

# **How Firm Growth Influences Job Satisfaction within the Entrepreneurial Workforce: A Penrosean Approach**

## **ABSTRACT**

Research focusing on the well-being of people working for growing new ventures - firms representing the workplaces of tomorrow - has been sparse. In this paper, we focus on how the growth of high-potential new ventures influences the job satisfaction of their workforce. Building on Penrose's theory of firm growth and the vast literature on job satisfaction, we explore how organizational characteristics of the growing new venture are positive for the entrepreneurial workforce up until the rate of growth exceeds managerial capacity. We construct a sample building on the millions of employee testimonies posted on the website Glassdoor.com. We specifically match testimonies of employees of new ventures with secondary data of the growth of the firms where they work. Our results indicate that generally, new venture growth, whether sales or employment has an inverted U-shaped relationship with job satisfaction, and that the employment growth moderates the influences of sales growth.

## INTRODUCTION

New ventures generate the majority of new jobs. In particular, job creation is largely due to the small fraction of new ventures that exhibit extraordinary growth and rise to industry leadership (Shane, 2009). Yet, virtually nothing is known about the experience of working within these firms (Burton, Dahl, & Sorenson, 2018). Finding out more about the quality of the jobs created by these firms is important because in the process of creative destruction, these jobs will eventually replace those that dominate today.

Further, the performance of these firms typically benefits their entrepreneurs greatly, but whether or not this spills over to their employees is an open question. Therefore, linking the performance of the firm to the well-being of their employees appears particularly valuable. In this paper, we focus specifically on how new venture growth influences the job satisfaction of its employees - the entrepreneurial workforce.

In doing so, we contribute to several literatures. First, we contribute to the job satisfaction literature. To date, this literature on *employee* job satisfaction has focused on large, established firms (e.g., Schneider, Hanges, Smith, & Salvaggio, 2003), whereas the literature on job satisfaction within *new ventures* has focused on the satisfaction of the entrepreneur. To the best of our knowledge, this is the first study to examine the job satisfaction of the entrepreneurial workforce. This is important, because there is reason to believe that the job situation is different in new ventures requiring unique theorizing. In addition, growth is a change process that every large and established organization has gone through, lending studies of the job satisfaction of growing new ventures great generality. Our study includes some of the most prominent and high-profile new ventures in the world (e.g., Uber, Airbnb, Blue Apron and Dropbox) that have created new industries and/or have rapidly risen to industry leadership. These firms are growing at a high

speed while working hard to recruit and retain talent. Understanding the job satisfaction of their workforce is of great scholarly and practical value. Moreover, these firms show that the difference between being a new venture and an industry leader is sometimes small.

Second, we contribute to Penrose's growth theory (Lockett, Wiklund, Davidsson, & Girma, 2011; Penrose, 1959). Specifically, Penrose argued that as firms grow they will incur adjustment costs because of limits to how fast they can expand their managerial capacity. The overarching idea that there are limits to firms' growth rates has been tested in numerous study (cf. Geroski, 2005). However, the core idea that rapid expansion will put strain on the inner workings of the firm lacks testing. By examining how growth influences employee job satisfaction and further separating the influence of sales and employment growth, we unpack Penrose's concept of adjustment cost, thereby contributing to firm growth theory.

Third, we identify and resolve a tension between organizational and entrepreneurship research. On the one hand, new venture growth is seen as highly valuable for entrepreneurs, often viewed as a direct proxy for performance and success (Coad, Daunfeldt, Holzl, Johansson, & Nightingale, 2014). On the other hand, organization scholars have identified internal turmoil, stress, and a loss of the familial atmosphere associated with growth (Flamholtz & Randle, 2012), leading to coining the term growing pains (Levie & Lichtenstein, 2010; Strauss, 1974). We hypothesize and show that growth positively influences the job satisfaction of the entrepreneurial workforce up to a point after which the influence turns negative. This suggests that the positive view of growth in the entrepreneurship literature extends to the vast majority of more mundane new ventures, but not those considered most successful.

Fourth, we provide a novel methodological approach that allows us to answer research questions that have hitherto remained difficult to assess. We created a unique set of software,

which allowed us to harvest large amounts of internet data, spanning multiple years. One frequently cited problem within the job satisfaction literature is the lack of research covering multiyear periods (Guest, 2011). Our approach also addresses the common issue of small sample sizes found within entrepreneurship research (Short, Ketchen, Combs, & Ireland, 2010) and is unobtrusive to the subjects (Landers, Brusso, Cavanaugh, & Collmus, 2016).

This paper unfolds as follows. First, we outline our theoretical foundations, reviewing literature on the implications of firm growth and organizational factors influencing employee job satisfaction. We then propose that firm growth has a positive influence on employee job satisfaction, though with important limitations and develop our hypothesis. Next, we outline our methods for data collection and our measurements for job satisfaction and their perception of their work environment. We conclude by discussing our results, limitations and our intended contributions to entrepreneurship and organization literatures.

## **THEORY AND HYPOTHESES**

### **Penrose's Growth Theory and Implications of Growth for the Entrepreneurial Workforce**

In order to understand how growth influences the job satisfaction of employees we build on Penrose's (1959) theory of firm growth which still is the dominating theoretical framework in the growth literature (Nason & Wiklund, 2018). A fundamental aspect of the theory is that growth itself generates unique challenges for the firm. Growth leads to adjustment costs because of limitations to managerial capacity. Existing managers cannot infinitely extend their scope to manage ever-increasing operations; outside managers hired by the firm require socialization into the unique workings of the specific firms before they can perform at full capacity; and managers promoted from within the organization require training and experience to effectively perform their managerial responsibilities. These restrictions set the ultimate limit to the speed at which a firm

can grow and is known as the ‘Penrose effect’ (Tan & Mahoney, 2005). But as noted by Penrose in her case studies (e.g. Penrose, 1960), before adjustment costs amass to the extent that they put a limit on further growth, firms exhibit signs of insufficient managerial capacity – an issue that has received surprisingly scant attention in the literature.

Penrose clarifies that because expansion of managerial capacity is time-consuming and difficult, this will set an upper limit to the rate at which a firm can successfully expand in any given time period. In the short run, it leads to internal problems “*if a firm deliberately or inadvertently expands its organization more rapidly than the individuals in the expanding organization can obtain the experience with each other and with the firm that is necessary for the effective operation of the group, the efficiency of the firm will suffer*”. (1959: 43). And in the long run, it sets an eventual cap on its maximum growth rate a firm can achieve (the Penrose effect): “*Since the services from ‘inherited’ managerial resources control the amount of new managerial resources that can be absorbed, they create a fundamental and inescapable limit to the amount of expansion a firm can undertake at any time.*” (1959: 44)

However, Penrose does not extensively elaborate on the exact nature of the internal problems associated with expansion above managerial capacity, which goes for the subsequent growth literature as well. Given that growth causes problems of insufficient managerial capacity, we would argue that it should lead to managerial problems throughout the whole organization. While the management problems associated with rapid growth ultimately lead to poor performance and stagnation, as suggested by Penrose, this is a process that operates through intermediary managerial mechanisms and that takes time to materialize. We therefore focus on how growth influences the well-being of the employees in terms of job satisfaction. A main reason for focusing on job satisfaction is that recruitment and retention are essential for expanding firms, and job

satisfaction feeds into both recruitment and retention (Trevor, 2001). Moreover, internal managerial problems are likely to be experienced most immediately and acutely by the employees. In past studies, scholars assess the implications of poor management via employee turnover or employee job satisfaction (Griffeth, Hom, & Gaertner, 2000). Given that we are concerned with managerial problems stemming from rapid expansion, employee turnover is not a feasible outcome, whereas employee job satisfaction is.

