



The influence of firm age and intangible resources on the relationship between entrepreneurial orientation and firm growth among Japanese SMEs

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ABSTRACT

With the relationship between entrepreneurial orientation (EO) and firm performance having broad scholarly acceptance, researchers are now delving with increased focus into the contextual factors that change the nature of the relationship between EO and various manifestations of organizational performance. In this vein, this study adopts the resource based view and investigates the moderating influence of firm age and intangible resources on the EO-firm growth relationship among small to medium sized enterprises (SMEs) in Japan. Further, we propose a three-way interactive model between EO, firm age, and intangible resources to better identify entrepreneurial configurations that promote superior SME growth.

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1. Executive summary

After more than thirty years of scholarly inquiry, it is generally accepted that firms that behave entrepreneurially perform better than those firms that are more conservative. The dominant conceptualization of what it means for a firm to 'behave entrepreneurially' is whether a firm engages in specific, observable strategic actions – innovation, proactiveness, and risk-taking – and whether such actions occur with some consistency. More nominally known as a firm's entrepreneurial orientation (EO), as knowledge in this area has expanded, increased attention is being paid to the contextual factors that may change the degree or nature of the EO-performance connection; the intention being to establish the boundary conditions – if present – of when it favors decision-makers to pursue entrepreneurial strategies and when it may not. From this perspective, this study investigates two potential boundary conditions on the relationship between EO and firm growth – the firm's age, and its intangible resource advantage relative to its industry rivals. A sample of 207 Japanese small to medium sized businesses (SMEs) was used to test the hypothesized relationships.

Regarding the potential influence of firm age on the EO-growth relationship, we argue – and find empirical support for this argument – that younger firms are better able to capture the value from entrepreneurial strategies in the form of higher organizational growth rates than their older peers. This argument is predicated on the notion that younger firms, while lacking established routines and processes that may provide guidance and discipline in strategic decision-making, also possess structures and an organizing context that is more flexible and reactive than older firms. Furthermore, younger firms, while again perhaps lacking in *quantity* of market knowledge, may actually possess market knowledge of greater temporal salience. These advantages allow younger firms to pursue

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entrepreneurial opportunities with greater congruence to current market expectations, and therefore be better positioned to translate those opportunities into superior growth outcomes.

In considering the firm's intangible resource advantage, we suggest, and again find support for our argument, that firms with an intangible resource advantage relative to their industry peers should also see a strengthening in the relationship between EO and firm growth. This hypothesis is based on the idea that because SMEs tend to be constrained in their tangible and slack resources, what intangible resources (such as intellectual property, brand identity, and reputation) they do possess take on particular strategic significance. This is also the case because intangible resources are often argued to be a significant source of competitive advantage — intangible resources are inherently more rare and difficult to imitate. Because firms engaging in entrepreneurial strategies tend to consume a significant number of resources in the pursuit of entrepreneurial opportunities, the surplus, or constraint of these strategically valuable resources influence the quantity of opportunities able to be pursued; the more the resources, the more the exploitable opportunities, and therefore the more avenues for growth in conjunction with an entrepreneurial strategic posture.

While the study's results have several implications for scholars and managers, a particularly notable finding is that, when considering EO, firm age, and intangible resources collectively, older firms struggled to grow even when they pursued entrepreneurial strategies and regardless of whether they had an intangible resource advantage or disadvantage. The key insight here is that the organizational context found within older firms—such as established processes, routines, and organizational norms — prohibited the translation of entrepreneurial behaviors into positive performance outcomes. This suggests that older firms particularly struggle with overcoming age-related contextual factors despite adopting an approach to strategy making that is otherwise conducive to achieving positive organizational growth. Our study therefore joins a growing number of works suggesting that firm age, in particular, represents an under-researched yet theoretically meaningful influence on the linkage between EO and key organizational outcomes.

2. Introduction

There is increasing scholarly agreement that firms possessing an entrepreneurial strategic posture perform better than those firms that are more conservatively managed. Specifically, as recent meta-analysis suggests (Rauch et al., 2009), there is a positive performance bias in favor of firms that engage in those strategic-level behaviors constitutive of a firm's entrepreneurial orientation (EO). First conceived by Miller (1983), and later expanded by Covin and Slevin (1989; 1991), EO refers to the behavioral tendencies, managerial philosophies, and strategic decision-making practices that are entrepreneurial in nature. Under the Miller/Covin and Slevin conceptualization of EO, a firm is entrepreneurial because it engages in the concurrent exhibition of innovative, proactive, and risk-taking strategic behaviors; that is, a firm that possesses a high level of EO is expected to exhibit similarly high levels of innovativeness, proactiveness, and a willingness to take risks. Notably, EO links to a variety of key performance outcomes including sales growth (Covin et al., 2006), profitability (Baker and Sinkula, 2009), and non-financial performance measures (Marino et al., 2002).

While there is often assumed to be a universally positive influence of EO on firm performance as broadly construed, Rauch et al. (2009) note that the EO-performance linkage appears to be contextual in nature; the nature or degree of the EO-performance relationship changes as a function of the endogenous and exogenous phenomenon influencing a given firm. For example, the relationship between EO and performance is stronger among firms operating in hostile environments (Covin and Slevin, 1989), and in environments characterized by unpredictability in the rate and nature of change (Miles et al., 2000). Looking internally, Stam and Elfring (2008) found that two elements of a founding team's social capital significantly moderated the EO-performance relationship among new ventures. Given the preceding studies and others in this vein, it behooves scholars to continue to probe potential moderating effects on the EO-performance relationship to paint a more comprehensive picture of the circumstances under which pursuing entrepreneurial strategies result in favorable performance outcomes.

This study adopts the resource based view (Barney, 1991) and investigates two potential moderators of the relationship between EO and firm growth among small to medium sized enterprises (SMEs) — firm age, and intangible resource advantage. Furthermore, this study continues in the model of Wiklund and Shepherd (2005) and Stam and Elfring (2008) by suggesting that the joint consideration of EO, firm age, and intangible resource advantage will result in differing growth outcomes. Thus, this study employs both contextual and configurational designs to illuminate additional boundary conditions influencing the EO-performance relationship among SMEs; specifically investigating: 1) How does age and intangible resource endowment change the degree of the EO-growth relationship; and 2) What configurations of EO, age, and intangible resource endowment result in the most efficacious growth outcomes? A sample of 207 Japanese SMEs in the manufacturing, services, and high-tech sectors is the setting for investigating the research questions.

In the process of addressing the aforementioned research questions, this study aims to make three principal contributions to the EO and broader entrepreneurship literatures. The first contribution is the use of contextual and configurational models to better tease out the conditions under which the EO-firm growth linkage is manifest among small to medium sized firms. The relative importance of SMEs to economic development has long spurred scholarly interest (Acs and Audretsch, 1988), and particularly in regards to the factors that promote SME growth (Achtenhagen et al., 2010). Yet despite this attention, there remain significant gaps in our understanding of the heterogeneity of growth outcomes among SMEs, specifically, why some SMEs achieve sustained growth and why others "...start small, live small, and die small" (Davidsson et al., 2005). While an innovation-centric strategic posture is a critical factor enabling SME growth (Rosenbusch et al., 2011), this relationship also tends to be contingent on exogenous and endogenous phenomenon influencing the firm (Achtenhagen et al., 2010). Thus, this study aims to illuminate theoretically meaningful factors that may facilitate – or hamper – the translation of an entrepreneurial strategic posture into SME growth.

The second contribution is the introduction of two theoretically meaningful, yet under-researched, moderators of the EO-firm growth relationship under the rubric of the resource-based view. Briefly, the resource-based view (Barney, 1991; Makadok, 2001) suggests that valuable, rare, and inimitable resources may be sources of competitive advantage, with the organizing context encompassing those resources determining either a sustained or a temporary advantage. Because EO is generally construed as a resource-consuming strategic posture (Covin and Slevin, 1991), the availability or constraint of strategically valuable resources influences the extent to which firms are able to capture value from the engagement in innovative, proactive, and risk-taking strategic behaviors. Similarly, value capture from the engagement in entrepreneurial behaviors is also contingent on the organizing context within the firm; internal structures, processes, and routines may encourage – or discourage – growth outcomes (Covin and Slevin, 1991). Therefore, under the rubric of the resource-based view, this study adopts firm age, representing the organizational context, and intangible resources, representing strategically valuable resources, as individual and joint moderators of the EO-growth relationship.

