Small Bus Econ
https://doi.org/10.1007/s11187-018-0118-1

Corporate governance in entrepreneurial firms: a systematic review and research agenda

Hezun Li · Siri Terjesen · Timurs Umans

Accepted: 5 October 2018
© The Author(s) 2018

Abstract This systematic review covers the extant literature on corporate governance in entrepreneurial firms. Using a sample of 137 research papers published from pre-1990 through June 2018 in 60 journals, we categorize outlets, research methods (quantitative, qualitative, review, and non-empirical), theoretical perspectives, and research questions, highlighting key patterns. We then summarize the concepts under study in the sample literature, and the geographical sources and model specification of quantitative empirical studies. The conclusion highlights the quite fragmented nature of the field and the substantial knowledge gaps, and then proposes an actionable agenda for future research in terms of theories, research questions, research settings, and research designs. In particular, we describe the need to explore how corporate governance mechanisms interact with one another and affect firm outcomes, by applying novel theoretical perspectives and methods that could provide a better understanding of entrepreneurial firms' functioning.

This study was partially supported by Jan Wallander and Tom Hedelius Foundation P2016-0246:1.

H. Li
Central University of Finance and Economics, 39 South College Road, Haidian District, Beijing 100081, People's Republic of China
e-mail: hezunli@american.edu

H. Li · S. Terjesen
Kogod School of Business, American University, 4400 Massachusetts Ave, Washington, DC 20016, USA

S. Terjesen
Norwegian School of Economics, Helleveien 30, 5045 Bergen, Norway
e-mail: terjesen@american.edu

T. Umans (✉)
Department of Management Control and Logistics, Linnaeus University, Universitetsplatsen 1, SE-351 95 Växjö, Sweden
e-mail: timurs.umans@lnu.se

T. Umans
Faculty of Business, Kristianstad University, 291 88 Kristianstad, Sweden

Keywords Corporate governance · Entrepreneurial firms · Literature review · New venture boards · Research agenda

JEL classification G30 · L26 · M10

1 Introduction

The last two decades witness a marked interest in research on corporate governance of entrepreneurial firms. While board of directors (BOD) is the most explored corporate governance mechanism in these studies, researchers also examine CEO characteristics and compensation, CEO-BOD relations, top management team characteristics and functioning, and ownership-related aspects. The limited set of reviews (e.g., Huse 2000; Garg and Furr 2017) and theoretical papers (e.g., Garg 2013; Broughman 2010) place primary focus on the

Published online: 13 November 2018

board of directors and their role in entrepreneurial firms, leaving other governance mechanisms in the shade.

We follow Charreaux (1997, p. 421) in defining corporate governance as "the set of mechanism that define powers and influence decisions of the chief executive" and therefore includes corporate boards, shareholders, and top management teams. Wirtz (2011) constructs a conceptual model for corporate governance of entrepreneurial firms based on this definition. As such, our definition of corporate governance is consistent with Monks and Minow's (2012, p. 18) notion that shareholders, directors, and executives are the "three major forces that are responsible for determining corporate direction and action."[1] While boards play a pivotal role in entrepreneurial firms' functioning and survival (e.g., Charas and Perelli 2013), board activities do not occur in a vacuum and boards' roles either interact or are contingent on other governance mechanisms such as CEO, owners, top management teams (TMTs), and capital markets (Bruninnge et al. 2007). Given the recent pivot from a singular focus on boards to examining boards' interaction with other governance mechanisms in entrepreneurial firms, we believe that the field has reached a level of maturity such that a systematic review can help to consolidate the achievements of the field and craft a research agenda for years to come. Focusing on the multiplicity of corporate governance mechanisms and their interaction with each other, this review provides insight into a configurational perspective (e.g., Schiehll et al. 2014; Misangyi and Acharya 2014) on corporate governance that has yet to find its way into the field of corporate governance of entrepreneurial firms, and that is valuable to the field of governance of large/listed firms as well as research on national governance systems.

Our review offers multiple opportunities and benefits to researchers and practitioners by highlighting the importance of corporate governance research in entrepreneurship and revealing patterns in theory, data, methodology, and content. Building from this foundation, this review then discusses future research possibilities. We highlight how existing research is fragmented across a range of disciplinary fields including entrepreneurship, finance, corporate governance, and strategic management. Apart from a multidisciplinary focus, our study breaks away from a dual theoretical focus on agency and resource theories (see Gabrielsson 2017), instead exploring and drawing on alternative theoretical perspectives. The silo-ing of the field prevents opportunities to systematize knowledge to benefit practice, policy, and research generally. To the best of our knowledge, the present study is the first comprehensive review of research on corporate governance of new and small firms.[2]

We follow the systematic review methodology (Tranfield et al. 2003) to identify articles using keyword search terms: entrepreneur*, board*, director*, venture*, and govern*. This search is broad and inclusive of many topics within entrepreneurial firms' boards. We included articles published until May 2018. The co-authors independently read and categorized all of the articles. The final sample comprises a total of 135 articles.

2 Systematic literature review methodology

To comprehensively review the literature, we follow Tranfield et al.'s (2003) systematic literature review methodology and use Business Source Premier, JSTOR, and ProQuest to search the following keywords: entrepreneur*, board*, director*, venture*, and govern*. We adopt the systematic review methodology due to its effectiveness in comprehensively surveying a limited field of study (e.g., Crossan and Apaydin 2010; Becheikh et al. 2006; Pittaway and Cope 2007). We decided not to limit ourselves to the specific journal or year as we aim to explore the field's general development rather than present findings only from certain journal, and to incorporate the full set of articles from this relatively nascent field of research. After we obtain the preliminary search results using the aforementioned keywords, we screened research papers on the basis of their abstracts and excluded studies that either do not address a corporate governance issue or do not specifically investigate entrepreneurial firms. Drawing on

[1] We acknowledge that Monks and Minow's (2012) definition of corporate governance can be debated within the context of entrepreneurial firms, yet it provides an established framework that is instrumental in structuring this review.

[2] We acknowledge that two recent studies by Garg and Furr (2017) and Gabrielsson (2017) reviewed the governance of entrepreneurial firms, but primarily focused on the board or limited number of theoretical perspectives. Our systematic review differs from these prior reviews by using a broader definition of corporate governance and entrepreneurial firms, embracing a multiplicity of governance mechanisms and theoretical perspectives.

Charreaux's (1997) broad definition of corporate governance, we consider a study as addressing a corporate governance issue if it concerns ownership, directors, entrepreneurs, or other top managers. As there is no widely accepted definition for entrepreneurial firms (Gabrielsson 2017), we adopt a broad definition and consider a study as investigating entrepreneurial firm if it explicitly investigates "entrepreneurial firms," "start-ups," "ventures," "small firms," "small and medium-sized enterprises (SMEs)," or "young firms." This broad definition is consistent with the most cited papers according to Google Scholar, such as Eisenberg et al. (1998), Hellmann and Puri (2002), Boone et al. (2007), and Westhead et al. (2001). The final sample literature includes 137 research papers.

In line with previous review studies (e.g., Nielsen 2010; Terjesen et al. 2016), we focus on seven themes: journal outlets, research methods, theories, data geography, modeling, research questions, and concepts under study. We adopt these particular categories given their mutual exclusivity and proven effectiveness in facilitating completely exhaustive reviews (ibid.). We utilize two-step coding (cf. Nielsen 2010) to first analyze the frequencies of outlets and the publication years, research questions, research methodology, and data geography. The second step provides more in-depth analysis by exploring theories, concepts, and models.

3 Current state of the field

3.1 Journal outlets

As shown in Table 1, CGEF (Corporate Governance of Entrepreneurial Firms) research papers are dispersed across 60 identified journal outlets, where the following three largest outlets: *Journal of Business Venturing* (15 papers), *Corporate Governance: An International Review* (8 papers), and *Small Business Economics* (8 papers). The fragmented nature of the field is evidenced in that there are 35 journals which each publishes only one CGEF article. The earliest research is Trow's (1961) archival quantitative study on small firms' executive succession plans. The field's impact is evidenced by 63 papers each with more than 100 Google Scholar citations, with the following ten most cited articles: Eisenberg et al. (1998, 2252 citations), Hellmann and Puri 2002, 2073 citations), Schulze et al. (2001, 2056 citations), Boone et al. (2007, 1402 citations), Westhead et al. (2001, 1109 citations), Sapienza et al. 1996, 922 citations), Davidsson (1991, 918 citations), Thong and Yap (1995, 868 citations), Zahra et al. (2000, 759 citations), and Human and Provan (2000, 725 citations).

3.2 Research methods used

The first publication we identified was published in 1961 followed by three articles in the 1970s and 1980s. As shown in Table 2, the field grew quickly in the early 1990s (7) and gained significant momentum with 11 (1995–1999), 25 (2000–2004), 30 (2005–2009), 37 (2010–2014), and 23 (2015–2018) publications.

We divide research methods into four types: (1) quantitative research, (2) qualitative research, (3) reviews, and (4) non-empirical research.[3] Of the 110 quantitative and qualitative empirical research papers, 106 conduct firm-level analysis. The remaining four studies focus on the following: obstacles of geographic and institutional nature venture capitalists face in their ownership (Tykvová and Schertler 2014); relationships between ownership structure and managers' innovative behavior and the contingent effect of independent directors (Omri et al. 2014); associations between small-firm network board characteristics and network performance (Wincent et al. 2009; Wincent et al. 2010); and TMT diversity and its relationship to top management team turnover (Hellerstedt et al. 2007).

Of 87 quantitative research studies, 29 studies employ archival data, and the vast majority (55 articles) utilize survey data. Only one article analyzes interview data both quantitatively and qualitatively, and 2 papers apply meta-analysis. Among the 55 survey studies, only 3 papers combine survey data with other data sources such as interviews and archival data. Of 23 qualitative research articles, 11 are case studies with 9 utilizing multiple cases and only one conducting a single-case study; the other 12 qualitative articles are based on interviews, surveys, or archives.

There are 12 prior literature reviews providing insight into topics such as investors' influence (e.g.,

[3] We identify a research paper as quantitative if it investigates observable phenomenon empirically via statistical techniques. We identify a research paper as qualitative if it investigates phenomenon empirically but does not address research question via statistical techniques. We identify a research paper as review if it summarizes the findings and knowledge from previous literature. The non-empirical papers are either theoretical or conceptual pieces.

Table 1 Journal outlets

Journal name	No. of publications							
	Pre-1990	1990–1994	1995–1999	2000–2004	2005–2009	2010–2014	2015–2018	Total
Journal of Business Venturing	1	2	2	1	2	3	4	15
Corporate Governance: An International Review					1	7		8
Small Business Economics		2		1	4	1		8
Journal of Small Business Management				1	1	1	3	6
Academy of Management Journal	1				1	2	1	5
Entrepreneurship and Regional Development		2	1	1		1		5
International Small Business Journal		1	1		2	1		5
Corporate Governance				1	2	1		4
Journal of Management				2		1	1	4
Journal of Management Studies			2	1			1	4
Strategic Management Journal				1	2		1	4
Entrepreneurship Theory and Practice					2	1	1	4
European Management Journal					1	1	1	3
Journal of Management and Governance				1	1	1		3
Journal of Small Business and Enterprise Development				2	1			3
Venture Capital: An International Journal of Entrepreneurial Finance				2			1	3
Academy of Management Review				1		1		2
Administrative Science Quarterly	1			1				2
Emerging Market Research						2		2
International Journal of Entrepreneurial Behavior and Research			1	1				2
Journal of Business Research						1	1	2
Journal of Financial Economics			1		1			2
Long Range Planning			1				1	2
R&D Management				1	1			2
Strategic Entrepreneurship Journal							2	2
Other Journals (only 1 paper in each journal)	1	0	2	7	8	11	6	35
Total	4	7	11	25	30	36	24	137

Note: Other journals include (1) *Asia Pacific Journal of Management*, (2) *Baltic Journal of Management*, (3) *British Journal of Management*, (4) *Business Horizons*, (5) *Canadian Journal of Administrative Sciences*, (6) *Corporate Board*, (7) *Economic Modelling*, (8) *Education + Training*, (9) *Foundations and Trends in Entrepreneurship*, (10) *Frontiers of Entrepreneurship Research*, (11) *International Business and Economics Research Journal*, (12) *International Journal of Business Governance and Ethics*, (13) *International Journal of Disclosure and Governance*, (14) *International Journal of Innovation and Technology Management*, (15) *International Review of Business Research Papers*, (16) *International Review of Financial Analysis*, (17) *International Studies of Management and Organization*, (18) *Journal of Accounting in Emerging Economies*, (19) *Journal of Family Business Strategy*, (20) *Journal of International Management*, (21) *Journal of Management & Governance*, (22) *Journal of Technology Transfer*, (23) *Journal of World Business*, (24) *Knowledge of Management Research and Practice*, (25) *Management Decision*, (26) *Management Research News*, (27) *Management Science*, (28) *Managerial Finance*, (29) *Omega*, (30) *Organization Science*, (31) *Seattle University Law Review*, (32) *Stanford Law Review*, (33) *The International Journal of Human Resource Management*, (34) *The Journal of Finance*, and (35) *The Review of Financial Studies*

Chemmanur and Fulghieri 2013), board (e.g., Huse 2000; Barrow 2001), top management (e.g., Klotz et al. 2014; Westhead and Storey 1996), mechanisms (e.g., Audretsch and Lehmann 2014), cultural and societal background (e.g., Audretsch and Lehmann 2014), cross-country differences (e.g., Claessens and Yurtoglu 2013), and laws and regulations (Barnes 2007), as well as associations between corporate

Table 2 Research methods and theories across time

	No. of publications							
	Pre-1990	1990–1994	1995–1999	2000–2004	2005–2009	2010–2014	2015–2018	Total
Research methods								
Quantitative	2	5	7	14	22	21	16	87
Qualitative	2	2	3	5	5	4	2	23
Review			1	2	1	5	3	12
Non-empirical				4	2	7	2	15
Total	4	7	11	25	30	37	23	137
Theories								
Agency theory		4	3	12	15	14	8	56
Resource theories		1	3	9	15	12	12	52
Contingency theory	1	1		1	1	3	3	10
Institutional theory			1	2		3	3	9
Upper echelon perspective					2	2	2	6
Stewardship perspective					1	1	3	5
Stakeholder theory					2	1		3
Strategic management theories					2		1	3
Team production theory						3		3
Attention-based view							2	2
Cognitive perspective					1		1	2
Transaction cost economics						1	1	2
Other theories		1	2	6	5	5	6	25
No. of papers without theory	2	1	4	4	2	5		18

Our sample includes only 4 papers published before 1990: Rosenstein (1988), Robinson (1982), McGivern (1978), and Trow (1961)

governance and certain outcomes such as financing (e.g., Bellavitis et al. 2017; Claessens and Yurtoglu 2013), strategic leadership (Daily et al. 2002), market reactions (e.g., Claessens and Yurtoglu 2013), and stakeholder relationships (e.g., Claessens and Yurtoglu 2013). There is no comprehensive review of multiple aspects of corporate governance of entrepreneurial firms.

