6-20-2020

How does your garden grow? The interface of employee and sales growth post IPO

Varkey K. Titus Jr.

Jenna R. Pieper

Matthew Josefy

Theresa M. Welbourne

STRATEGIC ENTREPRENEURSHIP JOURNAL

WILEY

How does your garden grow? The interface of employee and sales growth post IPO

Varkey Titus Jr[1] | Jenna R. Pieper[1] | Matthew Josefy[2] | Theresa M. Welbourne[3]

[1]Department of Management, College of Business, University of Nebraska-Lincoln, Lincoln, Nebraska, USA

[2]Kelley School of Business, Indiana University, Bloomington, Indiana, USA

[3]Will and Maggie Brooke Endowed Professor in Entrepreneurship, Alabama Entrepreneurship Institute, Culverhouse College of Business, The University of Alabama, Tuscaloosa, Alabama, USA

Correspondence
Varkey Titus Jr, Department of Management, College of Business, University of Nebraska-Lincoln, 730 N. 14th Street, Lincoln, NE 68588-0405, USA.
Email: vtitusjr2@unl.edu

Abstract

Research Summary: Firms often succumb to a growth imperative, yet little is known about how congruence between various forms of growth affects firm value. We argue that the (in)congruence between net hiring rates (e.g., growth in the number of employees) and sales growth has significant implications for firm value, assessed via Tobin's Q. We further contend that R&D expenditures and industry dynamism—factors that influence a firm's ability to realize value creation—moderate the relationship between growth pattern and firm value. We use a sample of 1,181 firms that conducted their initial public offerings from 1996 to 2006 to test our conceptual model. Findings indicate that employee-dominant growth is most strongly associated with firm value, and that high levels of R&D expenditures and industry dynamism intensify these relationships.

Managerial Summary: Growth is a goal and challenge for many firms, and navigating the various demands of growth represents a particularly promising opportunity for firms that recently went public. We study how firms can manage the growth process in a way that enhances firm value. Using a sample of 1,181 firms that conducted their initial public offerings from 1996 to 2006, we explore the interplay of employee and sales growth rates on value creation. We find

that an employee-dominant growth pattern was more strongly related to firm value than the other patterns. Our findings also suggest that managers, especially those in firms that invest in R&D and operating in dynamic industries, should avoid a strong focus on sales growth without also ensuring growth in employees.

1 | INTRODUCTION

Growth is a goal, opportunity, and imperative for many organizations, and is a "foundational topic of management research" (Nason & Wiklund, 2018). Yet growth also presents challenges: growing firms face increased resource needs, greater potential for internal turmoil, and increased pressure relating to managing customer demands (Barringer, Jones, & Neubaum, 2005; Demir, Wennberg, & McKelvie, 2017). The extant growth literature offers valuable insights but is characterized by two key concerns. First, it typically examines one form of growth at a time, thereby ignoring the interplay of different forms of growth (Haynie, Shepherd, & McMullen, 2009).[1] Second, growth research tends to examine the antecedents of growth, implicitly treating growth as the performance outcome (Josefy, Kuban, Ireland, & Hitt, 2015; McKelvie & Wiklund, 2010). Yet growth and performance do not always equate, because growth may not lead to enhanced profitability, stockholder returns, or firm value (Brush, Bromiley, & Hendrickx, 2000; Davidsson, Steffens, & Fitzsimmons, 2009), though little research disentangles the value creating implications arising from the interplay of different forms of growth. These issues highlight a knowledge gap related to how firms can manage the growth process in a way that enhances overall firm value.

One critical decision for growing firms is the rate of hiring employees, under the broader rubric of managing human resources (HR). A firm's employee base can be a source of competitive advantage (Barney & Wright, 1998), yet the financial resources required for hiring, training, and retaining employees can strain a firm's budget and leadership if not managed appropriately. This can be a choice between "missing the boat" (not having a sufficient number of employees to seize opportunities), or "sinking the boat" (the high cost of being overstaffed harming firm performance) (Dickson & Giglierano, 1986). Companies must therefore carefully align the hiring rate to meet demand while generating sufficient revenue to pay for employee growth.

Growth decisions are particularly salient for firms following an initial public offering (IPO), because strategic decisions relating to post-IPO expansion can have long-standing effects on firm performance (Marquis & Tilcsik, 2013). Indeed, while the influx of capital from an IPO can be used to facilitate firm growth (Lévesque, Joglekar, & Davies, 2012), it is unclear how firms should grow after an IPO to facilitate overall performance. Given the unique growth-related challenges following an IPO, such as greater scrutiny and the deployment of IPO proceeds (Certo, Holcomb, & Holmes, 2009; Hambrick & Crozier, 1985), decision makers at these firms must make strategic choices on how to position their growth trajectories.

We draw on contingency theory along with insights from the firm growth and strategic human resource management (SHRM) literatures to explore the interplay of employee and sales growth rates on value creation. Contingency theory is rooted in the notion that there is no one "best way" to organize a firm because the appropriateness of a particular form of organization is contingent upon internal arrangements and external context (Van de Ven, Ganco, & Hinings, 2013). We contend that the appropriateness of growth on one dimension—hiring employees—is contingent upon growth on another dimension—sales. Despite research giving credence to the notion that human resources, and the management of them, are a critical element to firm performance (Crook, Todd, Combs, Woehr, &

Ketchen, 2011), research has yet to explore the potentially contingent nature of employee growth—specifically, that realizing value creation from growing the employee base is contingent upon concurrently growing sales as well.

We develop theory to explain the importance of fit between a firm's employee and sales growth rates. To do so, we draw on notions of congruence, which is the match, agreement, or similarity between two constructs (Edwards, 1994). This conceptual basis provides a foundation for our arguments regarding how different patterns of congruent versus incongruent employee-to-sales growth can affect firm value. Our theoretical model considers three general patterns of employee-to-sales growth: *congruence* (a pattern with the employee growth and sales growth rates being relatively similar), *employee-dominant* growth (an incongruent pattern with the employee growth rate exceeding that of sales growth), and *sales-dominant* growth (an incongruent pattern with the sales growth rate exceeding that of employee growth).

We theorize that congruent employee-to-sales growth is most strongly associated with firm value. We then extend our contingency framework for employee-to-sales growth by examining its alignment with an internal strategic choice and an external environmental characteristic that may influence the appropriateness of different patterns of growth—that is, when an incongruent pattern may be most beneficial. We examine the moderating effect of R&D investments and industry dynamism because they reflect a firm's investment in long-term growth (R&D) and may necessitate flexibility to shifting demands (dynamism). Indeed, past research indicates that growth paths are influenced by both how firms invest their resources and their competitive environment (Clarysse, Bruneel, & Wright, 2011). We employ a data set of firms that completed an IPO between 1996 and 2006 to study the influence of a firm's congruent versus incongruent employee-to-sales growth on firm value. Furthermore, we utilize the recommended approach to study congruence—polynomial regression coupled with response surface methodology (e.g., Edwards, 1994, 2002; Meilich, 2006)—to capture the underlying three-dimensional relationship between employee and sales growth rates. Our findings provide informative insights about the value of congruence and incongruence in different contexts.

We make several contributions with our work. First, we advance a multidimensional conceptualization of the growth construct that recognizes the contingent nature of growth. There are a variety of stories documented in the popular press about companies that mismanaged their growth with ultimately severe consequences (e.g., DeMers, 2018), and one of the key issues discussed relates to the challenges of managing HR during periods of growth (Valencia, 2019). Yet the academic literature gives little attention to the interplay of different forms of growth, and as such, little is known about how firms can strategically align growth along different dimensions to influence important firm outcomes. Second, our work fills a gap in the growth literature on the performance (specifically, firm value) implications of growth. While there is considerable scholarship on growth's antecedents and its associated managerial challenges (McKelvie & Wiklund, 2010), there is little research regarding the influence of growth strategy on firm value. Third, our work contributes to the SHRM literature in two ways. We conceptually develop the congruent versus incongruent employee-to-sales growth construct and suggest that it can be a strategic initiative for influencing the HR–firm value relationship. The SHRM literature tends to focus on HR strategies assessed at specific points in the firm's lifecycle (Tansky, Heneman, & Greenberger, 2006). Congruent versus incongruent employee-to-sales growth offers dynamic insight on employee-based strategies related to rate of growth. Our consideration of the exigencies that influence the salience of congruent versus incongruent employee-to-sales growth patterns also fills an important gap in the SHRM literature on the appropriate alignment between HR practices (in our case, congruent versus incongruent employee-to-sales growth) and contextual exigencies necessitated for higher firm performance (Becker & Huselid, 2006).

2 | THEORY AND HYPOTHESES

2.1 | Firm growth, firm performance, and firm value

The firm growth construct, and the managerial bias to pursue growth, has long captured the interest of scholars (Josefy et al., 2015; McKelvie & Wiklund, 2010; Nason & Wiklund, 2018), and it is most commonly studied via sales

or employee growth (Gilbert, McDougall, & Audretsch, 2006). There are two interrelated themes in the literature that are particularly relevant to our current research. First, firm growth does not inherently equate to firm performance. Second, organizations grow in different ways, and these different ways of growing have distinct implications for organizational outcomes (McKelvie & Wiklund, 2010). Yet most empirical work treats growth and performance as the same, and rarely explores the possibility that different forms of growth have distinct performance implications.

Regarding the first point, Brush et al. (2000) note that sales growth sometimes benefits managers rather than stockholders, because managers may pursue unprofitable growth opportunities due to misaligned interests with stockholders or otherwise weak governance mechanisms. Examples include costly advertising campaigns that temporarily boost sales, or excessively low pricing that impedes sustainability but temporarily promotes growth. In other words, growth can sometimes present agency issues, because the managerial bias to grow may not reflect stockholders' desires. Further, Markman and Gartner (2002) found that extraordinary growth (sales or employee) was unrelated to firm profitability. Regarding the second point (that different ways of growing have distinct organizational outcomes), Davidsson et al. (2009) found that firms that grew sales prior to securing profitability were less likely to subsequently attain high growth and high profitability. Thus, despite the tendency to frame growth as a positive organizational outcome, the limited empirical research available paints a mixed picture. In sum, growth and performance are not the same, and different forms of growth may be positively associated with firm performance, but there are conditions, or contingencies, that may need to be present for the performance outcomes to materialize.

Consistent with prior research, we propose that firm performance is a broader construct than a single growth measure (Brush et al., 2000). While growth is often used as a proxy for firm performance, the distinction between growth and performance is a critical part of our research. Within the context of publicly traded firms, an important consideration of performance is the market's perceived value of the company. As such, we consider the firm's overall economic performance as represented by Tobin's Q, which, as noted by Dezsö and Ross (2012), "... is a forward-looking measure that captures the value of a firm as a whole rather than as the sum of its parts and implicitly includes the expected value of a firm's future cash flows, which are capitalized in the market value of a firm's assets (i.e., the combined market value of a firm's debt and equity)" (p. 1078). The notion that Tobin's Q captures firm value as a whole, rather than the sum of its parts, is a meaningful advantage given our interest in growth as an independent variable. We will use the term "firm value" throughout the remainder of the paper as a reference to Tobin's Q.

A firm's goals and growth trajectory differ based on its stage of development (Josefy, Harrison, Sirmon, & Carnes, 2017). While firm growth may not be an explicit goal at all stages, it is a salient issue for firms following an IPO. The IPO event is typically a defining point when it is acknowledged that the firm has successfully overcome the survival challenges inherent in the new venture stage and now faces unique growth opportunities (Chaddad & Reuer, 2009; Lee, Bach, & Baik, 2011). Yet the firm faces novel pressures related to coping with market fluctuations and being in the public spotlight (Mouri, Sarkar, & Frye, 2012)—broadly referred to as a liability of market newness (Certo, 2003). The challenges and opportunities related to growth are therefore of particular interest for firms undergoing a major transition in their lifecycle.