Introducing firm age as a moderator builds on recent research that identified the organization's age as a theoretically meaningful influence on the relationship between innovation-centric strategic postures (of which EO is subsumed) and performance outcomes (Rosenbusch et al., 2011). This is notable because the EO literature has generally been agnostic towards the contingent role of age, as a proxy for organizing context, between EO and other organizational outcomes. Conceptually, the connection between age and entrepreneurial strategies – i.e., the notion that younger firms tend to be more entrepreneurial than those that are older (Autio et al., 2000; Luo et al., 2005; Markman and Gartner, 2002) – is well established. However, there is also a significant body of research suggesting that value capture from entrepreneurial strategies may vary as a function of the different organizational contexts found in younger versus older firms (Sørensen and Stuart, 2000).

Regarding the inclusion of intangible resources in the research model, EO researchers have long considered a firm's internal resource endowment as affecting the EO-performance linkage; as Wiklund and Shepherd note (2003: 1313) "...an important implication for scholars of EO is the need to consider the contingent role of resources internal to the firm." Investigating intangible resources among SMEs has inherent scholarly value; because SMEs tend to be at a tangible resource disadvantage (Thornhill and Amit, 2003), the tacit, intangible resources possessed by such firms tend to be of greater managerial importance (Godfrey and Hill, 1995). Therefore, intangible resources are more likely to form the basis for competitive advantage in the SME context (Miller and Shamsie, 1996), and thus its influence on the EO-performance relationship is particularly salient.

The third contribution is pursuing the research questions at hand in a non-U.S. setting, and particularly in Japan. As Rosenbusch et al. (2011) noted in their recent meta-analysis of the innovation-performance relationship, cultural context exhibits a significant influence over the translation of innovation-centric strategic postures and performance outcomes. Despite the broad adoption of EO in international entrepreneurship research (e.g., Hansen et al., 2010; Kreiser, et al., 2010), there remain open questions regarding how cultural differences manifest in changes to the underlying theoretical rationale connecting entrepreneurial strategy-making to key performance outcomes. For example, the innovation-performance relationship among SMEs is heightened in national contexts typified by strong collectivist sensibilities (Rosenbusch et al., 2011), while national cultures with a tendency towards uncertainty avoidance diminish proactiveness and strategic risk-taking (Kreiser et al., 2010). What is notable about these findings is that nations may possess conflicting cultural tendencies vis-à-vis the exhibition of entrepreneurial behaviors. In the U.S. for example, there is a strong established linkage between EO and performance, yet the U.S. is generally considered to be more individualistic, yet also risk-tolerant (Hofstede, 2001). In a similar vein, a strong EO-performance connection has also been found in China (Zhao et al., 2009), which would be considered more collectivist but also less tolerant of uncertainty (Hofstede, 2001). One factor that makes the Japanese context interesting compared to other nations in the Asian-pacific region is that Japan represents a rough mid-point in cultural differences between the U.S. and other western European nations, and between China and other continental-Asia countries (Hofstede, 2001). Further, despite being the world's third largest economy, entrepreneurship in Japan remains under-researched, which raises important questions as to the generalizability of entrepreneurship theories and the constructs underlying those theories.

This paper proceeds by introducing the research model and building the conceptual rationale for age and intangible resources as boundary conditions of the EO-growth relationship. A discussion of the research design follows, and the results of the hypothesis tests are outlined. The paper concludes with a discussion of the study findings and its theoretical implications.

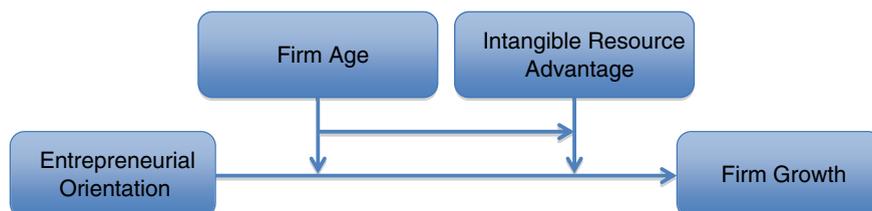


Fig. 1. Research model.

3. Theoretical development

3.1. Research model and theoretical rationale

As depicted in Fig. 1, this study adopts the resource-based view to argue that firm age, and the firm's intangible resource advantage relative to industry peers, moderates the relationship between EO and firm growth among SMEs. Specifically, the relationship between EO and firm growth is hypothesized to be stronger among firms that are younger, and that the EO-firm growth relationship is stronger among firms with an intangible resource advantage. Further, this study also suggests that there is a three-way interaction effect such that firms that are younger and that possess an intangible resource advantage will exhibit the strongest levels of growth in conjunction with higher levels of EO.

This research model adopts the perspective that EO is fundamentally representative of a strategic organizational posture that encourages the acquisition, structuring, and exploitation of organizational resources that facilitate sustained competitive advantage (Ireland et al., 2003; Newbert, 2007; Wiklund and Shepherd, 2011). However, the availability of strategically valuable resources and the organizing rubric encapsulating those resources bounds the ability to translate an entrepreneurial strategic posture into superior growth outcomes. Such a perspective is consistent with the resource-based view (Barney, 1991; Makadok, 2001) that the possession of valuable, rare, and difficult to imitate resources exploited under an organizational context that facilitates maximum value appropriation determines competitive advantage.

This study adopts the perspective that the relationship between EO and firm growth is stronger among younger firms than among older firms. From one perspective, age has its advantages in terms of a general ability to pursue entrepreneurial strategies; older firms may be better equipped to engage in innovation, proactiveness, and risk-taking by virtue of more established routines, structures, and processes that discipline firm actions and provide strategic purpose (Amburgey et al., 1993; Henderson, 1999). However, as Sørensen and Stuart (2000) note, innovation is path dependent; the firm's future entrepreneurial behaviors are a function of those that occurred in the past. As such, the development and implementation of entrepreneurial strategies among older firms is based, in part, on an understanding of past market conditions that are increasingly divergent with current market expectations as time progresses. Younger firms, with more temporally salient market knowledge and benefiting from a higher level of adaptability and strategic flexibility with which to exploit new entrepreneurial initiatives (Van de Ven, 1986), are thus, better positioned to capture value from their entrepreneurial strategies and, therefore, exhibit superior growth outcomes relative to their older peers.

In a similar vein, given that SMEs tend to have lower levels of tangible resources such as property, equipment, and capital (Thornhill and Amit, 2003), intangible resources – also inherently more likely to be valuable, rare, and inimitable (Newbert, 2007; Wiklund and Shepherd, 2003) – have disproportionately higher strategic value. Because EO is a resource consuming strategic posture (Covin and Slevin, 1991), the availability or constraint of strategically valuable resources influences the breadth and depth of entrepreneurial opportunities able to be pursued. Thus, EO, in conjunction with an intangible resource advantage, should facilitate stronger growth among SMEs. Finally, SMEs with an entrepreneurial strategic posture, that possess temporally salient market knowledge and are more structurally adaptive (e.g., are younger), and that possess an intangible resource advantage relative to their industry rivals, should exhibit the strongest growth outcomes.

3.2. EO and firm growth

Building from the work of Miller (1983), Khandwalla (1977), and Mintzberg (1973), Covin and Slevin (1991) conceived of a strategic posture continuum ranging from the exhibition of conservative strategic behaviors to those that are more entrepreneurial. Under the Miller (1983)/Covin and Slevin (1991) conceptualization of an entrepreneurial strategic posture, more nominally referred to as entrepreneurial orientation (EO), an entrepreneurial firm is one in which a recurring pattern of entrepreneurial behaviors is observable, and specifically those behaviors that are innovative, proactive, and risk-taking in nature (Covin and Slevin, 1991: 7):

In short, firms with entrepreneurial postures are risk taking, innovative, and proactive. They are willing to take on high-risk projects with chances of very high returns, and are bold and aggressive in pursuing opportunities. Entrepreneurial organizations often initiate actions to which competitors then respond, and are frequently first-to-market with new product offerings. In support of this strategic orientation, entrepreneurial firms characteristically emphasize technological leadership and research and development (Khandwalla, 1977).