Fourteen of the 15 non-empirical research papers are primarily theoretical or conceptual. The remaining paper is Deutsch and Ross' (2003) analytical study of outside directors' signaling role which shows that high-quality new ventures distinguish themselves from their lower quality counterparts by appointing reputable outside board directors.

3.3 Theories

As shown in Tables 2 and 3, agency theory is the most frequently used theoretical perspective (56 papers), followed by resource theories (52 papers), contingency theory (10 papers), and institutional theory (9 papers). There are 37 various types of theories explicitly used in analyses, with 25 theoretical perspectives each used by only one paper. There are 12 theoretical perspectives which appear in at least two papers while 18 papers do not explicitly mention a theoretical basis. Taken together, our findings are consistent with earlier reviews which highlight the prevalence of agency theory, resource theories, institutional theory, upper echelon perspective, stewardship perspective, stakeholder theories, and transaction economics (e.g., Daily et al. 2003; Huse 2000; Bellavitis et al. 2017; Klotz et al. 2014).

3.4 Agency theory

Agency theory is applied in 38 quantitative studies, 2 qualitative studies, and 10 non-empirical studies. While agency theory is often associated with the separation of ownership and control, the literature explores topics such as BODs' varying incentives to monitor management and protect shareholders' interest (Fama and Jensen 1983; Jensen and Meckling 1976), how corporate governance affects agency problems reflected by entrepreneur's behavior (e.g., Zahra et al. 2000; Brunninge et al. 2007), firm performance (e.g., Eisenberg et al. 1998), and market value (e.g., Daily and Dalton 1992). It is noteworthy that incomplete separation of ownership and control does not necessarily eliminate agency problems (e.g., Jensen 1994; Schulze et al. 2001; Liao et al. 2014). In particular, agency theory helps explain the monitoring and control functions of the BOD (e.g., Huse 1994; Garg 2014; Krause and Bruton 2014), while other BOD roles and corporate governance functions can be better understood with multiple theoretical perspectives (e.g., Zahra and Filatotchev 2004; Van den Heuvel et al. 2006).

3.5 Resource theories

Drawing on Huse (2000), we use "resource theories" to refer to the cluster of resource-based view, resource dependence, social capital (network), and human capital theories. Resource theories assume that corporate governance helps firms to secure scare resources such as financial resources as well as human and social capital; resource theories are applied in 30 quantitative studies and 11 qualitative studies, and discussed in 5 non-empirical studies. Resource theorizing explores governance mechanisms' role in acquiring resources for entrepreneurial firms. Social network theory extends resource dependence theory by focusing on how social networks explain board formation and composition (Lynall et al. 2003). Knowledge is a crucial type of firm resource, and entrepreneurial firms' development of new capabilities requires different knowledge from current stocks (Zahra and Filatotchev 2004). BOD human capital, for example, is a primary source of such knowledge (e.g., Basly 2007; Zahra et al. 2009; Bocquet and Mothe 2010).

3.6 Contingency theory

According to contingency theory, there is no universally optimal organizational structure—the best structure is contingent on external and internal contexts (see Schoonhoven 1981). Using terms such as "contingencies" or "contingent" as well as explicit claims of using contingency theory, we identify 7 quantitative studies, 1 qualitative study, and 2 non-empirical studies. Contingency theory can also be viewed as a meta-theory rather than just a conventional theory with a specific system of propositions (Schoonhoven 1981). Contingency theory may actually be implied in a far greater number of studies in our sample literature as 23 additional articles explicitly address how various antecedents affect entrepreneurial firms' corporate governance configurations. Additionally, the optimal configuration of corporate governance may not be a single solution since various corporate governance designs may generate similar outcomes (i.e., equifinality) under certain contingencies (e.g., Bell et al. 2014).

3.7 Institutional theory

Institutional theory is applied in 6 quantitative study and 1 qualitative study, and discussed in 1 non-empirical study. Institutional theory assumes that an organization reflects enduring rules and routines institutionalized and legitimized by its social environment (Scott 1995; Zattoni et al. 2017). This theory explains how formal and informal institutions (e.g., Zattoni et al. 2017) shape firms' corporate governance practice (Lynall et al. 2003). It is noteworthy that institutional theory can explain how corporate governance is affected by external institutions such as national institutional environment (e.g., Ge et al. 2017; Zattoni et al. 2017), as well as firm-specific institutions such as trust and relational norms (e.g., Calabrò and Mussolino 2013; Bell et al. 2014).

3.8 Other theoretical perspectives

Other theories are only scarcely applied. For example, the *upper echelon perspective* explores the relationship between TMT characteristics and organizational outcomes, and is applied in 4 quantitative studies, 1 non-empirical study, and 1 literature review with a focus on how new venture teams function in the context of corporate governance (Klotz et al. 2014; Escribá-Esteve et al. 2009; Bjørnåli et al. 2016; Jin et al. 2017). The *stewardship perspective* is applied in 3 quantitative studies and discussed in 2 non-empirical studies. According to stewardship theory, in certain circumstances, executives' and directors' interests are similar to those held by shareholders (Davis et al. 1997), a typical situation for family business (e.g., Sciascia et al. 2013; Brumana et al. 2017). *Stakeholder theory*, which

Table 3 Theories used for various types of research

	Quantitative	Qualitative	Review	Non-empirical	Total
Agency theory	38	2	6	10	56
Resource theories	30	11	6	5	52
Contingency theory	7	1		2	10
Institutional theory	6	1	1	1	9
Upper echelon perspective	4		1	1	6
Stewardship perspective	3			2	5
Stakeholder theory			2	1	3
Strategic management theories	3				3
Team production theory	2			1	3
Attention-based view	2				2
Cognitive perspective	1		1		2
Transaction cost economics	1		1		2
Other theories	15	3	2	5	25
No. of papers without theory	4	8	4	2	18

normatively addresses how corporate governance should be designed to represent various stakeholders' interests (Abor and Adjasi 2007; Barnes 2007), is discussed in 2 reviews and 1 non-empirical study. To explain how corporate governance shapes strategic formation and implementation, 2 quantitative studies and 1 qualitative study apply *strategic management theories*, including business policy theory (Robinson 1982), strategic choice perspective (Fiegener 2005), and strategic leadership theory (Van Gils 2005). *Team production theory* is applied in 2 quantitative studies and discussed in 1 non-empirical study, and conceptualizes the firm as a connection of team-specific assets invested by various stakeholders (Blair and Stout 1999) and views the BOD as a cooperative team contributing to firm value by getting involved in strategy, with each director bringing specific knowledge to the team (Kaufman and Englander 2005). Team production theories help explain board strategic participation (Machold et al. 2011; Vandenbroucke et al. 2016). Two quantitative studies apply *attention-based view* which argues that decision-makers' limited attention affects their actions (Ocasio 1997), e.g., why directors focus on certain roles such as board service involvement (Knockaert et al. 2015; Bjørnåli et al. 2016). The *cognitive perspective*, which addresses how cognitive process affects board effectiveness, is applied by 1 quantitative study (Fiegener 2005) and discussed in 1 literature review (Drover et al. 2017). *Transaction cost economics*, applied in 1 quantitative study and discussed in 1 non-empirical study, can help explain the role of financial intermediaries in facilitating financing activities for entrepreneurial firms (e.g., Tykvová and Schertler 2014; Bellavitis et al. 2017).

3.9 Data geography

As shown in Table 4, in addition to 16 papers using multi-country data, 66 empirical research papers are based on evidence from the USA (23 papers), the UK (21 papers), Sweden (14 papers), and Norway (8 papers). The multi-country empirical studies utilize evidence from as many as 80 countries (Chen et al. 2014).

3.10 Modeling

Firm-level survey samples include observations from at least 35 or at most 3837 firms, while firm-level archival studies each include observations from at least 60 or at most 6950 firms. As shown in Table 5, 23 of 87 quantitative research papers use moderating variables, and 12 papers use mediating variables. Adding moderating or mediating variables to regression model is not the only way to test such effects; moderation can be tested with grouped regressions (e.g., Bertoni et al. 2014); mediation can be tested by using the dependent variable in one model and as a predictor in another (e.g., Zahra et al. 2000; Benson et al. 2015).

Table 4 Geographic analysis of data focus

	No. of empirical studies							
Country/region	Pre-1990	1990–1994	1995–1999	2000–2004	2005–2009	2010–2014	2015–2018	Total
USA	3	1	1	6	6	4	2	23
UK		2	5	7	5	1	1	21
Sweden		3		3	6	1	1	14
Norway		1			3	2	2	8
Belgium					2	1	1	4
Germany				1	1		1	3
France					1	1	1	3
Italy						2	1	3
Canada					1	1		2
China (Mainland)							2	2
Singapore			2					2
New Zealand						2		2
Spain							2	2
Denmark						1		1
Dutch					1			1
Finland			1					1
Taiwan						1		1
Tunisia						1		1
Multi-country	1		1	2	1	7	4	16
Total	4	7	10	19	27	25	18	110

A few papers use non-linear models to test non-monotonic relationships. For example, Bertoni et al. (2014) find that the interaction between board independence (BI) and firm age squared positively affects IPO valuation while the interaction between BI and firm age is negative. By adding the squared term of board continuity variable, Wincent et al.'s (2009) investigation of SME board networks finds a U-shape relationship

Table 5 Analysis of modeling for quantitative empirical research

Content	Outcomes of corporate governance	Antecedents of corporate governance	Both antecedents and outcomes	Relationships among various corporate governance characteristics	Descriptive research	All quantitative
No. of papers	47	10	12	13	5	87
No. of papers with moderation	15	2	2	4	0	23
No. of papers with mediation	7	1	3	1	0	12
Avg. no. of hypotheses	4.30	5.20	5.92	5.15	0.00	4.51
Avg. no. of regression models	4.63	6.67	2.42	4.85	0.00	4.29
Avg. no. of regression methods	1.17	1.30	0.92	0.85	0.00	1.03
Avg. no. of explanatory variables	3.81	7.30	6.00	2.85	0.00	4.15
Avg. no. of regressors	10.72	11.70	11.08	8.23	0.00	9.90

between the continuity of SME network board and innovative performance moderated by network size. Sciascia et al. (2013) also add a squared term, finding a J-shape relationship between family involvement on board and internationalization of family business. Fiegener (2005) report a U-shape relationship between number of outside directors and board strategic participation.

Excluding descriptive research papers, quantitative papers each on average test more than 4 hypotheses with more than 4 regression models that contain more than 4 explanatory variables and more than 9 regressors in total. Some early research papers test hypotheses without regressions. For example, Grundei and Talaulicar's (2002) survey of 48 German start-ups provides evidence for 8 propositions on how company law affects corporate governance. Brunninge and Nordqvist (2004) use *t*-statistics to test 10 specific hypotheses on how ownership structure affects board composition and how board composition affects entrepreneurship in turn.

The sample literature uses a great variety of regression methods including OLS, probit, logit 2, SLS, GMM, Heckman, and structural equations. Four research papers use non-linear models, adding squared terms as explanatory variables. Structural equation model (SEM) is applied in 6 out of 55 quantitative survey studies. From our perspective, it seems that SEM's strength is not full demonstrated by prior literature. Our sample literature exhibits complicated and intertwined relationship among numerous constructs. Many constructs such as BSI (e.g., Bjørnåli et al. 2016) and CE (e.g., Zahra et al. 2000) cannot be easily observed from archival database, yet can be reliably and validly measured by multiple-item questionnaires. SEM enables researchers to test multiple and interrelated dependence using one single model. In SEM, observable items form or reflect constructs under study as latent variables, and multiple relationships are captured as pathways in the model. Such features can help researchers form more comprehensive understandings of the complex nature of entrepreneurial firm governance.

3.11 Research questions

We identify a corporate governance construct as characterized by (1) ownership, (2) board, or (3) top management. Based on these criteria, we categorize the main research questions addressed in each paper as follows: outcomes of corporate governance (category 1); antecedents of corporate governance (category 2); both antecedents and outcomes (category 3); relationships between corporate governance characteristics (category 4); descriptive research (category 5); and discussion of general issues (category 6). This review excludes constructs that are only captured by control variables.

Although a research paper may address more than one research question, we use the aforementioned 6 categories to cluster papers. We include a research paper in category 1 if it explicitly addresses corporate governance concepts and the effects caused by these concepts (i.e., outcomes), yet does not discuss what proceeds them (i.e., antecedents). We include a paper in category 2 if it discusses corporate governance concepts and their antecedents yet does not explicitly discuss outcomes. Category 3 articles discuss both the antecedents and outcomes of corporate governance. Each paper in category 4 explores the relationship between various identified corporate governance concepts without explicitly considering either outcomes or antecedents. Category 5 papers only describe situations of corporate governance concepts without discussing their relationships. Category 6 articles discuss corporate governance as a general issue without scrutinizing specific concepts and relationships. Table 6 shows the number of research papers in each category and some example research questions and findings.

3.12 Concepts under study

Using the same criteria in the previous subsection, we summarize the concepts studied in our sample literature and report related findings. All identified concepts are categorized into corporate governance characteristics, outcomes, and antecedents. Corporate governance characteristics are clustered into 4 groups: ownership structure, board characteristics, top management characteristics, and other constructs related to the aforementioned three stakeholder types. Table 7 presents the concepts identified in previous literature.