2.2 | Contingency theory and congruent versus incongruent employee-to-sales growth

The fundamental tenet of contingency theory is that there is no one "best way" to organize a firm (Meilich, 2006), or stated differently, "... that performance outcomes of an organizational unit are a result of the fit between the unit's external context and internal arrangements" (Van de Ven et al., 2013, p. 394). We first attend to a firm's internal arrangements, which, according to Miller (1992), include a firm's strategy, culture, structure, and systems. The SHRM literature applies contingency theory to study the interplay of strategic HR practices internal to the firm (Delery & Doty, 1996). For example, Hollenbeck et al. (2002) discuss internal fit in a way that reflects linking up different organizational structures to the appropriate personnel requirements: "For example, the complex and semi-autonomous nature of jobs in divisional structures places a premium on cognitive ability .... Thus, in staffing a divisional structure,

TITUS JR ET AL.

STRATEGIC
ENTREPRENEURSHIP
JOURNAL

WILEY

675

a good internal fit would seem to require high levels of cognitive ability on the part of teammembers" (p. 600). We propose that how a firm aligns its different forms of growth is another internal arrangement, in that the association between one form of growth (e.g., employee growth) and firm value may be contingent on another form of growth (e.g., sales growth). It is therefore not the presence or rate of employee growth or sales growth that benefits firm value per se, but the interplay between the two that provides insight on the value-creating implications of firm growth. Our review of the contingency theory literature indicates that the notion of aligning internal growth patterns as a form of internal "coherence" is novel to the literature.

The focus of our study is on a firm's congruent versus incongruent employee-to-sales growth, which we define as the similarity (or dissimilarity) between a firm's employee growth rate and its sales growth rate. We contend that the manner in which a firm aligns its employee and sales growth can be used strategically to influence firm value over time, echoing others in the growth literature who state that the rate at which a firm grows one dimension relative to another dimension is a strategic choice (Lockett, Wiklund, Davidsson, & Girma, 2011). The choice of how to grow is particularly important for IPO firms because they have an influx of cash and resources that they can use to exploit potentially valuable opportunities to grow their employee base and/or sales in the face of demands for increasing levels of formalized and bureaucratic management (Daily & Dalton, 1992; Reuer & Tong, 2010). Due to the tendency to view growth as an outcome, it is useful to briefly explain why we conceptualize growth as a strategic choice (an "input" the firm can manipulate), rather than exclusively as a consequence (or an "output" outside of the realm of managerial manipulation).

It is relatively intuitive to conceptualize employee growth as a strategic choice—that is, the organization's management can purposefully expand or contract its employee base in response to, or anticipation of, various exigencies. It is less intuitive to similarly conceptualize sales growth, as sales is typically seen as a goal to be pursued, rather than an input that can be manipulated. This raises two important points of clarification. First, aligning employee and sales growth does not require full managerial control over both inputs. Indeed, employee growth may be the more straightforward "lever to pull," and as such, management could align employee and sales growth by making purposeful changes to its employee growth rate to (approximately) match its sales growth. This is consistent with Chandler, McKelvie, and Davidsson (2009), who note that "There are a variety of reasons why managers of firms with sales growth potential choose to add or not to add new employees …" (p. 375).

Second, while managers may have only limited influence over sales growth, it is not entirely out of their control. There are a variety of means by which management can pursue changes in sales: promotions, advertisements, adding new locations, or other strategies meant to alter product adoption rates between different groups of customers (referred to as "riding the saddle" [Goldenberg, Libai, & Muller, 2002]). In fact, early work in agency theory discussed the notion that managers have some discretion over sales growth rate, and that their motivations to grow the firm via sales growth may not align with stockholder interests in long-term firm value (Jensen, 1986).

We theorize about three general patterns of congruent or incongruent employee-to-sales growth: incongruent growth via expanding the employee base faster than sales (employee-dominant growth), incongruent growth via increasing sales ahead of hiring (sales-dominant growth), and doing both relatively similarly (congruent employee-to-sales growth). We propose that value creation from one mode of growth is contingent on the presence of the other form of growth, and we expect that congruent employee-to-sales growth will be most strongly associated with firm value. There are two reasons why we expect this relationship.

First, similar sales and employee growth rates allow the organization to meet the demands inherent in exploiting existing opportunities without sacrificing the ability to explore future opportunities at a later point. Growing employees faster than sales may create inefficiencies because there are more employees available than are needed to accomplish the necessary tasks. Conversely, growing employees slower than sales may place excessive demands on the available workforce, causing inefficiencies due to excessive work demands on too few employees (Guthrie & Datta, 2008). This is consistent with the Job Demands-Resource Model of Burnout, which posits that high job demands without commensurate levels of supportive resources can lead to employee burnout (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). A company that grows sales (which increases demands) without growing employees

(human resources) at a similar pace will "tip the scales" toward burnout by growing demands without growing resources. And indeed, as noted by Garton (2017), heavy employee workloads are a major factor in burnout, and "employee workloads have increased in many organizations in which hiring has not matched growth." Research involving employment instability/variability, a growth-related concept that captures the degree to which a firm adjusts the size of its workforce across time, demonstrates that unstable employment growth patterns across time have a negative effect on firm performance. This highlights that disruption resulting from having too many or too few workers may lead to a weaker competitive position (Ji, Guthrie, & Messersmith, 2014).

Second, growing employees and sales at a similar rate may indicate that decision-makers are steadily building their organizations without resorting to one-off efforts (such as expensive advertising campaigns) that may bolster short-term sales but hurt profitability (McKelvie & Wiklund, 2010). Similarly, congruent employee-to-sales growth may suggest that decision-makers are promoting a growth path that enables the firm to appropriately staff to handle its growth, rather than one predicated on uncertain and risky future activities. A congruent approach, therefore, may indicate greater emphasis on matching the job demands of employees with the needs of the firm. While there may be variation in when recently hired employees are able to fully contribute, both managers and market observers may be monitoring for signs that a firm's trajectory is likely to overheat or burn out and thereby harm the organization's ability to create value. The preceding points suggest that the relationship between firm growth (in either sales or employees) and firm value is contingent upon firm growth in the other mode. We posit that congruent employee-to-sales growth promotes firm value and hypothesize the following:

Hypothesis 1. *Congruent employee-to-sales growth is positively related to firm value.*

Although we predict that congruence between employee growth and sales growth is beneficial for firms, a question remains regarding the value-creating implications for the two patterns of incongruent employee-to-sales growth. Human resources are a strategic investment that can contribute to organizational competitiveness (Coff & Kryscynski, 2011). In turn, employee-dominant growth can be viewed as an investment that can prepare an organization for growth at critical periods, and it is especially effective for learning and development relating to existing firm competencies (Voss, Sirdeshmukh, & Voss, 2008). The pressures placed on IPO firms, including extensive resource needs and tumultuous pressures that result from "instant size," are well-documented (Hambrick & Crozier, 1985). Employee-dominant growth may relieve some of these pressures and enable firms to achieve higher levels of performance. Growing employees faster than sales enables firms to create "contingent labor" that can smooth out some of the unexpected demands placed on firms during times of expansion and diversification, such as an IPO (Cardon, 2003). After an IPO, firms with employee-dominant growth can (a) build a "cushion" to allow for flexibility and adaptability during its stage of high growth, (b) invest and prepare for future growth to remain competitive, and (c) develop human capital for product and service innovation.

On the other hand, sales-dominant growth may be poorly suited to the post-IPO context. While the accumulation of human resources has been tied to a firm's competitive advantage (Coff & Kryscynski, 2011), firms may have achieved their pre-IPO growth in part by expecting their employees to demonstrate high levels of flexibility to overcome limitations from being understaffed (Welbourne & Andrews, 1996). Nevertheless, eventually an understocked workforce will influence employee burnout and exhaustion (e.g., Rochefort & Clarke, 2010) that may lead to lower firm output, lost business opportunities, or increased error rates of workers—factors detrimental to firm value. Despite the apparent efficiency of growing sales at a faster rate than employees, it may hamper the firm's ability to pursue opportunities embedded within the post-IPO context (Reuer & Tong, 2010), and therefore will be less positively associated with firm value than employee-dominant growth. We hypothesize the following:

Hypothesis 2. *Employee-dominant growth is more strongly related to greater firm value than sales-dominant growth.*

2.3 | The moderating role of R&D expenditures

Contingency theory indicates that both internal arrangements and external context are important considerations in regard to the performance implications of different modes of growth. As we discussed in Hypothesis 1, congruent employee-to-sales growth is likely most beneficial for firms, all else being equal. Congruent employee-to-sales growth, however, may not provide as much strategic value depending on certain internal or external contingencies. In this section, we consider two specific contingencies where the effects of incongruent employee-to-sales growth may be more beneficial for a firm's performance than a congruent growth pattern—specifically, a firm's investment in innovation (as indicated by R&D expenditures) and the dynamism of the firm's context.

R&D investment creates distinct HR needs that will ultimately influence which growth pattern is most beneficial for the firm. Innovative activities are a recognized means by which organizations pursue growth (Carnes, Chirico, Hitt, Huh, & Pisano, 2017), and R&D investment is a key source of heterogeneity among IPO firms due to its ability to influence future growth opportunities (Chaddad & Reuer, 2009). As such, appropriately configuring R&D investment with differing growth patterns could have significant implications relating to value creation (Symeonidou & Nicolaou, 2018).

For firms with high R&D expenditures, we contend that employee-dominant growth provides the necessary labor to exploit the opportunities that arise from such innovative efforts. Both employee-dominant growth and R&D investment are forward-looking; R&D investment is typically considered a form of long-term investment (David, Hitt, & Gimeno, 2001), and, as we noted earlier, employee-dominant growth is an investment made in anticipation of future growth. In this way, employee-dominant growth and R&D investment are synergistic and mutually reinforcing, and will therefore be most strongly associated with firm value. Firms that invest heavily in R&D may also have a more highly skilled workforce than firms that spend less on R&D, which could amplify the importance of proactively growing the firm rather than relying on hiring reactively, as highly skilled employees are more difficult to attract and retain (Keller & Meaney, 2017). Despite the financial pressure that investing in both R&D and employees places on the firm (Chaddad & Reuer, 2009), we argue that this alignment between hiring rate and investment in innovation increases the likelihood of realizing value from R&D investment. Neither congruent nor sales-dominant growth provides the necessary flexibility to exploit opportunities that arise from R&D investment.

> **Hypothesis 3.** *R&D expenditures moderates the relationship between growth pattern and firm value, enhancing the relationship between employee-dominant growth and firm value (relative to sales-dominant or congruent growth) more so when R&D expenditures are high than when R&D expenditures are low.*

2.4 | The moderating role of dynamism

Research indicates that industry characteristics such as labor intensity and industry growth rate influence the efficacy of SHRM practices (Datta, Guthrie, & Wright, 2005). For instance, Jackson, Schuler, and Jiang (2014) demonstrated that the effect of employment instability on profitability was negative in highly differentiated industries but positive in highly standardized industries. This research on industry growth rate and differentiation, as they relate to SHRM practices, provides a basis upon which we can theorize about the role of industry dynamism. Dynamic industries are characterized by frequent, unpredictable change and high variability in competitive and environmental pressures (Dess & Beard, 1984; Keats & Hitt, 1988). The challenges related to operating in an unpredictable and unstable environment are central to contingency theory due to the environment's influence on the appropriateness of any given internal form of organization (Cooper, Patel, & Thatcher, 2013).

Specific to our study, it is more difficult for a firm to reliably predict the necessary tasks and activities for employees to execute when operating in dynamic environments (Keats & Hitt, 1988). As such, dynamism is a salient

industry consideration within the congruent versus incongruent employee-to-sales growth context because dynamic industries require flexibility to address unpredictable opportunities or threats (Chadwick, Way, Kerr, & Thacker, 2013). In other words, industry dynamism has implications for how firms grow.