Penrose's theory concerned large established firms, but her theory has been successfully applied and tested among new ventures (Garnsey, 1998; Nason & Wiklund, 2018). In fact, many of the challenges of growth identified by Penrose are particularly salient among new ventures (Nason, Wiklund, McKelvie, Hitt, & Yu, 2018). Specifically, new ventures face critical resource acquisition constraints. They often lack the financial means to purchase resources as well as the ability to develop resources internally at sufficient speed (McKelvie, Brattström, & Wennberg, 2017). These challenges extend also to the employees of growing new ventures, influencing their work environment and hence job experiences. For example, growth can be a signal to employees of a bright future – they can offer competitive compensation packages (Baker, Jensen, & Murphy, 1988) and career opportunities (Bennett & Levinthal, 2017). However, growth also leads to organizational complexity and depletes slack resources, requiring entrepreneurs to fill gaps and divvy the expanding workload (Nicholls-Nixon, 2005). Roles within a new venture are often informal and ambiguous, which leads to a sense of intimacy (Ensley, Hmieleski, & Pearce, 2006). As financial and human capital resources expand, so will the firm's ability build out proper organizational infrastructure. Increased specialization reduces day-to-day variability and uncertainty, which can reduce stress and increases employee retention (Monsen & Boss, 2009).

However, it also reduces the sense of intimacy, which is an advantage of the small organization (Wiklund, Davidsson, & Delmar, 2003).

In order to sort out more specifically how the growth of the firm and limitations to managerial capacity influence the entrepreneurial workforce, we build on the job satisfaction literature that links organizational characteristics to job satisfaction (e.g., Schneider et al., 2003). Employee job satisfaction captures their general evaluation of their job (Judge, Weiss, Kammeyer-Mueller, & Hulin, 2017) covering a wide range of facets about one's job, such as satisfaction with salary, management and career advancement and is shaped in large part by contextual characteristics including the organizational environment (Parker, Wall, & Cordery, 2001). The job satisfaction literature largely focuses on established organizations with well-defined jobs. Accordingly, characteristics of the actual job, such as autonomy, responsibility and task variety, have received extensive attention (e.g., Hackman & Oldham, 1975), while the influence of organization-wide factors are less well studied (Parker et al., 2001) and even more so within the new venture context (Kang, Matusik, Kim, & Phillips, 2016). Further, new ventures face greater uncertainty (Mcmullen & Shepherd, 2006) leading to less hierarchy and greater job fluidity (Cardon & Stevens, 2004). Thus, the direct influence from organizational characteristics are likely more salient in regards to the entrepreneurial workforce (cf. the Elaborated Job Characteristics Model [EJCM], (Parker et al., 2001).

Specifically, firm performance is an overarching organizational factor that constrains or enables specific organizational mechanisms (Grant & Parker, 2009). For example, firm performance directly influences rewards (Lieberman, Garcia-Castro, & Balasubramanian, 2017), investments into benefits (Wright, Gardner, Moynihan, & Allen, 2005) and determines the resource pool available for enhancing or changing organizational structure and practices (Parker

et al., 2001). Firm performance is also associated with prestige and status, which could lead to higher levels of pride, and thus job satisfaction (Bergami & Bagozzi, 2000). In short, it seems that firm performance is an important organization level driver of job satisfaction. Moreover, given that growth is a key target for new venture managers and potentially the most important aspect of new venture performance, we suggest it is an important driver of employee job satisfaction in that context. In the next section we elaborate in greater detail on how new venture growth influences job satisfaction.

### **New Venture Growth and Job Satisfaction: The Double-Edged Sword**

Job satisfaction is a broad term encompassing a wide range of aspects related to the job one performs (Judge et al., 2017). According to Penrose (1959), growth is most pertinent to management quality. Thus, the employee experience is in part a reflection of their satisfaction with management's ability to lead the business. At levels of growth beneath the critical level, where managerial capacity can be expanded sufficiently fast, greater growth is likely to be associated with greater satisfaction because it instills a feeling of success and increased importance of the firm and its employees (Penrose, 1959). Employees are also likely to be impressed with management's ability to successfully navigate the company. At higher levels above this critical point, however, adjustment costs will amass because of constraints on managerial capacity expansion. This leads to well-documented managerial problems that are likely to affect the employee experience directly.

Growth likely feeds directly into work-life balance of employees. On the one hand, growth leads to increased workload, placing additional pressure on the workforce to put in longer hours and constantly take on more demanding work tasks. In the event of rapid growth, where resource slack is rare, work-life balance challenges will abound. On the other hand, growth reduces



liabilities of newness and therefore reduces the risk of failure and associated fear of job loss. The fear of losing a job is a top concern among employees (Jiang & Lavaysse, 2018), often leading to unhealthy work-life balance, as they sacrifice private life in favor of work concerns (Boswell, Olson-Buchanan, & Harris, 2014). If growth in work requirements exceeds the rate of hiring new employees, work-life balance will ultimately suffer for incumbent employees (Moore, Grunberg, & Greenberg, 2004).

Growth also influences the satisfaction with organizational culture. Growth is widely seen as an indicator of success, and new venture growth instills a culture of success – a feeling of being part of a winning team (Coad et al., 2014). Nevertheless, because new ventures lack history and legitimacy, they often have fragile and therefore, disreputable organizational cultures. New venture must ensure that new employees added to the workforce fit with the emerging culture, otherwise it might be threatened (Wry, Lounsbury, & Glynn, 2011). Also, because of small size, new ventures are generally intimate work places where the organizational culture derives from the personalities of the founders (Ensley et al., 2006). Growth requires founders to disengage from certain work tasks and fill their previous roles with employees (Mathias & Williams, 2018) and experienced incumbent employees become increasingly rare as the majority of the workforce is new (DeSantola & Gulati, 2017). Taken together, this suggests that very high levels of growth might disrupt the positive culture of success associated with growth.

Future career opportunities constitute one important aspect of job satisfaction that will be influenced by growth because new career opportunities within the firm are important for career advancement (Bidwell & Mollick, 2015). Meta-analyses corroborate the positive association between career advancement and perceptions of career success (Ng, Eby, Sorensen, & Feldman, 2005). Importantly, however, the satisfaction derived from career advancement is short lived.

Employees gravitate towards their hedonic setpoint soon after a promotion (Diener, Lucas, & Scollon, 2009), which can lead to a honeymoon-hangover effect following a promotion (Boswell, Boudreau, & Tichy, 2005). Growing firms offer unique opportunities in this regard, because they can potentially offer continuous opportunities for career advancement (Bennett & Levinthal, 2017). As new employees and new layers of management are added so are new opportunities for advancement and growth increases the need for managerial talent (Penrose, 1959). This stands in stark contrast to new ventures that do not expand and where career advancement opportunities are limited because most new ventures start and also stay very small. In addition to the direct opening of new career opportunities thanks to expansion of operations and employment, growth also sends a signal of a bright future, including future career opportunities. Consistent with the broader literature on goal progression (e.g., Sheldon & Houser-Marko, 2001), employees respond positively when they perceive that opportunity for advancement may be on the horizon (Kosteas, 2011).