According to Miller/Covin and Slevin, for a firm to be considered entrepreneurial it must exhibit all three 'sub-dimensions' of EO; there is a theoretically expected positive covariance between innovativeness, proactiveness, and risk-taking. Furthermore, all three behaviors must be present for a firm to assume the entrepreneurial label (Miller, 1983). Importantly, the Covin and Slevin (1991) conceptualization of EO does not suggest that the sub-dimensions of EO should *perfectly* covary, rather EO represents the shared variance between, or intersection of, these concurrently exhibited entrepreneurial behaviors (Covin and Wales, forthcoming). Thus, the Miller/Covin and Slevin conceptualization of EO represents a firm's overall strategic posture – a composite construct that collectively captures "...the strategy-making practices, management philosophies, and firm-level behaviors that are entrepreneurial in nature" (Anderson et al., 2009: 220). As such, it is not necessary to delineate individual causal relationships between the sub-dimensions of EO and their respective antecedents and consequences.

Given that the predominate criterion variable in strategic management research is competitive advantage (Barney, 1991), and that EO is a strategic-level construct, it is not surprising that a focus of EO scholars is on the relationship between EO and various manifestations of firm performance. Indeed, a recent meta-analysis of the EO literature found a moderate positive correlation between EO – measured as a composite construct – and firm performance broadly construed (adjusted $r = 0.24$; Rauch et al., 2009). More specifically, EO relates to a variety of performance outcomes including sales growth rate (Covin et al., 2006), profitability (Baker and Sinkula, 2009), and managerial perceptions of improvements in the firm's financial condition (Marino et al., 2002). Wiklund and Shepherd (2005) also link EO to a composite measure of performance that incorporates perceptual elements of firm growth as well as economic indicators of performance (e.g., profitability and cash flow). This study focuses on firm growth, specifically growth as conceptualized in terms of change in sales, employees, and market share, as the criterion of interest.

In looking to the causal relationship between EO and firm growth, and consistent with the resource-based view, EO is argued to represent an organizational posture that facilitates the structuration, bundling, and leveraging of organizational resources toward entrepreneurial aims (Ireland et al., 2003). This posture, consistent with Wiklund and Shepherd (2011), is rooted in the notion that entrepreneurial strategy-making and processes represent a valuable, rare, and inimitable organizing gestalt through which firms are able to generate competitive advantage (Barney, 1991; Newbert, 2007). This competitive advantage in turn fosters superior growth (Covin et al., 2006; Wiklund and Shepherd, 2011). To illustrate, Wiklund (1999: 45) identified a significant EO-performance connection using a multidimensional performance measure, suggesting that EO's relationship to firm performance in the SME context encompasses both growth and economic indicators, but that growth may have significant managerial salience, noting, "...growing firms generally exhibit better cash-flow and higher profitability. Hence, growth may be a suitable strategy for those small firms that wish to do well financially." Covin et al. (2006: 58) support the preceding notion suggesting that, "EO effectiveness is appropriately measured using criteria that reflect a firm's success at translating entrepreneurial opportunities into growth trajectories."

Therefore, given the broad acceptance of the EO-growth relationship, we offer no direct-effect hypothesis; rather we focus instead on the boundary conditions of the EO-growth relationship.

3.3. The moderating role of firm age

EO studies often include firm age in their specified research models, although most frequently as a statistical control variable (Rauch et al., 2009). While there are notable exceptions to the generally agnostic view of firm age in the EO literature—Luo et al. (2005) found, for example, that younger firms are more likely to exhibit entrepreneurial strategic behaviors than older firms – most studies obligingly include firm age in their research design to parcel out any spurious influence of age-related effects on other focal constructs. Building from a recent meta-analysis on the innovation-performance linkage by Rosenbusch et al. (2011), this study posits, however, that organizational age is an overlooked, yet theoretically meaningful, boundary condition on the ability of a firm to translate entrepreneurial strategies to meaningful performance outcomes.

As noted by Rosenbusch et al. (2011), understanding the contingent influence of firm age on the strategic entrepreneurship-performance linkage depends on a commensurate understanding of the differences in organizing context found betwixt younger versus older firms. However, there is ongoing debate as to whether such contextual differences have a positive or negative influence. To illustrate, consider that younger firms are often argued to be more freewheeling and undisciplined in their approach to strategic decision-making (Eisenhardt, 1989). Managers of younger firms, lacking established business processes, experiential market knowledge, and well-developed organizational norms often engage in excessive trial and error behavior without a clear strategic purpose, resulting in diminished capacity to link strategic moves to performance outcomes (Slevin and Covin, 1997). However, the lack of well-defined routines and more organic organizational structures better positions younger firms to generate radical innovations with the greatest potential for growth, and to also adapt faster to changing environmental exigencies (Hill and Rothaermel, 2003). Conversely, older firms benefit from established routines and processes that facilitate competitive advantage in established market contexts and that discipline entrepreneurial strategies (Freeman et al., 1983; Leonard-Barton, 1992). However, these established routines often devolve into core rigidities, which hamper managerial willingness to pursue new entrepreneurial opportunities and adaptation to changing environmental exigencies (Leonard-Barton, 1992).

In their seminal study of aging's influence on innovation outcomes, Sørensen and Stuart (2000) offered insight into the organizational age-innovation paradox, finding that while older firms tended to engage in more frequent innovation than younger firms, those innovations tended to be closely related to the firm's existing knowledge stock. The pursuit of entrepreneurial behaviors is thus path dependent, and future behaviors are predicated, in part, on existing (and historic) market knowledge, which loses temporal salience as time progresses. Consequently, entrepreneurial behaviors among older firms exhibit diminishing congruence with current market expectations. Thus, while older firms may actually be more entrepreneurial in terms of quantity of behaviors, such behaviors are increasingly incongruent with the market over time (Sørensen and Stuart, 2000), which, in turn, diminishes the ability of older firms to capture value from their entrepreneurial strategies in the form of superior growth.

The preceding observation is salient for the argument that the firm's age, representative of its organizing context, is therefore a theoretically meaningful boundary condition on the EO-performance relationship. While older firms may be able to draw on a greater breadth of market knowledge in developing their entrepreneurial strategies (Cohen and Levinthal, 1990), such knowledge is heavily path dependent (Henderson, 1999), and likely based on an understanding of market conditions that is growing increasingly outdated (Sørensen and Stuart, 2000). The entrepreneurial strategies pursued by older firms, therefore, are less likely to result in significant performance outcomes because of diminished market congruence. In contrast, while having more limited market knowledge, the knowledge possessed by younger firms tends to have greater temporal salience (Amburgey et al.,

1993), which enables younger firms to pursue entrepreneurial opportunities aligned more closely with current market expectations. In conjunction with a structural advantage that enables younger firms to pursue entrepreneurial strategies with greater agility (Rosenbusch et al., 2011), younger firms are better positioned to capture greater value from innovative, proactive, and risk-taking strategic behaviors than their more mature peers. Therefore, it is expected that:

Hypothesis 1. EO is more positively related to firm growth among younger SMEs than among older SMEs.

3.4. The moderating role of intangible resource advantage

The resource endowment of a firm is a significant determinant of the ability to create, implement, and reap the rewards of entrepreneurial behaviors (Covin and Slevin, 1991). Indeed, Covin and Slevin (1991) suggest that the resources and capabilities possessed by the entrepreneurial firm represent critical boundary conditions on the impact of innovative, proactive, and risk-taking strategic actions on organizational outcomes. Resource endowments encompass both tangible and intangible resources (Wiklund et al., 2010), as well as the firm's unencumbered resources, or slack (George, 2005); all of which meaningfully influence the EO-performance relationship (Covin and Slevin, 1991). Among SMEs, however, these firms are likely to be particularly constrained in regards to tangible and unencumbered resources (Thornhill and Amit, 2003). This constraint demonstrably increases the managerial salience of intangible resources such as intellectual property, specialized knowledge, reputation, and management control systems (Itami, 1987) because, as observed by Newbert (2007), intangible resources, by virtue of their inherent inimitability, are critical sources of competitive advantage. Thus, the possession or constraint of intangible resources represents an important factor in the ability to SMEs to pursue strategies that result in positive organizational outcomes.