Environments characterized by low levels of dynamism are stable and easy-to-predict, and, as such, organizational leaders are better able to anticipate future needs and predict opportunity exploitation opportunities (Wu, Levitas, & Priem, 2005), or generate new opportunities internally with the resources available to the organization (Bradley, Shepherd, & Wiklund, 2010). Internal organizational forms therefore do not need to be as flexible insofar as available HR is concerned, because the predictability allows organizations to staff based on needs related to the (predictable) tasks that arise. Organizations operating in stable environments can therefore operate as efficiently (minimal HR to accomplish the necessary tasks) as possible, thereby making sales-dominant growth more appropriate to the environment.

Dynamic environments pose a more nuanced challenge. In highly dynamic environments, there is a question whether growing as efficiently as possible (sales-dominant growth) or growing with sufficient HR to exploit opportunities (employee-dominant growth) is more beneficial. As discussed in the introduction, firms must assess the relative risk of "missing the boat" (not being staffed sufficiently to exploit an opportunity) or "sinking the boat" (being over staffed when opportunity exploitation is not successful) (Dickson & Giglierano, 1986). The post-IPO context offers a unique perspective on this classic question because an ostensible goal of an IPO is to gain new resources available in the public market with which the firm can grow via opportunity exploitation. In order to realize the potential benefit of the IPO, we argue that firms need to maximize their flexibility with regards to HR, as this flexibility will facilitate firms' opportunity exploitation likelihood (Chadwick et al., 2013). As such, the advantages of employee-dominant growth outweigh its costs when compared with the advantages/costs of sales-dominant growth. Furthermore, dynamic industries tend to demand greater managerial focus and effort (Chadwick et al., 2013) and increase complexity related to information-processing (Datta et al., 2005). An employee-dominant HR growth pattern may enable the firm to distribute these attentional demands throughout the organization, whereas a more efficient growth pattern concentrates this attention. We therefore hypothesize:

> **Hypothesis 4.** *Industry dynamism moderates the relationship between growth pattern and firm value, enhancing the relationship between employee-dominant growth and firm value (relative to sales-dominant or congruent growth) more so when industry dynamism is high than when industry dynamism is low.*

3 | METHODS

3.1 | Sample

Our sample consists of U.S. firms that issued a U.S. IPO in years 1996–2006. The IPO context is relevant to our study because it is a significant threshold event that places new pressures on firms to simultaneously be more "professional" (Daily & Dalton, 1992) and yet remain responsive to opportunities afforded by the influx of cash assets that can be deployed for growth-related objectives (Mouri et al., 2012). It is therefore an appropriate and valuable setting to study the value-creation implications of employee-to-sales growth patterns. We merged data from the Kenney and Patton (2017) dataset on emerging growth firms, where "emerging growth firm" is based on its de novo status, with 5 years of post-IPO financial data from COMPUSTAT for each firm. For example, if a firm issued its IPO in 1996, we followed financials for 1997–2001. After applying exclusion criteria and accounting for missing data on key variables (e.g., R&D expenditures), the final sample size consisted of 1,181 U.S.-based IPO-firms with 4,244 firm-year observations.[2] As some firms were delisted during the period of our study, our panel is unbalanced (please refer to the Robustness and Supplemental Analysis section for more information about this). The average number of firm-year observations per firm is 3.6.

At the time of their IPO, the average age of firms in the sample is 10.39 years old ($SD = 13.70$) and the average total employment is 729 ($SD = 2,286$). Table 1 shows the sample's concentration across industries and IPO years. The highest concentration of the firms in our sample are the manufacturing industry (42.59%), followed by the services industry (41.24%). The majority of firms in our sample issued their IPO in 1996–2000.

3.2 | Dependent variable

We measure firm value using Tobin's Q for several reasons. Tobin's Q is a market-based performance measure, and is frequently described as a forward-looking assessment of a firm's prospects based on its current strategic behaviors, and is therefore treated as a proxy for firm value (see, e.g., Titus & Anderson, 2018). In the context of our research, Tobin's Q reflects the market's assessment of whether the firm's growth pattern will yield long-term value. Tobin's Q is more robust to accounting manipulations than other performance measures (Dushnitsky & Lenox, 2006), and is therefore particularly relevant to our study as accounting-based measures of profitability may reflect changes in either revenue or employees. Consistent with prior literature, we calculated Tobin's Q with a simplified formula that approximates its value (Chung & Pruitt, 1994; Yang, Narayanan, & De Carolis, 2014): we sum market value, long term debt, and current liabilities, and divide the sum by total assets. Notably, our results are consistent if we adopt ROA as the focal performance measure, as noted in the Robustness and Supplemental Analysis section below.

TABLE 1 Firm-level descriptive statistics

Variable	N = 1,181	%
Industry		
Manufacturing	503	42.59%
Mining	3	.25%
Agriculture, forestry, and fishing	1	.08%
Construction	1	.08%
Transportation, communications, electric, gas, and sanitary service	35	2.96%
Wholesale trade	36	3.05%
Retail trade	104	8.81%
Finance, insurance, and real estate	10	.85%
Services	487	41.24%
Public administration	1	.08%
IPO year		
1996	260	22.02%
1997	172	14.56%
1998	100	8.47%
1999	205	17.36%
2000	187	15.83%
2001	28	2.37%
2002	21	1.78%
2003	18	1.52%
2004	72	6.10%
2005	54	4.57%
2006	64	5.42%

3.3 | Independent variables

3.3.1 | Congruent versus incongruent employee-to-sales growth

Underlying congruent versus incongruent employee-to-sales growth is the notion of similarity (or dissimilarity) between employee growth and sales growth rates. We computed *Employee growth* as the percent change in a firm's number of employees in year t from the number of employees in year $t - 1$. We measured *sales growth* as the percent change in a firm's sales in year t from sales in year $t - 1$.[3] To avoid methodological issues that would be introduced from calculating a difference score (Cronbach & Furby, 1970; Edwards, 2002; Edwards & Parry, 1993), we employed polynomial regression in which the component measures are introduced into the model, along with several higher-order terms of these measures.

3.3.2 | R&D expenditures

Researchers often scale R&D expenditures by some form of firm size—most typically by creating a ratio of R&D expenditures to sales. However, as noted by Certo, Busenbark, Kalm, and LePine (2020), ratio measures can lower statistical power and create other issues for researchers when the ratio measure is an independent or dependent variable. As such, Certo et al. (2020) advised researchers to utilize non-ratio measures (such as R&D expenditures) rather than ratio measures (such as R&D intensity). Furthermore, both sales and employees (the two most common measures of size used in R&D intensity calculations) are part of our employee-to-sales growth independent variable, and we therefore avoid using them as a component of this variable as well.

3.3.3 | Industry dynamism

We measured industry dynamism by adopting a two-step technique developed by Keats and Hitt (1988) using data from COMPUSTAT. For each firm-year t in our study, we first regressed an industry's net sales on its operating income over the prior 5-year period (e.g., 1990–1995 data predicted dynamism in 1996), based on three-digit SIC codes. In the second stage, we averaged the standard errors from these regression slopes to arrive at our measure; this measure was time varying. Higher standard errors reflect greater variance in industry returns and therefore represent uncertainty in industry profitability.

3.4 | Control variables

We controlled for year effects by including year dummies. We controlled for financial slack in each year by taking the difference between current assets and current liabilities in each firm-year (Mishina, Pollock, & Porac, 2004); this helps us isolate the effects of congruent versus incongruent employee-to-sales growth on firm performance. To account for differences in growth patterns by industry, we control for industry munificence (based on Keats & Hitt, 1988). We used a similar procedure to calculate munificence as we did for dynamism, except munificence was measured via the regression slope coefficient, which represents the average growth rate of the industry (at the three-digit SIC level) over the 5-year period. Munificent industries have external growth opportunities that facilitate scalability and could therefore influence firms' growth strategies.

3.5 | Analytical procedure

Because a Hausman test (chi-squared $= 165.91$, $df = 17$, $p < .001$) for the control-only model suggested the presence of unobserved heterogeneity, we used fixed effects (FE) estimation for our regression analyses (Greene, 2011). A fixed effects model is advantageous for avoiding biases from time-invariant omitted variables (e.g., firm age at time of its IPO and industry). It is also advantageous conceptually, as we are interested in how within-firm changes in growth influence that firm value. That said, it is important to note that our empirical results are consistent if we adopt a random effects model. We use STATA's XTREG command and report robust standard errors clustered on firms.

Though bivariate models dominate the literature on contingency theory, Meilich suggests that polynomial regression is a better approach because it allows for "a more generalized notion of fit while capturing the same forms of fit implied by existing bivariate models in a simpler and less constrained way" (Meilich, 2006, p. 162) and may therefore be sensitive to contingency relationships that would otherwise be undetected in traditional bivariate methods. As such, we use the polynomial regression procedure (e.g., Edwards, 2002; Edwards & Parry, 1993) to examine our hypotheses. Because we are interested in congruence versus incongruence between sales and employee growth as predictors of performance, polynomial regression analysis is the preferred procedure (over difference scores) because it allows us to examine the extent to which combinations of our two predictor variables and their higher-order components relate to firm value (see Edwards, 1994; Edwards, 2001, for a detailed description of this procedure). Based on Edwards (1994, 2001), we used the following equation:

$$\text{TOBIN'S Q}_{it} = b_0 + b_x(\text{CONTROLS}) + b_1(\text{EMPLOYEE GROWTH})_{it} + b_2(\text{SALES GROWTH})_{it}$$
$$+ b_3(\text{EMPLOYEE GROWTH})^2_{it} + b_4(\text{EMPLOYEE GROWTH} * \text{SALES GROWTH})_{it}$$
$$+ b_5(\text{SALES GROWTH})^2_{it} + e.$$

In this equation, Tobin's Q is regressed on the linear terms of the employee and sales growth variables, their interaction, and their non-linear terms. Edwards (1994, 2001) suggests a two-step procedure: (a) regress the outcome variable on the two linear terms of the predictor variables, and (b) enter the interaction and non-linear terms to the model. Unlike traditional regression analyses, when interpreting the results of polynomial regression analysis, more weight is given to the variance explained by the addition of the predictor variables' interaction and non-linear terms and the corresponding response surface pattern yielded by the regression equation than the significance of the specific regression coefficients. The coefficients are instead used to examine the response surface pattern (Edwards, 1994, 2001), which is a three-dimensional visual representation of the data to aid interpretation. In discussing our results next, we employ response surface methodology to depict the effects of congruent versus incongruent employee-to-sales growth as a three-dimensional surface and fully describe and interpret of these graphs (see, e.g., Andrevski & Ferrier, 2019).

Finally, because we are also interested in whether the effects of congruent versus incongruent employee-to-sales growth are moderated, for example, by industry dynamism, we supplement our polynomial regression equation with moderator variables following the equation for moderated polynomial regression outlined by Edwards[4] using the following regression equation:

$$\text{TOBIN'S Q}_{it} = b_0 + b_x(\text{CONTROLS}) + b_1(\text{EMPLOYEE GROWTH})_{it} + b_2(\text{SALES GROWTH})_{it}$$
$$+ b_3(\text{EMPLOYEE GROWTH})^2_{it} + b_4(\text{EMPLOYEE GROWTH} * \text{SALES GROWTH})_{it}$$
$$+ b_5(\text{SALES GROWTH})^2_{it} + b_6 W_{it} + b_7(\text{EMPLOYEE GROWTH}) W_{it} + b_8(\text{SALES GROWTH}) W_{it}$$
$$+ b_9(\text{EMPLOYEE GROWTH})^2 W_{it} + b_{10}(\text{EMPLOYEE GROWTH} * \text{SALES GROWTH}) W_{it}$$
$$+ b_{11}(\text{SALES GROWTH})^2 W_{it} + e.$$

In this equation, the moderator variable W is multiplied to the component measures and their higher-order terms, and moderation is tested by assessing the incremental variance explained by the addition of these terms compared with a model without.

Sales and employee growth were not standardized because for polynomial regression they must be measured on the same metric scale to facilitate interpretation of the three-dimensional surface plots; otherwise, except for dummies, all other variables were standardized to ease interpretation (Cohen, Cohen, West, & Aiken, 2003).