Though growth offers career opportunities absent in new ventures that don't expand, extreme growth rates can lead to lack of communication between top managers and employees because manager resources are stretched thin (Flamholtz & Randle, 2012). This has negative consequences for the ability of growing forms to appropriately develop their employees. As noted by Penrose, (1959) one of the drivers of adjustment costs, and thus a main problem of rapid growth, is that it takes time for employees to develop the skills necessary to advance within the expanding organization. Paired with diminishing communication between top management and employees, this suggests that employees may experience that they lack the skills necessary for advancement and that the firm lacks the capacity to equip them with such skills fast enough, which has detrimental effects upon satisfaction with career opportunities. Derue and Wellman (2009) found

that when feedback from firm leadership is limited, so is leadership development of their subordinates. Further supporting this, Rutherford, Buller, and McMullen (2003) found that high growth firms had more trouble developing employees than their moderate-growth counterparts. This suggests that at high rates of growth, firms may lose their ability to match employee skills with career opportunities, which compromises the positive impact of the availability of opportunities.

Compensation is also an important aspect of job satisfaction influenced by growth. As firms become larger, they accumulate more resources and develop the capacity to potentially offer more generous compensation (Burton et al., 2018). In addition, in order to attract employees to new organizations lacking legitimacy, compensation packages have to be attractive. Therefore, greater growth is likely associated with more attractive employee compensation. The relationship between actual pay level and pay satisfaction has been noted as weak (Williams, McDaniel, & Nguyen, 2006), suggesting that employees use other comparative measures to benchmark satisfaction with their compensation. Similar to evaluations of career satisfaction as identified above, Judge and colleagues (2010) propose that employees are susceptible to adaptation processes (e.g., Diener et al., 2009), where satisfaction wanes over time to a previous set-point. Nyberg (2010) lends empirical support to this idea, highlighting that pay growth is potentially more important than pay level to employees, finding that turn-over intentions are lower so long as pay continues to increase. Therefore, even if a new venture starts an employee at salary below their referent pay level, an annual pool of growing financial resources allows the firm to adjust compensation upward, which will in turn increase satisfaction with compensation (Tekleab, Bartol, & Liu, 2005), albeit temporarily.

However, very high levels of growth typically lead to negative cash flow, which reduces the capacity to pay salaries. As a result, very rapidly growing firms often prefer to defer payment through the introduction of stock option packages (Hand, 2008). While potentially very rewarding, such stock options lead to high uncertainty regarding actual future compensation. Employees have difficulty valuing stock-options, with most preferring cash bonuses instead (Abudy & Shust, 2012). Also, stock-based compensation disproportionately favor those in higher positions within the firm and is not as effective for employees acting in a non-executive capacity (Sesil & Lin, 2011).

Overall, the above indicates that growth is a mixed bag for several aspects of job satisfaction. Along a range of dimensions of job satisfaction, greater growth is associated with greater job satisfaction, but once growth reaches and exceeds the rate at which it can develop its managerial capacity, adjustment costs will start to amass, and these will have negative implications for all aspects of job satisfaction.

It is worthy to note that up to this point, we have treated growth as a more or less homogeneous concept with respect to its relationship with job satisfaction. Although the two types of growth do not have to perfectly covary (Shepherd & Wiklund, 2009), there is reason to believe that both of them are associated with benefits and costs. For example, extreme sales expansion brings increased compensation, but may also impair employees' work-life balance and capability development, leading to dissatisfaction. Likewise, employment growth signifies a growing company culture and potential career advancement, but may also generates conflicts and communication problems. Thus, we argue that both sales and employment growth would reflect an inverted U-shaped relationship with job satisfaction. In the next section we will discuss the two types of growth in terms of their *different degrees* of costs or problems for managing employee job satisfaction. Taken together, this leads us to pose our first hypotheses:

***Hypothesis 1a:** Job satisfaction has an inverted U-shaped relationship with new venture sales growth. Job satisfaction first increases with increases in sales growth, but then decreases.*

***Hypothesis 1b:** Job satisfaction has an inverted U-shaped relationship with new venture employment growth. Job satisfaction first increases with increases in employment growth, but then decreases.*

### **The Relationship between Employment Growth, Sales Growth and Job Satisfaction**

There is evidence that both conceptually (Nason et al., 2018; Penrose, 1959) and empirically (Shepherd & Wiklund, 2009) employment growth and sales growth represent two distinct dimensions that do not have to move in unison. To some extent, new ventures can decouple sales growth from employment growth by relying on mechanisms such as alliances, joint ventures, contracting, and other forms of collaboration (Nason et al., 2018), allowing them to expand sales without adding a corresponding amount of new resources, including employees, but instead relying on the resources of others for the expansion of their sales. For example, compared to traditional accommodation and transportation companies, Airbnb and Uber built business models that minimize the accumulation of resources, such as employees, while maximizing sales growth.

Penrose's discussion of adjustment costs is primarily concerned with expansion of the resource-base of the organization and is closer tied to expansion of employees than expansion of sales (Nason & Wiklund, 2018; Shepherd & Wiklund, 2009). In fact, Penrose (1959) explicitly views employees as part of the firm's resource pool. Therefore, the amount of successful sales growth the firm can achieve will to some extent depend on its ability to successfully expand its workforce. To the extent that new ventures are able to increase their sales without hiring new

employees, they should be able to fend off some of the adjustment costs associated with growth. The differing nature of how employment growth and sales growth influence adjustment costs, however, has not been explored.

Specifically, given the fragility of the organizational culture of new ventures, and its reliance on personal relationships, it is likely that large sales growth without the addition of employees will be less harmful than concomitant substantial employment and sales growth. As employee counts rises, so does the potential for workforce problems due to the lengthy socialization and coordination process (DeSantola & Gulati, 2017). The efforts needed for the successful expansion of the workforce also detracts managers' attention from individual employees and reduces the allocation of monetary benefits among incumbent employees. Because new ventures require management attention, it draws managerial attention away from incumbent workers. New ventures that expand sales faster than employees are in a better position to focus efforts towards the development of generous employee benefits along with investments in the organizations culture. Taken together, the above arguments suggest that whether the new venture is able to delay the occurrence of high adjustment costs of sales growth is dependent upon the levels of employment growth. Ventures with lower level of employment growth are able to reap the benefits of higher sales growth without incurring dominant adjustment costs. This suggests that employment growth serves as a moderator of the relationship between sales growth and job satisfaction so that the problems of sales growth occur at higher levels when employment growth is lower. Formally stated this leads to the following hypothesis:

***Hypothesis 2: Employment growth moderates the relationship between new venture sales growth and job satisfaction. The inflection point at which job satisfaction turns negative occurs at higher levels of sales growth when employment growth is lower.***

## METHOD

### Data and Sample

In order to test our hypotheses, we created a multi-level dataset linking new ventures and employees, leveraging PrivCo and Glassdoor.com, respectively. PrivCo collects information about private firms and new ventures, including annual financial performance metrics, employee counts, as well as funding, and founder data. Using both proprietary data sourcing technology and human verification, PrivCo covers around 900,000 privately held firms worldwide. PrivCo emphasizes high potential private firms with high growth rates, generally with sales in excess of \$10 million, though their dataset covers firms of all sizes so long as the PrivCo team can verify the firm's financial footprint. This makes PrivCo highly relevant for testing our hypotheses given the wide variance in firm growth rates. Knowing that most new ventures do not grow at all, and only a very small proportion exhibit extensive growth, a more typical sample of new ventures is less likely to exhibit adjustment costs to any substantial extent.

