

## articles

# Cultivating Emerging Gazelles: How Entrepreneurial Networks Influence Early Firm Success

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This study delves into the phenomenon of “emerging gazelles”—small, rapidly growing firms pivotal in job creation and economic expansion. By examining a representative sample of U.S. nascent entrepreneurs, we identify the startups that dominate in terms of employment and sales revenue in their inaugural year of operation. While prior research emphasizes the role of networks, our findings suggest that structural social capital—measured as the size of a founder’s network—may be more context dependent than is sometimes assumed. In light of these findings, we discuss practical strategies for entrepreneurs to cultivate networks that may support long-term growth, and for policymakers to foster environments conducive to relationship-building and resource access. Our study contributes to our understanding of high-performing new businesses and provides actionable insights for small business consultants and educators seeking to foster the next generation of high-impact firms.

### Cultivating Emerging Gazelles: How Entrepreneurial Networks Influence Early Firm Success

Entrepreneurship is inherently evolutionary, characterized by a trial-and-error process that leads to the emergence of new ventures (Loasby, 2007). These ventures, often described as learning organizations, provide environments where entrepreneurs can experiment—and they frequently fail. Even rarer are successful new ventures that achieve high revenues or employ a large workforce from the outset. While the impact of these enterprises on local and national economies has been well-documented, less is understood about the factors that drive their creation. The present study focuses on the nascent entrepreneurs who have launched these early successes. By nascent entrepreneurs, we mean those individuals actively engaged in creating a business that has not yet commenced operations (Reynolds et al., 2004). Specifically, we explore the

characteristics of the most successful new ventures—those that, in their first year, rank in the top ten to twenty percent in terms of employment and revenue. Remarkably, these “emerging gazelles” account for over eighty percent of employment and revenue among all nascent firms. Our research aims to unearth the foundational elements—particularly in terms of social and human capital—that enable these ventures to emerge. By identifying these pre-conditions, we seek to provide insights that could inform strategies for fostering similarly successful new businesses.

We use the term “emerging gazelles” to align our study with existing research on rapidly growing firms known as “gazelles.” Gazelles are young companies known for sustaining high growth rates of 20% annual sales revenue or employment within a given time window, typically three or four years (Birch, 1979; Henrekson & Johansson, 2010). Gazelles produce a disproportionate impact on net employment growth as they account for over 60 percent of net job creation (Acs et al., 2008; Haltiwanger et al., 2012).

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Gazelles have been analyzed in terms of their age, size, and geographic distribution (Henrekson & Johansson, 2010); their dispersal across industries (Bianchini et al., 2017; Piazza & Hill, 2021); and the risks they face as they undergo rapid growth (Cristofaro et al., 2024; Santos et al., 2024). While recent research has explored the early development of gazelles, detailed statistical data on the nascent stage, before the firm is officially established, can yield important insights. Studying gazelles using nascent-stage data offers a valuable opportunity to understand how initial resource endowments, founding conditions, and social structures shape the trajectory of high-growth firms. This perspective is especially important for informing support systems that aim to identify and cultivate growth-oriented ventures from the outset.

Recent research has explored the early development of gazelles (Cristofaro et al., 2024), and analyzing their first year of operation using large datasets that include nascent-stage information can yield important insights. Such analyses can help policymakers, educators, and scholars understand how initial resource endowments, founding conditions, and social structures shape the trajectory of high-growth firms. These insights are especially important for informing support systems that aim to identify and cultivate growth-oriented ventures from the outset.

The present study draws on a harmonized dataset<sup>1</sup> of two representative samples of U.S. nascent entrepreneurs from the Panel Study of Entrepreneurial Dynamics (PSED I and II), targeting individuals at the initial stages of establishing their businesses (Curtin & Reynolds, 2021). Our research examines these firms in their first year as fully operational businesses, drawing on a nationally representative sample of nascent entrepreneurs. The dataset focuses on the emergence process but uniquely follows successful founders into Year 1, allowing us to capture firms at their earliest operational stage. We specifically investigate the roles of human and social capital, inspired by extensive research demonstrating their positive effects on entrepreneurial success in other diverse global settings, including China (Woods et al., 2022), rural Portugal (Dias & Silva, 2021), India (Prasad et al., 2013), and New Zealand (Cruickshank & Rolland, 2006). Further, social capital is identified as a key factor enhancing firm performance and survivability (Marino et al., 2024), facilitating information exchange (Barwinski et al., 2020), and promoting skill development (Ascigil & Magner, 2009).

Our findings offer a nuanced view of how social capital relates to new venture growth, suggesting that its role may be more limited or context-dependent than commonly assumed. Although our study focuses on emerging gazelles, the patterns observed still offer useful considerations for nascent entrepreneurs, stakeholders, and their communities. Business consultants, educators, and policymakers may support growth by fostering initiatives that encourage

meaningful network-building among entrepreneurs, local businesses, and the broader community.

