HERE TO LAST? EVALUATING THE IMPACT OF BUSINESS FACTORS ON STARTUP CONSTANCY

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Abstract

The purpose of this article is to analyze how entrepreneurial constancy is affected for private-sector firms of varying maturities. As the entrepreneurial ecosystem in a state affects firms differently based on their age, we construct an empirical model of constancy. This article compiles annual data by state from 2001-2020 on compensation, constancy, contribution, and creation by firm age (0-1 years, 2-3 years, 4-5 years, 6-10 years, 11+ years) as well as measures of economic freedom and annual average unemployment rates. We then use OLS estimation to model constancy of firms in the private sector by firm age. Regardless of the maturity of firms, whether startups or firms aged 11+ years, compensation produces a positive, statistically significant effect on constancy. We further observe that increases in economic freedom and unemployment rates lead to increases in constancy for startup firms in the private sector. This article adds to the business and entrepreneurship literature through both its disaggregated analysis by firm age and its regression analysis in modeling constancy.

Research Paper

Keywords: Constancy, Firm maturity, Economic freedom, Kauffman, State Business Environment, Startups

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Introduction

In the private sector, startups have emerged as pivotal contributors to innovation, job creation, and economic development. The unique role of startups within their first year of operations has garnered interest from policymakers, economists, and researchers alike. But how much do firms less than one year in age compare to more mature, established ones in the private sector for job constancy and stability?

There is considerable discussion, both theoretical and empirical, in the literature related to the life cycle or stages of evolution for firms in the context of entrepreneurship (Lewis & Churchill, 1987), growth for small businesses in an international context (Chen & Zhang, 2017), and entrepreneurial ecosystems both outside the U.S. (Fuerlinger et al., 2015) and within it (Tula et al., 2024). However, what is generally lacking in entrepreneurship literature is how firms at varying stages of the lifecycle or maturity compare in their constancy, stability, and job contribution. Constancy, related to the longevity or persistence of jobs for three or more quarters at firms, is indicative of the business environment in states, especially for startups. Kritikos (2014) identifies that startup firms promote competition with established firms, thereby affecting an overall industry. Newcomer firms in an industry place pressure on other firms. But is such competition in connection to employment and firm survival rates? For job creation, Hyatt (2022) finds that newer firms within the United States tend to lead increased employment in comparison to more mature firms. But does this empirical result similarly apply when looking at state-level data as opposed to strictly data at the national level? These lingering questions lead us to explore how entrepreneurial constancy at the state level is affected through job creation and economic conditions.

This article aims to dissect the influence of startups on constancy in the private sector, the internal and external factors that impact job stability of startups in their nascency, and to relate these findings to the "Entrepreneurial Job Indicators" as measured by the *Kauffman Indicators of Entrepreneurship*. The Ewing Marion Kauffman Foundation presents entrepreneurship metrics on both the state and national levels annually; they provide insight, especially when inspected over time, for how entrepreneurship changes within states and the country as well as relative benchmarks. These Kauffman Indicators, indexed annually for U.S. states, are not discussed or analyzed extensively in entrepreneurship literature. The primary focus will be on the share of privatesector jobs held by these firms (Contribution), the relative earnings at those firms as compared to the average of all firms across the United States (Compensation), the number of new jobs created by the firms (Creation), and the current research on the causes and impacts of stable job creation. There is relatively little discussion in business and entrepreneurship literature of these Kauffman Indicators and especially how constancy is affected by contribution, compensation, and job creation.

Additionally, this paper evaluates the trends and job stability within startups, considerations for broader unemployment trends, and the impact on entrepreneurship from economic freedom. By exploring these areas, we seek to provide an understanding of the current state of startup employment, the factors driving these trends, and the implications of these findings for the workforce. This paper contributes to the broader entrepreneurship literature by investigating how constancy is impacted for firms of varying maturities as a result of entrepreneurial and economic conditions. It also enhances past literature by considering state-level (as opposed to national) data over time for

evaluating the evolution or maturity of firms. It also applies to business and economics discussion for better analyzing the decision process of firms to open and their life cycle in contributing within an industry.

