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Falling Not Far from the Tree: Entrepreneurs and Organizational Heritage

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Abstract. Past research has shown that founders bring important capabilities and resources from their prior employment into their new firms and that these intergenerational transfers influence the performance of these ventures. However, we know little about whether organizational practices also transfer from parents to spawns, and if so, what types of practices are transferred? Using a combination of survey and registrar data and through a detailed identification strategy, we examine these two previously unaddressed questions. Our results provide strong evidence for organizational heritage in practices. About 70% of the comparisons of start-ups and other established organizations are less similar than the average similarity between a parent organization and its spawn and that the overlap in organizational practices is almost 10% greater between a spawn and its parents than between the spawn and other established firms. Our further investigation shows that not all practices seem to find their way into the new entrepreneurial firms. In particular, practices that are valuable for and fit with the requirements of a start-up organization, and at the same time are more clearly defined and casually less ambiguous, are more likely to be transferred by the founders from their previous employers. These results contribute to our understanding of how entrepreneurs assemble their organizations and practice innovation as well as the diffusion of practices and the origins of firm heterogeneity.

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Keywords: organizational routines • strategic human resources management • strategy • entrepreneurship

Introduction

A vibrant body of research links the performance of new ventures to properties of the entrepreneur's prior employment (Klepper 2001, Phillips 2002, Dahl and Reichstein 2007, Dencker et al. 2009, Ganco and Agarwal 2009, Walter et al. 2014). Indeed, the literature suggests that entrepreneurs inherit the following: technical and product knowledge (Agarwal et al. 2004, Chatterji 2009, Cirillo et al. 2013, Basu et al. 2015), market related know-how (Agarwal et al. 2004, Klepper and Sleeper 2005, Adams et al. 2015), reputation and legitimacy (Higgins and Gulati 2003), ties to customers and suppliers (Semadeni and Cannella 2011, Ferriani et al. 2012), and connections to financial and social capital (Burton et al. 2002, Phillips 2002, Roberts et al. 2011). As a result, immediate prior affiliations influence new firm funding, growth, and survival (Phillips 2002, Agarwal et al. 2004, Chatterji 2009, Dencker et al. 2009, Sørensen and Phillips 2011).

Yet, even as these studies advance our understanding of the effects of organizational heritage on the determinants of new firm success, they provide little explicit evidence of inheritance processes, specifically establishing that organizational practices—particular and taken-for-granted ways of conducting organizational functions (Kostova 1999)—are replicated between generations of firms. Organizations have institutionalized practices related to employment, collaboration, and decision making. For example, firms may use employment bonuses to motivate employees, use cross-functional teams, or rely on strict hierarchies for final decisions. Organizational members accept and approve these practices (Winter and Szulanski 2001, Schau et al. 2009). Focusing on transference of common and important organizational practices provides a means to assess the existence of intergenerational inheritance.

Entrepreneurs spend the majority of their time searching for profitable business models and thus devoting less time to reflecting on organizational practices (Baron et al. 2001, Baker and Nelson 2005). This suggests that much of what prospective entrepreneurs inherit from their prior employment is knowledge about how to organize and manage an organization (Sørensen and

Phillips 2011, Ferriani et al. 2012). All the same, the transfer of organizational practices is not inevitable. Founders make deliberate decisions about the extent to which they utilize the practices embedded in organizations where they were previously employed (Basu et al. 2015). Thus, not only do we know little about whether replication of practices occurs, we also have little empirical evidence for which practices are replicated. More broadly, the mechanisms by which founders learn to assemble firms is important to processes of innovation (Beckman 2006) as well as adaptation (Baron et al. 2001) and may subsequently influence the performance of the firms from which the founders originated (Campbell et al. 2012, Agarwal et al. 2016, Kim and Steensma 2017). Moreover, differences in organizational practices are important sources of heterogeneity, affecting firm performance and industry competitiveness (Teece 2007, Bromiley and Rau 2014). However, to articulate a theory of firm heterogeneity, we need to understand the origins of specific organizational blueprints and how these blueprints subsequently become dominant. A first step to understanding this is through an in-depth investigation of the mechanisms of transfer to new firms through entrepreneurial mobility (Carroll 1993, Dokko and Gaba 2012).