## Theory and Hypotheses

The average startup is rather ordinary, devoid of significant innovation, and growing only modestly, if at all (Acs et al., 2008; Aldrich, 2008; Aldrich & Ruef, 2018; Storey, 1994). Most of these ventures are short-lived, with fewer than half surviving for more than a few years. The majority of these firms do not raise external financing (Frid et al., 2016; Gartner et al., 2012). Our paper focuses on the evolutionary origins of a small number of these new ventures that *do* grow rapidly, and go on to contribute a disproportionate share of new venture employment and revenue to the economy. Prior research has demonstrated that new ventures emerge in a non-linear, uneven process (Katz & Gartner, 1988), so understanding which, if any, specific social and/or human resources underlie the emergence of early-impact startups is important in the study of their evolution.

The primary goal of this study is to identify nascent ventures in the United States that have significantly outperformed their peers, and to do so utilizing data that can be generalized to the broader population of nascent ventures nationwide. The Panel Study of Entrepreneurial Dynamics (PSED I and PSED II) is a longitudinal study tracking nascent entrepreneurs as they establish new businesses (Curtin & Reynolds, 2021). Our preliminary analysis of the harmonized PSED I and II datasets reveals patterns consistent with prior findings on mature “gazelle” firms (refer to [Table 1](#) in the Results section). Notably, PSED emerging gazelles account for 89 percent of all new employee hires and 91 percent of generated revenues in the U.S. In comparison, mature gazelles are responsible for 82.7 percent of employment and 89.7 percent of revenue in the national economy (Acs et al., 2008; Birch, 1979; Davis et al., 2007).

Inspired by these findings, we sought to investigate the factors contributing to the creation of such high-performing emerging firms. Our research builds on existing literature that explores the relationship between social and human capital and entrepreneurial performance. Both types of capital have been linked to increased likelihood of entrepreneurial entry and enhanced performance across various studies (Davidsson & Honig, 2003; Kim et al., 2006; Klyver & Schenkel, 2013). Additionally, the positive impact of social capital on performance has been demonstrated in international contexts, including in India and New Zealand (Cruickshank & Rolland, 2006; Prasad et al., 2013). Our study, therefore, aims to delve into how social and human capital contribute to the exceptional performance of nascent firms.

<sup>1</sup> The harmonized dataset combines the first and second Panel Studies of Entrepreneurial Dynamics (PSED I and II), which track individuals actively in the process of starting businesses. The dataset standardizes variables across both panels to enable longitudinal analysis of how nascent entrepreneurs move from firm conception through early operational stages.

## Gazelles in Context: Industry Presence, Growth Mechanisms, and Challenges

Gazelles are found across a wide range of industries and geographical locations, with only a small number from high-tech sectors (Bianchini et al., 2017; Daunfeldt et al., 2016). Evidence suggests these high-growth firms tend to cluster in the information, financial, and professional service sectors whereas the education, leisure, hospitality, and manufacturing industries report relatively fewer instances of gazelles (Piazza & Hill, 2021).

The path to achieving high-growth performance is unique to each gazelle startup. Most grow organically, often by focusing on a niche marketing strategy centered around a single innovative product (Bianchini et al., 2017; Czar-nitzki & Delanote, 2013). Key drivers of growth include human capital, business strategy, human resource management, innovation, corporate capabilities, and access to finance (Demir et al., 2017; Santos et al., 2024). Due to the youth and scalability of these firms, early investors and the local entrepreneurial ecosystem can supplement the firm's internal resources to drive growth. However, there is a risk of significant disruption to their growth performance if these supporters withdraw their backing (Cristofaro et al., 2024).

Maintaining high growth can be challenging, and research indicates early-stage gazelles may need to expand into broader markets. However, a subset of gazelles that have undertaken such expansions have experienced increased volatility (Santos et al., 2024; Senderovitz et al., 2016). Periods of rapid growth may fail to endure (Erhardt, 2021; Parker et al., 2010), and failure to adapt to market demands can contribute to the fragility of gazelles.

Taken together, these studies highlight both the promise and precarity of gazelle firms. While they may achieve rapid early growth, their long-term success is far from guaranteed, often hinging on access to key resources, strategic adaptability, and support from their surrounding ecosystem. This underscores the importance of understanding how intangible assets like human and social capital—particularly at early stages—may shape growth trajectories. In the next sections, we explore this dynamic and present this study's hypotheses.