4 Corporate governance characteristics

4.1 Ownership structure

VC ownership In our sample literature, venture capital (VC) ownership is the most frequently discussed owner-level predictor. Investors work actively with portfolio

Table 6 Content and sample research directions

Sample research questions	Sample findings	Examples of future research directions
Category 1. Outcomes of corporate governance: 68 studies (quantitative: 47; qualitative: 10; review: 6; non-empirical: 5)		
How does governance drive entrepreneurial orientation (EO) in small firms? (Deb and Wiklund 2017)	Founder status and ownership create powerful personal incentives for small firm CEOs to engage in behaviors that influence EO. The founder-CEO's prior managerial experience in start-up firms positively moderates the founder-EO relationship. (Deb and Wiklund 2017) [quantitative survey]	Alternative non-financial outcomes such as market orientation, market-driven and market-driving strategies, ambidexterity
Do VC and outside CEOs change portfolio firms' business model? (Gerasymenko et al. 2015)	VCF involvement positively affects PFC performance. The VCFs' experience with business model change and the recruitment of an outside CEO to the PFC both increase the positive impact of VCF involvement. (Gerasymenko et al. 2015) [quantitative survey combined with archival data]	
How do new ventures access advice to achieve high growth and sustainable performance? (Ahn 2014)	Advisory boards and boards of directors have a significant role in managing and creating value for emerging high-growth firms due to inherently high failure rates, technological complexity, and market risk—all of which requires access to external resources. (Ahn 2014) [quantitative meta-analysis]	Sustainability reporting
What is the effect of the presence of different types of individual owners, i.e., owner-managers and non-manager individual shareholders, on the performance of high-tech entrepreneurial firms? (Colombo et al. 2014)	The number of owner-managers has a positive effect on firm performance. (Colombo et al. 2014) [quantitative archival]	Entrepreneurial team characteristics in their relation to team process and team effectiveness and efficiency
What is the dynamic inter-relationship between corporate governance, venture capital ownership. and financial performance? (Farag et al. 2014)	A high level of VC ownership and its reputation leads to better corporate governance in IPO companies, which positively affects financial performance. (Farag et al. 2014) [quantitative archival]	Entrepreneurial exit
How do VC investments affect corporate governance and financial stability of IPO firms in the emerging markets? (Liao et al. 2014)	VC-backed firms have less agency problems related to excess control than non-VC-backed firms at the time of IPO. VCs are more likely to improve the excess control problem in firms with weak-governance-structure than those with strong-governance-structure. VC-backed firms are less likely to encounter financial difficulty than non-VC-backed firms. (Liao et al. 2014) [quantitative archival]	Social performance in emerging markets
Does family involvement in board have a positive or negative impact on a company's performance? (Sciascia et al. 2013)	Family involvement in the board of directors and performance of the company have a J-shaped, non-linear relationship. (Sciascia et al. 2013) [quantitative survey]	
To what extent do (both formal and informal) features of boards of directors (dual governance) influence family SME export intensity? (Calabrò and Mussolino 2013)	Formal and informal governance mechanisms can co-exist complementing and supplementing each other, thus positively influencing family SME export intensity. (Calabrò and Mussolino 2013) [quantitative survey]	Decisions to stay local/national players
How do cross-country differences in shareholder protection against self-dealing and personal bankruptcy laws affect the financing of new technology-based firms (NTBFs)? (Vanacker et al. 2014)	Better shareholder protection rights increase the probability of raising external equity financing and allow firms to raise larger amounts of equity financing. Less forgiving personal bankruptcy laws decrease the probability of raising debt financing and limit the amount of debt financing that is raised. VC ownership strengthens the	Capital budgeting and accounting choice in entrepreneurial firms

Table 6 (continued)

Sample research questions	Sample findings	Examples of future research directions
	aforementioned relationships. (Vanacker et al. 2014) [quantitative archival]	
Does corporate governance structure affect manager's innovative behavior? (Omri et al. 2014)	Ownership structure is significantly associated with manager's innovative behavior. The relationship is fully mediated by outsiders' representation on the board. (Omri et al. 2014) [quantitative survey]	Explorative and exploitative orientation
How do governance mechanisms affect the ability of SMEs to introduce strategic change? (Brunninge et al. 2007)	Closely held firms exhibit less strategic change than do SMEs relying on more widespread ownership structures. To some extent, closely held firms can overcome these weaknesses and achieve strategic change by utilizing outside directors on the board and/or extending the size of the top management teams. (Brunninge et al. 2007) [quantitative survey]	
Does board size affect financial performance? (Eisenberg et al. 1998)	There is a significant negative correlation between board size and profitability in a sample of small and midsize Finnish firms. (Eisenberg et al. 1998) [quantitative archival]	
Category 2. Antecedents of corporate governance: 13 studies (quantitative: 10; qualitative: 1; review: 1; non-empirical: 1)		
Does the collective endowment of industry experience among the firm's top managers affect the amount of industry experience provided by outside directors? Does the firm's liability of newness (captured by firm age) moderate this resource provision? (Kor and Misangyi 2008)	Among younger entrepreneurial firms, a dearth of top management industry experience is offset by the presence of outside directors with significant managerial industry experience, providing evidence of experience supplementing by outside directors. The notion of experience supplementing at the upper echelons prevails in young firms as they try to alleviate the burdens of the liability of newness. (Kor and Misangyi 2008) [quantitative archival]	Managerial discretion perceived and factual
How is board size and board independence affected over time? How is board independence related to manager influence? (Boone et al. 2007)	Board size and independence increase as firms grow and diversify over time. Board size—but not board independence—reflects a tradeoff between the firm-specific benefits and costs of monitoring. Board independence is negatively related to the manager's influence and positively related to constraints on that influence. (Boone et al. 2007) [quantitative archival]	The nature of board independence and dependence on the firm owners
How do new ventures and small businesses access knowledge resources? (Audretsch and Lehmann 2006)	There is a strong link between geographical proximity to research-intense universities and board composition. (Audretsch and Lehmann 2006) [quantitative survey]	
What is the impact of CEO influence over the board of directors on CEO pay for both large and small firms? (Joe Ueng et al. 2000)	CEO pay of large firms is mostly a function of CEO influence over the board, firm size, and firm performance, while firm size is the primary factor of CEO pay for small firms. (Joe Ueng et al. 2000) [quantitative archival]	Dyadic relations of CEO and CFO as well as CEO and Chair
Category 3. Both antecedents and outcomes: 18 studies (quantitative: 12; qualitative: 3; review: 2; non-empirical: 1)		
Why even with deficient formal institutions do many economies have high rates of entrepreneurship in recent years? (Ge et al. 2017)	Entrepreneurs with political connections are willing to reinvest despite a weakening institutional environment. (Ge et al. 2017) [quantitative survey]	Contextual discretion, perceived, and actual
How does the interaction of public and corporate governance systems affect global entrepreneurial young firms' strategic	Corporate governance systems interact with public governance to harmonize the interests of different claimants, especially in disputes that arise across	The role and nature of public-private partnership

Table 6 (continued)

Sample research questions	Sample findings	Examples of future research directions
choices as they seek to position themselves in their markets? (Zahra 2014)	national borders. Corporate governance systems ensure effective monitoring of owner-managers and define what they do and how to do it in a highly globalized environment. (Zahra 2014) [non-empirical]	constellation involving entrepreneurial firms
What is the effect of the August 25, 2010, announcement of the proxy access rule on small firms in US? (Stratmann and Verret 2012)	The unanticipated application of the proxy access rule to small firms, particularly when combined with the presence of investors with at least a 3% interest (who are able to use the rule), resulted in negative abnormal returns. (Stratmann and Verret 2012) [quantitative archival]	
How do threshold firms sustain corporate entrepreneurship? (Zahra et al. 2009)	Firms' boards and absorptive capacity complement each other in fueling corporate entrepreneurship activities. (Zahra et al. 2009) [multiple case study]	
Can VCs add value beyond the money they provide to their portfolio companies? (Sapienza et al. 1996)	VC experience, uncertainty, agency risk, and business risk predict VC's face to face interaction with CEO. Venture needs, uncertainty, and VC experience predict value added by VC involvement. (Sapienza et al. 1996) [quantitative survey]	
What determines entrepreneurial firm growth? (Davidsson 1991)	Ownership dispersion, firm age, and firm size affect the need for growth, which together with entrepreneur's ability affect firm's growth motivation. (Davidsson 1991) [quantitative survey]	
Category 4. Relationships among various corporate governance characteristics: 14 studies (quantitative: 13; review: 1)		
Does interactions between outside board members and the top management team (TMT) affect the functioning of the outside board? (Vandenbroucke et al. 2017)	Conflict between TMT and outside board is an important antecedent for outside board service involvement. (Vandenbroucke et al. 2017) [quantitative archival]	Processes between board and TMT and strategic actions in supra TMT constellations
What is the role of top management team (TMT) and board chair characteristics as antecedents of board service involvement (BSI)? (Knockaert et al. 2015)	TMT diversity positively affects board service involvement. CEO duality negatively affects board service involvement. Board chair industry experience is an important moderator. (Knockaert et al. 2015) [quantitative survey]	Complementarity and dissimilarity of board and TMT human and social capital in relation to firm outcomes
What tensions exist between the founding teams of high-tech startups and the external equity stakeholders? Do outside board members have human capital that compliments or substitutes the founding team? (Clarysse et al. 2007)	High-tech start-ups with a public research organization as an external equity stakeholder are more likely to develop boards with outside board members with complementary skills to the founding team. (Clarysse et al. 2007) [quantitative survey]	
What affect board selection in initial public offerings (IPOs)? (Filatotchev 2006)	Board independence, cognitive capacity, and the incentives of non-executive directors are negatively associated with the experience and power of executive directors. Large-block share ownership is positively associated with the intensity and diversity of non-executives' experience. The retained equity by venture capitalists negatively affects board independence and non-executive directors' interests. (Filatotchev 2006) [quantitative archival]	Board/Chair/CEO/TMT leadership and firm outcomes
What is the relationship between venture capital (VC) firms and portfolio firms? (Gabrielsson and Huse 2002)	Venture capital firms purposefully use boards in the portfolio firms. Boards in venture capital-backed firms are more active than boards in other firms. (Gabrielsson and Huse 2002) [quantitative survey]	
What is the difference between boards of venture capital-backed companies with the	Boards of directors in venture-capital backed companies are more involved in strategy formation	Board and TMT selection processes and antecedents

Table 6 (continued)

Sample research questions	Sample findings	Examples of future research directions
boards of other types of organizations? (Fried et al. 1998)	ad evaluation than board where members do not have large ownership stakes. One of the most significant value-adds of venture capitalists is their involvement with strategies for firm growth. (Fried et al. 1998) [quantitative survey]	
Category 5. Descriptive research: 14 studies (quantitative: 5; qualitative: 9)		
How are board directors selected for SME firms? (Charas and Perelli 2013)	Directors are commonly selected to join boards based on their professional capital, but are seldom screened for understanding and appreciation of appropriate behavior inside and outside the boardroom or ability and willingness to address affective conflict in either realm. (Charas and Perelli 2013) [interview]	Exposure mechanisms in similar/dissimilar other board selection
What is the role of external or non-executive directors and entrepreneurs in small growth companies? (Deakins et al. 2000b)	External directors (or NEDs) do bring value-added benefits to a growing small company. Even when external directors are appointed by venture capital firms they perform more than mere monitoring functions. (Deakins et al. 2000b) [interview]	
What is the role of boards in owner-managed SMEs? Do boards enhance good governance in SMEs? (Neville 2011)	The role of a board as a resource is more important than its control role. Good governance appears to be associated with the existence of boards and of outside board members. (Neville 2011) [quantitative survey]	The role of "good governance" discourse in entrepreneurial firms
What is the function of board of directors necessary for small firms? (Teksten et al. 2005)	Critical factors influencing board function and action included needs of the company, abilities of the directors, sophistication of ownership and management, as well as life cycle stage, percent of family ownership and trading status of the corporation's stock. (Teksten et al. 2005) [quantitative survey]	Conflict resolution role of the board in entrepreneurial firms
What are the characteristics of good cooperation between an entrepreneur and a venture capitalist? (Landström 1990)	Continuous interaction between the entrepreneur and the venture capitalist seems to be of the utmost importance for the result of the portfolio firm. (Landström 1990) [multiple case study]	
Category 6. Discussion of general issue: 10 studies (review: 2; non-empirical: 8)		
What data and research currently exists in the field of SMEs, especially in relationship to Boards of directors? (Huse 2000)	There is extensive research in the field of SME boards, which can be categorized in several key ways, despite the continued statement in SME research that there is little available data. (Huse 2000) [review]	- Compensation as a governance mechanism in entrepreneurial firms - Managerial labor market in entrepreneurial firms
Can sound corporate governance policies address managerial incompetence? (Abor and Adjasi 2007)	The problems of managerial incompetence and credit constraints could be resolved through good corporate governance structure. (Abor and Adjasi 2007) [non-empirical]	The role of media in the governance of entrepreneurial firms

firms to provide resources (Landström 1990) which affect firm performance (Landström 1992). As financial intermediaries, VCs provide financial resources to firms (Steier and Greenwood 1995), help guarantee financial stability, and reduce agency problems in order to secure their interests (Liao et al. 2014). However, VCs' roles differ from traditional financial intermediaries (Hellmann and Puri 2002) in terms of offering managerial experience and know-how that might improve portfolio firms' performance (Gerasymenko et al. 2015; Farag et al. 2014), and purposefully use portfolio firms' board of directors to actively participate in firm governance (Gabrielsson and Huse 2002; Deakins et al. 2000b; Fried et al. 1998). Specifically, VCs can nurture product

Table 7 Concepts under study in previous literature

Antecedents	Corporate governance characteristics	Outcomes
a) National level institution	Ownership structure	a) Firm value
b) Firm-specific characteristics	a) VC ownership	b) Financial performance
	b) Family ownership	c) Non-financial performance
	c) Founder, CEO, and TMT ownership	d) Financing activity
	d) Director ownership	e) Agency problems
	e) Other ownership issues	f) Business survival
	Board characteristics	g) Corporate strategy
	f) Board role	
	g) Board size	
	h) Board composition	
	i) Board behavior	
	Top management characteristics	
	j) Duality, founder status, and owner status	
	k) Compensation	
	l) TMT characteristics	
	m) Behavioral and psychological characteristics	
	n) Succession	
	Other constructs	
	o) Corporate governance index	
	p) Human capital	
	q) Social capital	
	r) Reputation and signaling	
	s) Informal mechanisms	

innovation (Chemmanur and Fulghieri 2013) and shape HR policy (Hellmann and Puri 2002). Similarly, institutional ownership boosts R&D economic return (Kor and Mahoney 2005) and affects firms' innovation behavior (Omri et al. 2014). Angel investment also boosts product innovation (Chemmanur and Fulghieri 2013).

Family ownership It remains uncertain whether and under which governance conditions family firms are entrepreneurial (Le Breton-Miller et al. 2015). Family SMEs' conservatism and a lack of relevant knowledge hinder internationalization (Basly 2007), while non-family directors positively affect family firms' pace of internationalization (Calabrò and Mussolino 2013). Family firms exhibit less strategic change (Brunninge et al. 2007) and fewer innovation behaviors (Omri et al. 2014), and are more reluctant than non-family firms to appoint independent directors to their boards (Brunninge and Nordqvist 2004).

Founder, CEO, and TMT ownership Studies on insider ownership produce mixed results. Corporate entrepreneurship (CE) is relatively high when executives hold stock in their company (Zahra et al. 2000), while Kroll et al. (2007) find that ownership by TMT members who are also on board is positively associated with post-IPO performance, and that this relationship is positively mediated by even ownership distribution across TMT board members. Bell et al. (2014) describe how CEO stock options predict high IPO valuations under certain context conditions. CEO founder status is positively associated with entrepreneurial orientation (EO), yet CEO ownership negatively predicts EO (Deb and Wiklund 2017). Two characteristics of closely held firms, CEO ownership and TMT ownership, lead to less strategic change (Brunninge et al. 2007).

Director ownership Zahra et al. (2000) find that a firm's CE is relatively high when its outside directors own its stock. Keasey et al. (1994) report a curvilinear (positive and then negative) relationship between firm performance and the percentage of equity held by the board of directors.

Other ownership issues Davidsson (1991) posits that ownership dispersion naturally incentivizes a firm's growth motivation simply because "there are more mouths to feed." The literature explores various forms such as Clarysse et al.'s (2007) report that high-tech start-ups with public research organizations as external equity stakeholders are more likely to develop a BOD with outside directors whose skills complement the founding team. Omri et al. (2014) show that state ownership is positively associated with outside director proportion. There are significant difference between independent and subsidiary plants/operating units in leadership style, culture, and strategic making and implementation (Ghobadian and O'Regan 2006).