To reduce heterogeneity, we built a filtered list of 3921 firms based on the following search criteria. First, we include only firms with headquarters in the United States. Second, we only include new ventures, less than ten years old with founding dates between 2006 and 2015. Third, the firm must be stand-alone (i.e. not a subsidiary of an established firm).

We then merged PrivCo's firm-level data with employee data from Glassdoor.com. Glassdoor.com is a public website where employees post feedback about their employment experience and rate various aspects of their work environment, such as their satisfaction with management, company culture and work-life balance. Glassdoor.com has a policy and tools in place to prevent employers from interfering with employee feedback. Moreover, unlike other job

posting sites, Glassdoor adopts the Give-to-Get (GTG) policy meaning that in order to read more than 3 pieces of reviews for an employer, one is required to submit his/her own reviews. This kind of economic incentive reduces self-selection bias commonly found in online reviews (Marinescu, Klein, Chamberlain, & Smart, 2018).

To obtain employer-employee matches, we created a tailored suite of software tools to aide in automated large-scale data collection from Glassdoor's publicly available application programming interface (API) and supplemented by web scraping (see Landers et al., 2016 for an overview). The software leverages the Python programming language to parse the employee data found on the website Glassdoor.com. The first step in our employer-employee matching process searched each firm record from Privco for a corresponding presence on Glassdoor.com via their public API. The API allows our software to query the Glassdoor.com database by company name, and as such, the API has potential to return multiple results on any query. To handle this issue, the software generated three separate files: one to one matches; no matches; and multiple matches. We then audited a random sample of the one-to-one matches to ensure their accuracy. We examined the multi-match file manually and when possible, we extracted a match.

The final matched list held the entry point for each firm's Glassdoor.com presence, where our scraping software program then iterated through each page of employee feedback, downloading each employee record, which we parsed into a format that to be analyzed by traditional statistical analysis. We provide a screenshot of an example employee record in Figure 1. We matched the year of the employee record with the appropriate year of firm growth, lagged by one year. We then verified employee location and firm location for all cases and refined the sample by dropping firms with less than five employee records. Finally, we dropped all records that contained missing values for any of our variables. This resulted in a pooled cross-sectional



sample including 8,397 employee records nested within 274 firms. The median sales for our sample firms are \$30M, and the median employee size is 147.

## Measures

**Dependent variables:** Job satisfaction is the evaluative judgement of an individual on their job attributes. Specifically, “satisfaction is the assessment of the favorability of a job, typically arrayed along a continuum from positive to negative” (Judge et al., 2017). Thus, measures of job satisfaction typically tap into the respondent’s evaluation of either a global assessment of the job or the different aspects or facets of one’s job (Saari & Judge, 2004). Composite measures may include more distinctive aspects of the job (Spector, 1997) and have been widely adopted in previous studies (e.g., Bruck, Allen, & Spector, 2002; Wright & Bonett, 2007). This is based on the premise that different job characteristics may have varying influence on the employee satisfaction (Saari & Judge, 2004). Glassdoor asks employees to evaluate their satisfaction level along five dimensions: compensation and benefits; career opportunities; management; company culture and values; and work-life balance. Measurements are on a five-point scale ranging from one to five. These items are reminiscent of other scales used in the job satisfaction literature, such as the Job Descriptive Index (JDI; Smith, Kendall, & Hulin, 1969) and the Minnesota Satisfaction Questionnaire (MSQ; Weiss, Dawis, & England, 1967). For example, the widely deployed JDI scale examines five job attributes: work, pay, promotion, coworkers and supervision. Similar to Glassdoor’s measurement strategy, five-point Likert-type measurements are common (Johnson, Smith, & Tucker, 1982). The MSQ also utilizes a five-point Likert-type scale and is noted for its high internal constancy, with studies using the composite measure reporting alphas above 0.80 (e.g., Hirschfeld, 2000).

Prior research validates this scale. For example, Huang, Li, Meschke and Guthrie (2015) found that for each year, the “100 Best Companies to Work For” listed in the Fortune magazine were rated significantly higher than other companies in the Glassdoor ratings. Similar finding was reported by O’Reilly, Caldwell, Chatman and Doer (2014). When summed to an index our measure of *job satisfaction* has high internal consistency (Cronbach’s  $\alpha = 0.93$ ).

**Independent variables:** Both *employment* and *sales growth* are key dimensions of growth and provide different insights (Delmar & Wiklund, 2008). We utilize both for our analysis. Following prior research (e.g., Shepherd & Wiklund, 2009) the growth measure is calculated as  $(\text{Size } t-1 - \text{Size } t-2) / \text{Size } t-2$ . Note that we lag growth variables one year to reduce the reversal causality concern. Further, we winsorized the growth variables at the 0.01 level to reduce outlier influence.

**Control variables:** We include control variables at both the individual and firm level. We include a dummy variable for whether respondents disclosed their job title with their testimonial, as a proxy for how anonymous the employee sought to be (*Anonymous*). Previous studies suggest that fear of retaliation influences an employee’s intention of leaving honest feedback (Smith & Fortunato, 2008). We also included the employment status of the respondent at the time of leaving the review (*Employed*), as employees who were fired or resigned may have a more negative opinion on the firm. We controlled for the number of words the respondent left (*Word count*). Respondents who wrote more words for the review may have a better understanding of the firm’s situation and/or a more careful attitude towards writing reviews. At the firm level, we control for the firm’s size in terms of both employees and sales (*Employees; Sales*), the *Industry* (Delmar & Wiklund, 2008), coded by their 2 digit SIC code, and the *Time* effect (using year dummies that capture year-to-year changes in the macro environment). The employee and sales number are both

log transformed to reduce outlier influence. Finally, considering the possibility of dual causality between growth and job satisfaction (Schneider et al., 2003), we also control for the *firm-level job satisfaction* at year t-1 by taking the average of job satisfaction evaluations of all employees of a given firm in that year. The following equations test Hypothesis 1 and Hypothesis 2, respectively.

$$\begin{aligned} \text{Job satisfaction}_{i,t} = & \beta_0 + \beta_{\text{time}} + \beta_{\text{industry}} + \beta_1 \text{anonymous}_{i,t} + \beta_2 \text{employed}_{i,t} + \\ & \beta_3 \text{word count}_{i,t} + \beta_4 \log\_employees_{j,t-1} + \beta_5 \log\_sales_{j,t-1} + \\ & \beta_6 \text{firm\_level job satisfaction}_{j,t-1} + \beta_7 \text{firm growth}_{j,t-1} + \beta_8 \text{firm growth}^2_{j,t-1} + \epsilon_{i,t} \quad (1) \end{aligned}$$

$$\begin{aligned} \text{Job satisfaction}_{i,t} = & \beta_0 + \beta_{\text{time}} + \beta_{\text{industry}} + \beta_1 \text{anonymous}_{i,t} + \beta_2 \text{employed}_{i,t} + \\ & \beta_3 \text{word count}_{i,t} + \beta_4 \log\_employees_{j,t-1} + \beta_5 \log\_sales_{j,t-1} + \\ & \beta_6 \text{firm\_level job satisfaction}_{j,t-1} + \beta_7 \text{firm sales growth}_{j,t-1} + \beta_8 \text{firm sales growth}^2_{j,t-1} + \\ & \beta_9 \text{firm sales growth}_{j,t-1} * \text{employment growth} + \beta_{10} \text{firm sales growth}^2_{j,t-1} * \\ & \text{employment growth} + \beta_{11} \text{employment growth} + \epsilon_{i,t} \quad (2) \end{aligned}$$

### **Analytical Method**

We utilize hierarchical liner modeling (HLM) to examine our cross-sectional sample of employees, nested within their respective firms. HLM is most often the best technique for analyzing nested data; common examples include students within a classroom or members of team (Woltman, Feldstain, MacKay, & Rocchi, 2012) and allows researchers to test relationships between lower level variables and those of a higher-order (Aguinis, Gottfredson, & Culpepper, 2013). In our case, at the lower level we are interested in the employee's job satisfaction and at the higher level we are interested in how the firm's growth rate might have an influence. We started with a null model without any predictors and examined the residual variance of the intercept at the firm level. The intraclass correlation (ICC1) was 0.25, indicating a variance of 25% between firms. This suggests the appropriateness of using multilevel modelling for our data.