## Social Capital and Nascent Firm Performance

Numerous studies have investigated the link between social capital and entrepreneurial success. Social capital is strongly associated with the decision to be a nascent entrepreneur (Davidsson & Honig, 2003) as well as successful outcomes from entrepreneurial activities (Cruickshank & Rolland, 2006; Gomez & Santor, 2001). A high endowment of social capital can promote entrepreneurial success for lifestyle entrepreneurs (Dias & Silva, 2021), women entrepreneurs in rural communities (Segantini & Dicks, 2021), and in emerging economies (Prasad et al., 2013; Woods et al., 2022). Social capital can assist in the acquisition of business skills (Ascigil & Magner, 2009), collaborative information exchange (Barwinski et al., 2020), and help build strategic alliances (Marino et al., 2024). Scholars

have debated how different types of relationship networks may be more influential. For example, an extended network of weak ties with heterogeneous actors may be particularly beneficial in gathering informational resources (Cook & Whitmeyer, 1992; Davidsson & Honig, 2003; Klyver & Schenkel, 2013). A strong, homogenous network of embedded ties, however, may provide more trust and facilitate gathering and receiving emotional support (Brüderl & Preisendörfer, 1998; Davidsson & Honig, 2003; Klyver & Schenkel, 2013).

The structural nature of these networks is key to whether social capital influences new firm growth and success (Nahapiet & Ghoshal, 1998). Thus, given research demonstrating a link between a founder's structural network and entrepreneurial outcomes, we propose the following hypothesis:

*H<sub>1a</sub>* Structural social capital—measured as the size of the founder's network—is positively associated with high employment outcomes in a nascent firm's first year of operation.

*H<sub>1b</sub>* Structural social capital is positively associated with high revenue outcomes in a nascent firm's first year of operation.

## Human Capital and Nascent Firm Performance

Several studies have also examined the link between human capital and entrepreneurial outcomes. Traditionally, human capital has been conceptualized as formal education, work experience, managerial experience, and startup experiences (Davidsson & Honig, 2003; Grichnik et al., 2014). Education and training can nurture entrepreneurs' problem-solving skills—skills that specifically aid in the creation and commercialization of innovative products. Formal education, for example, increases the propensity to select into entrepreneurship and later succeed (Davidsson & Honig, 2003; Headd, 2000). The outcomes from education are industry-specific, with a positive association only for nascent entrepreneurs operating in complex, technology-based industries (Liao & Welsch, 2008).

The association between different forms of experience (e.g., managerial, work, and startup experience) and entrepreneurial outcomes appears to be more complex. Managerial experience appears to have a weak association with entrepreneurial entry, and work experience no association. Prior startup experience, surprisingly, has been associated with a 50 percent likelihood of *not* starting a business, perhaps due to the discouraging impact of prior failure (Kim et al., 2006). Other studies have found that education and prior startup experience, when combined with self-efficacy, have a positive effect on entrepreneurial entry (Klyver & Schenkel, 2013), and on the number of activities nascent entrepreneurs complete during the startup process (Hopp & Sonderegger, 2015). Taken together, studies examining human capital and entrepreneurial outcomes suggest that a higher human capital endowment will more than likely be associated with success (Unger et al., 2011). Based on this evidence, we formulate the following hypothesis:

*H<sub>2a</sub>* Human capital—measured as educational attainment, industry experience, managerial experience, and

prior startup experience—is positively associated with high employment outcomes in a nascent firm’s first year of operation.

$H_{2b}$  Human capital is positively associated with high revenue outcomes in a nascent firm’s first year of operation.

## Method

This study employs the Harmonized PSED dataset, which was developed to integrate data from the Panel Study of Entrepreneurial Dynamics I and II—two large-scale, longitudinal studies designed to follow nascent entrepreneurs. Nascent entrepreneurs are individuals actively trying to start a business prior to the establishment of an up-and-running firm. The PSED I and II began with extensive screenings in 1998–2000 and 2005–2006, respectively, yielding cohorts of 830 and 1,214 nascent entrepreneurs followed over multiple years. Both studies used similar survey instruments and are representative of the entire population of U.S. nascent entrepreneurs. As such, all results are generalizable. The survey instruments were developed by an international consortium of scholars, enhancing the applicability of the results across different contexts and temporal settings.

Among the 57 U.S. databases related to entrepreneurial businesses identified by the Small Business Administration’s Office of Advocacy, only the Panel Study of Entrepreneurial Dynamics offers comprehensive data on the human and social capital of nascent entrepreneurs (Reynolds et al., 2004; Reynolds & Curtin, 2007). In the present study, we are interested in examining gazelle firms in relationship to social and human capital across the overall period of 1998 (PSED I) to 2011 (PSED II).

The harmonization effort involved aligning variables across both datasets—standardizing definitions, response categories, and coding schemes—to enable pooled analysis. This dataset is especially valuable because it allows researchers to analyze patterns across cohorts and examine the role of specific startup activities in venture outcomes (Curtin & Reynolds, 2021). To examine early performance among “emerging gazelles,” it is critical to compare firms on a level playing field. One challenge in analyzing nascent ventures is that they often engage in startup activities at different times and in different sequences relative to their formal launch. Without standardization, firms that have simply been in process longer may appear to be more successful, not because of inherent differences, but because they’ve had more time to accumulate employees or revenue.