In looking at the contingent role intangible resources plays on the EO-firm growth relationship, it is frequently suggested that firms with a larger resource endowment relative to industry peers – as George (2005) noted, the *absolute* value of available resources is less meaningful than whether a given firm has a resource *advantage* (in terms of both quality and/or quantity of resources) relative to their competitors – will be expected to exhibit higher levels of entrepreneurial behaviors (Nohria and Gulati, 1996; Wiklund and Shepherd, 2005). This is because, as Covin and Slevin (1991) suggest, EO is fundamentally a resource-consuming posture; the pursuit of entrepreneurial behaviors necessitates the expenditure of organizational resources, requiring either a significant existing resource base and/or the continued search for new resources to translate entrepreneurial behaviors into performance outcomes. The lower the firm's resource endowment, the fewer the number of entrepreneurial initiatives able to be pursued; as resource levels increase, so too does the quantity and variability of opportunities able to be exploited. Straightforwardly, then, the ability to pursue greater quantities of entrepreneurial opportunities results in correspondingly higher avenues for organizational growth, and the EO-performance linkage should therefore be stronger among firms with an intangible resource advantage over their industry rivals. This is particularly the case given that intangible resources tend to have greater strategic significance (Newbert, 2007); firms are able to pursue greater numbers of opportunities in conjunction with resources that tend to provide the basis for longer-term competitive advantage. Stated more succinctly, we expect that:

Hypothesis 2. EO is more positively related to firm growth among SMEs with an intangible resource advantage than among SMEs lacking a resource advantage.

3.5. The joint consideration of EO, firm age and intangible resource advantage

This study builds on prior EO research (e.g., Wiklund and Shepherd, 2005) and adopts a configurational model to provide a finer-grained insight into how age, intangible resources, and EO interact to predict different growth outcomes. Configurational approaches argue that organizational outcomes are predicated on the basis of different configurations of specific and theoretically relevant elements of strategies, structures, processes and environments, and that such configurations provide insight beyond that which can be identified by direct-effect or contextual relationships alone (Ketchen et al., 1993; Meyer et al., 1993; Wiklund and Shepherd, 2005). Configurational models thus investigate the interaction of three constructs of interest that jointly predict differing outcomes (Ketchen et al., 1993; Wiklund and Shepherd, 2005).

As noted previously, the resource-based view suggests that valuable, rare, and inimitable resources organized under an effective exploitative framework will facilitate the most advantageous performance outcomes (Barney, 1991; Makadok, 2001). In the context of the current study, this would suggest that the EO-growth relationship would be strongest among younger firms that also possess an intangible resource advantage relative to industry peers. Building from the logic advanced in Hypotheses 2 and 3, younger firms are likely to possess an organizing context that is both more adaptable to changing environmental exigencies and a knowledge base that is more in tune with current market expectations than their older peers. This context provides for an effective framework for opportunity exploitation; younger firms may better exploit their strategically valuable intangible resources than older firms in conjunction with an entrepreneurial strategic posture and, therefore, exhibit the strongest growth.

Conversely, the EO-growth relationship should be weakest among firms that are older and that lack an intangible resource advantage. Straightforwardly, these firms lack all aspects of the VRIO (valuable, rare, inimitable and organizing; Barney, 1991) criteria. Notably, the resource based view provides some insight as to possible outcomes when some, but not all, of the VRIO criteria are present. For example, older firms that possess an intangible resource advantage may be able to generate temporary advantage from their strategically valuable resources. Thus, it is expected that positive growth results from entrepreneurial, resource-rich firms that are older, though this growth will be somewhat tempered as their organizing context is not the most conducive to

resource exploitation under an entrepreneurial strategic posture. Similarly, younger entrepreneurial firms that lack an intangible resource advantage might enjoy a strengthening – albeit even more tempered – in the EO-growth relationship. This is because while an entrepreneurial strategic posture has a net positive impact on performance, and younger firms possess more temporally salient market knowledge and strategic adaptability, absent a strategically valuable resource advantage with which to exploit, superior organizational performance is not likely sustainable.

To summarize, the EO-growth relationship is expected to be strongest when the complete VRIO criteria are present in entrepreneurial firms (younger and resource rich); the next strongest growth outcome is among firms with the V, R, and I but lacking the O (resource rich, older firms), followed by younger firms lacking a resource advantage (the O but not the V, R, and I). Lastly, growth will be weakest among entrepreneurial firms that are older and resource constrained (lacking all VRIO criteria). Expressed formally:

Hypothesis 3. EO, intangible resources, and firm age have a three-way interaction effect on firm growth among SMEs such that the relationship between EO and firm growth is a) strongest among younger SMEs that possess an intangible resource advantage; b) next strongest among older SMEs that possess an intangible resource advantage; c) next strongest among younger SMEs lacking an intangible resource advantage; and d) weakest among older SMEs lacking an intangible resource advantage.

4. Methods

4.1. Sample and data collection

This study defines a small to medium-sized enterprise as a firm with less than 250 employees and below ¥2B yen (roughly \$18.6 M USD based on the average monthly Yen-USD exchange rate in 2008, which was year in which the data were collected). The definitional criteria of a SME in Japan stems from a 2007 national survey of Japanese businesses conducted by the Japanese equivalent of the U.S. Small Business Administration. Potential survey respondents that met the SME definitional criteria were then randomly selected from the Tokyo Shoko Research Data File, a business information service in Japan similar to Dun and Bradstreet in the United States, which yielded an initial sample of 1085 SMEs. Questionnaires were sent to the senior manager of each firm between January and February of 2008. Usable responses were received from 230 firms (21% response rate). Lack of data for the research variables under study resulted in the elimination of an additional 23 respondents, yielding a final *N* of 207 firms. Firms in the final sample reported mean sales of ¥543,656,300 or roughly \$5 million USD based on the average monthly Yen-USD exchange rate in 2008 (s.d. = ¥224,355,900), an average number of employees of 37 (s.d. = 21.82), and a mean age of 28 years (s.d. = 16.16). To investigate the potential for non-response bias, *t* test comparisons of responding versus non-responding firms on age, total employees, sales turnover and total capital were conducted, and revealed no significant differences. Furthermore, data on the aforementioned variables for responding firms were compared against those reported in the Tokyo Shoko Research Data File for these same firms, with no significant differences found.

For those scale items originally printed in the English language (i.e., the Entrepreneurial Orientation scale), a professional Japanese-English translator (a native English speaker) was employed to assist one of the study's authors (a native Japanese speaker) in translating the English measures to Japanese. To ensure that the translations did not inadvertently introduce contamination through language bias, the resulting Japanese measures were compared to previous Japanese language studies employing similar measures of the constructs of interest (e.g., Kitahora, 1996; Yamada and Eshima, 2009; Yamada et al., 2003). The comparison indicated that the measures for the current study were consistent with prior research, and that the Japanese measures are adequately capturing the conceptual domain of the constructs of interest.

Table 1

Summary statistics and correlation matrix^a.

	Mean	S.D.	α	1	2	3	4	5	6	7	8
1. Firm growth	4.17	1.18	0.82								
2. EO	3.79	0.95	0.85	0.34							
3. Firm age	27.76	16.16	–	0.04	–0.04						
4. Intangible res. adv.	2.49	0.84	0.79	0.26	0.40	–0.03					
5. Employees	37.43	21.82	–	0.10	0.01	0.20	–0.01				
6. Sales turnover ^b	543656.30	224355.90	–	0.13	0.01	0.39	–0.07	0.33			
7. Market scope	0.50	0.50	–	0.14	0.33	–0.09	0.26	–0.08	–0.06		
8. Tech services ind.	0.12	0.32	–	–0.19	–0.05	–0.44	–0.01	–0.37	–0.56	0.12	
9. Manufacturing ind.	0.78	0.42	–	0.19	0.02	0.40	–0.01	0.12	0.42	–0.09	–0.68

N = 207.

^a Non-logged transformed age, employees, and sales reported. All variables non-standardized. Correlations at or above 0.14 significant at the 0.05 level or higher.

^b Thousands of ¥.

4.2. Measures

This study employs eight variables, four of which are focal constructs. Table 1 presents the summary statistics, correlation matrix, and Cronbach alpha statistic where appropriate.