In this paper, we respond to calls for both theoretical development and empirical investigations on the replication of organizational practices by Agarwal et al. (2004), Phillips (2005), Ruef (2005), Fern et al. (2012), and Ferriani et al. (2012). Using a combination of survey and registrar data, we examine two previously unaddressed questions: *Do organizational practices actually transfer from parents to spawns,* and *if so, what types of practices are transferred?* To address these questions, we execute an exploratory research design that permits an in-depth analysis without committing to specific hypotheses (see, e.g., Petty and Gruber 2011, Moeen and Agarwal 2017). We adopt a nested study structure, where we conduct our investigation at two levels of hierarchy. Our first level addresses the baseline question of whether organizational practices transfer from parents to spawns. We then focus on organizational practices related to employment, communication, collaboration, and decision making, which may or may not be transferred. Together, we provide empirical evidence of organizational heritage between parents and their spawns and offer an account of the pattern across specific organizational practices.

Organizational Practices

Organizational practices structure and shape repeated and recognizable patterns of interdependent actions carried out by multiple individuals to achieve organizational goals (Zeitz et al. 1999, Feldman and Pentland 2003). Practices embody general, procedural understandings as well as tacit, embedded knowledge (Winter and Szulanski 2001, Schau et al. 2009). When a group of organizational members enact a practice on a regular basis, they develop not only individual knowledge but also mutual coordination and understanding of the practice, which produces a collective knowledge structure regarding the practice, which forms the basis of the institutionalization of the practice (Kostova 1999). In aggregate, this body of knowledge represents a unique strategic resource (Winter and Szulanski 2001, Bromiley and Rau 2014) and is central to the long-term performance of organizations (Feldman and Pentland 2003, Teece 2007).

In creating new organizations, entrepreneurs confront myriad decisions. The choices involved are numerous, and each affects the payoff associated with other practices. There is also significant outcome uncertainty. All the same, founders of new firms cannot afford to experiment randomly or foolishly (Aldrich 1999). On the one hand, entrepreneurs typically lack the resources and time that might allow them to find the most optimum combinations through trial-and-error learning while buffering their organizations from the cost of experimentation and suboptimal selection (Baker et al. 2003). On the other hand, the early choices that founders make set conditions for an emergent process that determines the eventual organizational structure (Carroll 1993). Indeed, initial practices become entrenched as more and more organizational members engage in them. In turn, these practices lodge themselves in cognitive structures and become deeply held values. As a result, abandoning them becomes very unlikely—even under external pressure (Zeitz et al. 1999). To the extent that these practices are perceived as effective, organizational members' commitments to these practices will become even more enhanced, resulting in a greater reluctance—or increased difficulty—to discard them (Zeitz et al. 1999). Viewed in this light, decisions about organizational practices constitute a strategic task for founders. Indeed, as Agarwal et al. (2016) observe, a necessary condition for a new venture's success is the founder's ability to establish norms, practices, and structures within which resources can be appropriately configured.

Founders bring important capabilities and resources from their prior employment into their new firms (Klepper 2001, Phillips 2002, Agarwal et al. 2004, Chatterji 2009, Ganco and Agarwal 2009, Semadeni and Cannella 2011, Sørensen and Phillips 2011, Adams et al. 2015, Agarwal et al. 2016, Kim and Steensma 2017). In fact, the acquisition of such valuable resources and capabilities by employees in existing firms is a key driver of new firm creation through employee entrepreneurship (Gambardella et al. 2014). Whether founders also transfer organizational practices, however, remains virtually empirically unknown. Next, we investigate this question empirically.

