performance (2016)	0.62***	0.04	0.54	0.69	0.008	0.01
Business unit age → Business unit performance (2016)	-0.57***	0.04	-0.63	0.50	-0.09	-0.07
Business unit manager tenure in the current job → Business unit performance (2016)	0.36***	0.02	0.33	0.39	0.16	0.22
Business unit in Taiwan → Business unit performance (2016)	0.02	0.02	-0.01	0.07	-0.02	0.12
Business unit in Jiangsu province in China → Business unit performance (2016)	0.02	0.02	-0.01	0.05	-0.01	0.04
Corporation size[d] → Business unit performance (2016)	-0.10***	0.03	-0.16	-0.05	-0.11	-0.03
Corporate TMT size → Business unit performance (2016)	0.59***	0.05	0.51	0.66	0.007	0.01
Environmental complexity → Business unit performance (2016)	-0.05	0.03	-0.10	0.01	-0.15	0.01
Manufacturing industry → Business unit performance (2016)	0.09***	0.02	0.06	0.12	0.12	0.26
High technology industry → Business unit performance (2016)	0.07***	0.02	0.03	0.11	0.06	0.20
Biotechnology industry → Business unit performance (2016)	-0.15***	0.03	-0.19	-0.10	-0.40	-0.22
Business unit autonomy → Business unit performance (2016) (horizontal)	-0.02	0.03	-0.07	0.02	-0.15	0.05
Business unit autonomy (vertical) → Business unit performance (2016)	-0.05	0.03	-0.10	0.01	-0.24	0.01
Part B: Indirect effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Corporate-level EO → Business unit radical innovation → Business unit performance (2014)	0.16***	0.02	0.13	0.19	0.09	0.13
Corporate-level EO → Business unit radical innovation → Business unit performance (2016)	0.06**	0.02	0.02	0.10	0.01	0.07
Part C: Moderated effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Business unit R&D intensity → Business unit radical innovation	0.06**	0.03	0.01	0.11	0.02	0.12
Corporate-level EO × Business unit R&D intensity → Business unit radical innovation	0.96***	0.02	0.92	0.99	0.40	0.44
Business unit AC → Business unit performance (2014)	0.12***	0.02	0.09	0.14	0.08	0.12
Business unit AC → Business unit performance (2016)	0.16***	0.02	0.12	0.20	0.11	0.21
Business unit radical innovation × Business unit AC → Business unit performance (2014)	0.67***	0.02	0.63	0.71	0.20	0.23
Business unit radical innovation × Business unit AC → Business unit performance (2016)	0.85***	0.02	0.82	0.89	0.26	0.36

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

[a]Low corporation age = below 23.43; n = 1470 at the business unit level (level 1); n = 660 at the corporate level (level 2). [b]SE = standard error of estimate. [c]CI = confidence interval; LLCI = lower level of the 95% confidence interval; UCLI = upper level of the 95% confidence interval. [d]Log number of full-time employees. EO, corporate-level entrepreneurial orientation; AC, business unit-level absorptive capacity; performance, business unit-level objective performance (sales growth).

Table 8
Two-Level Moderated Mediation Model: Paths, Estimate, and Their Significance (Business Unit in Taiwan)[a]