As indicated, the internal reliability values for all scales are above the 0.70 threshold recommended by Nunnally and Bernstein (1994). The specific items that comprise each scale are reported in Appendix A, along with a description of the steps taken to assess the internal response consistency of each scale. Those focal constructs measured via scale were subjected to a maximum likelihood principal component analysis with Varimax rotation before their inclusion in the research model. All measures generally loaded cleanly on their intended construct (i.e., >0.50) with no significant cross-loadings (i.e., <0.30). One exception was one measure of the EO scale (EO9) that loaded at 0.48 on the EO variable, however, the measure's next highest loading was 0.20, suggesting that the measure is sufficiently capturing variance within the EO construct and is not introducing meaningful contamination to other focal variables.

4.2.1. Firm growth

A three-item, seven-point, subjective performance scale measured Firm Growth. Each respondent was asked to compare their firm's growth with their intra-industry rivals on three items: sales growth rate, market share growth, and employee growth. The use of a subjective performance measure, long employed in the management literature (e.g., Covin and Slevin, 1989; Lawrence and Lorsch, 1967; Tan and Peng, 2003), offered a number of advantages in the current study over the use of objective performance indicators. First, the focus of this study is on the boundary conditions on the EO-firm growth relationship among SMEs. In such a context, obtaining reliable accounting-derived measures is difficult because of differences in accounting procedures, the confounding effect of executive compensation practices, and the willingness of survey respondents to disclose confidential performance metrics (Dess and Robinson, 1984; Powell, 1992). Second, in a small to medium-sized firm, the CEO-respondent's perception of the firm's success or failure relative to rivals has been found to often have a stronger motivational influence on managerial choices (Dess and Robinson, 1984), thus as Powell (1992: 125) noted, "CEO perception of performance can be regarded as an important independent variable in and of itself." Third, as Achtenhagen et al. (2010) note, the use of a subjective performance indicator facilitates comparison across industries, market contexts and economic conditions; as Beard and Dess (1981) observe, such contextual differences can confound objective performance indicators. As with all multi-item scales in the study, the combined mean of the scale measures constitutes the variable score. Firms that score higher on the firm growth scale reported higher levels of overall growth relative to industry rivals.

4.2.2. Entrepreneurial orientation

An eight-item, seven-point scale derived from the nine-item EO scale developed by Covin and Slevin (1989) measured EO. The scale represents the mean value of the composite measures of innovativeness, proactiveness, and risk-taking that constitute the conceptual domain of a firm's entrepreneurial orientation (Covin and Slevin, 1991; Miller, 1983). Note that data for the complete nine-item EO scale was collected for this study, however initial factor analysis revealed significant cross-loadings on one of the EO measures (EO1: 'In general, the top managers of my business unit favor...A strong emphasis on the marketing of tried and true products or services/A strong emphasis on R&D, technological leadership, and innovations'), necessitating its removal. As Anderson et al. (2009), and Rauch et al. (2009) note, the removal of an item from the original Covin and Slevin (1989) scale is not uncommon in EO research, and does not appear to materially diminish the content validity of the EO scale. It is also important to note that the cross-cultural validity of the Covin and Slevin (1989) scale is well established in the literature (see Kreiser et al. (2002) for a thorough discussion), suggesting that cultural and economic factors unique to Japan should not materially influence the respondent's interpretation of the scale measures (Rauch et al., 2009).² A higher score on the EO scale indicates a more entrepreneurial posture, while a lower score a more conservative posture. The EO variable was standardized before its inclusion in the research model and the standardized value, as with all focal predictor variables in the current study, was used in the interaction terms.

4.2.3. Firm age

Firm Age was measured as the number of years since the firm's self-reported establishment (George, 2005). Firm age was log transformed to normalize its distribution and then standardized before inclusion in the research model.

4.2.4. Intangible resource advantage

Intangible Resource Advantage was measured using a five-item, five-point scale developed expressly for this study. The individual measures are grounded in the VRIO (valuable, rare, inimitable, organizational orientation) framework as developed by Barney (1991), and are meant to capture senior managers' perception of the extent to which their firm possesses an advantage—in terms of either quantity or quality—in intangible resources relative to their industry rivals. The scale defines intangible resources consistent

² Two recent studies investigated the measurement invariance of the Covin and Slevin EO scale in cross-cultural research: Hansen et al. (2010), and Runyan et al. (2011). These studies reach similar conclusions that the Covin and Slevin EO scale is generally robust in international research settings, but offer different modifications to the Covin and Slevin scale to improve cross-cultural validity. Specifically, Hansen et al. suggest eliminating items EO1, EO6, and EO9; while Runyan et al. suggest dropping only EO9. In the current study, we eliminated EO1 due to significant cross-loading, which is consistent with the observations made by Hansen et al. Given the conflicting recommendations by these two studies, we reran all analyses using the now three different EO scales and observed no differences in the sign of the coefficients, in their significance, and only very minor differences in the coefficient values themselves.

with the conceptualization offered by Itami (1987), including employee know how, managerial systems, company reputation, intellectual property, and informal social networks. As Hall (1992) notes in his study of British CEOs, intangible resources contribute disproportionately to the firm's underlying competitive advantage, and are the most difficult organizational resources to build and to replace. As such, CEOs are particularly attuned to the degree to which their intangible resources influence their firm's underlying competitiveness, that is, CEOs are in the best position to judge the value of their firm's intangible assets. Because such assets do not have an objective value, we capture the degree to which the survey respondent (the CEO) perceives their firm to have an advantage relative to their rivals in their intangible resource endowment.

Regarding the specific measures for the construct, drawing from Hall (1992, 1993), we developed four items to tap specifically into the intangible capabilities and assets classification introduced in Hall (1992). We used four items to tap intangible capabilities (i.e., special skills, managerial know-how, relationships, and reputation) because Hall (1992) identified those items as being most salient to CEOs in judging the importance of intangible resources to competitive advantage. One item was then used to capture the contribution of intangible assets (i.e., intellectual properties). As Hall (1992, 1993) notes, senior managers' perception of whether their firm possesses an intangible resource advantage relative to industry rivals – either in terms of quantity or quality – is a driving consideration in how those managers estimate their relative competitive advantage, which is a key factor in strategic decision-making. Thus, a subjective measure of intangible resource advantage is both empirically practical and conceptually preferred in the current study. A higher value on the intangible resource advantage variables indicates a corresponding advantage vis-à-vis industry rivals. Again, the intangible resource advantage variable was standardized before its inclusion in the research model.

4.2.5. Control variables

The current study uses four variables to account for exigencies that may influence the research model. Two variables controlled for the influence of firm size on the EO-firm growth relationship consistent with Rauch et al. (2009); *Sales Turnover*, measured as the annual sales turnover during the previous fiscal year in thousands of yen, and *Employees*, which is the present number of full-time employees. Both measures were log transformed to normalize their distribution. Also consistent with Rauch et al. (2009), two variables controlled for market scope and industry effects. *Market Scope* is a dummy variable that captures the extent to which a firm is local or regionally focused, or is nationally/globally oriented (0 = regional/local foci; 1 = national/international foci). Industry was measured as a categorical variable with two measures reflecting three total categories: manufacturing, technology services (including software and information processing), and other services. Consistent with the procedure outlined by Cohen et al. (2003), a category scheme was developed using the 'other services' category as the referent, and thus two dummy measures are included in the research model, *Manufacturing Industry*, and *Technological Services Industry*. A value of 0 for both dummy variables indicates that the firm is in the 'other services' referent category. In the current sample, there are 24 technology services firms, 163 manufacturing firms, and 23 'other services' firms.

4.3. Analytical technique

Hierarchical linear regression analysis was used to estimate the research model. Hierarchical regression is an appropriate technique for evaluating contextual and configurational research models (Cohen et al., 2003), and is well established as a model estimator in entrepreneurship research (Rauch et al., 2009). Under the hierarchical regression method, the variables, including the interaction variables, are entered sequentially in order to examine whether the next higher-order interaction(s) account for a statistically significant difference in the total explained variance (Wiklund and Shepherd, 2005). Importantly, to evaluate a three-way interaction effect, all meaningful lower order interactions must be specified in the model (e.g., Firm Age X Intangible Resource Advantage, in addition to the prior two hypothesized interactions). A configurational effect is established when the coefficient of the three-way interaction term is statistically significant and there is a significant improvement in overall model fit as evidenced by an *F* test of the incremental change in R^2 (Cohen et al., 2003). Because of the potential for multicollinearity among interaction terms, variance inflation factors were calculated for each model and all were below the generally established threshold of 10 (model VIFs < 4; Hair et al., 1998), suggesting that multicollinearity is not materially influencing the model results.