We therefore use the harmonized dataset, which standardizes the operational start date across all firms. This allows us to align performance outcomes relative to the same point in the firm’s lifecycle (Year 1 of operations). This approach is particularly important given our control variables, which include key pre-launch activities often associated with gazelle firms (e.g., legal formation, patent filing, developing proprietary technology). Harmonization ensures that these activities are appropriately positioned prior to the performance window, rather than being confounded with early outcomes.

In summary, using a harmonized start date, we more accurately isolate the relationship between founder characteristics (such as human and social capital) and early performance, independent of timing artifacts or unequal startup runway durations.

## Sample Inclusion Criteria and Weighting

Potential nascent entrepreneurs were culled from a series of questions to determine if they were currently the owner of a new business or trying to start one. To be categorized as an active nascent entrepreneur, individuals needed to have satisfied three criteria in the prior 12 months: (1) performed some action towards a startup, (2) expected to own all or part of a new firm and (3) not yet reached profitability. Those determined to be active, nascent entrepreneurs then completed a detailed questionnaire covering their personal characteristics, entrepreneurial intentions, business characteristics and activities of the new venture.

Our final sample consists of 174 individuals who had launched an independent new venture and were in their first year of operations. To arrive at this subset, we began with the harmonized Panel Study of Entrepreneurial Dynamics (PSED I and II), which includes approximately 1,410 cases after standardization across the two datasets.

We then identified cases that had transitioned from the nascent phase to Year 1 of active operations, yielding a pool of 212 ventures. This transition point is central to our analysis. As described above, comparing ventures at a standardized point in time—Year 1—allows us to examine performance outcomes such as employment and revenue on a level playing field. Without this harmonization, ventures that had spent more time preparing prior to launch could appear more successful due to having had more time to accumulate resources, thus risking over- or underestimating true performance.

To focus on autonomous entrepreneurship, we then excluded franchises, multilevel marketing businesses, and business purchases, which resulted in the final analytic sample of 174 independent ventures. This approach aligns with theoretical frameworks used in the gazelle literature and with public conceptions of high-growth, founder-driven startups.

The Harmonized PSED database provides additional benefits in our study of emerging gazelles. First, because we capture entrepreneurial activity so early in the process our research reduces survivor bias as respondents remain in the sample. Second, the detailed personal and business information available in the PSED datasets means we can explore specifics about the form and levels of human and social capital not available in other studies. Third, the PSED data provides us with the sales revenue and number of employees for each new venture. Thus, we can measure outcomes in their first actual year of operation to gauge initial performance.

This study applies post-sampling stratification weights to align both PSED datasets with the U.S. Current Population Survey regarding demographic factors such as sex, race, age, and education. This rectifies biases from prior re-

search and sample design choices, such as differential non-response and the oversampling of women and minorities in PSED I.

### Variables Used from the PSED

**Dependent variables.** Employees hired and sales revenue are the most common performance indicators scholars use when studying nascent firm outcomes (Crawford et al., 2015). We constructed two separate variables to be used in two separate statistical models. One uses revenue earned in the first year of operation (PSED items r742-t742, BV2-FV2), and the other uses the number of full-time employees hired (PSED items r733-736, s733-736, t733-736; BU1-FU1). Because we were interested in emerging gazelles, the study only includes cases where either revenue, employment, or both were above the 80<sup>th</sup> percentile. This cutoff was used for several reasons. First, a visual scan of the distribution shows a drop off near the upper quintile. Second, prior work has revealed that the 80-20 ‘Pareto principle’ applies across nearly all variables in the PSED, where 20 percent of firms account for 80 percent of the activity (Crawford et al., 2015; Frid et al., 2016a; Frid et al., 2016b). The final sample used in the analysis consists of 50 nascent entrepreneurs.

**Independent variables.** The human capital variables tested included level of education (q343, AH6\_1), years of industry experience (q199, AH11\_1), management experience (qf1a2-qf1g2, AH21\_1), and startup experience (q200, AH12\_1). There was only one social capital variable common to both datasets, the number of weak or strong ties (q242, AG18).

**Control variables.** Before examining the association between social and/or human capital and firm performance, a variety of control variables must be considered. First, we considered the size of the organizing team (q195, AG1), the legal status of the effort (q189, AC1), the sex of the respondent (ncgender, AH1\_1), the race of the respondent (pgrace, QS9\_1), and the only financial capital variable common to both datasets, household income (q386, AZ14). Next, we control for the presence of a patent (q124, AD13) and the availability of proprietary technology (q302e, AD11).