Background

The Business Dynamics Statistics (BDS) from the U.S. Census Bureau, covering four decades up to 2019, reveal significant trends in job growth and employment across U.S. firms, highlighting the increasing dominance of older, more mature firms in employment share. This period has seen a shift towards employment concentration in older firms, which, by 2019, accounted for around 90% of all employees (Goetz & Stinson, 2022; Batrancea et al., 2019, 2022). For the period 2001-2020 the share of jobs in the U.S. contributed by startups has been declining Contribution for startups increased between 2001 and 2003, peaking at 4.6%. It then declined to 3.2% in 2020. In contrast, contribution for firms 11+ years old has increased from 75.4% in 2001 to 81.6% in 2020 (Looze & Goff, 2022). This information will remain important for years to come as the U.S. economy is expected to add 4.7 million jobs by the year 2032 (Bureau of Labor Statistics, 2023), and it is unclear how many of those jobs will be held by startups as the share of private sector jobs held by startups has steadily declined in recent years.

Contribution

Several factors have contributed to the decreased share of private sector jobs held by firms aged 0-1. Notably, there has been a significant decline in the number of high-growth young firms; since roughly 2000, a national decline in dynamism and entrepreneurship has resulted in a decrease in the

number of firms (Decker et al., 2016; Horst et al., 2021). Additional research from the National Bureau of Economic Research identified a "persistent and widespread" decline in startup rates which has been dubbed in the U.S. as the "startup deficit" (Decker et al., 2017). Further studies identified "superstar firms," large firms taking up a progressively larger labor share alongside technological advancements and an increase in total import intensity as major contributing factors to the decrease in Contribution from firms in their first year (Autor et al., 2020).

The impacts of this decrease in the young firm labor share has major implications for the economy. Firstly, lower rates of dynamism result in lower rates of aggregate productivity as individuals reallocate away from younger businesses and into larger, older firms (Alon et al., 2017). This decrease also raises concerns about the potentially less dynamic U.S. economy (Decker et al., 2014). This could impact the U.S. economy's ability to adjust to recover from recessions robustly.

Compensation

According to the *Kaufmann Entrepreneurial Job Indicators* report, startups have, since 2001 consistently shown employee earnings below the average earnings for employees across all firms nationally. The decline between the years 2001 and 2020 with a decline of 14.34% over the period (Looze & Goff, 2022). It has also been found that individuals, on average, who work for startups exhibit lower lifetime earnings as a direct result of the low pay associated with startups (Sorenson et al., 2021). Regarding the self-employed, who do factor into the Kauffman data, the "median self-employed

entrepreneur with employees earns significantly more than the median salaried employee, while the median solo entrepreneur earns less" (Sorger et al., 2017). Despite this, on average, those individuals employed in startups earn less. Many factors could contribute to the fact that, historically, startups pay less than established firms. (Strand, 1987). One notable reason is that larger firms tend to have a higher concentration of better educated, historically more stable workers (Evans & Leighton, 1989). And, with an average size of less than 5 employees per firm, startups are most often categorized as small firms; as previously mentioned, smaller firms tend to pay less than larger firms (United States Census Bureau, 2018). This could also explain part of the earnings gap between startups and older firms (Brown & Medoff, 2003).

Competitive pay scales have noteworthy impacts on both the employees and the productivity at the firm paying competitive wages. Current information has associated lower wages with "significantly earlier and excess mortality rates" (Kezios et al., 2023). In contrast, productivity and lower turnover respond positively to increased wages (Emmanuel & Harrington, 2020).

Creation

According to current data, startups are the most major influential factor in job creation. The most recent Kauffman report shows that startups aged 0-1 years, as a whole, have created roughly 5 jobs per 1,000 people since 2001. Almost all other firms' ages hover at or below 0 jobs created per 1,000 individuals. Notably, firms aged 11+ are responsible for the most removal of jobs in recent years (Looze & Goff, 2022; Tajpour et al., 2021). This demonstrates that, on average, almost all firms 2 years are older are responsible for, at best, breakeven job creation. Other research also demonstrated an inverse

relationship between firm age and job creation; it also concluded that "firm startups account for only 3 percent of employment but almost 20 percent of gross job creation" (Haltiwanger et al., 2013).

This major job growth from startups seems to come from high-growth startups. Many firms fail in their first year(s), but among those that do survive, there is considerable net job growth. This leads to major positive skewness for job growth from young firms (Haltiwanger et al., 2016). However, data suggesting older firms result in job losses indicates an unsteadiness in job security as firms age.