5. Results

5.1. Hypotheses tests

Table 2 presents the hierarchical regression results. Model 1 contains the hypothesized control variables, and Model 2 enters the main effect of EO, which consistent with past research (e.g., Rauch et al., 2009) is significant and positively related to firm growth among SMEs ($\beta = 0.37, p < .001$). Model 3 enters the interaction terms for the joint consideration of EO and firm age, and EO and intangible resource advantage, respectively. Hypothesis 1 was supported ($\beta = -0.26, p < .001$), as the negative coefficient of the interaction term suggests that the relationship between EO and firm growth is strongest among younger SMEs. Supporting Hypothesis 2, the possession of higher levels of intangible resources relative to industry rivals also positively moderates the EO-firm growth relationship ($\beta = 0.19, p < .01$). Following the procedure recommended by Cohen et al. (2003), plots of the interactions at ± 1 s.d. were created to facilitate interpretation.

As Fig. 2 illustrates, younger SMEs are able to generate higher levels of growth in conjunction with an entrepreneurial strategic posture than older SMEs. Further, linear comparisons of the slopes of the two conditions suggest that the two slopes are

Table 2
Model results (DV: firm growth)^a.

	Model 1	Model 2	Model 3	Model 4
Employees	0.17 (0.21)	0.25 (0.20)	0.40* (0.20)	0.45* (0.20)
Sales turnover	-0.05 (0.20)	-0.01 (0.19)	0.00 (0.18)	0.05 (0.18)
Market scope	0.40* (0.16)	0.15 (0.16)	0.10 (0.16)	0.11 (0.16)
Technological services industry	-0.38 (0.42)	-0.27 (0.42)	-0.02 (0.40)	0.11 (0.40)
Manufacturing industry	0.33 (0.26)	0.39 (0.25)	0.40 (0.24)	0.41 ⁺ (0.24)
EO		0.37*** (0.08)	0.28*** (0.08)	0.30*** (0.08)
Firm age		-0.10 (0.10)	-0.11 (0.10)	-0.05 (0.10)
Intangible resource advantage			0.18* (0.08)	0.17* (0.08)
EO × firm age			-0.26*** (0.07)	-0.21*** (0.07)
EO × intangible res. adv.			0.19*** (0.06)	0.16* (0.06)
Firm age × intangible res. adv.				-0.15 ⁺ (0.08)
EO × firm age × intangible resource adv.				-0.13* (0.06)
Constant	3.88 (2.52)	3.03 (2.50)	2.30 (2.37)	1.49 (2.37)
R ²	0.07**	0.17***	0.27***	0.29***
Adjusted R ²	0.5	0.14	0.23	0.25
Δ R ²		0.10***	0.10***	0.02*

N = 207.

^a Non-standardized coefficients reported. Standard errors in parentheses.

⁺ p < .10.

* p < .05.

** p < .01.

*** p < .001.

statistically different, however, the relatively flat slope of the older firm condition indicates that the relationship between EO and firm growth does not materially change among firms that are older as the level of EO increases. Similarly, Fig. 3 shows that the possession of higher levels of intangible resources vis-à-vis rivals facilitated stronger growth among more entrepreneurial SMEs. Again, linear comparisons indicated that the slopes of the two lines are statistically different, however the relatively flat slope for the low intangible resource condition suggests that the EO-firm growth relationship does not materially change in the presence of low levels of intangible resources.

Model 4 enters the three-way interaction variable of EO, intangible resources, and firm age into the research model. In support of Hypothesis 3, the three-way interaction coefficient is significant ($\beta = -0.13$, $p < .05$), and the change in R^2 indicates a significant improvement in model fit between Model 3 and Model 4. Because of the difficulty in interpreting a three-way interaction solely from the coefficient value, Fig. 4 plots the three-way interaction, again following the procedure outlined by Cohen et al. (2003).

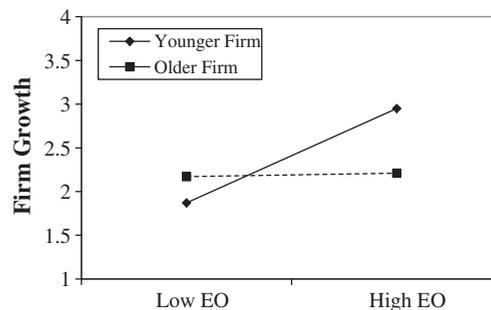


Fig. 2. Interaction of EO and firm age on firm growth.

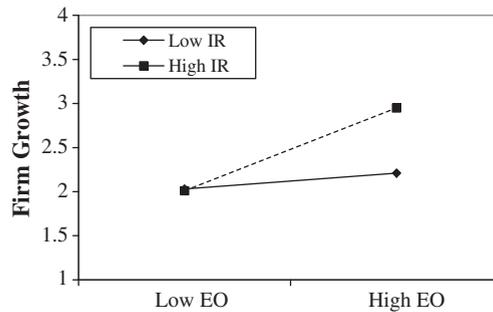


Fig. 3. Interaction of EO and intangible resource advantage on firm growth.

As Fig. 4 demonstrates, the relationship between EO and firm growth was strongest among younger SMEs that possess higher levels of intangible resources relative to their peers as hypothesized (3a), and the next highest growth outcome was among older firms with a resource advantage (supporting 3b). Regarding Hypotheses 3c and 3d, linear point comparisons revealed no significant difference in the level of firm growth at one standard deviation for older and younger resource-constrained firms, thus Hypothesis 3 is only partially supported. However, while the slopes of these interactions are not significantly different, the trajectory of these slopes indicates the most significant increase in the EO-growth relationship is among younger, resource-constrained firms as the level of EO increases. Further comparisons of the slopes generally indicated significant differences, with the exceptions being: the comparison of the older firm/low intangible resource, and older firm/high intangible resource, conditions; older firm/high intangible resource and younger firm/low intangible resource conditions; and older firm/low intangible resource and younger firm/low intangible resource conditions.

5.2. Robustness checks

Three additional tests were conducted to evaluate the validity of the study findings. In the first test, each model was examined independent of the control variables. In each model, the coefficients maintained their significance and hypothesized direction. The second and third tests evaluated the influence of common methods bias. As with all survey research collected from a sole respondent, the research design has the possibility of introducing common methods bias into the sample, with the potential to overestimate or underestimate the underlying relationships between the constructs of interest (Podsakoff and Organ, 1986; Williams et al., 1989). In the first technique to evaluate the influence of common methods bias, an exploratory factor analysis was conducted on the measures comprising the scale variables – which includes two of the three independent variables and the dependent variable – to determine whether a single factor accounts for greater than 50% of the total variance (Podsakoff and Organ, 1986). This test, called the Harman single-factor method, resulted in four factors with eigenvalues greater than 1, with the first factor accounting for 22% of the total variance, suggesting that should common methods bias be present, it is not materially influencing the results.

The second technique to evaluate the influence of common method bias was a more robust latent methods factor test outlined by Podsakoff et al. (2003). The latent methods factor technique employs a form of confirmatory factor analysis (CFA) wherein each measure loads in a structural model on both its intended construct and on a latent methods factor intended to capture the effect of common method bias. To assess whether methods bias is materially influencing the model results, the coefficient values of a base CFA model estimated without the latent methods factor is compared against the coefficient values of a CFA model with the latent methods factor included to identify any significant change in the pattern of relationships across the models. In the current study, all indicators were significantly related to their intended constructs in the base CFA model, and all but two indicators for the intangible resource advantage variable retained their significance in the CFA model estimated with the latent methods factor.³ Thus, the results of this test support the results of the Harman single factor test that the research model is not being materially influenced by common methods bias.

6. Discussion

6.1. Key findings and implications

This study posited that the age of the firm and its intangible resource advantage relative to its industry rivals would represent theoretically meaningful boundary conditions on the EO-firm growth relationship among small to medium sized enterprises.

³ Note that for purposes of this analysis the components of the EO scale were split into their individual dimensions of innovativeness, proactiveness, and risk-taking to facilitate interpretation.