Part A: Direct effect (standardized estimates)	Estimate	SE[b]	LLCI[c]	UCLI[c]	Monte Carlo (unstandardized estimates)	
					LLCI[c]	UCLI[c]
Corporate-level EO → Business unit performance (2014)	0.04**	0.02	0.01	0.08	0.01	0.05
Corporate-level EO → Business unit performance (2016)	0.05**	0.02	0.02	0.09	0.01	0.05
Corporate-level EO → Business unit radical innovation	0.30***	0.05	0.21	0.39	0.11	0.17
Business unit radical innovation → Business unit performance (2014)	0.53***	0.06	0.43	0.62	0.60	0.64
Business unit radical innovation → Business unit performance (2016)	0.35***	0.06	0.25	0.45	0.33	0.46
Business unit EO → Business unit performance (2014)	0.02**	0.01	0.01	0.03	0.01	0.04
Business unit EO → Business unit performance (2016)	0.04**	0.02	0.01	0.07	0.01	0.08
Corporate-level EO → Business unit EO	0.32***	0.16	0.07	0.32	0.01	0.09
Business unit size → Business unit performance (2014)	0.04***	0.01	0.03	0.06	0.0004	0.001
Business unit age → Business unit performance (2014)	0.03	0.04	-0.03	0.09	-0.001	0.004
Business unit manager tenure in the current job → Business unit performance (2014)	0.18***	0.03	0.14	0.23	0.01	0.03
Corporation size[d] → Business unit performance (2014)	-0.03**	0.01	-0.05	-0.01	-0.02	-0.003
Corporation age → Business unit performance (2014)	-0.10***	0.01	-0.12	-0.08	-0.004	-0.002
Corporate TMT size → Business unit performance (2014)	-0.02	0.02	-0.05	0.01	-0.01	0.01
Environmental complexity → Business unit performance (2014)	-0.03**	0.01	-0.04	-0.01	-0.04	-0.01
Manufacturing industry → Business unit performance (2014)	0.09***	0.02	0.05	0.12	0.06	0.17
High technology industry → Business unit performance (2014)	0.05	0.03	-0.01	0.10	-0.01	0.11
Biotechnology industry → Business unit performance (2014)	0.14***	0.03	0.09	0.19	0.12	0.24
Business unit autonomy (horizontal) → Business unit performance (2014)	0.01	0.03	-0.04	0.05	-0.07	0.09
Business unit autonomy (vertical) → Business unit performance (2014)	-0.03	0.03	-0.08	0.02	-0.13	0.04
Business unit size → Business unit performance (2016)	0.10***	0.01	0.08	0.12	0.001	0.002
Business unit age → Business unit performance (2016)	0.04	0.04	-0.03	0.12	-0.01	0.01
Business unit manager tenure in the current job → Business unit performance (2016)	0.16***	0.03	0.12	0.21	0.01	0.03
Corporation size[d] → Business unit performance (2016)	0.06***	0.02	0.03	0.09	0.01	0.03
Corporation age → Business unit performance (2016)	-0.11***	0.02	-0.14	-0.07	-0.004	-0.002
Corporate TMT size → Business unit performance (2016)	-0.06***	0.02	-0.10	-0.02	-0.004	-0.001
Environmental complexity → Business unit performance (2016)	-0.08***	0.02	-0.10	-0.05	-0.10	-0.05
Manufacturing industry → Business unit performance (2016)	0.07**	0.03	0.02	0.12	0.03	0.15
High technology industry → Business unit performance (2016)	0.04	0.04	-0.03	0.10	-0.03	0.10
Biotechnology industry → Business unit performance (2016)	0.11**	0.04	0.04	0.18	0.05	0.22
Business unit autonomy → Business unit performance (2016) (horizontal)	-0.01	0.03	-0.05	0.04	-0.09	0.07
Business unit autonomy (vertical) → Business unit performance (2016)	-0.01	0.03	-0.06	0.04	-0.11	0.06
Part B: Indirect effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Corporate-level EO → Business unit radical innovation → Business unit performance (2014)	0.16***	0.02	0.12	0.20	0.07	0.11
Corporate-level EO → Business unit radical innovation → Business unit performance (2016)	0.11***	0.02	0.08	0.13	0.04	0.07
Part C: Moderated effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Business unit R&D intensity → Business unit radical innovation	0.22***	0.04	0.16	0.29	0.13	0.21
Corporate-level EO × Business unit R&D intensity → Business unit radical innovation	0.93***	0.03	0.87	0.98	0.38	0.42
Business unit AC → Business unit performance (2014)	0.04***	0.01	0.02	0.07	0.02	0.05
Business unit AC → Business unit performance (2016)	0.06**	0.03	0.02	0.11	0.01	0.09
Business unit radical innovation × Business unit AC → Business unit performance (2014)	0.72***	0.01	0.70	0.74	0.22	0.24
Business unit radical innovation × Business unit AC → Business unit performance (2016)	0.81***	0.02	0.79	0.84	0.23	0.27

*p < 0.10, **p < 0.05, ***p < 0.01
[a]n = 1880 at the business unit level (level 1); n = 965 at the corporate level (level 2). [b]SE = standard error of estimate. [c]CI = confidence interval; LLCI = lower level of the 95% confidence interval; UCLI = upper level of the 95% confidence interval. [d]Log number of full-time employees. EO, corporate-level entrepreneurial orientation; AC, business unit-level absorptive capacity; performance, business unit-level objective performance (sales growth).