## RESULTS

Table 1 shows descriptive statistics for our key variables, including means, standard deviations, along with a correlation matrix. The mean annual growth rates are 90.9% for sales and 62.1% for employees, suggesting that these firms are indeed high-potential new ventures as intended by PrivCo. The correlation between sales growth and employee growth is moderate at 0.44, supporting that they tap into different dimensions of the growth construct (Shepherd & Wiklund, 2009).

Table 2 shows the results of HLM regressions. Model 1 includes only the control variables. *Anonymous* employees had a slightly lower job satisfaction rating, and consistent with job turnover literature (Hom, Lee, Shaw, & Hausknecht, 2017), employees who were currently *employed* exhibited higher job satisfaction, than those who had departed the firm. The total *word count* was inconsequential. We can see that size measured by *employees* is negatively related to employee job satisfaction, which is consistent with previous literature (e.g., Idson, 1990), while size according to *sales* had no notable influence. Last, firm-level job satisfaction in the previous year had a positive influence on the employee's current year job satisfaction, suggesting a positive work context is positive for the employee experience (Spreitzer, Sutcliffe, Dutton, Sonenshein, & Grant, 2005). Model 2 adds sales growth and its squared term, showing that sales growth is positively related (0.146;  $p=0.007$ ) while sales growth squared is negatively related (-0.0389;  $p=0.004$ ) to job satisfaction. This suggests an inverted U shape between sales growth and employee job satisfaction. We further verify the existence of this inverted U shape by following Haans, Pieters and He's (2016) suggestion. First, the slopes at two ends of the independent variable should both be statistically significant and of different directions. The range of sales growth in our sample is from -0.47 to 5.5. Thus, using the margin command in STATA, we find that the slope is positive

and statistically significant (0.183; p=0.006) when sales growth is -0.47, and the slope is negative and statistically significant (-0.281; p=0.005) when sales growth is 5.5. Second, the inflexion point and its 95% confidence interval should be within the data range of the independent variable. The inflexion point is 1.883 or 188% and its 95% confidence interval is 1.404 to 2.361, which is well within the range of sales growth rates observed in our sample. It suggests that up to an annual growth rate of 188%, greater growth leads to increases in employee job satisfaction, but above that level, job satisfaction starts to suffer. This provides support to Hypothesis 1a.

Model 3 adds employee growth and its squared term to the control variables. Employee growth is positively related (0.226; p=0.004) while employee growth squared is negatively related (-0.0737; p=0.012) to satisfaction with career opportunities. Again, following Haans et al. (2016), we find an inverted U shape between employee growth and job satisfaction. Specifically, employee growth ranges from -0.52 to 3.44 in our sample. The slope is positive and statistically significant (0.302; p=0.005) when employee growth is -0.52. The slope is negative and statistically significant (-0.279; p=0.038) when employee growth is 3.43. The inflexion point is 1.533 or 153%, and the confidence interval is 0.992 to 2.074, which is within the range of employee growth rates observed in our sample. Thus, we find support also for Hypothesis 1b.

Model 4 adds the interaction terms of sales growth and employment growth to Model 2, following Haans et al.'s (2016) suggestion for model specification of moderated curvilinear relationships. Using the *nlcom* command in STATA, we calculate the inflection points for sales growth at different levels of employment growth. Specifically, the calculation is as follows (coefficient numbers from Equation 2)

$$\text{Inflexion point} = \frac{-\beta_7 - \beta_9 * \text{employment growth}}{2\beta_8 + 2\beta_{10} * \text{employment growth}}$$

As shown in the table, when employment growth is -0.07 (1 SD below the sample mean), the inflection point for sales growth is 1.79 or 179%. When employment growth is 0.62 (sample mean), the inflection point is at 1.53 or 153%. When employment growth increases to 1.32 (1 SD above the sample mean), the inflection point for sales growth moves further to the left to -5.8. The relationships are better illustrated in Figure 4 which plots the estimation of the relationship between sales growth and job satisfaction for three levels of employment growth: at the mean; at 1 SD below the mean; and at 1 SD above the mean. Interestingly, the plot shows that at zero sales growth, the lowest job satisfaction is observed for those with the lowest employment growth. This is in line with the overall premise of the paper that up to a point growth, whether employment or sales, is positive for job satisfaction and that job satisfaction is lower in stagnate firms. It is also apparent that at the highest levels of employment growth, sales growth leads to no benefits in job satisfaction, confirming the high adjustment costs associated with employment growth. In fact, at this high level of employment growth, job satisfaction decreases slightly with increases in sales growth. The plots also indicate that the inflection points appear further to the right at lower levels of employment growth. Overall, these results support Hypothesis 2.

### **Robustness Checks and Post Hoc Analyses<sup>1</sup>**

In addition to the results above, we conducted several robustness checks. First, variable distributions may influence results. Thus, we used log transformed growth measures as robustness checks. Results remained unchanged. Second, the concept of new venture has no precise universally accepted definition (McDougall, Covin, Robinson, & Herron, 1994; Zahra, 1996; Zahra, Nielsen, & Bogner, 1999). Therefore, as a robustness test we used different cutoffs for

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<sup>1</sup> Results tables for the robustness checks and post hoc analyses are included in the technical appendix.

sample inclusion, excluding from our sample all firms that were 8 years or older. Results remain qualitatively the same.

## **DISCUSSION**

As hypothesized, we observe that job satisfaction has a curvilinear relationship with new venture growth. Employee job satisfaction increases with increases in growth rates up to a point, after which it starts going down. Specifically, on average these inflection points occur at annual growth rates of 188% for sales and 153% for employment. These might seem like high numbers, but in the context of new ventures they are less extreme. For example, a company started by two business partners that employs 33 people three years later may be above the inflection point of 153% annual employment growth every year. Similarly, starting off with sales of \$1M in year one, hitting \$24M three years later can put you above 188% annual sales growth every single year. Moreover, we find that for those ventures that expand at one SD below the mean in terms of employment growth, their inflection point occurs at 26% higher sales growth rate than for those that grow at the sample mean of employment growth.

### **Theoretical Contributions**

These findings have important implications for several literatures. First, Penrose (1959)'s growth theory has been widely adopted in the entrepreneurship literature. The notion of the "Penrose effect" is well documented. What is less well known, however, is how such limitation of managerial capacity pan out. We hypothesize and show empirically that the growth influences the job satisfaction of the entrepreneurial workforce in ways consistent with the Penrose effect. Thus, we identify an important mechanism for the receding managerial capacity. Interestingly, as we hypothesize, it seems that the employment growth drives adjustment costs more than sales growth.