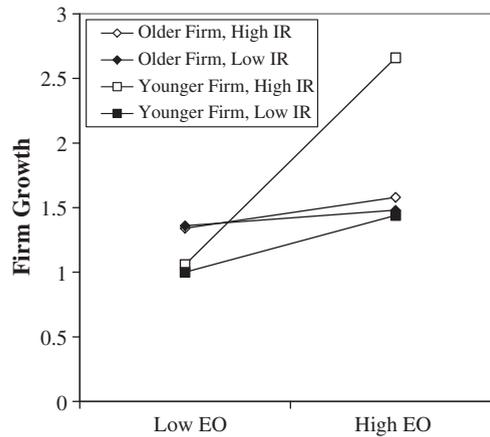


Fig. 4. Interaction of EO, firm age, and intangible resource advantage on firm growth.

Further, the joint consideration of EO, age, and intangible resource advantage should result in significant performance differences. Results obtained from 207 Japanese SMEs generally supported the hypothesized relationships with notable implications for EO scholars.

Regarding the contextual influence of firm age on the EO-performance relationship, younger firms are likely to possess an organizational context more conducive to the pursuit and adoption of entrepreneurial initiatives (Hill and Rothaermel, 2003), and a knowledge base with greater temporal congruence with current market expectations than their older peers (Sørensen and Stuart, 2000). This context enables greater flexibility, strategic adaptability, and the pursuit of entrepreneurial opportunities better aligned with market needs (Rosenbusch et al., 2011), which results in a strengthening of the EO-growth relationship, and the results depicted in Fig. 2 support this observation. Notably, however, among older firms there is no significant difference in the level of growth as entrepreneurial orientation moves from low to high. Thus, among older firms, the level of growth was constant regardless of a more conservative or more entrepreneurial strategic posture. Within the SME literature, some research has suggested that a reason why some SMEs do not experience sustained positive growth is the result of a conscious strategic decision on the part of top managers to 'stay small' (Davidsson et al., 2005). This study, however, suggests that even among those older firms that have adopted a strategic posture towards organizational growth – an entrepreneurial orientation – there remain contextual factors associated with organizational age that is inhibiting superior performance.

The results also supported the influence of an intangible resource advantage on the EO-performance linkage. As hypothesized, this paper suggested that SMEs tend to be more resource constrained in terms of tangible and slack resources (Wiklund et al., 2010), and as such, intangible resources take on greater strategic significance (Miller and Shamsie, 1996). SMEs, therefore, in possession of intangible resources in a quantity or quality above that of their peers should enjoy a superior competitive position (Newbert, 2007). As EO is a resource consuming strategic posture (Covin and Slevin, 1991), the availability of strategically valuable intangible resources with which to pursue a higher quantity, and perhaps quality, of new entrepreneurial initiatives engenders superior growth, and Fig. 3 suggests that is the case. Notably, there is no significant increase in the level of growth as the level of EO increases among SMEs lacking an intangible resource advantage.

Under the configurational model, as hypothesized, younger more entrepreneurial firms that possessed an intangible resource advantage exhibited the highest level of growth. Furthermore, the slope representing these firms was significantly different from the remaining three configurations. This suggests, consistent with the resource-based view, that entrepreneurial firms exhibit the strongest growth outcomes when they possess both an intangible resource advantage relative to industry peers and an organizing context facilitative of resource exploitation under an entrepreneurial strategic posture. Notably, there was also a significant increase in the EO-firm growth relationship among younger firms lacking an intangible resource advantage. This suggests that younger firms are also able to leverage their strategic adaptability and temporally salient market knowledge to overcome intangible resource disadvantages and achieve growth objectives. Taken together, these findings indicate that the organizational context found in younger firms strengthens the EO-growth relationship irrespective of those firms' level of resource endowment. The statistically insignificant change in the EO-firm growth relationship among older firms with either an intangible resource advantage or disadvantage supports the preceding observation. These results suggest that as firms age and their organizational routines limit adaptability, decrease market responsiveness, and their entrepreneurial behaviors derive from increasingly outmoded market knowledge, it becomes difficult to obtain significant improvements in organizational growth despite an entrepreneurial strategic posture.

The results suggest several implications for scholars and practitioners. The first implication is that while there is generally a universally positive effect on firm growth from entrepreneurial behaviors, the organizing context and the firm's resource endowment exhibit meaningful influences on the strength of this relationship. What is notable here is not necessarily that younger and more resource advantaged firms performed better as the level of entrepreneurial behaviors increased – which is consistent with

theory – but that the EO-growth relationship did not materially change as the level of EO increased in older or more resource disadvantaged firms. The resource-based view suggests that firms that lack valuable, rare, and inimitable resources, and that further lack an effective exploitative organizing context, should experience competitive disadvantages (Priem and Butler, 2001). The findings in the current study suggest that pursuing entrepreneurial strategies may actually *mitigate* these performance disadvantages; behaving more entrepreneurially as you age and in the face of resource constraints may stave off *negative* organizational growth, although the firm is not likely to capture positive growth.

The second implication is the importance of the firm's organizing context in conjunction with intangible resource advantages or disadvantages. As expected in the configurational model, younger entrepreneurial firms with a resource advantage performed best; however as previously discussed, there was also a significant increase in growth among younger, resource disadvantaged firms as the level of EO increased. Indeed, these younger firms, perhaps engaging in entrepreneurial bricolage (Baker and Nelson, 2005), exhibited performance gains such that the distinction between them and their older counterparts became non-significant. In conjunction with the non-significant differences between older firms with either a resource advantage or a resource disadvantage, these findings suggest, with an important implication for resource-based view scholars, that the organizing context may be more critical in the ability of firms to capture performance benefits from their resources than the resources themselves. To state differently, the 'O' in VRIO may outweigh the contribution of the V,R, and I in conjunction with an entrepreneurial strategic posture, although more work in this area is needed.

A third implication building from the preceding point is that this study, consistent with past work on moderators of the EO-performance relationship (e.g., Rauch et al., 2009), also identifies only upper-limit boundary conditions. Scholars continue to find evidence of conditions where EO 'works' better than others, but have yet to identify those contexts under which pursuing an entrepreneurial strategic posture may *harm* organizational performance. In other words, we lack insight as to the conditions where EO is not recommended. Given the finding of a modest zero-order correlation between EO and growth in this study, consistent with the bulk of the EO literature, it is perhaps not surprising that scholars lack an understanding of a lower limit boundary condition. Yet, the body of accumulated results seems to provide support for the argument that firms are better off – irrespective of endogenous or exogenous phenomenon influencing their organization – pursuing entrepreneurial strategies versus enacting those that are more conservative.

An implication for practitioners regards the influence of firm age on the EO-growth relationship. Unlike an intangible resource advantage, there is nothing purposeful that managers can do to influence organizational age. This study, similar to results from Rosenbusch et al. (2011) and Sørensen and Stuart (2000), finds that as firms age they are increasingly less able to reap the performance rewards from the employment of entrepreneurial-centric strategies. Unfortunately for managers, this poses a difficult conundrum – on one hand, there are benefits from their firm aging, such as learning curve economics, improved managerial control systems, and an established market reputation (Thornhill and Amit, 2003). On the other, as the firm ages, its knowledge tends to become outmoded, and the resulting entrepreneurial opportunities increasingly diverge from current market expectations as time progresses (Sørensen and Stuart, 2000). For managers in older firms then, achieving superior growth from entrepreneurial behaviors may be a function of their ability to become an 'exception' to the population; leveraging benefits accrued from maturity while also aggressively seeking to stay close to changing market conditions and improving organizational adaptability.

A final contribution of this study was the investigation of the research model in an under-researched international context—Japan. Despite the size of the Japanese economy and the country's influence in global trade, entrepreneurship research appearing in English-speaking journals with Japanese data is sparse, particularly in comparison to its fast-growing neighbor, China. Research in Japan is important for scholars, however, because Japan represents a unique cultural setting among Asia-Pacific nations. For example, Japan tends to exhibit high levels of uncertainty avoidance in comparison to, for example, Taiwan or South Korea (Hofstede, 2001). As Kreiser et al. (2010) note, uncertainty avoidance negatively relates to risk-taking and proactive strategic behaviors—two elements of an entrepreneurial strategic posture. Japan is also far more individualistic than most Asian countries (Hofstede, 2001), yet Rosenbusch et al. (2011) identified a stronger relationship between innovation and performance in more collectivist cultures. Taken together, a weaker – or perhaps insignificant – effect of EO on firm performance would therefore be reasonably expected in Japan, yet the current study found the opposite. Indeed, there was a strong, positive zero-order correlation between EO and firm growth in the sample ($r = 0.34$). On one hand, the robustness of our findings provide further confirmation of the universally positive influence of EO on performance; on the other, it behooves scholars to continue to probe cultural differences and how those differences may change the nature or degree of the EO-performance linkage—theory would suggest such differences are meaningful, yet this area is under-explored.