Table 9
Two-Level Moderated Mediation Model: Paths, Estimate, and Their Significance (Business Unit in Jiangsu Province in China)[a]

Part A: Direct effect (standardized estimates)	Estimate	SE[b]	LLCI[c]	UCLI[c]	Monte Carlo (unstandardized estimates)	
					LLCI[c]	UCLI[c]
Corporate-level EO → Business unit performance (2014)	0.06[**]	0.03	0.01	0.12	0.01	0.07
Corporate-level EO → Business unit performance (2016)	0.07[**]	0.03	0.03	0.12	0.02	0.08
Corporate-level EO → Business unit radical innovation	0.32[***]	0.07	0.20	0.44	0.11	0.20
Business unit radical innovation → Business unit performance (2014)	0.48[***]	0.08	0.35	0.61	0.52	0.61
Business unit radical innovation → Business unit performance (2016)	0.31[***]	0.08	0.17	0.44	0.28	0.42
Business unit EO → Business unit performance (2014)	0.02[**]	0.01	0.01	0.03	0.01	0.04
Business unit EO → Business unit performance (2016)	0.08[**]	0.04	0.01	0.15	0.01	0.16
Corporate-level EO → Business unit EO	0.20[***]	0.10	0.02	0.38	0.01	0.12
Business unit size → Business unit performance (2014)	0.04[***]	0.01	0.02	0.07	0.001	0.002
Business unit age → Business unit performance (2014)	0.02	0.06	-0.08	0.12	-0.003	0.01
Business unit manager tenure in the current job → Business unit performance (2014)	0.22[***]	0.04	0.16	0.29	0.02	0.04
Corporation size[d] → Business unit performance (2014)	-0.05[***]	0.02	-0.07	-0.02	-0.03	-0.01
Corporation age → Business unit performance (2014)	-0.10[***]	0.02	-0.13	-0.07	-0.004	-0.002
Corporate TMT size → Business unit performance (2014)	-0.02	0.03	-0.07	0.03	-0.001	0.001
Environmental complexity → Business unit performance (2014)	-0.04[*]	0.02	-0.06	-0.01	-0.06	-0.01
Manufacturing industry → Business unit performance (2014)	-0.32[***]	0.08	-0.45	-0.18	-0.59	-0.23
High technology industry → Business unit performance (2014)	-0.41[***]	0.10	-0.57	-0.25	-0.64	-0.28
Biotechnology industry → Business unit performance (2014)	-0.26[***]	0.09	-0.40	-0.12	-0.53	-0.15
Business unit autonomy (horizontal) → Business unit performance (2014)	0.00	0.03	-0.06	0.05	-0.10	0.09
Business unit autonomy (vertical) → Business unit performance (2014)	-0.02	0.03	-0.08	0.03	-0.12	0.05
Business unit size → Business unit performance (2016)	0.10[***]	0.02	0.06	0.13	0.001	0.002
Business unit age → Business unit performance (2016)	0.03	0.07	-0.08	0.15	-0.003	0.01
Business unit manager tenure in the current job → Business unit performance (2016)	0.20[***]	0.04	0.13	0.27	0.02	0.04
Corporation size[d] → Business unit performance (2016)	0.05[*]	0.02	0.01	0.09	0.002	0.03
Corporation age → Business unit performance (2016)	-0.11[***]	0.03	-0.16	-0.06	-0.01	-0.002
Corporate TMT size → Business unit performance (2016)	-0.06	0.04	-0.12	0.01	-0.001	0.001
Environmental complexity → Business unit performance (2016)	-0.08[***]	0.02	-0.12	-0.05	-0.11	-0.04
Manufacturing industry → Business unit performance (2016)	-0.42[***]	0.05	-0.50	-0.33	-0.65	-0.39
High technology industry → Business unit performance (2016)	-0.53[***]	0.06	-0.63	-0.44	-0.70	-0.44
Biotechnology industry → Business unit performance (2016)	-0.38[***]	0.07	-0.49	-0.26	-0.64	-0.30
Business unit autonomy → Business unit performance (2016) (horizontal)	0.02	0.04	-0.04	0.08	-0.08	0.14
Business unit autonomy (vertical) → Business unit performance (2016)	-0.05	0.04	-0.11	0.02	-0.18	0.03
Part B: Indirect effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Corporate-level EO → Business unit radical innovation → Business unit performance (2014)	0.16[***]	0.03	0.11	0.20	0.06	0.11
Corporate-level EO → Business unit radical innovation → Business unit performance (2016)	0.10[***]	0.02	0.06	0.14	0.04	0.07
Part C: Moderated effect (standardized estimates)	**Estimate**	**SE[b]**	**LLCI**	**UCLI**	**LLCI**	**UCLI**
Business unit R&D intensity → Business unit radical innovation	0.19[***]	0.07	0.07	0.30	0.05	0.20
Corporate-level EO × Business unit R&D intensity → Business unit radical innovation	0.92[***]	0.06	0.83	1.02	0.37	0.43
Business unit AC → Business unit performance (2014)	0.06[***]	0.02	0.03	0.10	0.03	0.08
Business unit AC → Business unit performance (2016)	0.08[**]	0.04	0.03	0.14	0.02	0.11
Business unit radical innovation × Business unit AC → Business unit performance (2014)	0.74[***]	0.04	0.67	0.81	0.23	0.26
Business unit radical innovation × Business unit AC → Business unit performance (2016)	0.82[***]	0.15	0.57	1.07	0.23	0.29