Constancy

Constancy rose steadily across all firm ages between 2001 and 2020. Despite increases in job stability at startups across the period, firms aged 0-1 had significantly lower constancy levels than all other firms aged 2+ (Looze & Goff, 2022). As it is currently understood, individuals employed by startups face a higher risk of unemployment and lower employment stability compared to joining incumbent firms (Schnabel et al., 2011). However, there is noteworthy disagreement on this topic as other researchers argue that entrepreneurship can indeed be compatible with economic and job security (Randolph-Seng et al., 2015).

Unstable jobs have negative impacts on both businesses and individuals suffering from lower employment stability. In terms of the business, it high turnover results in lower productivity and profitability (Al-Suraihi et al., 2021). Similar research finds that the increased cost of hiring, job training, and direct exit costs result in negative financial outcomes for firms with high turnover rates (Sarhadi, 2017).

Regarding the individual, the French CONSTANCES study reveals a clear connection between histories of unemployment and temporary employment and self-reported depression (Hoven et al., 2021). Further studies demonstrate that employment instability, especially job losses, is negatively associated with overall economic well-being (Cai et al., 2023).

Economic Conditions

As emphasized by Witham & Varao (2022), there is a positive relationship between entrepreneurship programming and the opportunity share of entrepreneurs in states. In particular, the opportunity share relates to entrepreneurs starting businesses out of interest as opposed to necessity. However, entrepreneurs still may turn to self-employment and entrepreneurship during recessions and times of heightened unemployment. Research done by the Small Business Administration indicates that unemployment positively increases entrepreneurship (Plehn-Dujowich, 2013). This introduces the concept of "opportunity" and "necessity" entrepreneurs. "Opportunity" entrepreneurs are "individuals coming out of wage and salary work, school, or other labor market status whereas "necessity" entrepreneurs become business owners "due to unemployment" (Fairlie, 2022). Further research indicates that economic freedom is strongly positively correlated with increases in entrepreneurial activity (Dempere & Paucenau, 2022; Hosseini et al., 2021). Campbell et al. (2008) identifies that rising levels of economic freedom leads to both increases in firm startups and, consequently, failures. This information offers some insight into how overall economic conditions affect entrepreneurial indicators.

Methodos

We construct our panel dataset using state-level observations by year from 2001-2020. Our data on constancy, creation, contribution, and compensation are collected from the Ewing Marion Kauffman Foundation's *Kauffman Indicators of Entrepreneurship*. We additionally consider data from the Federal Reserve Bank of St. Louis (FRED) for annual state average unemployment rates. Finally, we consider CATO's Freedom in the 50 States Index for measurements on state economic freedom. Descriptions and sourcing information for each of our variables are included in Table 1.

Table 1. Descriptions and sourcing of variables

Variable	Description	Source
Compensation	the relative earnings of private sector jobs at firms of a given maturity in a state compared to the average earnings at firms of all ages across the U.S. for a given year	Kauffman Indicators of Entrepreneurship
Constancy	the percentage of jobs held at firms of a given maturity lasting three or more quar- ters in a state for a given year	Kauffman Indicators of Entrepreneurship
Contribution	the fraction of jobs that are maintained by firms of a given maturity out of the private sector in a state for a given year	Kauffman Indicators of Entrepreneurship
Creation	number of net new jobs created or lost at firms of a specific maturity per 1,000 people in a state for a given year	Kauffman Indicators of Entrepreneurship
Economic Freedom	overall economic freedom in a state for a given year	CATO's Freedom in the 50 States
Unemployment Rate	the average unemployment rate as a percent in a state for a given year	Federal Reserve Bank of St. Louis (FRED)

Descriptive Statistics

We include descriptive statistics for each of our variables as well as including subsetted descriptive statistics by the age of the business (all ages, 0-1 year, 2-3 year, 4-5 year, 6-10 year, and 11+ years). These are included in Tables 2a-2f.