4.2 Board characteristics

Board size Usually defined as the number of directors on board, board size is one of the basic variables of empirical corporate governance research; however, there is no consensus on the relationship between board size and firm performance (e.g., Eisenberg et al. 1998; Dalton et al. 1999). Studies on entrepreneurial firms also generate mixed findings: some show that firm profitability is negatively correlated with board size (Eisenberg et al. 1998) while others indicate that larger board size is positively associated with higher corporate governance level (Gordon et al. 2012) and productivity (Cowling 2003), and helps solve agency problem (Boone et al. 2007). Given the multiple roles of BOD, perhaps board size as a variable fails to capture many specific aspects of the nature of BOD. After all, two boards of the same size may significantly differ in their impact on corporate governance if they vary in other characteristics such as composition and directors' resources.

Board composition Board composition is discussed in the literature in terms of non-executive director (NED), outside director (or external director), or independent director, often interchangeably (e.g., Deakins et al. 2000a, b; Omri et al. 2014). One cluster of studies explores NED roles, showing that NED presence on the board ensures accuracy of financial information and adherence to the business plan (Barrow 2001), and also provides a specialist assistance when appointed by the VC rather than by someone else (Deakins et al. 2000b), ensures executive learning (Deakins et al. 2000a), and signals a well-functioning firm (Deutsch and Ross 2003).

Outside directors affect the firm in various ways, including facilitating internationalization (Calabrò and Mussolino 2013), innovation (Omri et al. 2014), board strategic participation (Fiegener 2005), and strategic change (Brunninge et al. 2007). Outside directors' ownership also affects firm commitment to corporate entrepreneurship (Zahra et al. 2000). In the family firm context, Sciascia et al. (2013) find a J-shape relationship between family presence on board and sales internationalization: sales internationalization decreases and then slightly increases with an increase in the proportion of family directors. Similarly, Calabrò et al. (2017) find that the presence of non-family directors positively affects internationalization.

Gabrielsson and Huse (2005) highlight the importance of using theories of agency, resource-based view, and resource dependency to understand outside directors' multiple roles. A young firm's outside directors provide resources for TMT's strategy implementation, rather than just TMT monitoring (Kroll et al. 2007). Outside directors' specific experience, as well as diversity and tenure, can significantly affect firm performance (Vandenbroucke et al. 2016) and may alleviate the burdens of firms' liability of newness (Kor and Misangyi 2008). For example, high-tech start-ups with public research organization shareholders tend to have outside directors with skills that complement the founding team (Clarysse et al. 2007).

Researchers do not fully understand how independent directors affect entrepreneurial firm performance (e.g., Brunninge and Nordqvist 2004; Boone et al. 2007; Boone et al. 2007). Bertoni et al. (2014) propose that a firm's board independence decision is determined by the relative importance of two board roles: value creation and value protection. The authors identify a U-shape relationship between firm's board independence and firm age such that in young firms, board independence negatively predicts IPO valuation as value creation role dominates, and in mature firms, board independence positively predicts IPO valuation as value protection role dominates.

4.3 Top management characteristics

Duality, founder status, and owner status Due to incomplete separation of ownership and control, it is natural for many young firms to have a CEO or manager who is board chair, founder, or owner (Banham and He 2010). Various theoretical perspectives (e.g., agency theory and stewardship theory) predict the effect of CEO duality differently (Donaldson and Davis 1991). An early study by Daily and Dalton (1992) fails to find significant relationship between CEO duality and firm performance; however, later studies show that CEO duality negatively affects corporate entrepreneurship (Zahra et al. 2000) and strengthens the positive association between TMT diversity and BSI (Knockaert et al. 2015). CEO founder status is positively associated with entrepreneurship orientation (Deb and Wiklund 2017). Owner-managers may lead to low horizontal agency costs (Colombo et al. 2014), but some agency problems ignored by Jensen and Meckling (1976) exist in privately owned, owner-managed firm (Schulze et al. 2001). Several studies focus on the characteristics of owner-managers. Hankinson et al. (1997) explore the key characteristics of SME owner-managers that influence performance outcomes including behavior and lifestyle, skills and capabilities, and management method. Hansen and Hamilton's (2011) qualitative study shows that owner-managers' ambition and positive worldview contribute to firm growth. By contrast, only one study examines the outside CEOs' role: Gerasymenko et al. (2015) find that outside CEO and VC experience in strategic change strengthens the positive effect of VC involvement on firm performance.

Compensation In our sample literature, only 2 research papers specifically address compensation for entrepreneurial firm management. Joe Ueng et al. (2000) compare the determinants of compensation in small firms with those for large firms and find that CEO pay for small firm is primarily determined by firm size. Schulze et al. (2001) find that pay incentive positively affects performance of non-family managers, but not family managers. These findings suggest that major differences may exist between small firms and large firms in the performance effect of pay incentive.

TMT characteristics Top management teams are frequently addressed in sample literature. Studies show that start-up TMTs exhibit high cohesion and social integration and low levels of conflict (Grundei and Talaulicar 2002) and that such cohesion guarantees TMT effectiveness (Bjørnåli et al. 2016). TMT diversity benefits entrepreneurial firms in various ways but may also drive an individual to leave the team (Hellerstedt et al. 2007) or make decision-making less effective and thus leads to higher level of BSI (Knockaert et al. 2015). TMT size and outside directors both positively affect strategic change while their interaction does negatively (Brunninge et al. 2007). Kroll et al. (2007) find that, besides TMT ownership, TMT size and TMT presence on board are positively associated with post-IPO firm value. Firms' strategic orientation is affected positively by TMT's experience and negatively by familial nature, and in turn positively affects firm performance (Escribá-Esteve et al. 2009). Andersson et al. (2004) find that formal TMT activities captured by management meeting frequency are positively associated with internationalization.

Behavioral and psychological characteristics The extant literature also covers behavioral and psychological aspects of top management. CEO locus of control positively affects firm performance in terms of growth (Davidsson 1991) and profitability (Boone et al. 1996). Entrepreneurial orientation (Wiklund et al. 2009) and strategic planning (Berry 1998), as well as entrepreneur style (Sadler-Smith et al. 2003), drive firm growth and are affected by CEO characteristics such as ownership and founder status (Deb and Wiklund 2017) and directors (such as non-family directors) (Calabrò et al. 2017). Managerial ethical orientation can be directed by policymakers to influence small firms' ethics (Spence and Rutherfoord 2001). Managers' who hold more positive attitudes towards IT adoption will be more likely to succeed in this adoption (Thong and Yap 1995).

Succession Well-planned manager succession is a crucial factor for firm survival and success (Trow 1961; McGivern 1978); however, there is no subsequent research.

5 Board roles and behaviors

Board roles Several research papers address entrepreneurial firms' board roles. Bennett and Robson (2004) highlight the importance of viewing board, consultant, and top management skills as substitutes. A survey by Teksten et al. (2005) indicates that board functions for small privately held companies lack formality and are significantly influenced by factors such as the firm's need, director ability, ownership/management sophistication, life cycle stage, family ownership, and trading status of the firm's stock. Huse and Zattoni (2008) show that BODs get involved in legitimacy, advisory, and control tasks in start-up phase, growth phase, and crisis stage respectively. Neville's (2011) survey reveals that the SME board's resource role is more important than its control role. Pollman (2014) underlines Blair and Stout's (1999) team-production-theory-based understanding of the role of BOD, namely that BOD is a mediating hierarchy that encourages firm-specific investment in team production.

Board behaviors BODs play an important role in strategy formation (Rosenstein 1988) which contributes to firm effectiveness (Robinson 1982) and entrepreneurial posture (Gabrielsson, 2007a, b). Board strategy involvement in entrepreneurial firms is positively affected by VCs' presence (Fried et al. 1998), board leadership (Machold et al. 2011), outside directors' presence, organizational transition or potential downturn, low CEO ownership, and firm size (Fiegener 2005). Following Huse's (2007) notion of board role as a composite of three elements—"enhancing company reputation," "establishing contacts with the external environment," and "giving counsel and advice to executives"—several research papers use the construct "board service involvement (BSI)." Huse and Zattoni's (2008) case study shows that BODs perform the abovementioned three types of tasks on the basis of different types of trust relationships between internal and external actors. Survey-based empirical evidence shows that BSI antecedents include TMT characteristics (e.g., size and diversity), CEO duality, board chair industry experience (Knockaert et al. 2015), and TMT-outside board task conflict and relationship conflict (Vandenbroucke et al. 2017), and that BSI mediates the relationship between TMT diversity and TMT effectiveness (Bjørnåli et al. 2016). Other studies use board meeting number or frequency to capture formal board activity and find a positive association with internationalization (Andersson et al. 2004), strategic change (Brunninge and Nordqvist 2004), and board strategic involvement (Pugliese and Wenstøp 2007).

5.1 Other constructs related to ownership, board, and top management

Corporate governance index Only 2 research papers construct a comprehensive index to capture corporate governance level. The CGAIM50 index developed by Farag et al. (2014) consists of 50 equally weighted items such as "small board," "chair/CEO split," and "non-executive chair." Their research shows that VC ownership and reputation positively affect entrepreneurial firms' corporate governance levels, which in turn positively affects financial performance measured by return on assets (ROA). Gordon et al.'s (2012) index of 14 observable items for small publicly traded Canadian companies highlights a significantly positive association between corporate governance and accrual quality or Tobin's Q.

Human capital Human capital from owners, directors, and entrepreneurs contribute to firm performance (e.g., Sapienza et al. 1996; Vandenbroucke et al. 2016; Colombo and Grilli 2010). Prior literature discusses the benefits of various specific types of human capital, including VC experience (Sapienza et al. 1996), director knowledge (Zahra and Filatotchev 2004; Collinson and Gregson 2003; Bocquet and Mothe 2010), director experience (Zahra and Filatotchev 2004), director education (Bennett and Robson 2004), academic degree (Audretsch and Lehmann 2006; Bennett and Robson 2004), qualification, TMT knowledge (Van Gils 2005), manager experience (Davidsson 1991; Kor and Mahoney 2005), and manager training (Storey 2004). It is important that different types of social capital match one another. For example, Clarysse et al. (2007) find that high-tech start-up boards tend to have skills that complement the TMT. Directors and external consultants' skills substitute for those of internal management (Bennett and Robson 2004).

Social capital Social capital is another value-adding resource for entrepreneurial firms. Studies of social capital address various types of social networks, including those of VCs (Steier and Greenwood 1995), incubators (Collinson and Gregson 2003), firms (Wincent et al. 2010; Wincent et al. 2009; Human and Provan 2000), interfirms (Rosa 1999), and entrepreneurs (Stam et al. 2014; Basly 2007; Curran et al. 1993)—including political connections (Ge et al. 2017).

Reputation and signaling Deutsch and Ross (2003) show that new ventures may credibly signal their high quality by appointing reputable directors. Prestigious executives, directors, venture capital firms, and underwriters increase IPO valuation (Pollock et al. 2010); however, entrepreneurs may obscure corporate governance information to create a false image (Benson et al. 2015).

Informal mechanisms Only one research paper explicitly studies informal mechanisms: Calabrò and Mussolino (2013) find that relational norm and trust, as well as board independence, positively affect internationalization.

5.2 Outcomes of corporate governance

Firm value To capture the firm value recognized by the capital market, various studies use variables related to share price, including market value growth (Wiklund et al. 2009), P/E (Daily and Dalton 1992), Tobin's Q (Bertoni et al. 2014; Gordon et al. 2012), cost of capital (Claessens and Yurtoglu 2013), and IPO return (Kroll et al. 2007), valuation (Pollock et al. 2010; Bertoni et al. 2014), and underpricing (Certo et al. 2001; Benson et al. 2015). In addition, VC value add and other corporate governance aspects can be measured using questionnaire items (Sapienza et al. 1996; Cowling 2003).

Financial performance Profitability and growth are two critical aspects of entrepreneurial firms' financial performance. Profitability in the reviewed studies is measured by ROA (Daily and Dalton 1992; Keasey et al. 1994; Boone et al. 1996; Eisenberg et al. 1998; Escribá-Esteve et al. 2009; Farag et al. 2014), ROE (Daily and Dalton 1992), cash flow on asset, gross margin (Boone et al. 1996), pre-tax profit (Bennett and Robson 2004), and ROS (Robinson 1982). Sales (turnover) growth is frequently used to capture firm growth in financial perspective (Robinson 1982; Davidsson 1991; Berry 1998; Schulze et al. 2001; Westhead et al. 2001; Sadler-Smith et al. 2003; Wiklund et al. 2009; Chen et al. 2014). Internationalization is captured primarily by export sales (Westhead et al. 2001; Andersson et al. 2004; Basly 2007; Sciascia et al. 2013; Zahra 2014; Calabrò et al. 2017).

Non-financial performance Growth and innovation are two crucial outcomes of corporate governance (e.g., Huse and Zattoni 2008; Coulson-Thomas 2007; Chemmanur and Fulghieri 2013; Ahn 2014). Many research papers measure growth by more than one means—that is, not only by market value and sales, but also by employee growth (Robinson 1982; Davidsson 1991; Westhead et al. 2001; Colombo and Grilli 2010; Chen et al. 2014). Entrepreneur's growth motivation is another growth-related concept under survey study (Davidsson 1991). Innovation can be measured by questionnaire and survey items (e.g., Bennett and Robson 2004; Omri et al. 2014). It is noteworthy that innovation is not a homogeneous concept (e.g., Wincent et al. 2010) and can be measured variously, including radical innovation and incremental innovation (Wincent et al. 2010), IT adoption (Thong and Yap 1995), R&D economic return (Kor and Mahoney 2005), and patent filing (Vandenbroucke et al. 2016). In addition, as a survey-based construct, corporate entrepreneurship (CE) reflects firms' innovation and venturing activities (Zahra et al. 2000, 2009). A few studies use survey items to capture TMT-level outcomes such as team effectiveness (e.g., Bjørnåli et al. 2016).

Financing activity Steier and Greenwood's (1995) case study highlights VCs' traditional role in securing financial resources for entrepreneurial firms. Corporate governance helps firm get greater access to financing (Claessens and Yurtoglu 2013). Various studies address the link between corporate governance and traditional equity financing (Wu et al. 2007; Landström 1992; Paul et al. 2007; Vanacker et al. 2014) and debt financing (Vanacker et al. 2014). New sources of entrepreneurial finance make it easier for ventures to raise capital and grow, but also bring new challenges (Bellavitis et al. 2017). Other studies focus on internal financing such as firm reinvestment of after-tax profit (e.g., Ge et al. 2017).

Agency problems Despite the frequent use of agency theory, only a few research papers explicitly measure agency problems, mostly utilizing indirect variables such as earning quality (Gordon et al. 2012), excessive control (Liao et al. 2014), financial problems (Liao et al. 2014), and total factor productivity (Colombo et al. 2014).

Business survival A few papers examine how corporate governance affect business survival and failure (e.g., Theng and Boon 1996; Westhead et al. 2001; Liao et al. 2014).

Corporate strategy Despite the impact of corporate governance on strategy, a few papers examine strategy per se, using constructs such as strategic change (Brunninge et al. 2007) and differentiation strategy (Boone et al. 1996).