Although not explicated stated by Penrose, interpretations of her work have asserted that Penrose's theory is more closely linked to employment than sales growth (Shepherd & Wiklund, 2009). With this paper, we provide more fine-grained elaboration as well as empirical support of those assertions.

We also resolve the tension between the literature suggesting growth is inherently good (Coad et al., 2014; Shane, 2009) and those noting the growing pains associated with growth (Chen, Williams, & Agarwal, 2012; Flamholtz & Randle, 2012). Based on our research it appears that these two views do not contradict, but instead complement each other. Both views bring important insights to the table, just at different facets of the growth spectrum. In our sample, as in any sample of growing new ventures, we would expect some to display more severe growing pains in terms of reduced job satisfaction and some displaying the benefits of growth and greater job satisfaction.

We also contribute to the broader job satisfaction literature generally and the job satisfaction of the entrepreneurial workforce specifically. To date, research within the entrepreneurship literatures has focused on and offers important theoretical insights into the job satisfaction of the entrepreneur (Benz & Frey, 2008; Stephan, 2018), but little is known about the experiences of the entrepreneurial workforce. Working in a new venture is unique, thus warranting unique theory. Importantly, among the 274 firms included in our sample are some of the most prominent and high-profile new ventures in the world (e.g., Uber, Airbnb, and Blue Apron) that have created new industries and/or have rapidly risen to industry leadership. They are growing extensively and are also fighting hard to recruit and maintain talent. Thus, the factors that contribute or detract to job satisfaction in these companies are of great scholarly and practical interest. Despite this, these types of firms (new, impactful ventures) have received next to no attention in the job satisfaction literature. With this paper, we have taken a small but important



step towards shedding light on these businesses, showing that the highest level of success comes at a cost in terms of job satisfaction. Moreover, despite its prominence, the role of firm performance for job satisfaction has received relatively scant attention (Schneider, 2018). To the extent that this relationship has been examined, it assumes that better performance is associated with greater job satisfaction (Schneider et al., 2003; Wright et al., 2005). We suggest that the performance -- job-satisfaction relationship could be non-linear. This could depend on the organizational context or the specific dimensions of performance examined, both, or neither. Regardless, it is certainly worthwhile to more generally consider potentially curvilinear relationships between performance and job satisfaction. It resonates with the more general ‘too-much-of-good-thing’ effect (Pierce & Aguinis, 2013) suggesting that linear relationships don’t hold up at more extreme levels.

In addition to our theoretical and empirical contributions, our study also offers methodological contributions. Within the broader organization literature, scholars are turning their attention towards the potential of data science techniques (Tonidandel, King, & Cortina, 2018) with calls for researchers to capitalize on the plethora of data on the Internet (e.g., George, Haas, & Pentland, 2014). Here, we demonstrate this potential by building a large multi-level data set with diverse firms, which would otherwise be very time intensive and costly. Leveraging Glassdoor’s API along with the creation of custom software to harvest employee data, we are able to collect this data in an efficient and unobtrusive manner (Landers, et al., 2016). Further, we are able to collect data across multiple years – simultaneously resolving sample size issues found in the entrepreneurship literatures (Short, Ketchen, Combs, et al., 2010) and longitudinal issues found within the job satisfaction literature (Guest, 2011).

### **Contributions to Practice**

This research also offers several contributions for practice. First, people spend a large portion of their life at their workplace. Thus, studies illuminating what makes one work environment superior to another is highly valuable for society. As employees evaluate career opportunities within new ventures, understanding the growth trajectory of the firm is important predictor of what the working experience will be like. The growing new venture has the resources and the need to offer employees career advancement (Bennett & Levinthal, 2017), whereas a stagnating firm may also lead to career stagnation within the firm. While career mobility is increasing common, changing employers also comes with costs, such as cultural acclimation and stresses associated with changing environments. Thus, employees who inquire about the firm's growth are likely to find signals regarding their own opportunity within the firm (Short, Ketchen, Shook, & Ireland, 2010).

However, if the new venture is in the midst of extreme growth, the environment will face challenges. The rapid addition of employees creates a level of cultural and managerial chaos. For example, consistently finding the 'right' employees in the midst of rapid growth becomes increasingly difficult and hiring the 'wrong' employees will compromise the social psychological attributes of the a new venture (Forbes, Borchert, Zellmer-Bruhn, & Sapienza, 2006). Further, new employees outnumber those with experience in the rapidly growing firm (DeSantola & Gulati, 2017). Even for those with previous job experience, they are not acclimated to the ways of the firm, adding additional day-to-day burden on the workforce with longer tenure. During high velocity growth, the founder faces a rapid role change as well, which has a large impact on the firm (Mathias & Williams, 2018). For example, the founder must delegate leadership responsibility to others and these new leaders need to carry the imprint of the founder to ensure leadership consistency. At rapid growth, this task becomes much more challenging.

## **Limitations and Future Directions**

This study faced several limitations that open new opportunities for future research. First, while we benefited from a multi-level data structure, we were unable to examine certain individual attributes that likely play an important role how organizational attributes influence job satisfaction. For example, in our study the gender of the employee is unknown, which may lead to different effects based on gender composition of the firm (e.g., Scandura & Lankau, 1997). Therefore, a future research opportunity lies in identifying interaction effects between employee gender, the gender distribution of the firm, and new venture growth rate. Further, these relationships are likely to play out differently based on the industry the firm. There is reason to believe that in labor-intensive manufacturing industries, the rapid increase in employees such as assembly line workers is less detrimental to firm management.

Next, our sample was limited to new ventures headquartered in the United States. Organizational research highlights the differing nature of the work experience across different cultures. Recent findings suggest that dimensions of culture play an important role in how employees experience demands associated with their jobs (Jang, Shen, Allen, & Zhang, 2018). Another opportunity for future research could test whether the inverted u-shape relationship holds in collectivist cultures or if it is specific to new ventures in individualistic leaning countries, such as the United States.

Further, while our study benefited from the pooled cross-sectional nature of the data, robust future opportunities exist with repeated measure within-individual designs. Such design could further reduce concerns with endogeneity in addition to enabling tests of stability regarding job satisfaction in both the long and short term as the firm undergoes changes due to its growth. For example, growth provides the firm multiple sources to prevent the job satisfaction adaptation

effects proposed by Judge et al., (2010), where positive attitudes wane over time. One possible explanation is that under the chaotic conditions of extreme growth, the effects of positive changes at work are short lived.

## CONCLUSION

In examining the entrepreneurial workforce, our study offers significant implications for theory at the intersection of firm growth, entrepreneurship, and job satisfaction. Employees within new ventures participate in an environment that is rife with uncertainty, intimacy, and day-to-day ambiguity, leading to a unique work experience. By theorizing and finding a nuanced nonlinear relationship between new venture growth and the job satisfaction of the entrepreneurial workforce, we offer a deeper appreciation of some of the internal costs associated with firm growth and its impact on the workforce.