4 | RESULTS

Table 2 provides the means, standard deviations, and correlations of the variables used in the analysis.[5] The results of our hypothesis tests are presented in Table 3. Model 1 displays the results of the baseline model. Model 2 includes the linear form of the employee growth and sales growth variables. The set of non-linear terms (employee growth^2, employee growth $\times$ sales growth, and sales growth^2) are added in Model 3 to assess congruence versus incongruence between employee and sales growth. Based on a Wald test, the addition of these parameters explained significant variance above the linear employee growth and sales growth terms (Wald test $\chi^2 = 5.66, df = 3, p = .001$).

To interpret the estimated regression model in Model 3 and assess whether Hypothesis 1 was supported, we calculated the response surface analysis parameters in Model 1 in Table 4 and plotted the response surfaces in Figure 1. These surfaces are based on the slope (a_x) and curvature (a_{x2}) of two critical lines in our three-dimensional graph. The first is $Y = X$, or the line of congruence, which in Figure 1 runs from the front center corner (C) to the back corner (D). The shape of the surface along this line indicates whether firm value (Tobin's Q) varies when employee growth is relatively similar to sales growth. The second line of interest is $Y = -X$, which in Figure 1 runs from the left corner (A) to the right corner (B). Moving from left to right along this line, employee growth increases and sales growth decreases; this line represents the effects of incongruence on firm performance.[6]

We apply Humberg, Nestler, and Back's (2019) recently developed checklist of four conditions necessary to detect a congruence effect, which in our case would mean that firm value is maximized when employee and sales growth are congruent, exhibiting a concave or dome-shaped surface. Because our theory predicts increased firm value for employee and sales growth congruence, we evaluated the first principal axis, which can be described as the "ridge" of the surface.[7] The position of the first principal axis in relation to the line of congruence ($Y = X$) provides important information on whether a congruence effect exists. If it differs (e.g., is rotated) from the line of congruence, then congruence is not supported. Condition 1 in support of congruence is that the intercept (p_{10}) of the first principal axis does not significantly differ from zero. Condition 2 is that the first principal axis's slope (p_{11}) does not significantly differ from one. If these conditions are both supported, the surface parameters for the line of incongruence ($Y = -X$) are then evaluated. If a congruence effect occurs, the surface above the line of incongruence must have an inverted U-shape (i.e., is curved downward along the $Y = -X$ line). Thus, Condition 3 states that the curvature of this line (a_{x2}) is significant and negative, which in our study means that incongruent sales and employee growth predictor combinations have significantly lower firm performance. Condition 4 is that the slope of this line (a_x) is not significant.

As shown in Model 1 of Table 4, the intercept ($p_{10} = 18.62, p > .05$) and slope ($p_{11} = -3.79, p > .05$) parameters for the position of the first principal axis (Conditions 1 and 2) are not significantly different from zero and one, which support a congruence effect. However, conditions 3 and 4 do not support congruence. The curvature (Condition 3) of the line of incongruence ($a_{x2} = -.063, p = .423$) is negative but not significant, and the slope of the line of incongruence (Condition 4; $a_x = 1.591, p < .001$) is significant. These findings indicate that Tobin's Q is maximized when employee and sales growth are incongruent. However, this does not mean that increasing employee and sales growth congruently is unrelated to firm value. We find that the slope of the line of congruence as it relates to Tobin's Q is significant and positive (slope $= 1.546, p < .001$), and the curvature of this line is negative and significant (curvature $= -.232, p = .004$). As can be seen in Figure 1, these findings suggest that when employee growth and

TABLE 2 Summary statistics and correlation matrix[a,b]

Variable	Mean	SD	Min.	Max.	1.	2.	3.	4.	5.	6.
1. Tobin's Q	2.99	5.37	.11	169.14						
2. Financial slack	84.12	184.65	−1,284.10	3,784.37	.026					
3. Industry munificence	12,088.33	11,648.23	−13,207.36	82,328.09	.085	.024				
4. R&D expenditures	19.19	41.69	.00	1,049.03	.029	.431	.145			
5. Industry dynamism	.12	.09	.00	1.19	.092	−.024	.374	.044		
6. Employee growth	.16	.73	−1.00	14.00	.104	.100	.029	.064	.035	
7. Sales growth	.53	2.83	−1.00	94.95	.062	.020	.013	.017	.004	.158

Note: $N_{firms} = 1,181$ and $N_{firm-year-observations} = 4,244$. Correlations are based on $N_{firm-year-observations}$, and correlations whose absolute values are greater than .030 are statistically significant at $p < .05$.

[a]Nonstandardized and un−logged descriptive statistics reported.

[b]Correlations are based on logged values.

TABLE 3 Polynomial regression results (DV: Tobin's Q)

Variable	Model 1[a,b] b (SE)	p-value	Model 2 b (SE)	p-value	Model 3 b (SE)	p-value	Model 4 b (SE)	p-value	Model 5 b (SE)	p-value
Financial slack	−.019 (.125)	.877	−.034 (.122)	.779	−.074 (.118)	.530	−.087 (.112)	.438	−.093 (.123)	.448
Industry munificence	.449 (.534)	.401	.430 (.529)	.416	.349 (.523)	.505	.287 (.508)	.572	.066 (.549)	.905
R&D expenditures	−1.592 (.405)	.000	−1.585 (.399)	.000	−1.584 (.389)	.000	−1.891 (.356)	.000	−1.514 (.385)	.000
Industry dynamism	.074 (.177)	.675	.100 (.186)	.591	.013 (.245)	.958	.031 (.275)	.909	−.147 (.151)	.330
Employee growth			.468 (.196)	.017	1.569 (.387)	.000	1.714 (.403)	.000	1.476 (.359)	.000
Sales growth			.004 (.037)	.924	−.022 (.078)	.773	−.028 (.088)	.751	.020 (.073)	.789
Employee growth^2					−.148 (.039)	.000	−.199 (.051)	.000	−.119 (.031)	.000
Sales growth^2					.000 (.001)	.651	.001 (.001)	.650	−.001 (.001)	.342
Employee growth × sales growth					−.084 (.070)	.229	−.091 (.064)	.154	−.122 (.060)	.042
Employee growth × R&D expenditures							.649 (.299)	.030		
Sales growth × R&D expenditures							.292 (.184)	.112		

TABLE 3   (Continued)

Variable	Model 1[a,b] b (SE)	p-value	Model 2 b (SE)	p-value	Model 3 b (SE)	p-value	Model 4 b (SE)	p-value	Model 5 b (SE)	p-value
Employee growth^2 × R&D expenditures							-.191 (.090)	.034		
Sales growth^2 × R&D expenditures							-.005 (.003)	.064		
Employee growth × sales growth × R&D expenditures							-.135 (.111)	.221		
Employee growth × industry dynamism									1.162 (.589)	.049
Sales growth × industry dynamism									.079 (.128)	.539
Employee growth^2 × industry dynamism									-.077 (.049)	.116
Sales growth^2 × industry dynamism									-.003 (.003)	.301
Employee growth × sales growth × industry dynamism									-.147 (.125)	.239
Constant	3.037 (.226)	.000	2.741 (.257)	.000	2.495 (.294)	.000	2.425 (.304)	.000	2.570 (.257)	.000
$R^2_{overall}$	.003		.005		.006		.006		.009	
R^2_{within}	.067		.073		.084		.092		.096	
Wald test of model with M2					5.66	.001				
Wald test of model with M3							3.55	.003	2.62	.023

Note: $N_{firms} = 1{,}181$ and $N_{firm-year-observations} = 4{,}244$.

[a]Year dummies omitted from the table for parsimony. Financial slack, industry munificence, R&D expenditures, and industry dynamism are standardized.

[b]*p*-values are calculated based on two-tailed tests.

TABLE 4 Response surface results

Model	Estimated regression model					Position of 1st principal axis		Slopes along lines of interest								
								Y = X		Y = −X		1st principal axis		2nd principal axis	
	b_1	b_2	b_3	b_4	b_5	p_{10}	p_{11}	a_x	a_{x2}	a_x	a_{x2}	a_x	a_{x2}	a_x	a_{x2}
	(SE)	(SE)	(SE)	(SE)	(SE)			(SE)	(SE)	(SE)	(SE)				
	p	p	p	p	p			p	p	p	p				
1. Main model	1.569	−.022	−.148	−.084	.000	18.62†	−3.79	1.546	−.232	1.591	−.063	.026	.177	−.025	−.170***
	(.387)	(.078)	(.039)	(.070)	(.001)			(.375)	(.080)	(.414)	(.079)				
	.000	.773	.000	.229	.651			.000	.004	.000	.423				
2. R&D expenditures high (+2 SD)	3.012	.557	−.581	−.362	−.010	8.62	−3.44†a	3.569	−.953	2.455	−.228	−1.436	.548	1.800	−.687***
	(.735)	(.305)	(.216)	(.199)	(.005)			(.789)	(.294)	(.803)	(.292)				
	.000	.068	.007	.069	.046			.000	.001	.002	.435				
3. R&D expenditures low (−2 SD)	.416	−.612	.183	.179	.011	−14.47**	.42	−.197	.374	1.028	.015	−2.577	.262	1.747	−.177
	(.708)	(.438)	(.152)	(.258)	(.007)			(.825)	(.300)	(.839)	(.299)				
	.557	.162	.229	.488	.116			.812	.213	.220	.961				
4. Industry dynamism high (+2 SD)	3.799	.177	−.274	−.416	−.007	9.20	−1.83	3.977	−.697	3.622	.135	−.124	.465	.134	−.503***
	(1.480)	(.297)	(.119)	(.295)	(.007)			(1.500)	(.318)	(1.518)	(.318)				
	.010	.551	.021	.159	.317			.008	.029	.017	.670				
5. Industry dynamism low (−2 SD)	−.847	−.138	.035	.172	.004	4.20	8.36	−.985	.212	−.709	−.133	−.209	.182	.189	−.165
	(.920)	(.234)	(.085)	(.199)	(.004)			(.935)	(.217)	(.964)	(.216)				
	.357	.555	.681	.387	.317			.292	.329	.462	.538				

Note: Columns labeled p_{10} and p_{11} contain intercepts and slopes of the first principal axis. For each line ($Y = X$, $Y = −X$, first principal axis, second principal axis), a_{x2} represents curvature of the surface along the line, and a_x is the slope of the surface along the line at $X = 0$. For coefficients of the estimated regression model, slopes along the $Y = X$ and $Y = −X$ lines, significance levels are based on standard errors calculated using ordinary rules for variances of linear combinations of random variables. For p_{10}, p_{11}, and the slopes for the first and second principal axes, significance levels are based on confidence intervals constructed from coefficients from 10,000 bootstrap samples, using the bias corrected percentile method to determine critical values. †$p < .10$; *$p < .05$; **$p < .01$.

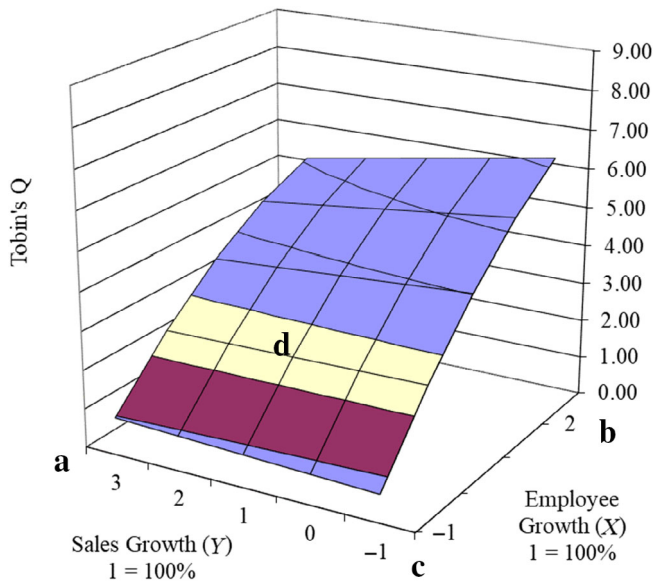ªThe 95% bias corrected confidence interval of p_{11} excluded 1.00.