### Analytic Strategy

To examine the relationship between human capital, social capital, and early hiring outcomes, we estimated a series of stepwise ordinary least squares (OLS) regression models. While we considered alternative approaches such as quantile regression—often used to model heterogeneous effects across the outcome distribution—we ultimately determined that our data did not meet the assumptions or sample size thresholds needed to support stable quantile regression estimates. Specifically, our analytic sample consists of 174 cases, and quantile regression requires substantially larger samples to produce reliable estimates, particularly when modelling upper-tail quantiles (e.g., the 0.8 or 0.9 quantile), which would be most relevant for studying high-performing “gazelle” firms (Buchinsky, 1998; Koenker, 2005).

Moreover, our dependent variables (employment and revenue in Year 1) are zero-inflated and right-skewed, with many firms reporting zero employees or sales in their first year. Quantile regression models are particularly sensitive to data with heavy clustering at specific values—such as zeros—which can lead to estimation instability and interpretation challenges, especially at lower and middle quantiles. Given our research goal of comparing early-stage performance outcomes across a harmonized sample of new ventures, we judged that OLS models offered the most interpretable and stable approach for estimating the average relationships between founder characteristics and early hiring.

### Results

To better understand the role of firm-level variation in employment outcomes, we examined two complementary components of the dataset. First, we conducted descriptive analyses of the top 50 firms in the sample—those that account for approximately 80 percent of the total employment and revenue across all cases. This exploratory analysis allows us to illustrate the magnitude and influence of a relatively small group of high-performing ventures, providing context for how gazelle-like firms manifest in the broader sample. [Table 1](#) shows that only 10 percent of U.S. nascent entrepreneurs account for 89 percent of total employment, and 7 percent account for 91 percent of revenues earned in Year 1 of operation.

[Table 2](#) depicts the study’s variables, descriptive statistics, and correlation matrix for *employment* as the dependent variable. Note that the descriptive statistics and correlation matrix for *revenue* as the dependent variable are not included here, as those regression models were not statistically significant.

We conducted a three-stage, stepwise regression for the Harmonized PSED I and PSED II samples including (1) all control variables, (2) all control and human capital variables, and (3) all control, human, and social capital variables. These models include controls for key demographic and firm-level characteristics, as well as measures of human and social capital, to assess their relationship with employee hiring outcomes. [Table 3](#) depicts the regression results for this analysis.

We examined the relationship between human and social capital and the number of employees hired in the first year of operation among new ventures. Model 1 included control variables such as team size, legal form, sex, race, income, patent submissions, and proprietary technology. Race emerged as the only significant predictor of employee hiring, with white-owned firms associated with a higher number of hires in Year 1 ( $p < .01$ ).

In Model 2, we added human capital variables, including founder education level, prior entrepreneurial experience, managerial experience, and industry experience. None of the human capital indicators were significant, and the model explained slightly less variance in hiring compared to the control-only model ( $\Delta R^2 = -0.02$ ).

Model 3 incorporated measures of social capital, such as the number of industry contacts and participation in net-

**Table 1. Defining Emerging Gazelles: Percentages of Nascent Firms Accounting for Financing, Employee Hires, and Year One Revenue.**

|                          | Financing             | No. of Employees | Year 1 Revenue (est.)  |
|--------------------------|-----------------------|------------------|------------------------|
| Total (N=492)            | \$85,361,228          | 560              | \$300,934,250          |
| No. of emerging gazelles | 49<br>(10%)           | 51<br>(10%)      | 35<br>(7%)             |
| ...Accounting for        | \$74,932,188<br>(88%) | 504<br>(89%)     | \$275,840,825<br>(91%) |
| Max                      | \$17,300,000          | 100              | \$100,000,000          |
| Min                      | \$200,000             | 3                | \$500,000              |

working events. Again, these variables were not statistically significant, and the model's explanatory power further declined ( $\Delta R^2 = -0.03$ ).

Across all three models, race remained the only consistent and significant predictor, suggesting that white ownership is positively associated with early hiring activity.

### Discussion

Results demonstrate that the emerging gazelles in the PSSED sample mirror patterns of highly skewed distributions found in other studies on more seasoned gazelles. Those in the top 10 percent of employment and/or sales revenue drive close to 90 percent of the employment and revenue among nascent startups in the United States. The highly skewed nature of these performance outcomes is surprising, given other studies that have found such skewness occurs as firms age (Shim, 2016).

The lack of significance for both human and social capital runs counter to established assumptions in the entrepreneurship literature, which frequently positions these forms of capital as key enablers of venture growth. One possible explanation is that for startups achieving “gazelle” status—those with rapid early hiring—factors beyond individual founder capital may be driving employment decisions, such as access to capital, structural inequalities, or market opportunities not captured by standard human and social capital measures. It is worth mentioning that the legal form of business (i.e., LLCs, S-Corporations, and C-Corporations), and ventures based on proprietary technology were marginally significant predictors of employee hiring in the first year ( $p < .07$ ). This suggests that the model adequately captures structural and innovation-based factors typically associated with high-growth “gazelle” ventures, lending credence to the possibility that the non-significant effects of human and social capital are substantively meaningful rather than merely statistical noise.