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**TABLE 1**  
**Descriptive statistics and correlation matrix**

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Career opportunity <sub>t</sub>	3.565	1.488													
2. Compensation <sub>t</sub>	3.546	1.326	0.73***												
3. Cultural value <sub>t</sub>	3.760	1.490	0.78***	0.67***											
4. Senior management <sub>t</sub>	3.435	1.574	0.83***	0.71***	0.84***										
5. Work life balance <sub>t</sub>	3.528	1.390	0.64***	0.61***	0.69***	0.69***									
6. Overall job satisfaction <sub>t</sub>	3.567	1.283	0.91***	0.84***	0.91***	0.93***	0.82***								
7. Anonymous <sub>t</sub>	0.432	0.495	-0.06***	-0.05***	-0.08***	-0.07***	-0.06***	-0.07***							
8. Employed <sub>t</sub>	0.697	0.460	0.47***	0.39***	0.45***	0.48***	0.37***	0.49***	-0.02*						
9. Word count <sub>t</sub>	56.357	38.070	0.07***	0.06***	0.05***	0.07***	0.03**	0.06***	-0.03**	0.05***					
10. Employees (log) <sub>t-1</sub>	6.011	1.439	-0.14***	-0.10***	-0.12***	-0.17***	-0.14***	-0.15***	-0.09***	-0.07***	-0.14***				
11. Sales (log) <sub>t-1</sub>	18.070	1.733	-0.09***	-0.04***	-0.08***	-0.13***	-0.06***	-0.09***	-0.04***	-0.03**	-0.11***	0.83***			
12. Firm-level job satisfaction <sub>t-1</sub>	3.599	0.836	0.29***	0.28***	0.29***	0.32***	0.27***	0.33***	-0.02*	0.19***	0.05***	-0.28***	-0.17***		
13. Sales growth <sub>t-1</sub> (w)	0.909	1.179	0.06***	0.06***	0.02	0.05***	-0.04***	0.03**	0.01	0.04***	-0.02	-0.13***	-0.19***	0.13***	
14. Employee growth <sub>t-1</sub> (w)	0.621	0.697	0.18***	0.14***	0.14***	0.18***	0.06***	0.16***	0.01	0.15***	-0.00	-0.07***	-0.10***	0.36***	0.44***

Notes: (w) denotes winsorized variable.

**TABLE 2**

**HLM Regression Results for Overall Job Satisfaction**

	Model 1	Model 2	Model 3	Model 4
Industry effects	Included	Included	Included	Included
Time effects	Included	Included	Included	Included
<b>Controls</b>				
Constant	2.842*** (0.614)	2.774*** (0.602)	2.674*** (0.614)	0.00666 (0.00788)
Anonymous $t$	-0.118*** (0.0235)	-0.119*** (0.0235)	-0.118*** (0.0235)	-0.119*** (0.0234)
Employed $t$	1.110*** (0.0258)	1.110*** (0.0258)	1.109*** (0.0258)	1.109*** (0.0258)
Word count $t$	0.000335 (0.000303)	0.000331 (0.000303)	0.000338 (0.000303)	0.000325 (0.000303)
Employees (log) $_{t-1}$	-0.107** (0.0358)	-0.0953** (0.0354)	-0.119*** (0.0362)	-0.0955** (0.0361)
Sales (log) $t-1$	-0.0149 (0.0312)	-0.0162 (0.0310)	-0.00244 (0.0314)	-0.0123 (0.0318)
Firm-level job satisfaction $t-1$	0.0824** (0.0260)	0.0821** (0.0258)	0.0694** (0.0265)	0.0674* (0.0263)
<b>Explanatory</b>				
Sales growth $t-1$		0.146** (0.0546)		0.279*** (0.0737)
Sales growth $t-1^2$		-0.0389** (0.0136)		-0.0788*** (0.0200)
Employment growth $t-1$			0.226** (0.0790)	0.177** (0.0619)
Employment growth $t-1^2$			-0.0737* (0.0292)	
<b>Interactions</b>				
Sales growth $_{t-1}$ X Employment growth $t-1$				-0.240** (0.0768)
Sales growth $^2_{t-1}$ X Employment growth $t-1$				0.0584** (0.0185)
<b>U shape test</b>				
Inflection point	n/a	1.883	1.533	1.79 (Emp growth=-0.07) 1.53 (Emp growth= 0.62) -5.8 (Emp growth= 1.32)
95% confidence interval for extreme point	n/a	[1.404, 2.361]	[0.992, 2.074]	n/a
Slope when growth rate is low	n/a	0.183** (0.0667)	0.302** (0.107)	n/a
Slope when growth rate is high	n/a	-0.281** (0.0998)	-0.279* (0.135)	n/a
<b>Model</b>				
Number of observations (level 1/level 2)	274/8397	274/8397	274/8397	274/8397
Log likelihood	-12164.498	-12160.478	-12160.421	-12154.772
Wald chi2	2040.38***	2062.36***	2053.29***	2081.88***
Snijders/Bosker R-squared Level 1	0.2860	0.2913	0.2878	0.2941

**Figure 1. Example reviews from Glassdoor.com**

Jan 6, 2016

Helpful (262)



## "An amazing and inspiring place to work"



Current Employee - Operations and Logistics Manager in Chicago, IL

Recommends

Positive Outlook

Approves of CEO

I have been working at Uber full-time (Less than a year)

### Pros

I love being able to work around truly passionate people who are ready to change the world. The culture is great, free snacks and food is big plus. I had the opportunity to take ownership of projects within my first month

### Cons

The hours are much longer than any other job I've worked in, but this is expected to change as we continue hiring more help

### Advice to Management

Keep up the great work! I'm excited to see the company grow and mature and hope that we don't lose the strong culture we have now



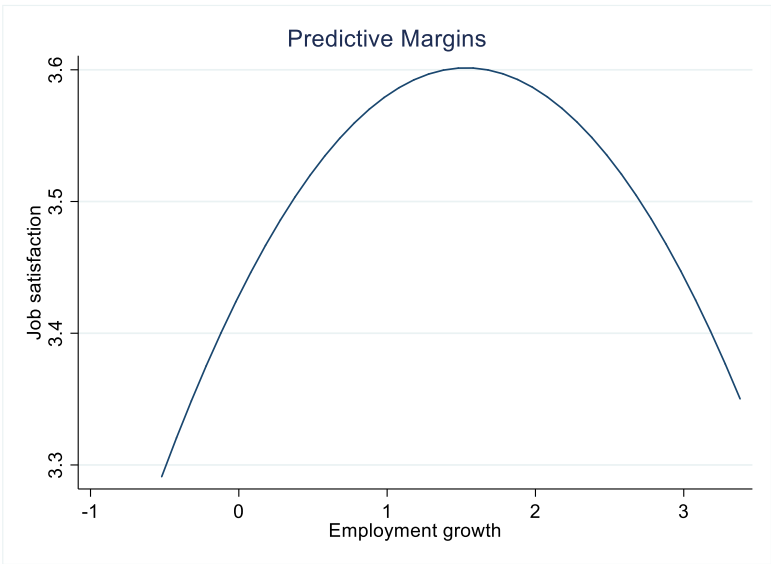
Helpful (262)