[*] $p < 0.10$, [**] $p < 0.05$, [***] $p < 0.01$

[a] n = 940 at the business unit level (level 1); n = 535 at the corporate level (level 2). [b] SE = standard error of estimate. [c] CI = confidence interval; LLCI = lower level of the 95% confidence interval; UCLI = upper level of the 95% confidence interval. [d] Log number of full-time employees. EO, corporate-level entrepreneurial orientation; AC, business unit-level absorptive capacity; performance, business unit-level objective performance (sales growth).
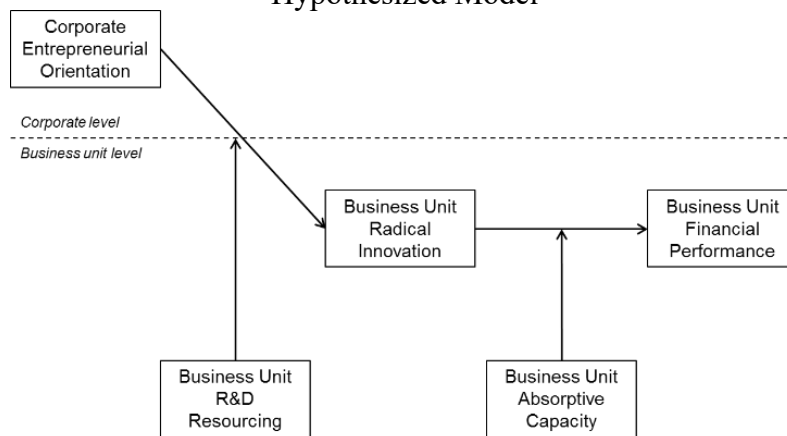
Figure 1
Hypothesized Model