Table 2a. Descriptive statistics for firms of all ages

Variable Name	Number of Observa- tions	Mean	Standard Deviation	Minimum	Maximum
Economic Freedom	5000	0.0047	0.2224	-0.8118	0.5322
Constancy	4890	0.6438	0.0807	0.3572	0.8276
Creation	4890	0.3236	4.4588	-74.12	25.07
Contribution	4890	0.2	0.3009	0.0225	0.8676
Compensa- tion	4890	0.751	0.187	0.426	1.6913
Unemploy- ment Rate	5100	5.7202	2.9648	2.1	13.7

Table 2b. Descriptive statistics for firms aged 0-1 years

Variable Name	Number of Observa- tions	Mean	Standard Deviation	Minimum	Maximum
Economic Freedom	1000	0.0047	0.2225	-0.8118	0.5322
Constancy	978	0.5273	0.0318	0.3572	0.6208
Creation	978	5.0093	1.4899	1.07	12.69
Contribution	978	0.0354	0.008	0.0225	-0.072
Compensa- tion	978	0.6224	0.1115	0.426	1.1626
Unemploy- ment Rate	1020	5.7202	2.9648	2.1	13.7

Table 2c. Descriptive statistics for firms aged 2-3 years

Variable Name	Number of Observa- tions	Mean	Standard Deviation	Minimum	Maximum
Economic	1000	0.0047	0.2225	-0.8118	0.5322
Freedom Constancy	978	0.6219	0.0342	0.4686	0.7522
Creation	978	-0.0018	0.6845	-5.2	3.1
Contribution	978	0.0387	0.0083	0.0245	0.0734
Compensa- tion	978	0.6699	0.1235	0.4684	1.2232
Unemploy- ment Rate	1020	5.7202	2.9648	2.1	13.7

Table 2d. Descriptive statistics for firms aged 4-5 years

Variable Name	Number of Observa- tions	Mean	Standard Deviation	Minimum	Maximum
Economic Freedom	1000	0.0047	0.2225	-0.8118	0.5322
Constancy	978	0.6459	0.0346	0.4846	0.7333
Creation	978	-0.1043	0.6642	-4.84	6.2
Contribution	978	0.0375	0.0078	0.0228	0.0697
Compensa- tion	978	0.712	0.1345	0.49	1.3964
Unemploy- ment Rate	1020	5.7202	2.9648	2.1	13.7

Table 2e. Descriptive statistics for firms aged 6-10 years

Variable Name	Number of Observa- tions	Mean	Standard Deviation	Minimum	Maximum
Economic Freedom	1000	0.0047	0.2225	-0.8118	0.5322
Constancy	978	0.6702	0.0365	0.5184	0.7677
Creation	978	-0.301	1.2622	-11.36	3.87
Contribution	978	0.0892	0.0158	0.0559	0.1654
Compensa- tion	978	0.769	0.1484	0.5447	1.4644
Unemploy- ment Rate	1020	5.7202	2.9648	2.1	13.7

Table 2f. Descriptive statistics for firms aged 11+ years

Variable Name	Number of Observa- tions	Mean	Standard Deviation	Minimum	Maximum
Economic Freedom	1000	0.0047	0.2225	-0.8118	0.5322
Constancy	978	0.7537	0.0316	0.6374	0.8276
Creation	978	-2.9843	7.82	-74.12	25.07
Contribution	978	0.7993	0.0373	0.6556	0.8676
Compensa- tion	978	0.9819	0.17	0.7247	1.6913
Unemploy- ment Rate	1020	5.7202	2.9648	2.1	13.7

The reason why we choose to break apart these descriptive statistics is that there may be differences for firms of varying degrees of maturity. We additionally include scatterplots through Figures 1-3 to see the evolution process for firms based on their maturity. Each of these scatterplots are generated using the data reported by Kauffman. What we observe is that compensation, creation, and contribution differ greatly by state when controlling for firm age. Compensation is greatest for firms aged 11+ years, shown in Figure 1.

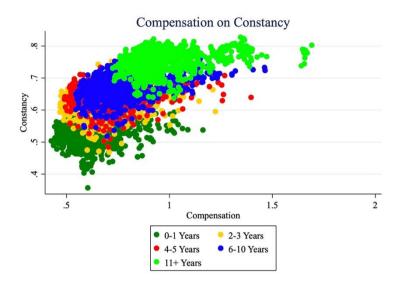


Figure 1. Compensation on Constancy by Age of Business for States (Source: authors)

For fledgling firms or startups between 0-1 years, there are consistently positive creation values in states relative to that of firms aged 11+ years. This is also illustrated in Figure 2.