6.2. Limitations

As with all social science research, this study does have its limitations. The first limitation is the use of cross-sectional data, which prohibits the identification of the underlying directions of causality between the constructs of interest. Within the EO literature, performance, and particularly firm growth, is generally regarded as an outcome of entrepreneurial behaviors (Rauch et al., 2009). However, there are theoretical arguments to be made that firm performance can be reasonably construed as an antecedent to EO; growth may engender the accumulation of additional resources (Covin and Slevin, 1991) that, in turn, facilitate the engagement in future entrepreneurial behaviors. Yet, the performance-EO relationship remains underexplored in the EO literature, and merits increased scholarly attention.

A further limitation regards the use of firm age as a focal construct. As previously noted, the EO literature has generally been agnostic towards age differences in the manifestation, and consequences, of entrepreneurial behaviors. This study found, building on prior meta-analysis (e.g., Rosenbusch et al., 2011), that age represents a theoretically important boundary condition on the EO-performance relationship. Unfortunately, the variable firm age can represent, by proxy, a variety of different organizational phenomenon (Cyert and March, 1963); while we can say that age plays a meaningful role and that age is under-considered in the EO literature, what, exactly, age represents remains ambiguous (Wiklund et al., 2010), and more conceptual and empirical work is needed in this regard.

Additionally, the use of self-reported and perceptual measures of firm performance has the potential to introduce respondent bias to the sample. While the firm growth measure used in the current study is widely adopted in the EO literature (Rauch et al., 2009), we encourage additional research that makes use of secondary sources of financial information. Lastly, the measure of intangible resource advantage reflects the perception of the senior manager regarding this advantage, thus there is the possibility that the respondent could effectively perceive an advantage when such an advantage does not exist in reality. We suggest, however, that a systemic bias in the sample introduced by this possibility is likely to be remote. This is because while a CEO could, effectively, fool him or herself into believing his or her firm possessed an intangible resource advantage when it did not, because of the importance of intangible resources to competitive advantage, such a disconnect between perception and reality would not be likely to persist (i.e., negative performance outcomes would prompt managerial refocusing) for a significant length of time.

6.3. Conclusion

Drawing from a sample of 207 Japanese SMEs, this study identified and found support for the contingent effect of firm age and intangible resource advantage on the EO-firm growth relationship; younger firms, and those that are endowed with an intangible resource advantage, exhibit stronger growth in conjunction with an entrepreneurial strategic posture than older, and more resource disadvantaged firms. In exploring a configurational model between EO, firm age, and intangible resource advantage, this study also found that while younger, more entrepreneurial firms that possess a resource advantage exhibit higher levels of growth, among older firms, there is not a meaningful change in the level of growth irrespective of resource endowment and strategic posture. This finding suggests, among other implications, that the organizational context that separates younger and older SMEs, previously under-researched in the EO literature, represents an important theoretical consideration on the question of why some SMEs are able to sustain superior organizational growth and why other SMEs may “...start small, live small, and die small” (Davidsson, et al., 2005).

Appendix A. Scale measures and tests of internal consistency reliability

The following presents the multi-item scales for the Firm Growth, Entrepreneurial Orientation, and Intangible Resources variables. Internal consistency reliability was assessed by concurrently collecting measures theoretically anticipated to covary with the study variables. The presence of moderate to high internal response consistency suggests that the respondents perceived the study variables in a manner consistent with their intended conceptual domain (Spector, 1992).

The firm growth scale

On a 7-point scale ranging from “very low” (= 1), “average” (= 4), to “very high” (= 7), respondents were asked to respond to the following statements comparing their firm to their industry rivals:

- Average sales growth for the last three years.
- Average market share growth for the last three years.
- Average employment growth for the last three years.

Internal response consistency of the firm growth scale was evaluated by comparing the firm growth variable with a measure of the firm's profitability relative to their competitors. Specifically, on a 7-point scale ranging from “very low” (= 1), “average” (= 4), to “very high” (= 7), respondents were asked to respond to the following statement comparing their firm to their industry rivals: “Average percentage of operational profit by total sales for the last three years.” Note that this measure does not measure growth in profits, but rather is assessing the firm's general profitability. Consistent with the observation of Chandler and Hanks (1993), senior managers of small to medium-sized firms are likely to strongly associate firm profitability with the ability of the firm to grow, thus, the firm growth measure and the profitability are expected to be highly correlated, which was borne out in the analysis ($r = 0.74$, $p < .001$).

The entrepreneurial orientation scale

On a 7-point scale, respondents were asked to respond to the following statements where a “1-3” indicates complete to intermediate agreement with the left-hand side statement; a “4” is neutral; and a “5-7” indicates intermediate to complete agreement with the right-hand side statement.

How many new lines of products or services has your business unit marketed during the past five years?		
No new lines of products or services	1 2 3 4 5 6 7	Very many new lines of products or services
Changes in product or service lines have been mostly of a minor nature	1 2 3 4 5 6 7	Changes in product or service lines have usually been quite dramatic
In dealing with its competitors, my business unit... Typically responds to actions which competitors initiate	1 2 3 4 5 6 7	Typically initiates actions to which competitors respond
Is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc.	1 2 3 4 5 6 7	Is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.
Typically seeks to avoid competitive clashes, preferring a “live-and-let-live” posture	1 2 3 4 5 6 7	Typically adopts a very competitive “undo-the-competitors” posture
In general, top managers of my business unit have... A strong proclivity for low risk projects (with normal and certain rates of return)	1 2 3 4 5 6 7	A strong proclivity for high risk projects (with chances for very high returns)
In general, the top managers of my business unit have... Owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behavior	1 2 3 4 5 6 7	Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives
When confronted with decision making situations involving uncertainty, my business unit... Typically adopts a cautious “wait and see” posture in order to minimize the probability of making costly decisions	1 2 3 4 5 6 7	Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities

Consistent with the observation of Covin and Slevin (1991) that an entrepreneurial strategic posture should result in sales growth from the introduction of new innovations to the marketplace, internal response consistency of the EO scale was evaluated by comparing the EO variable with a measure of the firm's sales growth specifically related to the introduction of new products. Specifically, on a 7-point scale ranging from “very low” (= 1), “average” (= 4), to “very high” (= 7), respondents were asked to respond to the following statement comparing their firm to their industry rivals: “Average percentage of sales growth from new products by total sales for the last three years.” As expected, the EO variable and sales growth from new product introductions is strongly correlated ($r = 0.46$, $p < .001$).

The intangible resource advantage scale

On a five-point scale ranging from “significant disadvantage” (= 1), “same as rivals” (= 3), to “significant advantage” (= 5), respondents were asked to respond to the following statements comparing their firm's perception of the degree to which the firm enjoys an intangible resource advantage relative to their industry rivals⁴:

- Special skills owned by specific engineers/researchers.
- Special organizational or managerial know-how.
- Intellectual properties such as patents.
- Strategic assets such as corporate brand or image.
- Network channels of managers or employees.

Internal response consistency of the intangible resource advantage scale was evaluated by comparing the intangible resources variable with two measures intended to capture other elements of the firm's resource environment theoretically expected, consistent with the resource based view (Barney, 1991), to be related to the firm's perceived intangible resource advantage relative to industry rivals. For the first measure, on a five-point scale ranging from “significant disadvantage” (= 1), “same as rivals” (= 3), to “significant advantage” (= 5), respondents were asked to respond to the following statement comparing their firm's subjective perception of the degree to which the firm enjoys an advantage relative to their industry rivals: “Special distribution channels”; and for the second measure: “Scale economy and efficiency in manufacturing operation/investments.” As expected, both measures are significantly related to the intangible resources variable: $r = 0.70$ ($p < .001$), and $r = 0.49$ ($p < .001$), respectively.

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⁴ The items comprising the intangible resources scale were originally developed in Japanese. The text presented here represents the English translation of the scale by one of the study authors.

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