5.3 Antecedents of corporate governance

National level institution Institutional environment greatly affects the entrepreneurial firm's corporate governance configuration (Bell et al. 2014; Ge et al. 2017; Zattoni et al. 2017). Specific aspects of national level institution are discussed and examined, including company law (Grundei and Talaulicar 2002), regulation and public policy (Westhead et al. 2001; Stratmann and Verret 2012; Zahra 2014), and investor protection (Bell et al. 2014; Barnes 2007).

Firm-specific characteristics Entrepreneurial firms' corporate governance configuration can be contingent on complementary to various firm-specific characteristics, including size (Boone et al. 2007; Davidsson 1991; Andersson et al. 2004; Fiegener 2005), age (Boone et al. 2007; Davidsson 1991; Andersson et al. 2004; Stam et al. 2014), life cycle stage (Lynall et al. 2003), number of business segments (Boone et al. 2007), location (Davidsson 1991; Westhead et al. 2001), technology level (Andersson et al. 2004), absorptive capacity (Zahra et al. 2009), past performance (Hellerstedt et al. 2007), resource independence (Basly 2007), access to external knowledge (Audretsch and Lehmann 2006), competition (Westhead et al. 2001), uncertainty (Sapienza et al. 1996; Andersson et al. 2004), and agency risk (Sapienza et al. 2000).

6 Discussion of future research directions

This section discusses specific future research directions. Table 8 summarizes the theories applied and emerging themes from the 5 most cited empirical studies in every 5 years. We noticed that although resource and agency theories dominate this field, recent studies are increasingly aware of the importance of behavioral and psychological perspectives (e.g., attention-based view, self-efficacy theory, and imprinting theory). The roles of VCs and outside directors have been frequently discussed since 1988. In the early 1990s, researchers began to notice social networking as a key success factor for entrepreneurial firms. In the 1990s, researchers addressed the performance of entrepreneurial firms from the aspects of growth and innovation. Later their ongoing discussions expanded into internationalization and IPO market reaction. Board-management relations caught attentions in the early 1990s, but remained largely unnoticed until recently. Besides, recent studies pay increased attention to board behaviors such as board service involvement.

Following Jackson et al. (2003), we summarize opportunities for future studies and threats that may undermine their contributions or slow the accumulation of new knowledge.

6.1 Theories: future directions

Agency and resource theories are the most frequently used perspectives in the extant literature. Given the dominance of these theories in the field, the majority of the articles reviewed might be providing a meaningful contribution to the field of corporate governance and strategic management through exploration of entrepreneurial firm context, yet leaving development of entrepreneurship theory in a shade. Only recently, entrepreneurship inspired theories such as imprinting (e.g., Judge et al. 2015a, b) and self-efficacy (e.g., Knockaert et al. 2015) theories have found its way into field. The dominance of the strategic management scholars as well as theories (see Table 8) have been an important developmental force in the field of entrepreneurship, yet it presents the field with a challenge. Agency and resource theories have been developing with an eye on the large/stock listed corporations where the governance structures as well as organizational outcomes differ significantly from those of the entrepreneurial firm. While board independence and board monitoring along with financial performance and competitive advantage are recurring themes within strategic management, these are misaligned with the entrepreneurship field's interest of, i.e., venture capitalist role in the board, founders' role and behavior, entrepreneurs' identification, and effectuation as well as outcomes such as survival, growth, and entrepreneurial exit among others. While not diminishing the role of strategic management theories and scholars in the development of entrepreneurship as a field, we thus see a need of diverting field's attention to a more entrepreneurship-grounded theories or theories that are providing a different lens on the governance of entrepreneurial firms.

We identified four emerging theoretical perspectives in this field: contingency theory, institutional theory, upper echelon perspective, and team production theory. In recent years, these theories are adopted by an increasing number of studies. Contingency theory was developed in the field of management control (e.g., Gerdin and Greve 2004) and provides a crucial lens to examine the antecedents of corporate governance and the fit between corporate governance characteristics and

Table 8 Analysis of the most cited empirical studies

Time period	Most cited empirical studies	Theories	Themes and research questions
2015–Present	Gerasymenko et al. (2015, 34 citations) Judge et al. (2015b, 26 citations) Knockaert et al. (2015, 21 citations) Judge et al. (2015a, 16 citations) Garg and Eisenhardt (2017, 10 citations)	- Resource theories: resource dependence theory (Gerasymenko et al. 2015; Garg and Eisenhardt 2017); knowledge-based view (Judge et al. 2015b) - Attention-based view (Knockaert et al. 2015) - Self-efficacy theory (Knockaert et al. 2015) - Imprinting theory (Judge et al. 2015a) - Strategic choice theory (Judge et al. 2015a)	- Board service involvement: What is the role of top management team (TMT) and board chair characteristics as antecedents of board service involvement (BSI) (Knockaert et al. 2015)? - Market reaction: Does board knowledge affect IPO underpricing (Judge et al. 2015b)? - Strategy and change: What affect capacity for change (Judge et al. 2015a)? - Board-management relations: How can venture CEOs effectively engage in strategy making with their boards (Garg and Eisenhardt 2017)? - The role of venture capitalists: Do VC and outside CEOs change portfolio firms' business model (Gerasymenko et al. 2015)?
2010–2014	Colombo and Grilli (2010, 348 citations) Stam et al. (2014, 287 citations) Pollock et al. 2010, 136 citations) Bell et al. (2014, 125 citations) Wincent et al. (2010, 125 citations)	- Resource theories: resource dependence theory (Wincent et al. 2010); competence-based view (Colombo and Grilli 2010); social capital theory (Stam et al. 2014) - Contingency theory (Stam et al. 2014; Bell et al. 2014) - Signaling theory (Pollock et al. 2010) - Actor network theory (Stam et al. 2014)	- Market reaction: How stock market responses to different constellations of firm-level corporate governance mechanisms by focusing on foreign initial public offerings (IPOs) in the United States (Bell et al. 2014)? - The role of social network: Does social capital affect small firms' performance (Stam et al. 2014)? What are the effects of affiliations with various types of prestigious parties on the success of young firms (Pollock et al. 2010)? How does board capital of entrepreneurial firm network (i.e., human capital and relational capital) affect total, radical and incremental network innovative performance (Wincent et al. 2010)? - The role of venture capitalists: How does human capital of founders and access to VC financing affect the growth of new technology-based firms in Italy (Colombo and Grilli 2010)?
2005–2009	Boone et al. 2007, 1402 citations) Wiklund et al. (2009, 506 citations) Kor and Mahoney (2005, 419 citations) Brunninge et al. (2007, 285 citations) Zahra et al. (2009, 263 citations)	- Resource theories: resource-based view (Wiklund et al. 2009; Kor and Mahoney 2005); knowledge-based view (Zahra et al. 2009) - Agency theory (Boone et al. 2007; Kor and Mahoney 2005; Brunninge et al. 2007)	- Strategy and change: How do governance mechanisms affect the ability of SMEs to introduce strategic change (Brunninge et al. 2007)? - Board size: How is board size affected over time (Boone et al. 2007)? - Growth:

Table 8 (continued)

Time period	Most cited empirical studies	Theories	Themes and research questions
			What are the indirect effects that some constructs from one perspective might have on small business growth through constructs from another perspective (Wiklund et al. 2009)? - Innovation and entrepreneurship: How do threshold firms sustain corporate entrepreneurship (Zahra et al. 2009)? How do firms develop and maintain dynamic capabilities (Kor and Mahoney 2005)?
2000–2004	Hellmann and Puri (2002, 2073 citations) Schulze et al. (2001, 2056 citations) Westhead et al. (2001, 1109 citations) Zahra et al. (2000, 759 citations) Human and Provan (2000, 725 citations)	- Resource theories: resource-based view (Westhead et al. 2001) - Agency theory (Schulze et al. 2001; Zahra et al. 2000) - Institutional theory (Human and Provan 2000) - Financial intermediation theory (Hellmann and Puri 2002)	- The role of owner/founder manager: Does owner management necessarily eliminate the agency costs of ownership (Schulze et al. 2001)? - Internationalization: Can the characteristics of principal founders, businesses, and the external environment at one point in time be used to explain whether a firm is still an exporter or a non-exporter at a later date (Westhead et al. 2001)? - Innovation and entrepreneurship: How ownership and governance affect corporate entrepreneurship (Zahra et al. 2000)? - The role of social network: How do SME networks build legitimacy (Human and Provan 2000)? - The role of venture capitalists: What impact does venture capital have on development of new firms (Hellmann and Puri 2002)?
1995–1999	Eisenberg et al. (1998, 2252 citations) Sapienza et al. (1996, 922 citations) Thong and Yap (1995, 868 citations) Berry (1998, 326 citations) Fried et al. (1998, 302 citations)	- Resource theories: resource dependence theory (Sapienza et al. 1996) - Agency theory (Eisenberg et al. 1998; Sapienza et al. 1996; Fried et al. 1998) - Institutional theory (Fried et al. 1998) - Innovation theory (Thong and Yap 1995)	- Board size: Does board size affect financial performance (Eisenberg et al. 1998)? - Innovation and entrepreneurship: Why do small firms adapt slower to changing technological needs (Thong and Yap 1995)? Do managers of small firms operating in the turbulent environment of high tech industries bother to plan for the longer term (Berry 1998)? - The role of venture capitalists: Can VCs add value beyond the money they provide to their portfolio companies (Sapienza et al. 1996)? What is the difference between boards of venture capital-backed companies with the boards of other types of organizations (Fried et al. 1998)?

Table 8 (continued)

Time period	Most cited empirical studies	Theories	Themes and research questions
1990–1994	Davidsson (1991, 918 citations) Daily and Dalton (1992, 547 citations) Curran et al. 1993, 369 citations) Landström (1992, 121 citations) Huse (1994, 82 citations)	- Resource theories: social network theory (Curran et al. 1993) - Agency theory (Huse 1994; Landström 1992; Daily and Dalton 1992) - Psychological economics (Davidsson 1991)	- Growth: What determines entrepreneurship firm growth (Davidsson 1991)? How do CEOs and board of directors affect the growth and productivity of medium-sized businesses (Daily and Dalton 1992)? - Social network: How does networking affect the success of small businesses (Curran et al. 1993)? - Entrepreneurial financing: How are small firms financed in terms of private investors and equity capital (Landström 1992)? - Board-management relations: How are board-management relations best defined (Huse 1994)?
Pre-1990	Robinson (1982, 415 citations) Trow (1961, 217 citations) Rosenstein (1988, 193 citations) McGivern (1978, 115 citations)	- Strategic management theory (Robinson 1982) - Contingency theory (McGivern 1978)	- Venture capitalists: What is the impact of venture capital on the performance of board of directors in high technology firms (Rosenstein 1988)? - Outside directors: What is the value of "outsider-based" strategic planning for small firms (Rosenstein 1988)? - Management succession: What factors influence how well prepared a small company will be for succession in its top positions (Trow 1961)? What is the impact of management succession on firms' likelihood for financial failure among small firms (McGivern 1978)?

internal and external environment of entrepreneurial firms. Institutional theory, that was emergent in the field in the 1990s and beginning of the millennium, is also ripe for further development, for example, exploring how differences in the national environment (e.g., legal, cultural) lead to distinct entrepreneurial firms' corporate governance forms. A separate strand of institutional theory could explore the potential for isomorphism. For example, are there dominant corporate governance structures by ventures from particular incubators, serial entrepreneurs, or signpost stakeholders such as law and accounting firms? Upper echelon perspective can be used to further examine how TMT characteristics interact with ownership structure, board characteristics, and corporate governance mechanisms. Besides, team production theory (Machold et al. 2011) can also be applied on team and individual level of analysis in order to further understand how directors or/and top managers function as a team and how individual team member interacts with one another and what type of dynamics in entrepreneurial teams are associated with which organizational outcomes (cf. Zander et al. 2015).

The future offers possibilities to utilize new and more entrepreneurship grounded and applied theories and to develop a more comprehensive understanding of entrepreneurial firms' corporate governance mechanisms. For example, the emerging theory of corporate governance deviance (Aguilera et al. 2018) could be used to examine how entrepreneurial firms' corporate governance templates may deviate from national models. Real options reasoning (McGrath 1999) could be used to explore entrepreneurial firms' decisions in a corporate governance context. Furthermore, it is reasonable to believe that individual entrepreneurs' perceptions and behaviors mediate the effect of corporate governance on firm-level outcomes; however, the majority of our sample are firm-level studies that do not scrutinize individual behavior. A few research papers investigate how corporate governance can affect or be affected by directors' or entrepreneurs' perceptions and behaviors. We suggest that, to better understand this issue, future research use behavioral and psychological perspectives, such as schemata, social identity, and cognitive dissonance theories. One challenge with respect to individual- and team-level variables is the difficulty of making observations. Surveys can capture individual- and team-level variables, yet surveys' anonymous nature may make it infeasible to accurately measure firm-level outcomes at the same time. Therefore, it may be very demanding to test the association between corporate governance and human and team behaviors, and even more difficult to test the association between such behaviors and firm performance.

6.2 Research questions: future directions

We note a gap in the literature in that most studies address the outcomes of certain corporate governance characteristics. In recent years, an increasing number of studies simultaneously investigate the antecedents and the outcomes of entrepreneurial firms' corporate governance. Future researchers should pay close attention to potential contingencies or antecedents at all levels: individual, board, external stakeholder, firm, and environmental context. Our review also highlights that most empirical studies focus more on "who" is governing than on "how" to do it—extant research focuses on profile characteristics (e.g., VC ownership, family ownership, board size, outside directors, experience, and education). We encourage future researchers to explore behavioral characteristics (e.g., BSI, board roles, board meetings, and informal mechanism).

Many research papers on ownership structure specifically discuss a certain type of owner (e.g., VC owners, family owners, and founders), pointing to a need for future researchers to address the relationship and interaction between different types of owners. Scholars should explore whether there is coordination or conflicts between different types of owners, whether certain owners dominate the control of certain entrepreneurial firms, and that what will happen if they do. A related gap in the literature surrounds corporate governance stakeholders' decisions about whether or not to go public, or revise other ownership structures.

While the extant literature often discusses board composition, especially in terms of outside status, there are critical gaps around the relationship and interaction between different types of directors. We encourage future researchers to explore these relationships. Moreover, there is a need to examine other types of board composition such as gender, age, geographic location, prior experience, and social networks. Furthermore, given multiple board roles and limited board size, researchers out to explore: What entrepreneurial firm board composition structure will achieve the greatest level of efficiency and performance? Future researchers should build on our understanding that each type of director brings certain benefits and costs (including opportunity cost) to entrepreneurial firms, such as benefits from outside directors (e.g., Vandenbroucke et al. 2016) and inside directors (e.g., Kroll et al. 2007). Future researchers should go beyond examining the influence of a certain type of directors, such as TMT directors, VC-backed directors, or outside directors, and explore how various types of directors fit into the BOD and function as a team to direct entrepreneurial firm efficiently. This line of enquiry should explore both board profiles and behaviors should be scrutinized.