Figure 2
The Indirect Effect of Corporate Entrepreneurial Orientation on Business Unit Radical
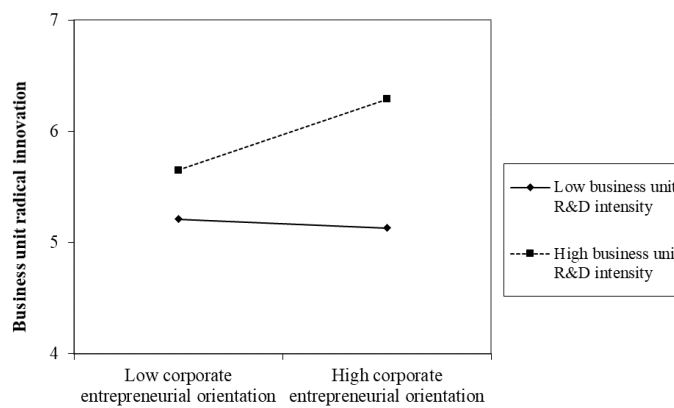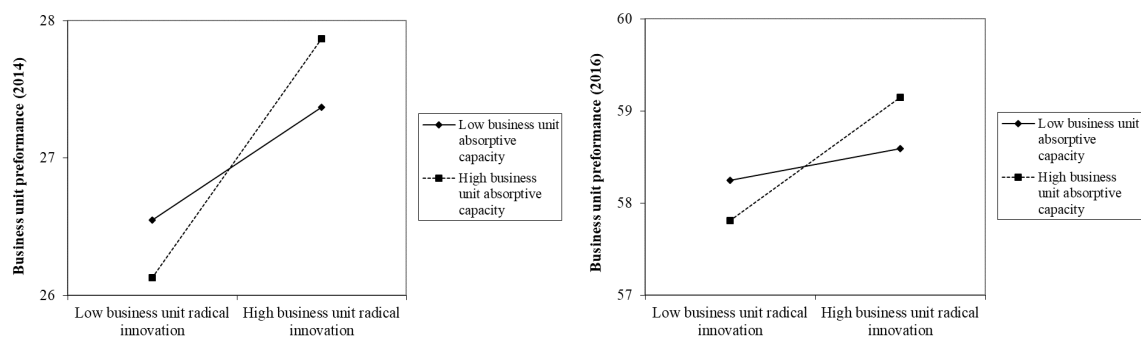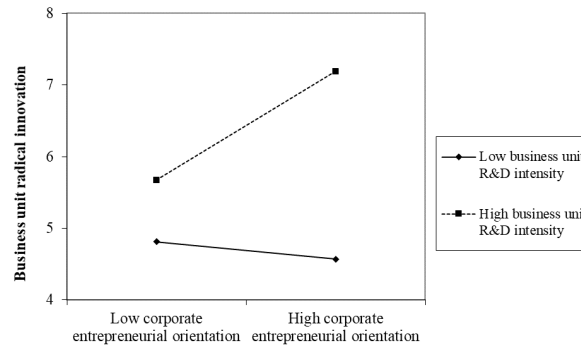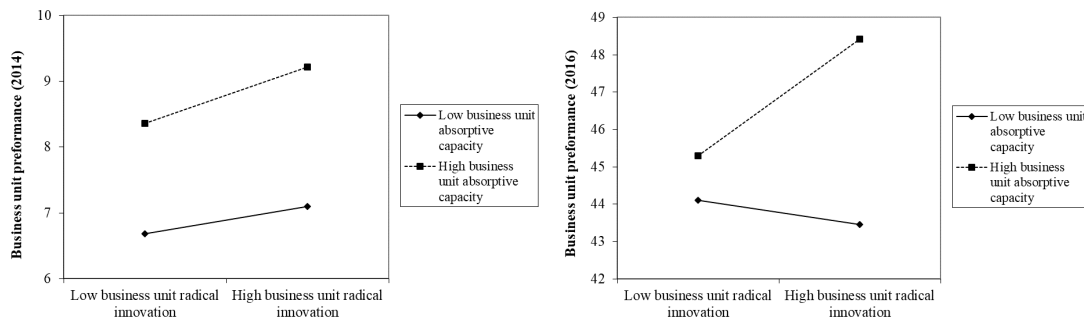