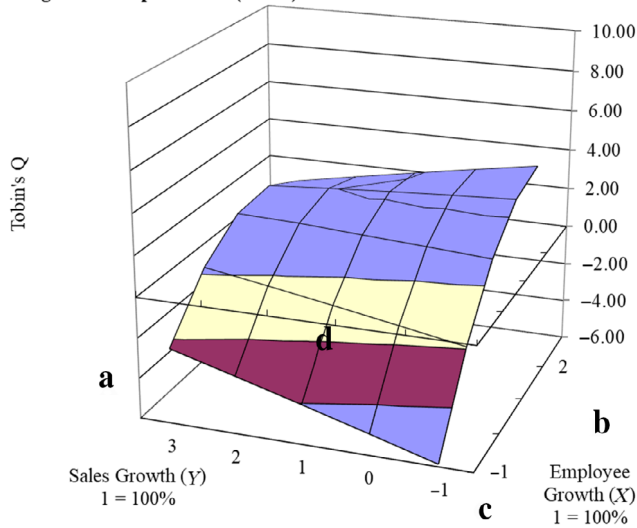**FIGURE 1**   Surface graph of employee growth and sales growth with firm performance

sales growth increase congruently, Tobin's Q increases significantly but is attenuated at high levels of employee growth and sales growth congruence, which generally supports Hypothesis 1.

To test Hypothesis 2, which proposed that firm performance is higher under employee-dominant versus sales-dominant growth, one must consider the direction of the slope of the line of incongruence ($X = -Y$). Because it is positive and significant, the 1.591 ($p < .001$) slope (Model 1 in Table 4) indicates that Tobin's Q is significantly higher when employee growth is greater than sales growth (employee-dominant growth) than vice versa, supporting Hypothesis 2. Notably, the results from testing H1 and H2 indicate that employee-dominant growth is most strongly (positively) related to Tobin's Q, and that a congruent growth pattern is more strongly (positively) related to Tobin's Q than sales-dominant growth.

In Hypotheses 3 and 4, we predicted moderation effects of R&D expenditures and industry dynamism. We tested for moderation by supplementing our polynomial regression equation with these moderator variables. Specifically, in separate models, we added R&D expenditures and industry dynamism (W) and the product of W with each term (*EMPLOYEE GROWTH, SALES GROWTH, EMPLOYEE GROWTH², EMPLOYEE GROWTH * SALES GROWTH*, and *SALES GROWTH²*) to our equation. Moderation is present if the addition of the set of product terms explains significantly more variation in Tobin's Q than the baseline polynomial regression model.

As shown in Table 3, a Wald test of Model 4, which assesses whether the effect of congruence versus incongruence is moderated by R&D expenditures, versus Model 3 was significant (Wald test $\chi^2 = 3.55$, $df = 5$, $p = .003$), indicating that R&D expenditures significantly moderates the employee-to-sales growth pattern effect. We next analyzed the simple response surface parameters in Table 4 and plotted them at both high (+2 *SD*; Figure 2a) and low (−2 *SD*; Figure 2b) R&D expenditures to interpret the moderating effect. We applied Humberg et al.'s (2019) checklist of necessary conditions to evaluate whether a true congruence effect exists and did not find one in either the high or low R&D expenditures conditions (i.e., Tobin's Q is *not* maximized under employee and sales growth congruence in either the low or high conditions). We further examine the parameters of the line of congruence ($Y = X$) and incongruence ($Y = -X$) for both conditions to highlight the interaction effect (Models 2 and 3 in Table 4). First, we find that the curvature for the line of incongruence was not significant for either the low or high R&D expenditures conditions, indicating that the degree of discrepancy between employee growth and sales growth is unrelated to Tobin's Q. We also find that the positive and significant 2.455 ($p = .002$) slope for

A. High R&D Expenditures (+2 *SD*)

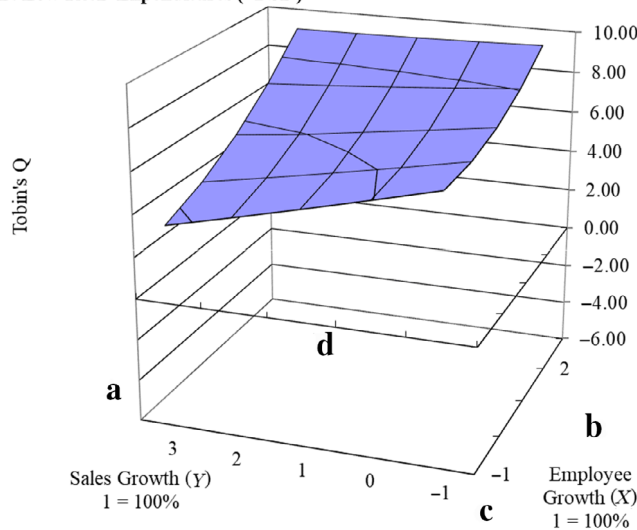**B. Low R&D Expenditures (−2 *SD*)**

FIGURE 2   Surface graph of R&D expenditures (high/low) moderation

the line of incongruence under the high R&D expenditures condition indicates that Tobin's Q is significantly higher when employee growth is greater than sales growth (employee-dominant growth) than vice versa. While positive, the 1.028 ($p = .217$) slope was not significant under the low R&D expenditures condition, which indicates no significant different between employee-dominant and sales-dominant growth. Next, parameter estimates for the line of congruence for high R&D expenditures suggest a positive effect ($a_x = 3.569$, $p < .001$) of employee and sales growth congruence on Tobin's Q that is significantly attenuated ($a_{x2} = -.953$, $p = .001$) at high levels of congruence. There is no effect of employee and sales growth congruence on Tobin's Q in the low R&D expenditures condition. Figure 2a,b display the differences in the two conditions. In support of Hypothesis 3, we find that employee-dominant growth is more important to firm value than both congruent and sales-dominant growth when R&D expenditures is high.

A. High Industry Dynamism (+2 *SD*)
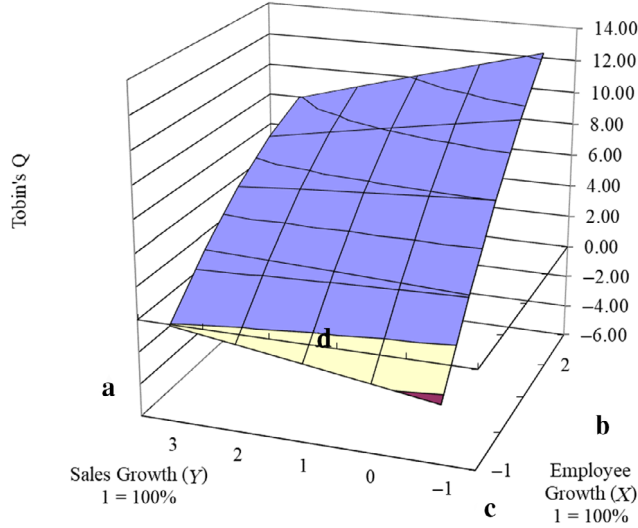
B. Low Industry Dynamism (−2 *SD*)
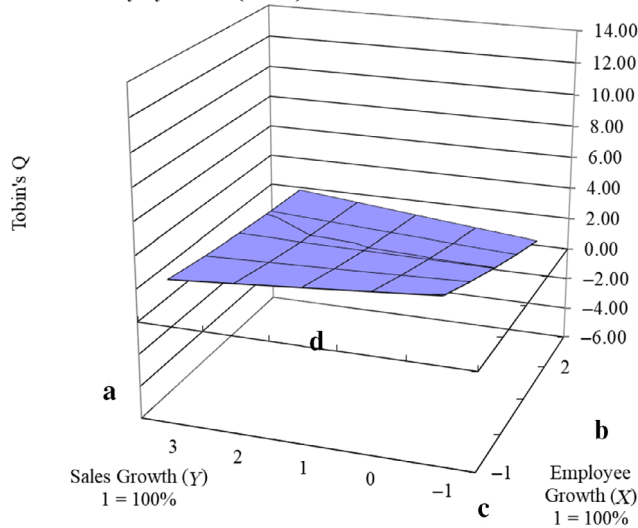
FIGURE 3 Surface graph of industry dynamism (high/low) moderation

Hypothesis 4 predicted that Tobin's Q will be significantly higher under employee-dominant growth than congruent and sales-dominant growth when industry dynamism is high than when industry dynamism is low. As shown in Table 3, a Wald test of Model 5, which assesses whether the effect of congruence versus incongruence is moderated by industry dynamisms, versus Model 3 was significant (Wald test $\chi^2 = 2.62$, $df = 5$, $p = .023$), indicating that industry dynamism significantly moderates the employee-to-sales growth pattern effect.

To interpret the moderating effect of industry dynamism, we analyzed the simple response surface parameters in Table 4 and plotted them at both high (+2 *SD*; Figure 3a) and low (−2 *SD*; Figure 3b) industry dynamism. Additionally, we did not find a true congruence effect in either the high or low industry dynamism conditions based on Humberg et al.'s (2019) checklist of necessary conditions, which further supports our moderation prediction. An examination of the parameters of the line of congruence ($Y = X$) indicates that the effect of increasing levels of

congruence on Tobin's Q matters more in relatively unstable industry environments than stable ones. As shown in Table 4, Model 4 (high dynamism) and Model 5 (low dynamism), the slope of the line of congruence ($Y = X$) as it relates to Tobin's Q is significant and positive (slope = 3.977, p = .008) but negatively attenuated (curvature = $-.697$, p = .028) when industry dynamism is high, whereas when industry dynamism is low, the slope of the $Y = X$ line is non-significant and negative (slope = $-.985$, p = .3000) and positively attenuated (curvature = .212, p = .328).

Finally, in support of Hypothesis 4, we find that employee-dominant growth is more important to firm value than both congruent and sales-dominant growth when industry dynamism is high. In examining the line of incongruence ($Y = -X$), we find that the curvature for the line of incongruence was not significant for either the low or high industry dynamism conditions, indicating that the degree of discrepancy between employee growth and sales growth is unrelated to Tobin's Q. However, the positive and significant 3.622 (p = .016) slope for the line of incongruence under the high industry dynamism condition indicates that Tobin's Q is significantly higher when employee growth is greater than sales growth (employee-dominant growth) than vice versa. The $-.709$ (p = .455) slope was not significant under the low industry dynamism condition, which indicates no significant different between employee-dominant and sales-dominant growth. As indicated by the parameters for the line of congruence ($Y = X$), we also find that employee and sales growth congruence is significantly related to Tobin's Q when industry dynamism is high but not so when low.

5 | ROBUSTNESS AND SUPPLEMENTAL ANALYSIS

We conducted a variety of additional analyses to probe the robustness of our results (complete results for each are available by request from the first author). First, Tobin's Q is a market-based measure of firm performance, so we conducted an analysis where we adopted ROA, a common metric for firm profitability, as the dependent variable. Results from this analysis are largely consistent with our models where Tobin's Q is the DV (see Appendix B). There are advantages and disadvantages associated with ROA as a DV relative to Tobin's Q. For example, ROA is less likely to be affected by stock market fluctuations, yet is more likely to be subject to accounting manipulations (Dushnitsky & Lenox, 2006). The consistency we find across both DVs gives us greater confidence in our results.

In addition to the market-based outcome measure, in supplemental analyses, we also probed other ultimate measures of firm performance such as firm failure and exit (Josefy et al., 2017). Specifically, we sought to understand how many of the firms in our analyses delisted within the 5-year performance window. We found some variation in likelihood of delisting, most notably that delisting rates were highest for firms born shortly before either the burst of the dot-com bubble or shortly before the Financial Crisis of 2007–2008. We also found acquisitions accounted for nearly three-fourths of exits, with just over half of these occurring when the firm was already in some degree of financial distress. These analyses provide some assurance that our year-fixed effects are appropriate and that results are not unduly influenced by extreme cases.