Moreover, the consistent significance of race, with white-owned firms hiring more employees in the first year, highlights persistent structural advantages that may facilitate early scaling. This finding warrants further investigation, particularly into how systemic barriers intersect with venture growth trajectories.

The results of this study challenge widely held assumptions about the drivers of early employment growth among nascent ventures. While the finding that neither human

nor structural social capital were significant predictors of first-year hiring may seem counterintuitive, it highlights an important nuance in understanding high-growth startups—founder background and network strength may not directly translate into early-stage job creation. This may be particularly true for emerging gazelles, which may need to hire quickly, and timing, market opportunity, or access to capital may matter more than traditional indicators of preparedness.

For policymakers, this finding signals that efforts to support high-growth entrepreneurship should not focus exclusively on networking and skills-building programs, but also consider systemic constraints and enablers, such as capital access, market barriers, and (possibly) institutional trust. For entrepreneurs, the lack of clear predictive power from human and social capital may reflect the increasing complexity and diversity of venture pathways, where different industries and contexts demand different types of resources—and where success is less about having a universal “startup resume” and more about fit, timing, and structural support.

### Additional Takeaways for Consultants, Educators, Policymakers, and Entrepreneurs

While prior literature has emphasized the centrality of network ties in venture development, our findings suggest that structural social capital—such as the size and breadth of an entrepreneur's network—may not, in itself, be a consistent driver of early hiring outcomes. This nuance is crucial for consultants and educators aiming to prepare entrepreneurs for impactful venture creation. Rather than focusing narrowly on network expansion, curricula and advisory services may benefit from emphasizing how entrepreneurs use their networks, including the quality of relationships, trust, and timing of engagement (Ascigil & Magner, 2009). Practical exercises may still include building and maintaining professional connections, but should also guide entrepreneurs in identifying strategic points of leverage within existing ecosystems and navigating context-specific constraints that limit the utility of social ties.

Advisory services remain well-positioned to support network activation, including facilitating introductions and encouraging engagement in relevant trade associations and forums (Barwinski et al., 2020; Marino et al., 2024). However, our findings suggest that network-building efforts



**Table 2. Means, Standard Deviations, and Correlations for All Variables (Employment=Dependent Variable).**

|    | Variable                              | Mean    | SD     | 1      | 2      | 3       | 4      | 5       | 6      | 7     |
|----|---------------------------------------|---------|--------|--------|--------|---------|--------|---------|--------|-------|
| 1  | Employment                            | 2.46    | 6.02   | 1.00   |        |         |        |         |        |       |
| 2  | Team: self vs. others                 | 1.50    | 0.50   | 0.19** | 1.00   |         |        |         |        |       |
| 3  | Legal form: sole proprietor vs others | 1.42    | 0.49   | 0.24** | 0.49** | 1.00    |        |         |        |       |
| 4  | Sex                                   | 1.57    | 0.49   | 0.11*  | 0.07** | 0.13**  | 1.00   |         |        |       |
| 5  | Race: white vs others                 | 1.23    | 0.42   | 0.22** | -0.06* | 0.02    | -0.00  | 1.00    |        |       |
| 6  | Household income                      | 78206   | 346793 | 0.08   | 0.05*  | 0.07*   | 0.04   | -0.04   | 1.00   |       |
| 7  | Patent submitted                      | 1.70    | 0.46   | -0.07  | 0.01   | -0.13** | -0.05* | -0.18** | -0.12  | 1.00  |
| 8  | Proprietary technology                | 1.70    | 0.46   | -0.18* | 0.01   | -0.07*  | -0.03  | -0.17** | -0.05* | 0.31  |
| 9  | Education                             | 2.36    | 0.99   | -0.00  | -0.04  | 0.04    | -0.06* | -0.10** | 0.11** | 0.01  |
| 10 | Industry experience                   | 9.90    | 10.66  | -0.03  | -0.03  | 0.00    | 0.11*  | -0.07** | -0.03  | 0.00  |
| 11 | Managerial experience                 | 10.21   | 9.65   | 0.01   | 0.06*  | 0.11**  | 0.08** | -0.18** | 0.11** | 0.03  |
| 12 | Startup experience                    | 0.48    | 0.50   | 0.01   | -0.01  | 0.08**  | 0.03   | -0.05*  | 0.06*  | -0.19 |
| 13 | Strong vs. Weak Ties                  | 1.46    | 3.20   | 0.00   | -0.03  | 0.05    | -0.00  | 0.06*   | -0.01  | -0.43 |
|    | Variable                              | 8       | 9      | 10     | 11     | 12      | 13     |         |        |       |
| 8  | Proprietary technology                | 1.00    |        |        |        |         |        |         |        |       |
| 9  | Education                             | -0.05   | 1.00   |        |        |         |        |         |        |       |
| 10 | Industry experience                   | -0.04   | 0.05*  | 1.00   |        |         |        |         |        |       |
| 11 | Managerial exp.                       | 0.02    | 0.21** | 0.31** | 1.00   |         |        |         |        |       |
| 12 | Startup exp.                          | -0.94** | 0.15** | 0.13** | 0.30** | 1.00    |        |         |        |       |
| 13 | Weak or strong ties                   | -0.05   | 0.02   | -0.01  | -0.05  | 0.46    | 1.00   |         |        |       |