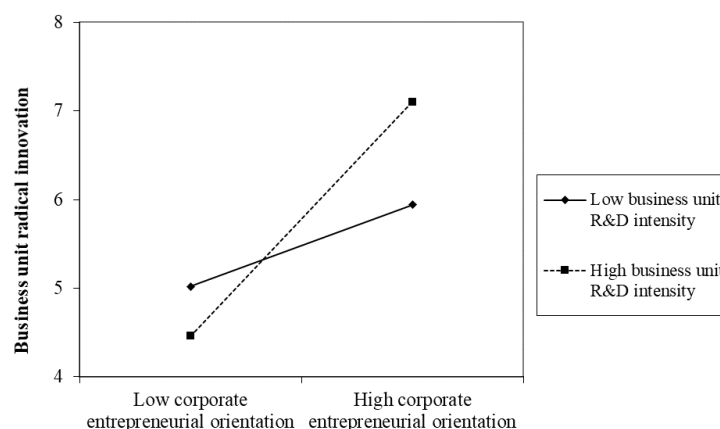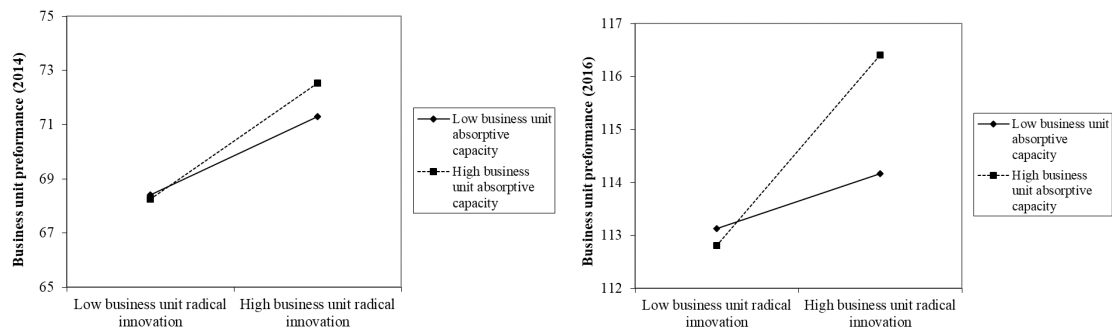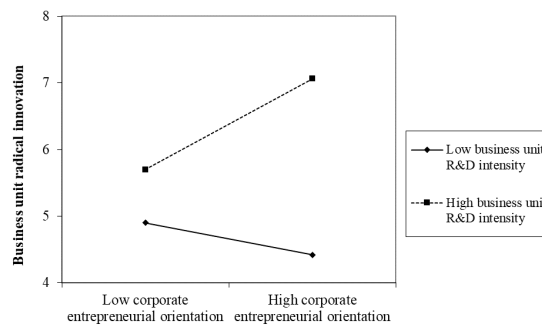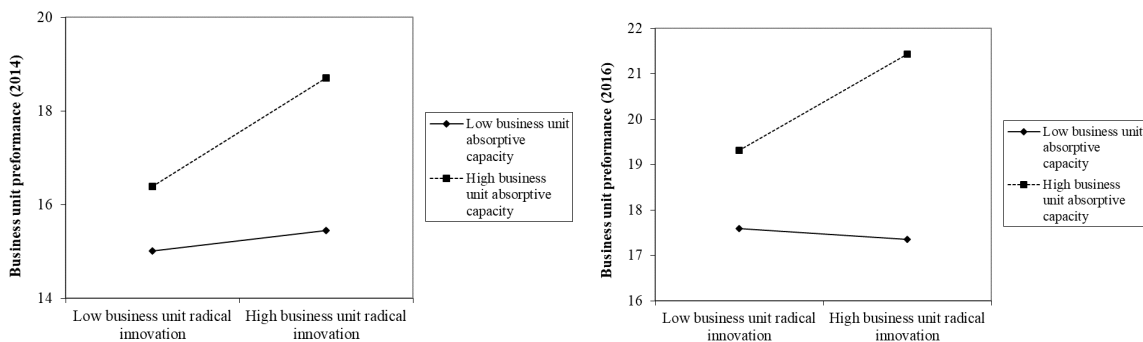Innovation at Low and High Levels of Business Unit R&D Intensity