Data and Methodology

Our empirical strategy relies on administrative data on new firm founders and established firms that were then matched to results of a survey on organizational practices. The survey, conducted by Statistics Denmark, was sent to two samples of firms—start-ups and established firms—both drawn from the official Danish firm registration data. It is important to note that the survey was pretested and validated by Statistics Denmark, with specific attention to the design of questions that reflect organizational practices before being sent to the samples of established firms and start-up firms, as defined below. We compiled information from the survey about common organizational practices related to employment and human resources; internal communication and collaboration; and the degree of openness, control, and hierarchy. We used the Statistics Denmark–matched employer-employee labor market database (IDA) to link founders to their parent firms. We expect greater similarity in organizational practices between parent firms and their spawns when compared with other firms. Next, we discuss our identification strategy and then present additional details on the organizational practices survey questions and summary statistics.

Established Firm Survey

Surveys were sent to the entire universe of 3,409 established firms, which each had more than 40 employees in 2008, and were registered as operating in manufacturing, retail, or knowledge-intensive services.[1] To accurately capture organizational practices, established firms received two different surveys. Questions pertaining to strategy were sent to the CEO, whereas questions relevant to human resource management were sent to the human resources (HR) manager.

We received complete sets of responses, from both the CEO and the HR manager, for 643 established firms (19% response rate). Table 1 provides response rates and descriptive statistics for the population compared with the respondents. These 643 responses proved representative of the population in terms of number of employees and overrepresentative of the food, textiles, and services industries.

Entrepreneurial Start-ups Survey

Statistics Denmark drew a random sample of entrepreneurial start-ups from the population of new enterprises established between 2001 and 2006 and for which the entrepreneur was immediately previously employed at an established firm.[2] The identified random sample counted 2,395 total start-ups, of which 535 (22.46%) firms responded to the survey. Founders were asked to respond to all of the survey questions on organizational practices as entrepreneurial firms are unlikely to have HR managers.

Table 1 provides descriptive statistics vis-á-vis the total sample, nonresponses, and responding sample. The sample is representative of the population. About 20% of the respondents were female, which approximately corresponded to the nonresponding sample (23%). Also, both samples were 46 years of age on average. This relatively high average age can be attributed to the sampling of only entrepreneurs coming from established firms. We hence found no bias between the responses and nonresponses with regard to age or gender. Results will be interpreted as generally representative of Danish start-ups where the founder had a prior affiliation with an established firm.

Identification Strategy

Using the Danish matched employer-employee labor market database (IDA), we established that 91 of the 535 start-up respondents were founded by an entrepreneur whose immediate prior affiliation was in one of the 643 established firms for which we had complete survey responses. Thus, we identified 91 established firm-entrepreneurial spawn dyads, yielding

Table 1. Response Rates: Established Firms and Founders

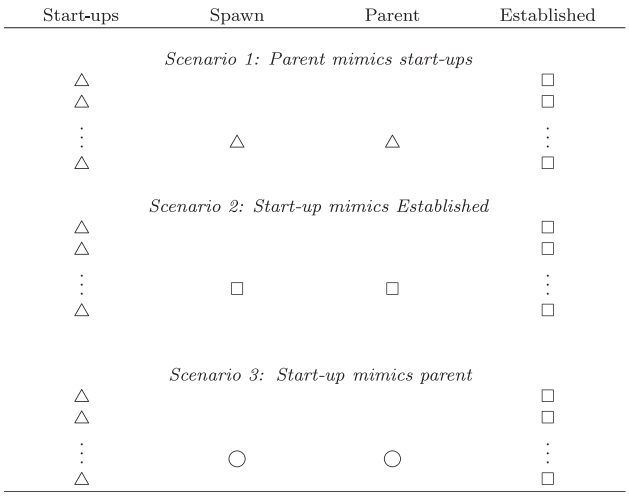
	Total sample	Nonrespondents	Respondents	Response rate	Significance
Established sample					
CEO & HR manager	3,392	2,749	643	18.96%	
Mean no. employees industry	207.07	197.85	246.50		n.s.*
Food and textiles	274	207	67	24.45%	
Other manufacturing	893	725	168	18.81%	
Retail	1,028	867	161	15.66%	
Services	1,197	950	247	20.63%	
Founder sample					
Entrepreneurs	2,395	1,860	535	22.46%	
Mean age	46.18	46.25	46.17		n.s.
Female share	22.46	23.06	20.37		n.s.