**Table 3. Stepwise Regression for Human Capital and Social Ties on Employee Hires**

| Predictor                    | Model 1         | Model 2         | Model 3         |
|------------------------------|-----------------|-----------------|-----------------|
| Constant                     | -5.29 (3.43)    | -5.27 (3.78)    | -5.22 (3.79)    |
| <i>Controls</i>              |                 |                 |                 |
| Team size – self vs others   | 1.42 (1.00)     | 1.40 (1.02)     | 1.39 (1.02)     |
| Legal form – sole vs other   | 1.89 (1.03)     | 1.87 (1.05)     | 1.89 (1.05)     |
| Sex of respondent            | 0.99 (0.89)     | 1.02 (0.91)     | 1.02 (0.91)     |
| Race – white vs other        | 3.03 (1.06)**   | 3.04 (1.09)**   | 3.05 (1.01)**   |
| Household income             | 1.108E-6 (0.00) | 1.052E-6 (0.00) | 1.047E-6 (0.00) |
| Patent submitted             | 0.39 (1.01)     | 0.39 (1.03)     | 0.39 (1.03)     |
| Proprietary technology       | -1.81 (1.00)    | -1.84 (1.02)    | -1.84 (1.03)    |
| <i>Independent Variables</i> |                 |                 |                 |
| Education                    |                 | 0.06 (0.46)     | 0.06 (0.46)     |
| Years industry experience    |                 | -0.02 (0.04)    | -0.02 (0.04)    |
| Years managerial experience  |                 | 0.01 (0.05)     | 0.01 (0.05)     |
| Startup experience           |                 | -0.19 (0.93)    | -0.17 (0.94)    |
| Weak or strong ties          |                 |                 | -0.04 (0.14)    |
| R Square                     | 0.14            | 0.14            | 0.14            |
| Adjusted R Square            | 0.11            | 0.09            | 0.08            |
| F Statistics                 | 3.93***         | 2.46**          | 2.25*           |

\* p &lt; .05 | \*\* p &lt; .01 | \*\*\* p &lt; .001

alone may be insufficient, especially if structural barriers, such as uneven access to capital or institutional bias, limit how social capital can be converted into tangible firm-level outcomes. This has important implications for policy, particularly in emerging economies, where incubators often function as ecosystem hubs. While networking opportunities remain valuable, policymakers may also need to address resource disparities and systemic inequalities that constrain entrepreneurs' ability to act on those connections (Prasad et al., 2013; Woods et al., 2022). The World Bank Group's infoDev program, for example, highlights incubation practices that extend beyond networking to include access to funding, mentorship, and market entry (BIM, 2010).

### Takeaways for Entrepreneurship Scholars

This study contributes to scholarly debates on the role of human and social capital in early-stage venture outcomes. While prior research emphasizes structural social capital as a driver of performance, our findings suggest the relationship may be more complex. In particular, the lack of significant effects for both social and human capital in predicting early employment growth among high-performing "gazelle" firms suggests that other factors—such as capital access, racial privilege, or market dynamics—may overshadow individual or relational resources in the earliest stages. These results invite scholars to reconsider the conditions under which social capital yields performance gains, and to probe how the value of entrepreneurial networks may be shaped by context, identity, and institutional forces.

Though gazelle firms have garnered significant attention due to their outsized contributions to job creation and eco-

nomie dynamism, some scholars caution that the field's disproportionate focus on these exceptional cases may be misplaced (Aldrich & Ruef, 2018). By concentrating on a narrow subset of high-growth firms, researchers risk overlooking the more representative patterns of entrepreneurial activity. Most new ventures do not follow the trajectory of rapid scaling, nor do they seek to. Instead, they reflect a diverse range of motivations, growth aspirations, and outcomes. A singular emphasis on "shiny object" firms can distort our understanding of entrepreneurship by elevating rarity over regularity and by sidelining the structural and institutional conditions that shape the experiences of most entrepreneurs.