Third, our observational window includes the dot-com bubble/burst, which could bias our findings (i.e., market valuation was high during the bubble and low during the bust). Although the results of our adoption of ROA as the DV provide evidence that the market biases during the bubble/burst are not driving our results because profitability-based performance metrics are not subject to the hot/cold market issues, we conducted a supplementary analysis (with Tobin's Q as the DV) where we split the sample into firms who initiated an IPO in "pre" (1996–2000) and "post" (2001–2006) burst periods.[8] The results of this analysis (see Appendix C) indicated that, like our primary model, Tobin's Q is maximized with employee-dominant growth for both the pre- and post-bubble samples. Additionally, the interactive effects when analyzing the pre-burst sample are like those when analyzing full sample, but there are subtle differences when examining the post-burst sample. As an example, for high R&D expenditures during the post-burst period, none of the parameters for the lines of congruence and incongruence are significant, indicating no effect of congruence or incongruence in this condition. This is different compared with high R&D

expenditures during the pre-burst period, where there is a positive and attenuated effect of congruence on firm value and where firm value is also significantly higher under employee-dominant growth.

Finally, we conducted an analysis to minimize year-to-year noise that may arise from year-end cut-offs or economic cycles. We conducted a supplemental analysis to approximate patterns of congruent versus incongruent employee-to-sales growth over time. We created dummy variables indicating a firm's pattern of congruent or incongruent employee-to-sales growth for each firm-year observation and then aggregated this information across time by calculating the percent of time (years) that each firm had employee-dominant, sales-dominant, or congruent employee-to-sales growth rates across the firm-years included in the dataset.[9] For example, if a firm had employee-dominant growth in 3 of 5 years, the firm had employee-dominant growth 60% of the time. We then categorized the firms as patterning one of four dominant employee-to-sales growth patterns across the firm-years in our study: primarily sales-dominant, primarily employee-dominant, primarily congruent, and no dominant orientation.[10] We then examined the degree to which a firm's consistent use of congruent versus incongruent employee-to-sales growth (as measured by one of the four patterns mentioned above) across time is related to its Tobin's Q (see Appendix D). We found that primarily employee-dominant firms had the highest firm value. Their firm value was significantly higher than that of primarily congruent firms ($b_{\text{primarily employee−dominant vs. primarily congruent}} = 2.103$, $p < .01$); their firm value was also marginally higher than primarily sales-dominant firms ($b_{\text{primarily employee−dominant vs. primarily sales−dominant}} = 1.00$, $p = .06$). These findings add additional support to our prediction that a dominant employee growth is more beneficial.

6 | DISCUSSION

> *"We have experienced, and in the future may experience, rapid growth in operations, which has placed, and could continue to place, a significant strain on our operations, services, internal controls and other managerial, operational, and financial resources. To effectively manage future expansion, we will need to maintain our operational and financial systems and managerial controls and procedures, which include … customer support … recruitment, training, supervision, retention and management of our employees …"—Blue Nile Inc., 2009 (10-K)*

The above quote comes from the annual report of Blue Nile Inc., a firm in our sample that went public in 2004 that had an employee-dominant growth orientation and a relatively high Tobin's Q value in 2009. Their discussion of the strains of rapid growth, and the need to manage this strain in ways directly related to HR (i.e., customer support and employee management), illustrate a fundamental tenet of our research: growth is both an opportunity and a challenge, and exploiting that opportunity (or succumbing to the challenge) will partially depend on how the firm manages that growth. We argue that, counter to conventional wisdom, "efficient" growth that maximizes revenue while minimizing employees could ultimately diminish firm value, because—as mentioned in the Blue Nile annual report above—the strains of growth ultimately require employees to adequately manage the growth process. We draw on contingency theory to introduce the concept of congruent versus incongruent employee-to-sales growth and contend that the pace of employee growth relative to sales growth is a strategic choice that can influence firm value. This proposition is rooted in a tenet of contingency theory—that there is no one "best way" to organize a firm, as both internal arrangements and external context are important considerations (Van de Ven et al., 2013). We also proposed that R&D expenditures and industry dynamism moderate the relationship between employee-to-sales growth patterns and firm value.

We anticipated a congruent growth pattern to be most strongly associated with firm value, but we found that an employee-dominant growth pattern was more strongly related to firm value than the other patterns. Our results also indicate that the more "efficient" growth pattern—sales-dominant growth, due to stronger growth in sales relative to "costly" growth in HR—is in fact the least strongly tied to firm value. A possible explanation for this finding is

that employee-dominant growth may be able to relieve some of the pressures of high-growth common to firms following an IPO and can provide greater flexibility and adaptability for the unexpected demands that may arise (Certo et al., 2009). It is also possible that the market is able to efficiently anticipate the value-creating potential of employee growth (e.g., a firm hires employees in anticipation of a new project, and market participants recognize potential growth as evidenced with a contemporaneous increase in the value of the firm).[11] Fundamentally, our research indicates that to realize the value-creating potential of sales growth, a sufficient level of employee growth (roughly equal to or greater than the sales growth) is needed.

We also investigated the moderating effect of R&D expenditures and industry dynamism, which influences the relationship between employee-to-sales growth pattern and firm value in the anticipated direction. Results are supportive of the notion that a strategy that emphasizes strategic flexibility and allows for responsiveness to opportunities—whether they are opportunities that the firm generates through its investment in innovation, or those that arise from a dynamic competitive landscape where tomorrow's opportunities may look different than today's—is most beneficial. Both moderators indicate the importance of not "missing the boat" when faced with the unique opportunities afforded by an IPO (Dickson & Giglierano, 1986).

6.1 | Contributions to theory

Our research makes several contributions that advance theory. First, we contribute to contingency theory through establishing important links with the literature on the multidimensionality of firm growth. As noted by Van de Ven et al. (2013, p. 421), internal fit is "the internal coherence or interdependence among components of a particular design configuration ...[internal fit] is achieved by creating complementarities between the internal processes." Existing contingency theory research points to the importance of fit or consistency with internal organizational arrangements such as organizational structure and personnel requirements (Doty, Glick, & Huber, 1993; Hollenbeck et al., 2002). We build on this by taking a recognized principle of the growth literature—that growth is multidimensional—and propose that the interplay of these different forms of growth can facilitate internal coherence. Our research therefore builds on the concept of internal coherence and applies it to the context of growth. This is novel to the contingency theory literature, and as our empirical tests indicate, it is a relevant consideration within the context of firm value.

Second, we also advance contingency theory by providing evidence of the potential value of *incongruence* to a firm, at least during certain stages of its lifecycle and within specific contexts. The most value-enhancing alignment of internal arrangements like growth depends on elements of strategy and environment. Our findings indicate that high R&D expenditures and high levels of environmental dynamism amplify the importance of employee-dominant growth. Finding the appropriate mix between different forms of growth has meaningful implications as it relates to value-creation, but as our results indicate, this mix may necessitate one form of growth outstripping another form to enhance overall value. Future research may fruitfully add to contingency theory by theorizing when incongruence may offer the most strategic benefit to a firm. For instance, employee-dominant growth may be a form of aggressive high-risk/high-reward strategy similar to other aggressive actions that a firm may take (Andrevski & Ferrier, 2019).

Finally, our research also provides additional insight to the importance of strategic HR issues for IPO firms, which is notable as several scholars have commented on the paucity of studies on strategic HR in growth-phase businesses compared with studies concentrating on HR in larger organizations (Hayton, 2003; Klaas, Semadeni, Klimchak, & Ward, 2012; Messersmith & Guthrie, 2010). Essentially, while growing firms may benefit from increasing economies of scale and scope (see Josefy et al., 2015), incongruent growth would counteract the marginal benefit of subsequent hiring and thereby affect future performance. Our findings indicate that the rate at which a firm grows its employee base compared with its revenue base is an important, yet overlooked, part of the conversation about strategic HR practices in growth firms. Thus, we contribute to the SHRM literature the concept of congruent versus

incongruent employee-to-sales growth. In addition, while scholars often look at the links between downsizing and firm performance (e.g., Brauer & Zimmermann, 2019), overall employee growth has received less attention; we extend this literature by providing theory-based arguments for how decisions regarding hiring affect the firm's ability to subsequently achieve growth.

6.2 | Implications for practice

Our research has several implications for practice. Though there is no lack of demand on the resources acquired during an IPO, managers should carefully consider the way they allocate these resources to expand their business. The findings reported here suggest that managers, especially those in firms that invest in R&D and operate in dynamic industries, should avoid a strong focus on sales growth without also ensuring growth in employees. Such a scenario likely hampers the firms' ability to pursue unique opportunities following the IPO and may even lead to employee burnout as the firm may be under-staffed to meet its high sales demands. Instead, post-IPO firms that take a forward-looking perspective indicated in the form of employee-dominant growth will have the greatest ability to exploit the unique opportunities afforded by the IPO event (Hayton, 2003). Most fundamentally, our work indicates that, for IPO firms, a persistent drive to operate at high levels of efficiency—for example, to drive sales growth without due consideration to commensurate growth in employee numbers—could reduce a firm's value-creating potential.

6.3 | Limitations and future research

Our results must be considered in light of the limitations of this research. First, the results of our analyses may not arise due to intentional strategic initiatives. Future research should focus on further investigating the results of our analysis by interviewing or surveying top management members of the IPO firms concerning the way they plan to or are growing their firm, and by collecting more fine-grained data that is not readily available from archival sources. For example, future research could assess managerial perceptions of their businesses' scalability, particularly relative to other businesses in their industry (i.e., if they believe their business has a different level of scalability than competitors due to leveraging technologies like artificial intelligence, automation, etc.). This perception could influence the business's employee-to-sales growth pattern, and the alignment of these perceptions with actual growth patterns could have interesting performance implications.

Second, we are unable to generalize our findings from this IPO context to firms at other stages in their organizational lifecycle. While we believe that the time of the IPO is particularly appropriate to studying how the nature of firm growth influences firm value, given the various internal and external pressures that arise during the IPO event, future research is needed to evaluate the congruence of employee and sales growth in other contexts. We believe however that our findings may generalize to firms at other threshold stages of their development. Zahra et al. (2009) state that: "'threshold' firms have an important common characteristic: they are moving from a founder-manager template to a more diverse and formalized decision-making" (p. 250). Indeed, the tension to be "professional" and "entrepreneurial" at the same time places pressure to both generate more significant revenue and to be more operationally efficient. Yet overlooking the importance of employee growth as it relates to sales growth could create the downstream issues we theorize about in our paper (e.g., employee burnout, short-term orientation, etc.). Thus, we believe that IPOs are an important context, and that our results could generalize to other threshold firms that face the kinds of competing pressures we discussed.

Third, scholars have noted the limitations of using microeconometric modeling using panel data to link dynamic decisions such as employment with firm outcomes because of the manner in which such decisions inherently incorporate future expectations (Bond & Van Reenen, 2007). As would be the case with nearly any resource, some of the benefits of obtaining and deploying human capital may take time to fully manifest. We focused our theorizing about

signs that a firm's trajectory is likely to overheat or burn out and harm firm value. Scholars may be able to employ other methods, such as experimental designs, to better uncover the mechanisms of this decision-making process and advance work to build models of how firms alter and adjust factors of production in the face of uncertainty (Bloom, Bond, & Van Reenen, 2007).

Finally, future research could examine the extent to which recent technological developments (such as artificial intelligence) influence the performance implications of employee-to-sales growth. While AI and other technologies may decrease the need for certain employees, it may increase the need for the "right" HR and their related human capital resources.

7 | CONCLUSION

We expand on the notion of growth as a strategy and suggest that congruent versus incongruent employee-to-sales growth can be a strategy with important performance implications. Our analysis suggests that organizations must consider how they grow their employee base in relation to their revenue. Ironically, while firms often are quick to fire employees during downturns to cut costs, our results suggest that the employee-dominant growth is a key strategic action during the IPO phase of an organizational life cycle.