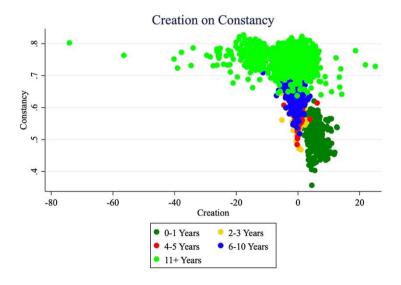


Figure 2. Creation on Constancy by Age of Business for States (Source: authors)

Similarly, we observe much higher contribution values for firms aged 11+ years, illustrated again in the descriptive statistics and Figure 3.

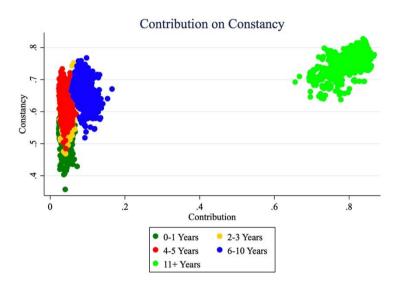


Figure 3. Contribution on Constancy by Age of Business for States (Source: authors)

Given that there appears to be distinctions based on firm maturity, we proceed with the empirical analysis by controlling for the age of firm rather than pooling them together.

Empirical Modelling & Analysis

Model

We run the following model using Ordinary Least Squares (OLS) estimation: $Constancy_{it}^{Age} = \beta_0 + \beta_1 Compensation_{it} + \beta_2 Creation_{it} + \beta_3 Contribution_{it} + \beta_4 EconFreedom_{it} + \beta_5 Unemployment_{it} + \varepsilon_{it},$

where i denotes a state, t denotes a year, and Age denotes the age or maturity of a firm (0-1 year, 2-3 year, 4-5 year, 6-10 year, and 11+ year intervals). We additionally include state- and year-fixed effects in our panel from 2001-2020. As to the anticipated algebraic signs, we would predict that compensation would have a positive effect on constancy because if firms have the ability to provide greater wages or earnings for their employees, this would suggest that the jobs at the firm would be more stable; it is in other words connected to a firm's cash flow. As to creation, we would expect a negative algebraic sign because as jobs are created, there may be redundancy of jobs (i.e. many employees performing the same task and amplifying labor costs for firms). Contribution would expectedly have a positive coefficient in our model as it connects to the business environment of a state; for example, the more jobs that exist for startup firms out of all private sector jobs, this would indicate that there may be a more stable environment for those jobs. As noted in Glaeser & Kerr (2010), Austin, Texas has a strong connection between employment growth and firms per worker (logarithmic). The entrepreneurial ecosystem of a state may support longevity of firms in that area. Finally, we anticipate that increases in both unemployment rates and economic freedom will produce corresponding increases in constancy. Incentive exists for self-employment by entrepreneurs with rising unemployment in an area. The empowering of entrepreneurs through economic freedom motivates stability and constancy.

Empirical Analysis

Table 3 includes our regression results, including variations of our model by firm maturity. Regression (1) evaluates constancy of startup firms

aged 0-1 years in states. We observe that 82.56% of the variation in constancy is explained by the variation in compensation, creation, contribution, economic freedom, the unemployment rate, along with state- and year- fixed effects. We observe similar R² values in each of our regressions, noting a relatively high coefficient of determination in regression (5) for firms aged 11 or more years of 92.61%.

Table 3. Regressions on mean constancy by age of firm

	(1)	(2)	(3)	(4)	(5)
Age of Firm	0-1 Years	2-3 Years	4-5 Years	6-10 Years	11+ Years
Independent Variable					
Compensation	0.0884***	0.0796***	0.1081***	0.0987***	0.0293**
	(0.0118)	(0.0112)	(0.0170)	(0.0136)	(0.0140)
Contribution	1.0777***	1.1174***	-0.0278	-0.0201	0.2861***
	(0.3390)	(0.1676)	(0.2961)	(0.1312)	(0.0496)
Creation	-0.0089***	-0.0012	-0.0004	-0.0000	-0.0001
	(0.0012)	(0.0012)	(0.0017)	(0.0010)	(0.0002)
Economic Freedom	0.0183**	0.0254**	0.0213*	0.0141	0.0104
	(0.0083)	(0.011)	(0.0110)	(0.0089)	(0.0064)
Unemployment Rate	0.0012*	0.0044***	0.0048***	0.0043***	0.0042***
	(0.0007)	(0.0007)	(0.0009)	(0.0007)	(0.0005)
Constant	0.4187***	0.4479***	0.4960***	0.5262***	0.4456***
	(0.0202)	(0.0111)	(0.0175)	(0.0158)	(0.0410)
State-Fixed Effects?	Yes	Yes	Yes	Yes	Yes
Year-Fixed Effects?	Yes	Yes	Yes	Yes	Yes
Robust Standard Errors?	Yes	No	Yes	Yes	Yes
F-statistic	75.11	42.66	60.71	137.53	206.84
\mathbb{R}^2	0.8256	0.7779	0.7855	0.8696	0.9261