Figure 3
The Indirect Effect of Corporate Entrepreneurial Orientation (via Business Unit Radical
Innovation) on Business Unit Performance at Low and High Levels of Business Unit
Absorptive Capacity

Figure 4

The Indirect Effect of Corporate Entrepreneurial Orientation on Business Unit Radical Innovation at Low and High Levels of Business Unit R&D Intensity (High Technology)
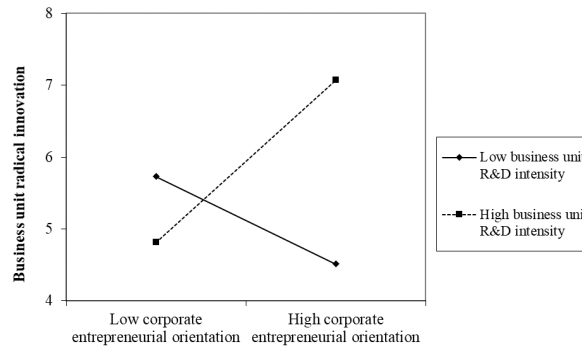

Figure 5

The Indirect Effect of Corporate Entrepreneurial Orientation (via Business Unit Radical Innovation) on Business Unit Performance at Low and High Levels of Business Unit Absorptive Capacity (High Technology)
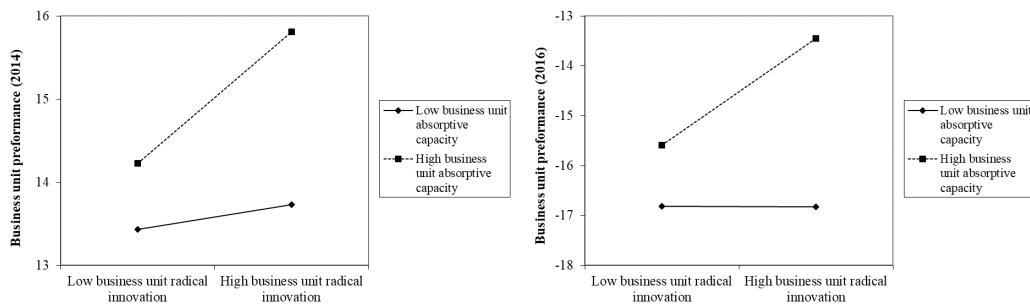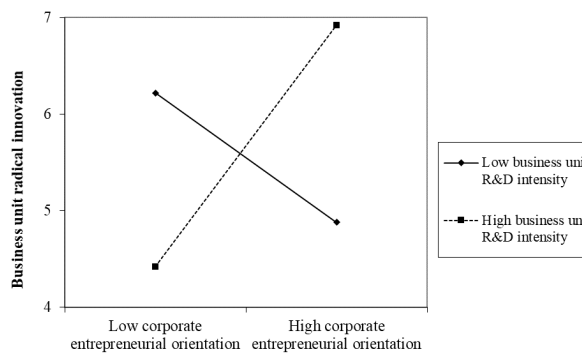

Figure 6

The Indirect Effect of Corporate Entrepreneurial Orientation on Business Unit Radical Innovation at Low and High Levels of Business Unit R&D Intensity (Biotechnology)

Figure 7

The Indirect Effect of Corporate Entrepreneurial Orientation (via Business Unit Radical Innovation) on Business Unit Performance at Low and High Levels of Business Unit Absorptive Capacity (Biotechnology)

Figure 8

The Indirect Effect of Corporate Entrepreneurial Orientation on Business Unit Radical Innovation at Low and High Levels of Business Unit R&D Intensity (Traditional Manufacturing)

Figure 9

The Indirect Effect of Corporate Entrepreneurial Orientation (via Business Unit Radical Innovation) on Business Unit Performance at Low and High Levels of Business Unit Absorptive Capacity (Traditional Manufacturing)
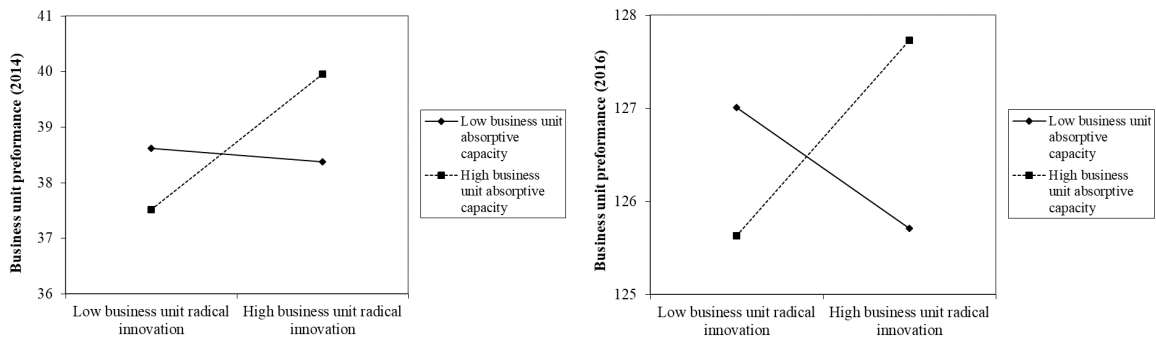
Figure 10

The Indirect Effect of Corporate Entrepreneurial Orientation on Business Unit Radical Innovation at Low and High Levels of Business Unit R&D Intensity (High Corporation Age)

Figure 11

The Indirect Effect of Corporate Entrepreneurial Orientation (via Business Unit Radical Innovation) on Business Unit Performance at Low and High Levels of Business Unit Absorptive Capacity (High Corporation Age)