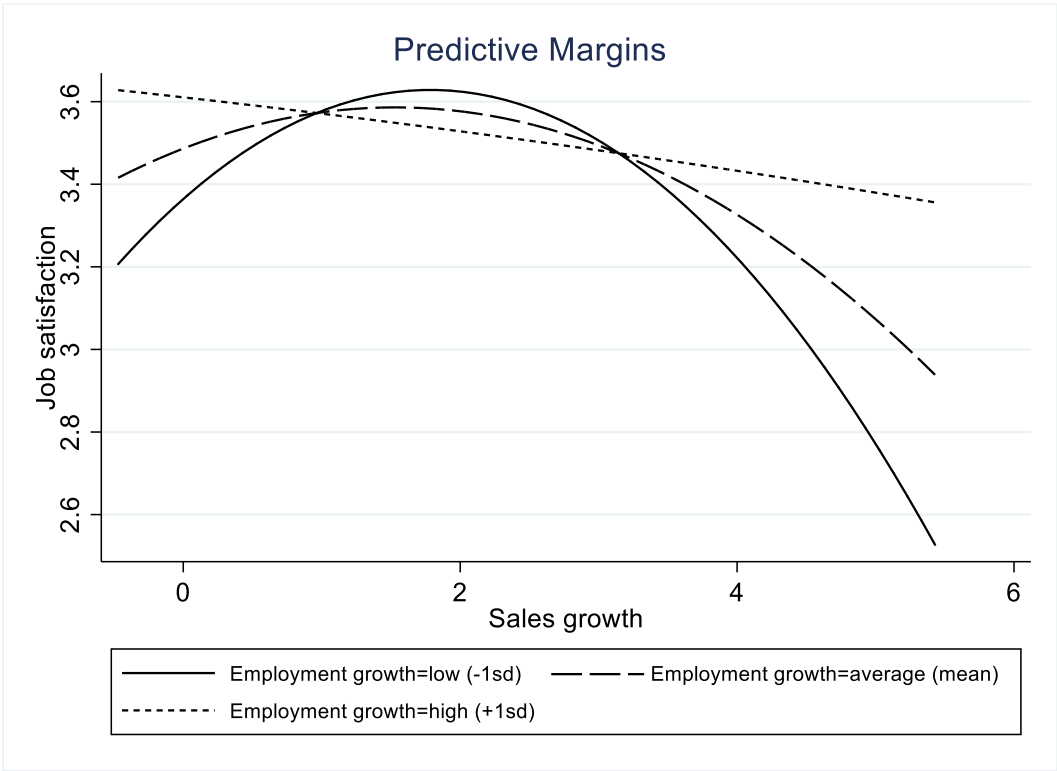
**Figure 2. Firm sales growth and overall job satisfaction**



**Figure 3. Firm employment growth and overall job satisfaction**



**Figure 4. Firm sales growth and job satisfaction, moderated by employment growth**





## APPENDICES

**Table 1. HLM Regression Results Using Log Transformed Growth Measures**

	Model 1	Model 2	Model 3	Model 4
Industry effects	Included	Included	Included	Included
Time effects	Included	Included	Included	Included
<b>Controls</b>				
Constant	2.842*** (0.614)	-17.639* (7.994)	-38.757* (18.33)	-1064.526** (326.6)
Anonymous $t$	-0.118*** (0.0235)	-0.119*** (0.0235)	-0.118*** (0.0235)	-0.120*** (0.0234)
Employed $t$	1.110*** (0.0258)	1.110*** (0.0258)	1.109*** (0.0258)	1.109*** (0.0258)
Word count $t$	0.000335 (0.000303)	0.000337 (0.000303)	0.000334 (0.000303)	0.000322 (0.000303)
Employees (log) $_{t-1}$	-0.107** (0.0358)	-0.103** (0.0353)	-0.117** (0.0362)	-0.0996** (0.0361)
Sales (log) $t-1$	-0.0149 (0.0312)	-0.0120 (0.0311)	-0.00369 (0.0315)	-0.00820 (0.0318)
Firm-level job satisfaction $t-1$	0.0824** (0.0260)	0.0852*** (0.0258)	0.0709** (0.0264)	0.0684** (0.0263)
<b>Explanatory</b>				
Sales growth $t-1$		16.542* (6.436)		864.833** (266.6)
Sales growth $t^2_{t-1}$		-3.343* (1.299)		-175.038** (54.34)
Employment growth $t-1$			33.869* (15.16)	436.439** (135.7)
Employment growth $t^2_{t-1}$			-6.892* (3.140)	
<b>Interactions</b>				
Sales growth $_{t-1}$ X Employment growth $t-1$				-353.398** (110.7)
Sales growth $^2_{t-1}$ X Employment growth $t-1$				71.485** (22.55)
<b>U shape test</b>				
Inflection point	n/a	2.474	2.457	2.45 (log emp growth=2.29) 2.43 (log emp growth= 2.36) 2.28 (log emp growth= 2.43)
95% confidence interval for extreme point	n/a	[2.411, 2.537]	[2.389, 2.525]	n/a
Slope when growth rate is low	n/a	1.565* (0.650)	2.991* (1.159)	n/a
Slope when growth rate is high	n/a	-3.182* (1.250)	-3.488* (1.900)	n/a
<b>Model</b>				
Number of observations (level 1/level 2)	274/8397	274/8397	274/8397	274/8397
Log likelihood	-12164.498	-12161.3	-12160.9	-12154.9
Wald chi2	2040.38***	2060.3***	2051.4***	2083.6***
Snijders/Bosker R-squared Level 1	0.286	0.291	0.288	0.295

**Table 2. HLM Regression Results Using Firm Cutoff Age of Eight**

	Model 1	Model 2	Model 3	Model 4
Industry effects	Included	Included	Included	Included
Time effects	Included	Included	Included	Included
<b>Controls</b>				
Constant	3.008*** (0.632)	2.919*** (0.616)	2.757*** (0.628)	2.734*** (0.636)
Anonymous $t$	-0.111*** (0.0245)	-0.112*** (0.0245)	-0.112*** (0.0245)	-0.113*** (0.0245)
Employed $t$	1.114*** (0.0271)	1.113*** (0.0271)	1.113*** (0.0271)	1.112*** (0.0271)
Word count $t$	0.000322 (0.000316)	0.000321 (0.000316)	0.000332 (0.000315)	0.000312 (0.000315)
Employees (log) $t-1$	-0.0704+ (0.0382)	-0.0557 (0.0377)	-0.0911* (0.0384)	-0.0678+ (0.0383)
Sales (log) $t-1$	-0.0341 (0.0329)	-0.0351 (0.0327)	-0.0145 (0.0330)	-0.0176 (0.0335)
Firm-level job satisfaction $t-1$	0.0700* (0.0277)	0.0716** (0.0274)	0.0552* (0.0281)	0.0524+ (0.0279)
<b>Explanatory</b>				
Sales growth $t-1$		0.168** (0.0563)		0.287*** (0.0760)
Sales growth $t-1^2$		-0.0456** (0.0139)		-0.0796*** (0.0203)
Employment growth $t-1$			0.267** (0.0828)	0.243*** (0.0642)
Employment growth $t-1^2$			-0.0722* (0.0302)	
<b>Interactions</b>				
Sales growth $t-1$ X Employment growth $t-1$				-0.245** (0.0775)
Sales growth $t-1^2$ X Employment growth $t-1$				0.0561** (0.0186)
<b>U shape test</b>				
Inflection point		1.844	1.847	1.824 (Emp growth=-0.08) 1.495 (Emp growth= 0.63) -4.729 (Emp growth=1.34)
95% confidence interval for extreme point		[1.428, 2.261]	[1.119, 2.575]	n/a
Slope when growth rate is low		0.211** (0.069)	0.342** (0.112)	n/a n/a
Slope when growth rate is high		-0.333** (0.102)	-0.229+ (0.139)	n/a n/a
<b>Model</b>				
Number of observations (level 1/level 2)	254/7593	254/7593	254/7593	254/7593
Log likelihood	-10941.7	-10936.4	-10936.0	-10928.6
Wald chi2	1843.2***	1869.2***	1863.2***	1896.4***
Snijders/Bosker R-squared Level 1	0.284	0.291	0.288	0.296

+ p<0.1, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001