ORCID
Varkey Titus Jr https://orcid.org/0000-0001-5771-6980
Jenna R. Pieper https://orcid.org/0000-0003-4089-3010
Matthew Josefy https://orcid.org/0000-0003-1174-1878
Theresa M. Welbourne https://orcid.org/0000-0003-4240-6570

ENDNOTES

[1] Shepherd and Wiklund (2009) found in a review of the literature that 73% of firm growth studies assessed only one form of growth.

[2] We excluded firms that did not have a product/service, had no employees, or were real estate trusts. We also excluded foreign-based firms, as these firms may face different employment practices and regulations than U.S. firms. Our sample was reduced further as a result of firms with no reported data in COMPUSTAT and missing information on variables from the other data sources. Finally, we excluded three firm-year observations that were identified as multivariate outliers using the blocked adaptive computationally efficient outlier nominators (BACON) algorithm (Billor, Hadi, & Velleman, 2000) available in STATA. This algorithm is based on the Mahalanobis distance criterion, and we applied the 15th percentile of the Chi-squared distribution to be used as a threshold to separate outliers from non-outliers. Upon inspection, these multivariate outliers contained extreme values on one or more of our variables. As further investigation of the influence of outliers in our data, we also examined two other model specifications–a more conservative multivariate approach (i.e., BACON with a 30th percentile applied) and a univariate approach (i.e., trimming variables at +3 standard deviations above the mean) to handling outliers. The results of these specifications are presented in Appendix A.

[3] Our measures of employee and sales growth rates are within the same period; this is not intended to indicate a direct causal relationship between employee growth and sales growth—indeed not all employees are directly involved in sales growth.

[4] http://public.kenan-flagler.unc.edu/faculty/edwardsj/resources.htm

[5] The average year-over-year employee growth rate was 16% while the average sales growth rate was 53%. Employee growth and sales growth were also significantly correlated ($r = .16$, $p < .001$). Furthermore, both growth variables were significantly related to Tobin's Q ($r_{employee\ growth} = .10$, $p < .001$); $r_{sales\ growth} = .06$, $p < .001$).

[6] One could also state that to the left of point (0, 0) on this line sales growth is greater than employee growth (sales-dominant growth) and to the right of this point employee growth is greater than sales growth (employee-dominant growth).

[7] If we predicted Tobin's Q to be its lowest at employee and sales growth congruence, or a convex or bowl-shaped surface, we would be interested in the second principal axis. The first and second principal axes describe the overall positioning of the surface relative to the X, Y plane.

[8] It is important to note here that splitting a sample in this way poses several disadvantages: it decreases the statistical power of our analyses because our sample size decreases (i.e., Pre-burst $N_{firms} = 927$ and $N_{firm-year-observations} = 3,244$; Post-burst $N_{firms} = 257$ and $N_{firm-year-observations} = 1,000$) and direct comparison between the two groups is made more challenging because the post-burst sample is notably smaller than the pre-burst sample.

[9] Because only two cases in our data existed where sales and employee growth rates were exactly equal, we coded congruent employee-to-sales growth as 1 if the employee growth and sales growth rate difference was between .10 and $-.10$ and as 0 otherwise for each firm-year observation. Employee-dominant growth was coded as 1 if the difference was greater than .10 and as 0 otherwise. Sales-dominant growth was coded as 1 if the difference was less than $-.10$ and as 0 otherwise.

[10] Primarily sales-dominant growth was coded as 1 if a firm had sales-dominant growth more than 50% of the time and 0 otherwise. Primarily employee-dominant growth was coded as 1 if the firm had employee-dominant more than 50% of the time and 0 otherwise. Primarily congruent was coded as 1 if the firm utilized congruent employee-to-sales growth more than 50% of the time and 0 otherwise. Finally, no primary orientation was coded as 1 if the firm did not have a dominant employee-to-sales growth pattern across time and 0 otherwise. We used firms with a full 5 years of data ($N_{firms} = 702$) to reliably capture a firm's dominant orientation over time, 37.18% of the 702 firms had primarily sales-dominant growth more than 50% of the time, 15.67% of the firms had primarily employee-dominant growth more than 50% of the time, 14.10% of the firms had primarily congruent growth more than 50% of the time, and 33.05% of the firms had no dominant employee-to-sales growth pattern.

[11] We would like to thank an anonymous review for this insight.

REFERENCES

Andrevski, G., & Ferrier, W. J. (2019). Does it pay to compete aggressively? Contingent roles of internal and external resources. *Journal of Management*, 45(2), 620–644. https://doi.org/10.1177/0149206316673718

Barney, J. B., & Wright, P. M. (1998). On becoming a strategic partner: The role of human resources in gaining competitive advantage. *Human Resource Management*, 37(1), 31–46. https://doi.org/10.1002/(SICI)1099-050X(199821)37:1%3C31::AID-HRM4%3E3.0.CO;2-W

Barringer, B. R., Jones, F. F., & Neubaum, D. O. (2005). A quantitative content analysis of the characteristics of rapid-growth firms and their founders. *Journal of Business Venturing*, 20(5), 663–687. https://doi.org/10.1016/j.jbusvent.2004.03.004

Becker, B. E., & Huselid, M. A. (2006). Strategic human resources management: Where do we go from here? *Journal of Management*, 32(6), 898–925. https://doi.org/10.1177/0149206306293668

Billor, N., Hadi, A. S., & Velleman, P. F. (2000). BACON: Blocked adaptive computationally efficient outlier nominators. *Computational Statistics & Data Analysis*, 34(3), 279–298. https://doi.org/10.1016/S0167-9473(99)00101-2

Bloom, N., Bond, S., & Van Reenen, J. (2007). Uncertainty and investment dynamics. *The Review of Economic Studies*, 74(2), 391–415. https://doi.org/10.1111/j.1467-937X.2007.00426.x

Bond, S., & Van Reenen, J. (2007). Microeconometric models of investment and employment. In J. J. Heckman & E. E. Leamer (Eds.), *Handbook of econometrics* (Vol. 6, pp. 4417–4498). Elsevier. https://doi.org/10.1016/S1573-4412(07)06065-5

Bradley, S. W., Shepherd, D. A., & Wiklund, J. (2010). The importance of slack for new organizations facing 'tough'environments. *Journal of Management Studies*, 48(5), 1071–1097. https://doi.org/10.1111/j.1467-6486.2009.00906.x

Brauer, M., & Zimmermann, M. (2019). Investor response to workforce downsizing: The influence of industry waves, macroeconomic outlook, and firm performance. *Journal of Management*, 45(5), 1775–1801. https://doi.org/10.1177/0149206317734901

Brush, T. H., Bromiley, P., & Hendrickx, M. (2000). The free cash flow hypothesis for sales growth and firm performance. *Strategic Management Journal*, 21(4), 455–472. https://doi.org/10.1002/(SICI)1097-0266(200004)21:4<455::AID-SMJ83>3.0.CO;2-P

Cardon, M. S. (2003). Contingent labor as an enabler of entrepreneurial growth. *Human Resource Management*, 42(4), 357–373. https://doi.org/10.1002/hrm.10095

Carnes, C. M., Chirico, F., Hitt, M. A., Huh, D. W., & Pisano, V. (2017). Resource orchestration for innovation: Structuring and bundling resources in growth-and maturity-stage firms. *Long Range Planning*, 50(4), 472–486. https://doi.org/10.1016/j.lrp.2016.07.003

Certo, S. T. (2003). Influencing initial public offering investors with prestige: Signaling with board structures. *Academy of Management Review*, 28(3), 432–446. https://doi.org/10.2307/30040731

Certo, S. T., Busenbark, J. R., Kalm, M., & LePine, J. A. (2020). Divided we fall: How ratios undermine research in strategic management. *Organizational Research Methods*, 23(2), 211–237. https://doi.org/10.1177/1094428118773455

Certo, S. T., Holcomb, T. R., & Holmes, R. M. (2009). IPO research in management and entrepreneurship: Moving the agenda forward. *Journal of Management*, 35(6), 1340–1378. https://doi.org/10.1177/0149206309347375

Chaddad, F. R., & Reuer, J. J. (2009). Investment dynamics and financial constraints in IPO firms. *Strategic Entrepreneurship Journal*, 3(1), 29–45. https://doi.org/10.1002/sej.65

Chadwick, C., Way, S. A., Kerr, G., & Thacker, J. W. (2013). Boundary conditions of the high-investment human resource systems-small-firm labor productivity relationship. *Personnel Psychology*, 66(2), 311–343. https://doi.org/10.1111/peps.12015

Chandler, G. N., McKelvie, A., & Davidsson, P. (2009). Asset specificity and behavioral uncertainty as moderators of the sales growth—Employment growth relationship in emerging ventures. *Journal of Business Venturing*, 24(4), 373–387. https://doi.org/10.1016/j.jbusvent.2008.04.002

Chung, K. H., & Pruitt, S. W. (1994). A simple approximation of Tobin's Q. *Financial Management*, 23(3), 70–74. https://doi.org/10.2307/3665623

Clarysse, B., Bruneel, J., & Wright, M. (2011). Explaining growth paths of young technology-based firms: Structuring resource portfolios in different competitive environments. *Strategic Entrepreneurship Journal*, 5(2), 137–157. https://doi.org/10.1002/sej.111

Coff, R., & Kryscynski, D. (2011). Drilling for micro-foundations of human capital-based competitive advantages. *Journal of Management*, 37(5), 1429–1443. https://doi.org/10.1177/0149206310397772

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. Mahwah, NJ: Lawrence Erlbaum.

Cooper, D., Patel, P. C., & Thatcher, S. M. (2013). It depends: Environmental context and the effects of faultlines on top management team performance. *Organization Science*, 25(2), 633–652. https://doi.org/10.1287/orsc.2013.0855

Cronbach, L. J., & Furby, L. (1970). How we should measure "change": Or should we? *Psychological Bulletin*, 74(1), 68–80. https://doi.org/10.1037/h0029382

Crook, T. R., Todd, S. Y., Combs, J. G., Woehr, D. J., & Ketchen, D. J. (2011). Does human capital matter? A meta-analysis of the relationship between human capital and firm performance. *Journal of Applied Psychology*, 96(3), 443–456. https://doi.org/10.1037/a0022147

Daily, C. M., & Dalton, D. R. (1992). Financial performance of founder-managed versus professionally managed small corporations. *Journal of Small Business Management*, 30(2), 25–34.