Figure 12

The Indirect Effect of Corporate Entrepreneurial Orientation on Business Unit Radical Innovation at Low and High Levels of Business Unit R&D Intensity (Low Corporation Age)

Figure 13

The Indirect Effect of Corporate Entrepreneurial Orientation (via Business Unit Radical Innovation) on Business Unit Performance at Low and High Levels of Business Unit Absorptive Capacity (Low Corporation Age)

Figure 14

The Indirect Effect of Corporate Entrepreneurial Orientation on Business Unit Radical Innovation at Low and High Levels of Business Unit R&D Intensity (Business Unit in Taiwan)
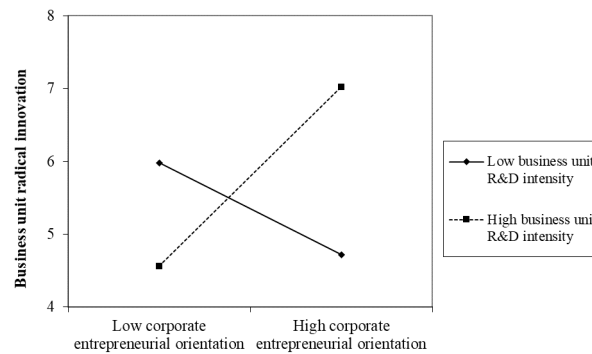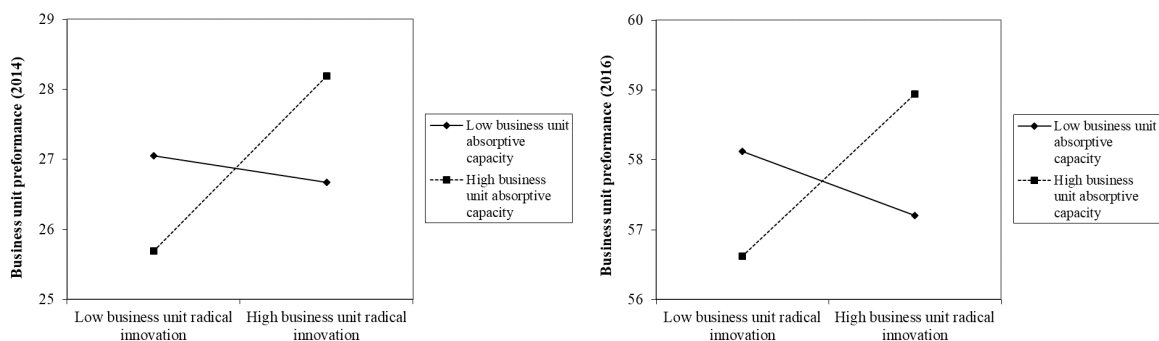

Figure 15

The Indirect Effect of Corporate Entrepreneurial Orientation (via Business Unit Radical Innovation) on Business Unit Performance at Low and High Levels of Business Unit Absorptive Capacity (Business Unit in Taiwan)

Figure 16

The Indirect Effect of Corporate Entrepreneurial Orientation on Business Unit Radical Innovation at Low and High Levels of Business Unit R&D Intensity (Business Unit in Jiangsu Province in China)
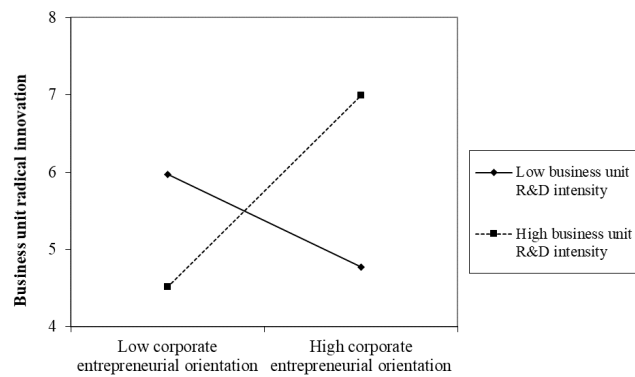

Figure 17

The Indirect Effect of Corporate Entrepreneurial Orientation (via Business Unit Radical Innovation) on Business Unit Performance at Low and High Levels of Business Unit Absorptive Capacity (Business Unit in Jiangsu Province in China)