Top management characteristics are less frequently discussed than ownership structure and BOD. Based on our review, we suggest that future research extend Clarysse et al.'s (2007) findings about how TMT and BOD can cooperate and complement one another's skills and capabilities to more deeply address the relationship between TMT and BOD and explore the fit between them. Our review indicates that boards are entrepreneurs' potential "battlefield" against outsiders (e.g., Charas and Perelli 2013). A VC can shape a firm's HR policy and replace the founder with an outside CEO (Hellmann and Puri 2002). We caution that researchers may not identify a general "optimal" configuration of corporate governance for entrepreneurial firms, because contingency theory suggests that the effectiveness of certain configuration is contingent on various contextual factors, which we encourage future studies to take into consideration.

Inspired by previous literature, we propose several specific research directions in the third column of Table 6. We suggest that future research investigate the relations and interactions among various key players within entrepreneurial firms. For example, future research can examine dyadic relations of CEO and CFO as well as CEO and board chair to better understand the nature of board independence and dependence on the firm owners by examining the social ties between the owners and directors. This particular line of enquiry is emerging in other fields of strategy research. Moreover, researchers could venture into the processes between board and TMT that shape strategic actions in supra TMT (Finkelstein et al. 1996) constellations, as well as the complementarity or dissimilarity of board and TMT human and social capitals and its implications for entrepreneurial firms.

We also encourage researchers to examine the behaviors of key stakeholders in addition to their demographic characteristics. Given the trend of new ventures initiated by entrepreneurial teams (Jin et al. 2017), future research could explore how entrepreneurial team characteristics affect team process and in turn affect team effectiveness and efficiency. The studies could also look at different aspects of leadership of board, chair, CEO, or TMT and their relation to affect entrepreneurial firms functioning.

To better understand the outcome of corporate governance, future research can investigate alternative firm-level non-financial outcomes such as market orientation, and ambidexterity as well as venturing into sustainability reporting, and social performance. Future research can also investigate the impact of corporate governance at individual or team level. For example, future research can explore how corporate governance characteristics affect entrepreneurial team efficiency, managerial discretion, explorative or exploitative orientation, capital budgeting, and accounting choices. Future studies are expected to pay more attention to the antecedents of corporate governance. For example, researchers can investigate what affect board and TMT selection processes and how firms configure their governance in response to perceived or actual contextual discretion and public-private partnership constellation.

Future research can expand to topics that are not frequently discussed by previous CGEF literature. For example, descriptive studies can cast light on the exposure mechanisms in similar/dissimilar other board selections, the role of "good governance" discourse in entrepreneurial firms, and the conflict resolution role of the board in entrepreneurial firms. Besides, researchers are expected to pay more attention to managerial compensation as a governance mechanism, the role of managerial market, and the role of media.

6.3 Research settings: future directions

In the sample literature, most empirical studies are based on evidence from OECD countries, while only a few studies investigate corporate governance practice for entrepreneurial firms in emerging economies. We do not recommend simply replicating previous research and comparing cross country differences; we suggest that future studies take advantage of unique institutional factors in emerging economics, such as specific regulations, to extend the understanding of the antecedents of corporate governance.

Table 9 Suggested future research directions

Opportunities	Challenges
Theory	
Rediscover agency, resource, institutional perspectives Apply new theoretical lenses, e.g., governance deviance, team production theory Apply behavioral and psychological perspectives Focus on team and individual levels of analysis	May be difficult to observe individual- and team-level variables and link them to firm-level outcome variables
Research questions	
Explore relationship and interactions among various types of ownerships Extend research on board composition Further discuss the relationship between TMT and BOD, especially BOD with VC's or TMT's presence	May not be able to find "optimal" configuration Identify entrepreneurial firms' unique contingencies
Research setting	
Emerging economies Cultural characteristics Social entrepreneurship ventures Cross-country studies	Simple replication without understanding unique institutional factors Overemphasis on cultural difference
Research design	
SEM Non-linear regression Use of qualitative methods	Inadequate theoretical basis for model design Reinvent existing theories rather than emerging new ones

Furthermore, cultural characteristics from various countries and regions can be investigated so that researchers can better understand how corporate governance practice can be shaped by informal institutions. However, we caution against overemphasizing cultural differences and uniqueness, as we expect that various findings across various countries or regions can be explained with general theoretical frameworks. For example, "guanxi culture" is frequently addressed in China-based empirical studies (e.g., Braendle et al. 2005). In fact, "guanxi" simply means "social ties" or "relationship" in Chinese language. Therefore, there is no major difference between guanxi and concepts such as political connection (Ge et al. 2017), social network, and social capital (Szeto et al. 2006), which can be effectively explained by social network perspective (e.g., Zhou et al. 2007).

We also encourage future researchers to explore new settings such as entrepreneurial social enterprises which have their own unique corporate governance regulations. These types of firms emerge from both developed and emerging economies which could potentially provide an exciting setting for cross-country investigations.

6.4 Research designs: future directions

The sample literature exhibits a great variety of research designs. However, only a few studies use SEM to analyze survey data. We suggest that future studies take advantage of this method to capture the intertwined relationships between various corporate governance, outcome, and antecedent constructs. We also encourage researchers to use non-linear regression specifications to test non-monotonic relationships. However, we believe that every pathway of SEM or specification of regression equation should be grounded in complete theory-based development of hypotheses. We also encourage researchers to unpack the black box of firm governance by conducting qualitative studies of actual board discussions and actions. Few studies in our review rely on grounded theory, phenomenology, ethnography, and narrative, yet increasing number of recent corporate governance studies suggests that studies employing these methodologies can bring new insights into a relatively saturated field of studies (e.g., Fletcher et al. 2016; Boddy 2017) (Table 9).

7 Conclusion

Our systematic literature review of 137 published studies of corporate governance of entrepreneurial firms identifies 60 journal outlets and categorizes research into quantitative (87 papers), qualitative (23 papers), review (10 papers), and non-empirical (14 papers). We also identify 37 categories of theoretical perspectives, with agency and resource theories the most frequently used perspectives.

Most empirical research is based on evidence from OECD countries, while only a few papers use data from emerging economies. Studies employ a variety of regression methods. Notably, a few research papers use non-linear model to capture non-monotonic relationships. In addition, among the 50 quantitative survey studies, only 4 apply SEM method.

We also categorize research papers according to their research questions. Most research papers address the outcomes of certain corporate governance characteristics, while some papers address the antecedents of or the links between various corporate governance constructs. A few papers are merely descriptive or discuss some general issues. We categorize concepts into corporate governance characteristics, outcomes, and antecedents and find intertwined and mixed relationships among a variety of constructs.

On the basis of our literature review, we propose several directions for future research. We suggest that future studies use behavioral perspectives to better understand how corporate governance can affect or be affected by directors' or entrepreneurs' perceptions and behaviors. However, one challenge for this research direction is to observe individual- and team-level behavioral and perceptional variables and test their links to firm-level outcomes. We suggest that future studies switch focus from "who" is governing to "how" to do it (e.g., BSI, board roles, board meetings, and informal mechanism), and that more attention is needed on the relationships between various stakeholders within certain corporate governance structure. However, we believe researchers should use contingency perspectives rather than seek a general "optimal" governance structure for entrepreneurial firms. Finally, we suggest that future studies apply non-linear models and SEM to capture complex and intertwined relationship and/or employ qualitative method of inquiry. The former designs should be based on complete development of hypotheses based on well-established theoretical perspectives. The latter studies should aim at exploring and emerging new concepts and generating new theories, rather than being used as confirmatory studies.

Open Access This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made.

References

Abor, J., & Adjasi, C. K. (2007). Corporate governance and the small and medium enterprises sector: theory and implications. *Corporate Governance: The International Journal of Business in Society, 7*(2), 111–122. https://doi.org/10.1108/14720700710739769.

Aguilera, R. V., Judge, W. Q., & Terjesen, S. A. (2018). Corporate governance deviance. *Academy of Management Review, 43*(1), 87–109. https://doi.org/10.5465/amr.2014.0394.

Ahn, M. J. (2014). Enhancing corporate governance in high-growth entrepreneurial firms. *International Journal of Innovation and Technology Management, 11*(6). https://doi.org/10.1142/S0219877014500382.

Andersson, S., Gabrielsson, J., & Wictor, I. (2004). International activities in small firms: examining factors influencing the internationalization and export growth of small firms. *Canadian Journal of Administrative Sciences, 21*(1), 22–34. https://doi.org/10.1111/j.1936-4490.2004.tb00320.x.

Audretsch, D. B., & Lehmann, E. (2006). Entrepreneurial access and absorption of knowledge spillovers: strategic board and managerial composition for competitive advantage. *Journal of Small Business Management, 44*(2), 155–166. https://doi.org/10.1111/j.1540-627X.2006.00161.x.

Audretsch, D. B., & Lehmann, E. (2014). Corporate governance and entrepreneurial firms. *Foundations and Trends in Entrepreneurship, 10*(1–2), 1–160. https://doi.org/10.1561/0300000037.

Banham, H., & He, Y. (2010). SME governance: converging definitions and expanding expectations. *International Business & Economics Research Journal, 9*(2), 77–82. https://doi.org/10.19030/iber.v9i2.524.

Barnes, L. (2007). One size doesn't fit all: a review of corporate governance guidelines with a SME perspective. *International Review of Business Research Papers, 3*(2), 27–40.

Barrow, C. (2001). The role of non-executive directors in high tech SMEs. *Corporate Governance: The International Journal of*

Business in Society, 1(2), 34–36. https://doi.org/10.1108/EUM0000000005488.

Basly, S. (2007). The internationalization of family SME: an organizational learning and knowledge development perspective. *Baltic Journal of Management, 2*(2), 154–180. https://doi.org/10.1108/17465260710750973.

Becheikh, N., Landry, R., & Amara, N. (2006). Lessons from innovation empirical studies in the manufacturing sector: a systematic review of the literature from 1993–2003. *Technovation, 26*(5–6), 644–664. https://doi.org/10.1016/j.technovation.2005.06.016.

Bell, R. G., Filatotchev, I., & Aguilera, R. V. (2014). Corporate governance and investors' perceptions of foreign IPO value: an institutional perspective. *Academy of Management Journal, 57*(1), 301–320. https://doi.org/10.5465/amj.2011.0146.

Bellavitis, C., Filatotchev, I., Kamuriwo, D. S., & Vanacker, T. (2017). Entrepreneurial finance: new frontiers of research and practice. *Venture Capital, 19*(1–2), 1–16. https://doi.org/10.1080/13691066.2016.1259733.

Bennett, R. J., & Robson, P. J. A. (2004). The role of boards of directors in small and medium-sized firms. *Journal of Small Business and Enterprise Development, 11*(1), 95–113. https://doi.org/10.1108/14626000410519137.

Benson, D. F., Brau, J. C., Cicon, J., & Ferris, S. P. (2015). Strategically camouflaged corporate governance in IPOs: entrepreneurial masking and impression management. *Journal of Business Venturing, 30*(6), 839–864. https://doi.org/10.1016/j.jbusvent.2015.03.001.

Berry, M. (1998). Strategic planning in small high tech companies. *Long Range Planning, 31*(3), 455–466. https://doi.org/10.1016/S0024-6301(98)80012-5.

Bertoni, F., Meoli, M., & Vismara, S. (2014). Board independence, ownership structure and the valuation of IPOs in continental Europe. *Corporate Governance: An International Review, 22*(2), 116–131. https://doi.org/10.1111/corg.12051.

Bjørnåli, E. S., Knockaert, M., & Erikson, T. (2016). The impact of top management team characteristics and board service involvement on team effectiveness in high-tech start-ups. *Long Range Planning, 49*(4), 447–463. https://doi.org/10.1016/j.lrp.2015.12.014.

Blair, M. M., & Stout, L. A. (1999). A team production theory of corporate law. *Virginia Law Review, 82*(2), 247–328 10.2139/ssrn.425500.

Bocquet, R., & Mothe, C. (2010). Knowledge governance within clusters: the case of small firms. *Knowledge Management Research & Practice, 8*(3), 229–239. https://doi.org/10.1057/kmrp.2010.14.

Boddy, C. R. (2017). Psychopathic leadership a case study of a corporate psychopath CEO. *Journal of Business Ethics, 145*(1), 141–156. https://doi.org/10.1007/s10551-015-2908-6.

Boone, C., Brabander, B., & Witteloostuijn, A. (1996). CEO locus of control and small firm performance: an integrative framework and empirical test. *Journal of Management Studies, 33*(5), 667–700. https://doi.org/10.1111/j.1467-6486.1996.tb00814.x.

Boone, A. L., Field, L. C., Karpoff, J. M., & Raheja, C. G. (2007). The determinants of corporate board size and composition: an empirical analysis. *Journal of Financial Economics, 85*(1), 66–101. https://doi.org/10.1016/j.jfineco.2006.05.004.

Braendle, U. C., Gasser, T., & Noll, J. (2005). Corporate governance in China: is economic growth potential hindered by guanxi? *Business and Society Review, 110*(4), 389–405. https://doi.org/10.1111/j.0045-3609.2005.00022.x.

Broughman, B. (2010). Investor opportunism and governance in venture capital. *Venture capital: Investment strategies, structures, and policies, Robert W. Kolb series in finance,* 347–364.

Brumana, M., Minola, T., Garrett, R. P., & Digan, S. P. (2017). How do family firms launch new businesses? A developmental perspective on internal corporate venturing in family business. *Journal of Small Business Management, 55*(4), 594–613. https://doi.org/10.1111/jsbm.12344.

Brunninge, O., & Nordqvist, M. (2004). Ownership structure, board composition and entrepreneurship: evidence from family firms and venture-capital-backed firms. *International Journal of Entrepreneurial Behavior & Research, 10*(1/2), 85–105. https://doi.org/10.1108/13552550410521399.

Brunninge, O., Nordqvist, M., & Wiklund, J. (2007). Corporate governance and strategic change in SMEs: the effects of ownership, board composition and top management teams. *Small Business Economics, 29*(3), 295–308. https://doi.org/10.1007/s11187-006-9021-2.

Calabrò, A., & Mussolino, D. (2013). How do boards of directors contribute to family SME export intensity? The role of formal and informal governance mechanisms. *Journal of Management & Governance, 17*(2), 363–403. https://doi.org/10.1007/s10997-011-9180-7.

Calabrò, A., Campopiano, G., Basco, R., & Pukall, T. (2017). Governance structure and internationalization of family-controlled firms: the mediating role of international entrepreneurial orientation. *European Management Journal, 35*(2), 238–248. https://doi.org/10.1016/j.emj.2016.04.007.

Certo, S. T., Covin, J. G., Daily, C. M., & Dalton, D. R. (2001). Wealth and the effects of founder management among IPO-stage new ventures. *Strategic Management Journal, 22*(6–7), 641–658. https://doi.org/10.1002/smj.182.

Charas, S., & Perelli, S. (2013). Threats to board stability: understanding SME director behavior. *International Journal of Disclosure and Governance, 10*(2), 175–191. https://doi.org/10.1057/jdg.2013.10.

Charreaux, G. (1997). Vers une théorie du gouvernement des enterprises. In G. Charreaux (Ed.), *Le Gouvernement des entreprises: Corporate governance, theories and faits*. Paris: Economica.