Nevertheless, we argue that there is value in examining firms with high-growth potential—especially when observed at a very early stage. Most firms, after all, start small, and catching these ventures just as they begin to scale allows us to explore the antecedents of growth while avoiding the hindsight bias that often accompanies studies of already-successful firms. In this way, our work serves as a bridge between two perspectives: it recognizes the importance of understanding extraordinary growth outcomes, while remaining grounded in the broader reality that most entrepreneurship unfolds incrementally and under considerable uncertainty.

### Limitations and Future Research

Our study provides opportunities for future research. First, we were limited in the present study to the social capital variables that work across the PSED I and PSED II data sets. Therefore, our study only examined structural so-



cial capital, the number of weak and strong ties, leaving out the relational and cognitive social capital (Nahapiet & Ghoshal, 1998). Future work could delve into the cultivation of structural ties, relational and cognitive social capital to examine their relative role in the growth of emerging gazelles. Further, other relevant social constructs may play an essential role in the formation of emerging gazelles than we were able to detect here. For example, future research could compare the impact of social capital within and between geographic areas.

Second, our research reveals that human capital factors are not statistically significant in explaining emerging gazelles. Yet, prior work on human capital shows it can influence performance. Our results may not have aligned with expectations due to the nature of our sample. We examined nascent entrepreneurs from a sample generalizable to the entire population, so there is a high degree of noise and variation on some variables. Future research could remedy this by examining emerging gazelles in one location or industry.

Third, the non-significance of our financial capital control variable on gazelle formation is congruent with PSED II research, which found that household income had an insignificant influence on new venture creation (Klyver & Schenkel, 2013). However, a limitation of our study is the absence of a household wealth variable. Household net worth has been found to have a positive association with entrepreneurial entry (Evans & Jovanovic, 1989; Frid et al., 2016a; Frid et al., 2016b). It may be that wealth is better associated with performance as well.

While our sample includes a variety of industry contexts, ultimately, this study takes place in a single cultural and temporal context. We examined emerging gazelles in the United States from 1999-2012. While our hypotheses are anchored in perspectives on nascent entrepreneurial activity that have been validated by prior research, the strength of the relationships between our dependent and independent variables may differ in other countries or time periods. For example, future research could examine cross-cultural emerging gazelles; data sets such as the Global Entrepreneurship Monitor (GEM) also capture the behaviors of nascent and early-stage entrepreneurs. On the methodological front, future work might examine this issue using qualitative methods such as ethnographic fieldwork or case studies. Doing so would help fully capture the distinctive reality of emerging gazelles in a way our data does not allow. Regarding the temporal dimension, the longitudinal nature of the PSED provides some balance in our study. Nevertheless, future research could conduct analyses comparing the behaviors of emerging gazelles before, during, and after COVID-19, the financial crisis, or any other disruptive events.

This study also offers a methodological insight for researchers using the Panel Study of Entrepreneurial Dynamics (PSED) data. Specifically, our use of the harmonized transitions file addresses a key limitation in many prior studies that rely on either PSED I or II—or merge them—without recalibrating the starting point of venture activity. In the raw PSED datasets, respondents enter the

panel at varying points in their startup journey: some had been working on their venture for years before initial contact, while others had just begun. Without adjusting for this variation, researchers may inadvertently conflate long-duration, slow-growth firms with fast-scaling gazelles. This misclassification poses a serious threat to validity in studies that attempt to explain or predict early-stage growth outcomes.

The harmonized transitions file—developed by Reynolds and Curtin—addresses this issue by realigning each case to a common “time zero” based on a structured sequence of over 36 startup activities (e.g., developing a product, seeking financing, registering the business). This process allows for consistent measurement of entrepreneurial progress and firm growth across cases, regardless of when the respondent was first surveyed. As a result, the harmonized data make it possible to compare growth trajectories more accurately and reduce noise introduced by timing discrepancies.

This has important implications for research on nascent entrepreneurship, especially studies that aim to track activity patterns, model performance outcomes, or identify high-growth firms. Without this adjustment, it is possible to overestimate or underestimate firm performance, especially in studies focused on identifying gazelles. Our findings thus serve as both a resource and a caution: future analyses using the PSED data should carefully consider how time is operationalized in the venture creation process. Use of the harmonized transitions file is not simply a matter of convenience—it is critical for ensuring valid comparisons and avoiding flawed inferences about how ventures grow and succeed.

Overall, by turning the focus away from venture capital-backed ventures in tech and other industries, this study is among the few that attempt to explore the performance outcomes of nascent ventures that compose the “modest majority” (Aldrich & Ruef, 2018; Davidsson, 2016; Davidsson & Gordon, 2012). In adopting a nascent perspective, we find the exchange of knowledge afforded by social capital networks offers the opportunity for emerging gazelles to deliver stronger performance outcomes in revenue and employment. Our work underscores the important role of policymakers, consultants, and educators in developing programs to grow social networks in their entrepreneurial communities and beyond.

## Conflicts of Interest

We have no conflicts of interest to disclose.

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