Datta, D. K., Guthrie, J. P., & Wright, P. M. (2005). Human resource management and labor productivity: Does industry matter? *Academy of Management Journal*, 48(1), 135–145. https://doi.org/10.2307/20159645

David, P., Hitt, M. A., & Gimeno, J. (2001). The influence of activism by institutional investors on R&D. *Academy of Management Journal*, 44(1), 144–157. https://doi.org/10.2307/3069342

Davidsson, P., Steffens, P., & Fitzsimmons, J. (2009). Growing profitable or growing from profits: Putting the horse in front of the cart? *Journal of Business Venturing*, 24(4), 388–406. https://doi.org/10.1016/j.jbusvent.2008.04.003

Delery, J. E., & Doty, D. H. (1996). Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of Management Journal*, 39(4), 802–835. https://doi.org/10.2307/256713

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86(3), 499–512. https://doi.org/10.1037/0021-9010.86.3.499

DeMers, J. (2018). Companies that grew too quickly (and what you can learn from them). https://www.entrepreneur.com/article/310166

Demir, R., Wennberg, K., & McKelvie, A. (2017). The strategic management of high-growth firms: A review and theoretical conceptualization. *Long Range Planning*, 50(4), 431–456. https://doi.org/10.1016/j.lrp.2016.09.004

Dess, G., & Beard, D. (1984). Dimensions of organizational task environments. *Administrative Science Quarterly*, 29(1), 52–73. https://doi.org/10.2307/2393080

Dezsö, C. L., & Ross, D. G. (2012). Does female representation in top management improve firm performance? A panel data investigation. *Strategic Management Journal*, 33(9), 1072–1089. https://doi.org/10.1002/smj.1955

Dickson, P. R., & Giglierano, J. J. (1986). Missing the boat and sinking the boat: A conceptual model of entrepreneurial risk. *The Journal of Marketing*, 50(3), 58–70. https://doi.org/10.2307/1251585

Doty, D. H., Glick, W. H., & Huber, G. P. (1993). Fit, equifinality, and organizational effectiveness: A test of two configurational theories. *Academy of Management Journal*, 36(6), 1196–1250. https://doi.org/10.2307/256810

Dushnitsky, G., & Lenox, M. J. (2006). When does corporate venture capital investment create firm value? *Journal of Business Venturing*, 21(6), 753–772. https://doi.org/10.1016/j.jbusvent.2005.04.012

Edwards, J. R. (1994). The study of congruence in organizational behavior research: Critique and a proposed alternative. *Organizational Behavior and Human Decision Processes*, 58(1), 51–100. https://doi.org/10.1006/obhd.1994.1029

Edwards, J. R. (2001). Multidimensional constructs in organizational behavior research: An integrative analytical framework. *Organizational Research Methods*, 4(2), 144–192. https://doi.org/10.1177/109442810142004

Edwards, J. R. (2002). Alternatives to difference scores: Polynomial regression and response surface methodology. In F. Drasgow & N. Schmitt (Eds.), *Measuring and analyzing behavior in organizations: Advances in measurement and data analysis* (pp. 350–400). San Francisco, CA: Jossey-Bass.

Edwards, J. R., & Parry, M. E. (1993). On the use of polynomial regression equations as an alternative to difference scores in organizational research. *Academy of Management Journal*, 36(6), 1577–1613. https://doi.org/10.5465/256822

Garton, E. (2017). Employee burnout is a problem with the company, not the person. Harvard Business Review. https://hbr.org/2017/04/employee-burnout-is-a-problem-with-the-company-not-the-person

Gilbert, B. A., McDougall, P. P., & Audretsch, D. B. (2006). New venture growth: A review and extension. *Journal of Management*, 32(6), 926–950. https://doi.org/10.1177/0149206306293860

Goldenberg, J., Libai, B., & Muller, E. (2002). Riding the saddle: How cross-market communications can create a major slump in sales. *Journal of Marketing*, 66(2), 1–16. https://doi.org/10.1509/jmkg.66.2.1.18472

Greene, W. (2011). Fixed effects vector decomposition: A magical solution to the problem of time-invariant variables in fixed effects models? *Political Analysis*, 19(2), 135–146. https://doi.org/10.1093/pan/mpq034

Guthrie, J. P., & Datta, D. K. (2008). Dumb and dumber: The impact of downsizing on firm performance as moderated by industry conditions. *Organization Science*, 19(1), 108–123. https://doi.org/10.1287/orsc.1070.0298

Hambrick, D. C., & Crozier, L. M. (1985). Stumblers and stars in the management of rapid growth. *Journal of Business Venturing*, 1(1), 31–45. https://doi.org/10.1016/0883-9026(85)90005-9

Haynie, J. M., Shepherd, D. A., & McMullen, J. S. (2009). An opportunity for me? The role of resources in opportunity evaluation decisions. *Journal of Management Studies*, 46(3), 337–361. https://doi.org/10.1111/j.1467-6486.2009.00824.x

Hayton, J. C. (2003). Strategic human capital management in SMEs: An empirical study of entrepreneurial performance. *Human Resource Management*, 42(4), 375–391. https://doi.org/10.1002/hrm.10096

Hollenbeck, J. R., Moon, H., Ellis, A. P., West, B. J., Ilgen, D. R., Sheppard, L., … Wagner, J. A., III. (2002). Structural contingency theory and individual differences: Examination of external and internal person-team fit. *Journal of Applied Psychology*, 87(3), 599–606. https://doi.org/10.1037/0021-9010.87.3.599

Humberg, S., Nestler, S., & Back, M. D. (2019). Response surface analysis in personality and social psychology: Checklist and clarifications for the case of congruence hypotheses. *Social Psychological and Personality Science*, 10(3), 409–419. https://doi.org/10.1177/1948550618757600

Jackson, S. E., Schuler, R. S., & Jiang, K. (2014). An aspirational framework for strategic human resource management. *The Academy of Management Annals*, 8(1), 1–56. https://doi.org/10.5465/19416520.2014.872335

Jensen, M. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review*, 76(2), 323–329.

Ji, Y. Y., Guthrie, J. P., & Messersmith, J. G. (2014). The tortoise and the hare: The impact of employment instability on firm performance. *Human Resource Management Journal*, 24(4), 355–373. https://doi.org/10.1111/1748-8583.12052

Josefy, M., Kuban, S., Ireland, R. D., & Hitt, M. A. (2015). All things great and small: Organizational size, boundaries of the firm, and a changing environment. *The Academy of Management Annals*, 9(1), 715–802. https://doi.org/10.1080/19416520.2015.1027086

Josefy, M. A., Harrison, J. S., Sirmon, D. G., & Carnes, C. (2017). Living and dying: Synthesizing the literature on firm survival and failure across stages of development. *Academy of Management Annals*, 11(2), 770–799. https://doi.org/10.5465/annals.2015.0148

Keats, B., & Hitt, M. (1988). A causal model of linkages among environmental dimensions, macro organizational characteristics, and performance. *Academy of Management Journal*, 31(3), 570–598. https://doi.org/10.2307/256460

Keller, S., & Meaney, M. (2017). Attracting and retaining the right talent. https://www.mckinsey.com/business-functions/organization/our-insights/attracting-and-retaining-the-right-talent

Kenney, M., & Patton, D. (2017). Firm database of emerging growth initial public offerings (IPOs) from 1990 through 2015. Inter-university Consortium for Political and Social Research.

Klaas, B. S., Semadeni, M., Klimchak, M., & Ward, A. K. (2012). High-performance work system implementation in small and medium enterprises: A knowledge-creation perspective. *Human Resource Management*, 51(4), 487–510. https://doi.org/10.1002/hrm.21485

Lee, S. H., Bach, S. B., & Baik, Y. S. (2011). The impact of IPOs on the values of directly competing incumbents. *Strategic Entrepreneurship Journal*, 5(2), 158–177. https://doi.org/10.1002/sej.112

Lévesque, M., Joglekar, N., & Davies, J. (2012). A comparison of revenue growth at recent-IPO and established firms: The influence of SG&A, R&D and COGS. *Journal of Business Venturing*, 27(1), 47–61. https://doi.org/10.1016/j.jbusvent.2010.08.001

Lockett, A., Wiklund, J., Davidsson, P., & Girma, S. (2011). Organic and acquisitive growth: Re-examining, testing and extending Penrose's growth theory. *Journal of Management Studies*, 48(1), 48–74. https://doi.org/10.1111/j.1467-6486.2009.00879.x

Markman, G. D., & Gartner, W. B. (2002). Is extraordinary growth profitable? A study of Inc. 500 high-growth companies. *Entrepreneurship Theory and Practice*, 27(1), 65–75. https://doi.org/10.1111/1540-8520.t01-2-00004

Marquis, C., & Tilcsik, A. (2013). Imprinting: Toward a multilevel theory. *The Academy of Management Annals*, *7*(1), 195–245. https://doi.org/10.5465/19416520.2013.766076

McKelvie, A., & Wiklund, J. (2010). Advancing firm growth research: A focus on growth mode instead of growth rate. *Entrepreneurship Theory and Practice*, *34*(2), 261–288. https://doi.org/10.1111/j.1540-6520.2010.00375.x

Meilich, O. (2006). Bivariate models of fit in contingency theory: Critique and a polynomial regression alternative. *Organizational Research Methods*, *9*(2), 161–193. https://doi.org/10.1177/1094428105284915

Messersmith, J. G., & Guthrie, J. P. (2010). High performance work systems in emergent organizations: Implications for firm performance. *Human Resource Management*, *49*(2), 241–264. https://doi.org/10.1002/hrm.20342

Miller, D. (1992). Environmental fit versus internal fit. *Organization Science*, *3*(2), 159–178. https://doi.org/10.1287/orsc.3.2.159

Mishina, Y., Pollock, T. G., & Porac, J. F. (2004). Are more resources always better for growth? Resource stickiness in market and product expansion. *Strategic Management Journal*, *25*(12), 1179–1197. https://doi.org/10.1002/smj.424

Mouri, N., Sarkar, M., & Frye, M. (2012). Alliance portfolios and shareholder value in post-IPO firms: The moderating roles of portfolio structure and firm-level uncertainty. *Journal of Business Venturing*, *27*(3), 355–371. https://doi.org/10.1016/j.jbusvent.2011.02.002

Nason, R. S., & Wiklund, J. (2018). An assessment of resource-based theorizing on firm growth and suggestions for the future. *Journal of Management*, *44*(1), 32–60. https://doi.org/10.1177/0149206315610635

Reuer, J., & Tong, T. (2010). Discovering valuable growth opportunities: An analysis of equity alliances with IPO firms. *Organization Science*, *21*(1), 202–215. https://doi.org/10.1287/orsc.1080.0397

Rochefort, C. M., & Clarke, S. P. (2010). Nurses' work environments, care rationing, job outcomes, and quality of care on neonatal units. *Journal of Advanced Nursing*, *66*(10), 2213–2224. https://doi.org/10.1111/j.1365-2648.2010.05376.x

Shepherd, D., & Wiklund, J. (2009). Are we comparing apples with apples or apples with oranges? Appropriateness of knowledge accumulation across growth studies. *Entrepreneurship Theory and Practice*, *33*(1), 105–123. https://doi.org/10.1111/j.1540-6520.2008.00282.x

Symeonidou, N., & Nicolaou, N. (2018). Resource orchestration in start-ups: Synchronizing human capital investment, leveraging strategy, and founder start-up experience. *Strategic Entrepreneurship Journal*, *12*(2), 194–218. https://doi.org/10.1002/sej.1269

Tansky, J. W., Heneman, R. L., & Greenberger, D. B. (2006). *Human resource strategies for the high growth entrepreneurial firm*. Greenwich, CT: IAP.

Titus, V. K., & Anderson, B. S. (2018). Firm structure and environment as contingencies to the corporate venture capital–parent firm value relationship. *Entrepreneurship Theory & Practice*, *42*(3), 498–522. https://doi.org/10.1111/etap.12264

Valencia, J. (2019). Scaling culture in fast-growing companies. Harvard Business Review. https://hbr.org/2019/06/scaling-culture-in-fast-growing-companies

Van de Ven, A. H., Ganco, M., & Hinings, C. (2013). Returning to the frontier of contingency theory of organizational and institutional designs. *The Academy of Management Annals*, *7*(1), 393–440. https://doi.org/10.5465/19416520.2013.774981

Voss, G. B., Sirdeshmukh, D., & Voss, Z. G. (2008). The effects of slack resources and environmental threat on product exploration and exploitation. *Academy of Management Journal*, *51*(1), 147–164. https://doi.org/10.2307/20159499

Welbourne, T. M., & Andrews, A. O. (1996). Predicting the performance of initial public offerings: Should human resource management be in the equation? *Academy of Management Journal*, *39*(4), 891–919. https://doi.org/10.5465/256716

Wu, S., Levitas, E., & Priem, R. L. (2005). CEO tenure and company invention under differing levels of technological dynamism. *Academy of Management Journal*, *48*(5), 859–873. https://doi.org/10.2307/20159702

Yang, Y., Narayanan, V. K., & De Carolis, D. M. (2014). The relationship between portfolio diversification and firm value: The evidence from corporate venture capital activity. *Strategic Management Journal*, *35*(13), 1993–2011. https://doi.org/10.1002/smj.2190

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

SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.