Chemmanur, T. J., & Fulghieri, P. (2013). Entrepreneurial finance and innovation: an introduction and agenda for future research. *Review of Financial Studies, 27*(1), 1–19. https://doi.org/10.1093/rfs/hht063.

Chen, Q., Hou, W., Li, W., Wilson, C., & Wu, Z. (2014). Family control, regulatory environment, and the growth of entrepreneurial firms: international evidence. *Corporate Governance: An International Review, 22*(2), 132–144. https://doi.org/10.1111/corg.12060.

Claessens, S., & Yurtoglu, B. B. (2013). Corporate governance in emerging markets: a survey. *Emerging Markets Review, 15*, 1–33. https://doi.org/10.2139/ssrn.1988880.

Clarysse, B., Knockaert, M., & Lockett, A. (2007). Outside board members in high tech start-ups. *Small Business Economics, 29*(3), 243–259. https://doi.org/10.1007/s11187-006-9033-y.

Collinson, S., & Gregson, G. (2003). Knowledge networks for new technology–based firms: an international comparison of local entrepreneurship promotion. *R&D Management, 33*(2), 189–208. https://doi.org/10.1111/1467-9310.00292.

Colombo, M. G., & Grilli, L. (2010). On growth drivers of high-tech start-ups: exploring the role of founders' human capital and venture capital. *Journal of Business Venturing, 25*(6), 610–626. https://doi.org/10.1016/j.jbusvent.2009.01.005.

Colombo, M. G., Croce, A., & Murtinu, S. (2014). Ownership structure, horizontal agency costs and the performance of high-tech entrepreneurial firms. *Small Business Economics, 42*(2), 265–282. https://doi.org/10.1007/s11187-013-9483-y.

Coulson-Thomas, C. (2007). SME directors and boards: the contribution of directors and boards to the growth and development of small and medium-sized enterprises. *International Journal of Business Governance and Ethics, 3*(3), 250–261. https://doi.org/10.1504/IJBGE.2007.014316.

Cowling, M. (2003). Productivity and corporate governance in smaller firms. *Small Business Economics, 20*(4), 335–344. https://doi.org/10.1023/A:1022931020438.

Crossan, M. M., & Apaydin, M. (2010). A multi-dimensional framework of organizational innovation: a systematic review of the literature. *Journal of Management Studies, 47*(6), 1154–1191. https://doi.org/10.1111/j.1467-6486.2009.00880.x.

Curran, J., Jarvis, R., Blackburn, R. A., & Black, S. (1993). Networks and small firms: constructs, methodological strategies and some findings. *International Small Business Journal, 11*(2), 13–25. https://doi.org/10.1177/026624269301100202.

Daily, C. M., & Dalton, D. R. (1992). The relationship between governance structure and corporate performance in entrepreneurial firms. *Journal of Business Venturing, 7*(5), 375–386. https://doi.org/10.1016/0883-9026(92)90014-I.

Daily, C. M., McDougall, P. P., Covin, J. G., & Dalton, D. R. (2002). Governance and strategic leadership in entrepreneurial firms. *Journal of Management, 28*(3), 387–412. https://doi.org/10.1016/S0149-2063(02)00133-2.

Daily, C. M., Dalton, D. R., & Cannella, A. A. (2003). Corporate governance: decades of dialogue and data. *Academy of Management Review, 28*(3), 371–382. https://doi.org/10.5465/amr.2003.10196703.

Dalton, D. R., Daily, C. M., Johnson, J. L., & Ellstrand, A. E. (1999). Number of directors and financial performance: a meta-analysis. *Academy of Management journal*, 42(6), 674–686.

Davidsson, P. (1991). Continued entrepreneurship: ability, need, and opportunity as determinants of small firm growth. *Journal of Business Venturing, 6*(6), 405–429. https://doi.org/10.1016/0883-9026(91)90028-C.

Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management Review, 22*(1), 20–47. https://doi.org/10.2307/259223.

Deakins, D., O'Neill, E., & Mileham, P. (2000a). Executive learning in entrepreneurial firms and the role of external directors. *Education + Training, 42*(4/5), 317–325. https://doi.org/10.1108/00400910010347795.

Deakins, D., O'Neill, E., & Mileham, P. (2000b). The role and influence of external directors in small, entrepreneurial companies: some evidence on VC and non-VC appointed external directors. *Venture Capital: An International Journal of Entrepreneurial Finance, 2*(2), 111–127. https://doi.org/10.1080/136910600295738.

Deb, P., & Wiklund, J. (2017). The effects of CEO founder status and stock ownership on entrepreneurial orientation in small firms. *Journal of Small Business Management, 55*(1), 32–55. https://doi.org/10.1111/jsbm.12231.

Deutsch, Y., & Ross, T. W. (2003). You are known by the directors you keep: reputable directors as a signaling mechanism for young firms. *Management Science, 49*(8), 1003–1017. https://doi.org/10.1287/mnsc.49.8.1003.16399.

Donaldson, L., & Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. *Australian Journal of Management, 16*(1), 49–64. https://doi.org/10.1177/031289629101600103.

Drover, W., Busenitz, L., Matusik, S., Townsend, D., Anglin, A., & Dushnitsky, G. (2017). A review and road map of entrepreneurial equity financing research: venture capital, corporate venture capital, angel investment, crowdfunding, and accelerators. *Journal of Management, 43*(6), 1820–1853. https://doi.org/10.1177/0149206317690584.

Eisenberg, T., Sundgren, S., & Wells, M. T. (1998). Larger board size and decreasing firm value in small firms. *Journal of Financial Economics, 48*(1), 35–54. https://doi.org/10.1016/S0304-405X(98)00003-8.

Escribá-Esteve, A., Sánchez-Peinado, L., & Sánchez-Peinado, E. (2009). The influence of top management teams in the strategic orientation and performance of small and medium-sized enterprises. *British Journal of Management, 20*(4), 581–597. https://doi.org/10.1111/j.1467-8551.2008.00606.x.

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics, 26*(2), 301–325. https://doi.org/10.1086/467037.

Farag, H., Mallin, C., & Ow-Yong, K. (2014). Governance, ownership structure, and performance of entrepreneurial IPOs in AIM companies. *Corporate Governance: An International Review, 22*(2), 100–115. https://doi.org/10.1111/corg.12049.

Fiegener, M. K. (2005). Determinants of board participation in the strategic decisions of small corporations. *Entrepreneurship Theory and Practice, 29*(5), 627–650. https://doi.org/10.1111/j.1540-6520.2005.00101.x.

Filatotchev, I. (2006). Effects of executive characteristics and venture capital involvement on board composition and share ownership in IPO firms. *British Journal of Management, 17*(1), 75–92. https://doi.org/10.1111/j.1467-8551.2005.00455.x.

Finkelstein, S., Hambrick, D. C., & Cannella, A. A. (1996). Strategic leadership. *St. Paul,* Minn.: West.

Fletcher, D., De Massis, A., & Nordqvist, M. (2016). Qualitative research practices and family business scholarship: a review and future research agenda. *Journal of Family Business Strategy, 7*(1), 8–25. https://doi.org/10.1016/j.jfbs.2015.08.001.

Fried, V. H., Bruton, G. D., & Hisrich, R. D. (1998). Strategy and the board of directors in venture capital-backed firms. *Journal of Business Venturing, 13*(6), 493–503. https://doi.org/10.1016/S0883-9026(97)00062-1.

Gabrielsson, J. (2007a). Correlates of board empowerment in small companies. *Entrepreneurship: Theory and Practice, 31*(5), 687–711. https://doi.org/10.1111/j.1540-6520.2007.00195.x.

Gabrielsson, J. (2007b). Boards of directors and entrepreneurial posture in medium-size companies: putting the board demography approach to a test. *International Small Business Journal, 25*(5), 511–537. https://doi.org/10.1177/0266242607080657.

Gabrielsson, J. (2017). Corporate governance and entrepreneurship: current states and future directions. In *Handbook of research on corporate governance and entrepreneurship* (pp. 3–26). Edward Elgar Publishing. https://doi.org/10.4337/9781782545569.00007.

Gabrielsson, J., & Huse, M. (2002). The venture capitalist and the board of directors in SMEs: roles and processes. *Venture Capital: An International Journal of Entrepreneurial Finance, 4*(2), 125–146. https://doi.org/10.1080/13691060110094397.

Gabrielsson, J., & Huse, M. (2005). Outside directors in SME boards: a call for theoretical reflections. *Corporate board: Role, duties and composition, 1*(1), 28–37. https://doi.org/10.22495/cbv1i1art3.

Garg, S. (2013). Venture boards: distinctive monitoring and implications for firm performance. *Academy of Management Review, 38*(1), 90–108. https://doi.org/10.5465/amr.2010.0193.

Garg, S. (2014). Microfoundations of board monitoring: the case of entrepreneurial firms. *Academy of Management Review, 39*(1), 114–117. https://doi.org/10.5465/amr.2013.0190.

Garg, S., & Eisenhardt, K. M. (2017). Unpacking the CEO–board relationship: how strategy making happens in entrepreneurial firms. *Academy of Management Journal, 60*(5), 1828–1858. https://doi.org/10.5465/amj.2014.0599.

Garg, S., & Furr, N. (2017). Venture boards: past insights, future directions, and transition to public firm boards. *Strategic Entrepreneurship Journal, 11*(3), 326–343. https://doi.org/10.1002/sej.1258.

Ge, J., Stanley, L. J., Eddleston, K., & Kellermanns, F. W. (2017). Institutional deterioration and entrepreneurial investment: the role of political connections. *Journal of Business Venturing, 32*(4), 405–419. https://doi.org/10.1016/j.jbusvent.2017.04.002.

Gerasymenko, V., De Clercq, D., & Sapienza, H. J. (2015). Changing the business model: effects of venture capital firms and outside CEOs on portfolio company performance. *Strategic Entrepreneurship Journal, 9*(1), 79–98. https://doi.org/10.1002/sej.1189.

Gerdin, J., & Greve, J. (2004). Forms of contingency fit in management accounting research—a critical review. *Accounting, Organizations and Society, 29*(3–4), 303–326. https://doi.org/10.1016/S0361-3682(02)00096-X.

Ghobadian, A., & O'Regan, N. (2006). The impact of ownership on small firm behaviour and performance. *International Small Business Journal, 24*(6), 555–586. https://doi.org/10.1177/0266242606069267.

Gordon, I. M., Hrazdil, K., & Shapiro, D. (2012). Corporate governance in publicly traded small firms: a study of Canadian venture exchange companies. *Business Horizons, 55*(6), 583–591. https://doi.org/10.1016/j.bushor.2012.07.005.

Grundei, J., & Talaulicar, T. (2002). Company law and corporate governance of start-ups in Germany: legal stipulations, managerial requirements, and modification strategies. *Journal of Management and Governance, 6*(1), 1–27. https://doi.org/10.1023/A:1015559828219.

Hankinson, A., Bartlett, D., & Ducheneaut, B. (1997). The key factors in the small profiles of small-medium enterprise owner-managers that influence business performance: the UK (Rennes) SME survey 1995-1997. *International Journal of Entrepreneurial Behavior & Research, 3*(3), 168–175. https://doi.org/10.1108/13552559710190421.

Hansen, B., & Hamilton, R. T. (2011). Factors distinguishing small firm growers and non-growers. *International Small Business Journal, 29*(3), 278–294. https://doi.org/10.1177/0266242610381846.

Hellerstedt, K., Aldrich, H.E., & Wiklund, J. (2007). The impact of past performance on the exit of team members in young firms: the role of team composition. *Frontiers of Entrepreneurship Research*, 27(11), Acticle 2.

Hellmann, T., & Puri, M. (2002). Venture capital and the professionalization of start-up firms: empirical evidence. *The Journal of Finance, 57*(1), 169–197. https://doi.org/10.1111/1540-6261.00419.

Human, S. E., & Provan, K. G. (2000). Legitimacy building in the evolution of small-firm multilateral networks: a comparative study of success and demise. *Administrative Science Quarterly, 45*(2), 327–365. https://doi.org/10.2307/2667074.

Huse, M. (1994). Board-management relations in small firms: the paradox of simultaneous independence and interdependence. *Small Business Economics, 6*(1), 55–72. https://doi.org/10.1007/BF01066112.

Huse, M. (2000). Boards of directors in SMEs: a review and research agenda. *Entrepreneurship & Regional Development, 12*(4), 271–290. https://doi.org/10.1080/08985620050177912.

Huse, M. (2007). *Boards, governance and value creation. Boards, governance and value creation: the human side of corporate governance*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511611070.

Huse, M., & Zattoni, A. (2008). Trust, firm life cycle, and actual board behavior: evidence from "one of the lads" in the board of three small firms. *International Studies of Management & Organization, 38*(3), 71–97. https://doi.org/10.2753/IMO0020-8825380303.

Jackson, S. E., Joshi, A., & Erhardt, N. L. (2003). Recent research on team and organizational diversity: SWOT analysis and implications. *Journal of Management, 29*(6), 801–830. https://doi.org/10.1016/S0149-2063_03_00080-1.

Jensen, M. C. (1994). Self-interest, altruism, incentives, and agency theory. *Journal of Applied Corporate Finance, 7*(2), 40–45. https://doi.org/10.1111/j.1745-6622.1994.tb00404.x.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X.

Jin, L., Madison, K., Kraiczy, N. D., Kellermanns, F. W., Crook, T. R., & Xi, J. (2017). Entrepreneurial team composition characteristics and new venture performance: a meta-analysis. *Entrepreneurship Theory and Practice, 41*(5), 743–771. https://doi.org/10.5465/ambpp.2014.10266abstract.

Joe Ueng, C., Wells, D. W., & Lilly, J. D. (2000). CEO influences and executive compensation: large firms vs. small firms. *Managerial Finance, 26*(8), 3–12. https://doi.org/10.1108/03074350010766800.

Judge, W. Q., Hu, H. W., Gabrielsson, J., Talaulicar, T., Witt, M. A., Zattoni, A., et al. (2015a). Configurations of capacity for change in entrepreneurial threshold firms: imprinting and strategic choice perspectives. *Journal of Management Studies, 52*(4), 506–530. https://doi.org/10.1111/joms.12121.

Judge, W. Q., Witt, M. A., Zattoni, A., Talaulicar, T., Chen, J. J., Lewellyn, K., et al. (2015b). Corporate governance and IPO underpricing in a cross-national sample: a multilevel knowledge-based view. *Strategic Management Journal, 36*(8), 1174–1185.

Kaufman, A., & Englander, E. (2005). A team production model of corporate governance. *Academy of Management Executive, 19*(3), 9–22. https://doi.org/10.5465/ame.2005.18733212.

Keasey, K., Short, H., & Watson, R. (1994). Directors' ownership and the performance of small and medium sized firms in the UK. *Small Business Economics, 6*(3), 225–236. https://doi.org/10.1007/BF01108290.

Klotz, A. C., Hmieleski, K. M., Bradley, B. H., & Busenitz, L. W. (2014). New venture teams: a review of the literature and roadmap for future research. *Journal of Management, 40*(1), 226–255. https://doi.org/10.1177/0149206313493325.