Note: *** p-value < 0.01; ** p-value < 0.05; * p-value < 0.10

We perform, checks for heteroscedasticity in each of our models, including robust standard errors where applicable. In each of our regressions (1)-(5), we find that compensation produces a positive, statistically significant (at the 1% level for all maturities except for firms aged 11+ years, which is at the 5% level) effect on constancy. This implies that increases in the relative earnings of private-sector jobs of a firm (regardless of its maturity) would

correspond with increases in the fraction of jobs held in firms of that same maturity. Similarly, contribution produces a positive and statistically significant effect (at the 1% level) on constancy for firms aged 0-1 years, 2-3 years, and 11+ years, but there is not evidence of an effect for firms aged 4-5 years or 6-10 years. This result supports the previous findings of Hyatt (2022) towards the impact of startup firms on employment relative to more mature firms

Creation produces a negative statistically significant effect (at the 1% level) on constancy for firms aged 0-1, but it does not produce a statistically significant effect for firms of any other age. This result is interesting as it uniquely applies to the fledgling, startup firms. Economic freedom produces a positive, statistically significant effect (at the 5% level for firms aged 0-1 years and 2-3 years, at the 10% level for firms aged 4-5 years) on constancy. This positive impact supports the prior findings of Dempere & Paucenau (2022) for economic freedom supporting entrepreneurial startups. Finally, as state unemployment rates increase, there is a positive, statistically significant effect on constancy and stability for firms regardless of maturity. What is observed though is that there is a more significant result on constancy for firms aged 2 years or older relative to startup firms.

Conclusion & Discussion

In each of our models, we find that there is a strong, positive, statistically significant relationship between compensation and constancy. This association underscores the critical role of compensation in fostering job stability at firms, regardless of their maturity in the private sector. This suggests that firms who have the means to offer higher wages are likely to experience

higher constancy. Higher compensation may reflect stronger financial health or commitment to investing in human capital, both of which are also conducive to long-term sustainability (Salamzadeh et al., 2022). The variation in significance (1% level for younger firms and 5% for firms aged 11+ years) may indicate that, while compensation remains important for all firm ages, its incremental impact on constancy may be moderated by other factors that have solidified over time, such as creation, creation and economic freedom at the state level. We further find that contribution, creation, economic freedom, and the average unemployment rate are all factors that statistically impact constancy for startups.

The positive impact of contribution and economic freedom on constancy for firms aged 0-1 years and 2-3 years highlights the importance of a firm's role within the broader state business ecosystem. For younger firms, contributing more towards private sector jobs may signal robustness and high growth potential. For mature firms, the continued impact of contribution on job stability likely reflects sustained competitive advantage and operational efficiency. We additionally observe the creation is only statistically significant (and at the 1% level) for firms aged 0-1 years. This suggests a challenge particularly for startups where rapid job creation may not immediately translate to higher job stability; this could be due to increased costs attributed to hiring and risk of potential redundancy as a firm finds its operational footing. Finally, we note that with increases in unemployment rates, there is an increase in constancy. This suggests potential for entrepreneurial growth, for startups at times of increased unemployment or recession.

Future areas for research expansion include a regional analysis of how constancy may vary across the United States. Though this article incorporates

state-level data from 2001-2020, we do not presently evaluate how there may be geographic trends for regions, such as the Southeast or New England. For example, whereas Fairlie (2022b) identifies that Rhode Island ranks the lowest for early-stage entrepreneurship in states and Vermont for early job creation, it may be interesting to evaluate constancy for regions such as New England. Additionally, investigating the observed variation in compensation, creation, contribution and constancy across different industries could yield industry-specific insights. This could possibly be achieved through a microanalysis rather than aggregating simply to a state or national level. Industries differ in their growth dynamics, regulatory policies and labor demands, each of which could significantly affect how these factors impact constancy.

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