Knockaert, M., Bjørnåli, E. S., & Erikson, T. (2015). Joining forces: top management team and board chair characteristics as antecedents of board service involvement. *Journal of Business Venturing, 30*(3), 420–435. https://doi.org/10.1016/j.jbusvent.2014.05.001.

Kor, Y. Y., & Mahoney, J. T. (2005). How dynamics, management, and governance of resource deployments influence firm-level performance. *Strategic Management Journal, 26*(5), 489–496.

Kor, Y. Y., & Misangyi, V. F. (2008). Outside directors' industry-specific experience and firms' liability of newness. *Strategic Management Journal, 29*(12), 1345–1355.

Krause, R., & Bruton, G. (2014). Agency and monitoring clarity on venture boards of directors. *Academy of Management Review, 39*(1), 111–114. https://doi.org/10.5465/amr.2013.0032.

Kroll, M., Walters, B. A., & Le, S. A. (2007). The impact of board composition and top management team ownership structure on post-IPO performance in young entrepreneurial firms. *Academy of Management Journal, 50*(5), 1198–1216. https://doi.org/10.5465/amj.2007.20159920.

Landström, H. (1990). Co-operation between venture capital companies and small firms. *Entrepreneurship & Regional Development, 2*(4), 345–362. https://doi.org/10.1080/08985629000000022.

Landström, H. (1992). The relationship between private investors and small firms: an agency theory approach. *Entrepreneurship & Regional Development, 4*(3), 199–223. https://doi.org/10.1080/08985629200000012.

Le Breton-Miller, I., Miller, D., & Bares, F. (2015). Governance and entrepreneurship in family firms: agency, behavioral agency and resource-based comparisons. *Journal of Family Business Strategy, 6*(1), 58–62. https://doi.org/10.1016/j.jfbs.2014.10.002.

Liao, W. M., Lu, C. C., & Wang, H. (2014). Venture capital, corporate governance, and financial stability of IPO firms. *Emerging Markets Review, 18*, 19–33. https://doi.org/10.1016/j.ememar.2013.11.002.

Lynall, M. D., Golden, B. R., & Hillman, A. J. (2003). Board composition from adolescence to maturity: a multitheoretic view. *Academy of Management Review, 28*(3), 416–431. https://doi.org/10.5465/amr.2003.10196743.

Machold, S., Huse, M., Minichilli, A., & Nordqvist, M. (2011). Board leadership and strategy involvement in small firms: a team production approach. *Corporate Governance: An International Review, 19*(4), 368–383. https://doi.org/10.1111/j.1467-8683.2011.00852.x.

Misangyi, V. F., & Acharya, A. G. (2014). Substitutes or complements? A configurational examination of corporate governance mechanisms. *Academy of Management Journal*, 57(6), 1681–1705.

McGivern, C. (1978). The dynamics of management succession: a model of chief executive succession in the small family firm. *Management Decision, 16*(1), 32–42. https://doi.org/10.1111/j.1741-6248.1989.tb00007.x.

McGrath, R. G. (1999). Falling forward: real options reasoning and entrepreneurial failure. *Academy of Management Review, 24*(1), 13–30. https://doi.org/10.5465/amr.1999.1580438.

Monks, R. A. G., & Minow, N. (Eds.). (2012). Corporate governance (5th edition). Hoboken, NJ: Wiley. 10.1002/9781119207238

Neville, M. (2011). The role of boards in small and medium sized firms. *Corporate Governance: The International Journal of Business in Society, 11*(5), 527–540. https://doi.org/10.1108/14720701111176948.

Nielsen, S. (2010). Top management team diversity: a review of theories and methodologies. *International Journal of Management Reviews, 12*(3), 301–316. https://doi.org/10.1111/j.1468-2370.2009.00263.x.

Ocasio, W. (1997). Towards an attention-based view of the firm. *Strategic Management Journal, 18*(SI), 187–206.

Omri, W., Becuwe, A., & Mathe, J. C. (2014). Ownership structure and innovative behavior: testing the mediatory role of board composition. *Journal of Accounting in Emerging Economies, 4*(2), 220–239. https://doi.org/10.1108/JAEE-07-2012-0033.

Paul, S., Whittam, G., & Wyper, J. (2007). The pecking order hypothesis: does it apply to start-up firms? *Journal of Small Business and Enterprise Development, 14*(1), 8–21.

Pittaway, L., & Cope, J. (2007). Entrepreneurship education: a systematic review of the evidence. *International Small Business Journal, 25*(5), 479–510. https://doi.org/10.1177/0266242607080656.

Pollman, E. (2014). Team production theory and private company boards. *Seattle University Law Review, 38*(16), 626–634 10.1108/14626000710727854.

Pollock, T. G., Chen, G., Jackson, E. M., & Hambrick, D. C. (2010). How much prestige is enough? Assessing the value of multiple types of high-status affiliates for young firms. *Journal of Business Venturing, 25*(1), 6–23. https://doi.org/10.1016/j.jbusvent.2009.01.003.

Pugliese, A., & Wenstøp, P. Z. (2007). Board members' contribution to strategic decision-making in small firms. *Journal of Management & Governance, 11*(4), 383–404. https://doi.org/10.1007/s10997-007-9036-3.

Robinson, R. B. (1982). The importance of "outsiders" in small firm strategic planning. *Academy of Management Journal, 25*(1), 80–93.

Rosa, P. (1999). The prevalence of multiple owners and directors in the SME sector: implications for our understanding of start-up and growth. *Entrepreneurship & Regional Development, 11*(1), 21–37. https://doi.org/10.1080/089856299283272.

Rosenstein, J. (1988). The board and strategy: venture capital and high technology. *Journal of Business Venturing, 3*(2), 159–170. https://doi.org/10.1016/0883-9026(88)90024-9.

Sadler-Smith, E., Hampson, Y., Chaston, I., & Badger, B. (2003). Managerial behavior, entrepreneurial style, and small firm performance. *Journal of Small Business Management, 41*(1), 47–67. https://doi.org/10.1111/1540-627X.00066.

Sapienza, H. J., Manigart, S., & Vermeir, W. (1996). Venture capitalist governance and value added in four countries. *Journal of Business Venturing, 11*(6), 439–469. https://doi.org/10.1016/S0883-9026(96)00052-3.

Sapienza, H. J., Audrey Korsgaard, M., Goulet, P. K., & Hoogendam, J. P. (2000). Effects of agency risks and procedural justice on board processes in venture capital-backed firms. *Entrepreneurship & Regional Development, 12*(4), 331–351. https://doi.org/10.1080/08985620050177949.

Schiehll, E., Ahmadjian, C., & Filatotchev, I. (2014). National governance bundles perspective: understanding the diversity of corporate governance practices at the firm and country levels. *Corporate Governance: An International Review*, 22(3), 179–184.

Schoonhoven, C. B. (1981). Problems with contingency theory: testing assumptions hidden within the language of contingency theory. *Administrative Science Quarterly, 26*(3), 349–377. https://doi.org/10.2307/2392512.

Schulze, W. S., Lubatkin, M. H., Dino, R. N., & Buchholtz, A. K. (2001). Agency relationships in family firms: theory and evidence. *Organization Science, 12*(2), 99–116. https://doi.org/10.1287/orsc.12.2.99.10114.

Sciascia, S., Mazzola, P., Astrachan, J. H., & Pieper, T. M. (2013). Family involvement in the board of directors: effects on sales internationalization. *Journal of Small Business Management, 51*(1), 83–99. https://doi.org/10.1111/j.1540-627X.2012.00373.x.

Scott, W. R. (1995). *Institutions and organizations. Foundations for organizational science*. London: Sage.

Spence, L. J., & Rutherfoord, R. (2001). Social responsibility, profit maximisation and the small firm owner-manager. *Journal of Small Business and Enterprise Development, 8*(2), 126–139. https://doi.org/10.1108/EUM0000000006818.

Stam, W., Arzlanian, S., & Elfring, T. (2014). Social capital of entrepreneurs and small firm performance: a meta-analysis of contextual and methodological moderators. *Journal of Business Venturing, 29*(1), 152–173. https://doi.org/10.1016/j.jbusvent.2013.01.002.

Steier, L., & Greenwood, R. (1995). Venture capitalist relationships in the deal structuring and post-investment stages of new firm creation. *Journal of Management Studies, 32*(3), 337–357. https://doi.org/10.1111/j.1467-6486.1995.tb00779.x.

Storey, D. J. (2004). Exploring the link, among small firms, between management training and firm performance: a comparison between the UK and other OECD countries. *The International Journal of Human Resource Management, 15*(1), 112–130. https://doi.org/10.1080/0958519032000157375.

Stratmann, T., & Verret, J. W. (2012). Does shareholder proxy access damage share value in small publicly traded companies? *Stanford Law Review, 64*(6), 1431–1468.

Szeto, R., Wright, P. C., & Cheng, E. (2006). Business networking in the Chinese context: its role in the formation of guanxi, social capital and ethical foundations. *Management Research News, 29*(7), 425–438. https://doi.org/10.1108/01409170610690880.

Teksten, E. L., Moser, S. B., & Elbert, D. J. (2005). Boards of directors for small businesses and small private corporations: the changing role, duties and expectations. *Management Research News, 28*(7), 50–68. https://doi.org/10.1108/01409170510784887.

Terjesen, S., Hessels, J., & Li, D. (2016). Comparative international entrepreneurship: a review and research agenda. *Journal of Management, 42*(1), 299–344. https://doi.org/10.1177/0149206313486259.

Theng, L. G., & Boon, J. L. W. (1996). An exploratory study of factors affecting the failure of local small and medium enterprises. *Asia Pacific Journal of Management, 13*(2), 47–61. https://doi.org/10.1007/BF01733816.

Thong, J. Y., & Yap, C. S. (1995). CEO characteristics, organizational characteristics and information technology adoption in small businesses. *Omega, 23*(4), 429–442. https://doi.org/10.1016/0305-0483(95)00017-I.

Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management, 14*(3), 207–222. https://doi.org/10.1111/1467-8551.00375.

Trow, D. B. (1961). Executive succession in small companies. *Administrative Science Quarterly, 6*(2), 228–239. https://doi.org/10.1177/014920639402000204.

Tykvová, T., & Schertler, A. (2014). Does syndication with local venture capitalists moderate the effects of geographical and institutional distance? *Journal of International Management, 20*(4), 406–420. https://doi.org/10.1016/j.intman.2014.09.001.

Van den Heuvel, J., Van Gils, A., & Voordeckers, W. (2006). Board roles in small and medium-sized family businesses: performance and importance. *Corporate Governance: An International Review, 14*(5), 467–485. https://doi.org/10.1111/j.1467-8683.2006.00519.x.

Van Gils, A. (2005). Management and governance in Dutch SMEs. *European Management Journal, 23*(5), 583–589. https://doi.org/10.1016/j.emj.2005.09.013.

Vanacker, T., Heughebaert, A., & Manigart, S. (2014). Institutional frameworks, venture capital and the financing of European new technology-based firms. *Corporate Governance: An International Review, 22*(3), 199–215. https://doi.org/10.1111/corg.12046.

Vandenbroucke, E., Knockaert, M., & Ucbasaran, D. (2016). Outside board human capital and early stage high-tech firm performance. *Entrepreneurship Theory and Practice, 40*(4), 759–779. https://doi.org/10.1111/etap.12141.

Vandenbroucke, E., Knockaert, M., & Ucbasaran, D. (2017). The relationship between top management team–outside board conflict and outside board service involvement in high-tech start-ups. *Journal of Small Business Management*. https://doi.org/10.1111/jsbm.12338/full.

Westhead, P., & Storey, D. (1996). Management training and small firm performance: why is the link so weak? *International Small Business Journal, 14*(4), 13–24. https://doi.org/10.1177/0266242696144001.

Westhead, P., Wright, M., & Ucbasaran, D. (2001). The internationalization of new and small firms: a resource-based view. *Journal of Business Venturing, 16*(4), 333–358. https://doi.org/10.1016/S0883-9026(99)00063-4.

Wiklund, J., Patzelt, H., & Shepherd, D. A. (2009). Building an integrative model of small business growth. *Small Business Economics, 32*(4), 351–374. https://doi.org/10.1007/s11187-007-9084-8.

Wincent, J., Anokhin, S., & Boter, H. (2009). Network board continuity and effectiveness of open innovation in Swedish strategic small-firm networks. *R&D Management, 39*(1), 55–67. https://doi.org/10.1111/j.1467-9310.2008.00539.x.

Wincent, J., Anokhin, S., & Örtqvist, D. (2010). Does network board capital matter? A study of innovative performance in strategic SME networks. *Journal of Business Research, 63*(3), 265–275. https://doi.org/10.1016/j.jbusres.2009.03.012.

Wirtz, P. (2011). The cognitive dimension of corporate governance in fast growing entrepreneurial firms. *European Management Journal, 29*(6), 431–447. https://doi.org/10.1016/j.emj.2011.06.004.

Wu, Z., Chua, J. H., & Chrisman, J. J. (2007). Effects of family ownership and management on small business equity financing. *Journal of Business Venturing, 22*(6), 875–895. https://doi.org/10.1016/j.jbusvent.2006.07.002.

Zander, L., Butler, C. L., Mockaitis, A. I., Herbert, K., Lauring, J., Mäkelä, K., Paunova, M., Umans, T. & Zettinig, P. (2015). *Team-based global organizations: The future of global organizing. In The Future of Global Organizing* (pp. 227–243). Emerald Group Publishing Limited.

Zahra, S. A. (2014). Public and corporate governance and young global entrepreneurial firms. *Corporate Governance: An International Review, 22*(2), 77–83. https://doi.org/10.1111/corg.12059.

Zahra, S. A., & Filatotchev, I. (2004). Governance of the entrepreneurial threshold firm: a knowledge-based perspective. *Journal of Management Studies, 41*(5), 885–897. https://doi.org/10.1111/j.1467-6486.2004.00458.x.

Zahra, S. A., Neubaum, D. O., & Huse, M. (2000). Entrepreneurship in medium-size companies: exploring the effects of ownership and governance systems. *Journal of Management, 26*(5), 947–976. https://doi.org/10.1177/014920630002600509.

Zahra, S. A., Filatotchev, I., & Wright, M. (2009). How do threshold firms sustain corporate entrepreneurship? The role of boards and absorptive capacity. *Journal of Business Venturing, 24*(3), 248–260. https://doi.org/10.1016/j.jbusvent.2008.09.001.

Zattoni, A., Witt, M. A., Judge, W. Q., Talaulicar, T., Chen, J. J., Lewellyn, K., et al. (2017). Does board independence influence financial performance in IPO firms? The moderating role of the national business system. *Journal of World Business, 52*(5), 628–639. https://doi.org/10.1016/j.jwb.2017.04.002.

Zhou, L., Wu, W. P., & Luo, X. (2007). Internationalization and the performance of born-global SMEs: the mediating role of social networks. *Journal of International Business Studies, 38*(4), 673–690. https://doi.org/10.1057/palgrave.jibs.8400282.