Note. n.s., not significant.
*$p < 0.01$.

996 unmatched respondents—444 start-up firms and 552 established firms. To assess the existence of organizational heritage, comparison groups were identified for both established firms and start-ups utilizing the sample of 996 firms that did not have an established firm-entrepreneurial spawn match in the survey responses.

Figure 1 conceptualizes our identification scheme. First, we consider if the spawn start-up has similar, or mimics, organizational practices of its own parent. As a comparison group, we examine the organizational practices of each spawn start-up against the practices of other established firms (i.e., randomly assigned established firms, as well as matched established firms that were identified based on propensity score matching). Keeping the identified parent-spawn dyad as the benchmark, significant negative coefficients establish that the start-up is more similar to its parent than to other established firms. Even if it is indicative of heritage, this result, however, is not sufficient to establish the transmission of organizational practices. It may simply be that the parent firms that spawn new ventures may follow more entrepreneurial practices that are associated with start-ups (scenario 1 in Figure 1). For this reason, we next consider how the parent compares to its own spawn, as compared with the randomly assigned start-up and the matched-assigned start-up. Again, keeping the parent-spawn dyad as the benchmark, a negative coefficient establishes that the organizational practices of the parent are less similar to the practices of nonrelated start-ups, as compared with their own spawn. Once more, this is only indicative of heritage because it may be caused by the spawn start-up organizing like established firms, in general (scenario 2 in Figure 1). The combined results indicate that a transfer of organizational practices is likely to exist and that heritage takes place because it suggests that the overlap is due to ways of organizing that are specific to the parent firm rather than being a reflection of either generic behavior among start-ups or established firms (scenario 3 in Figure 1). Causality, the gold standard of empirical work, is difficult to establish. The preexistence of the parent firm's organizational practices suggests that spawns because they are closer in practices to their parents, are adopting their parents' practices.

Figure 1. Illustration of Analytical Design



Randomly Identified Comparison Sample. For each of the 91 established firms that were part of a matched dyad, we randomly identified another established firm to compare with the spawn. A similar process was pursued for the start-ups: We randomly identified a start-up for each of the 91 matched dyad start-ups to compare with the parent.

Matched-Based Comparison Sample. To at least partially remove potential variations that may be caused by self-selection among those identified in the established firm-spawn dyads, we identified a sample of established firms that had similar characteristics to the 91 established firms that are linked to related spawn firms. Specifically, we identified this match based on observables including firm size, firm age, exports, industry affiliation, and whether the firm is a limited liability. We applied a one-to-one propensity score matching technique (see Figure A.1 for a graphical illustration of the performance of this matching procedure) using the technique discussed by Rosenbaum and Rubin (1983, 1984). A logistic specification was used in predicting conditional probabilities and a nearest neighborhood one-to-one matching rule applied to select the matched start-ups. The variables in the propensity score equation were based on the assumption that practices are adopted and abandoned as the firm matures. We thereby sought to capture matched firms that shared specific characteristics, in terms of stage of development, with the investigated parent firms. This provided a sample of 91 matched established firms.

A similar approach was employed for the start-ups—using founder's gender, age, business experience, serial entrepreneur status, and marital status—for generating the propensity scores (see Figure A.2 for a graphical illustration of the performance of this matching procedure). We used the same technique and steps to secure the matched sample of entrepreneurs/start-ups. We choose to use founder level variables instead of firm-level variables because the survey was sent directly to the founders (not to the firms) and because founders of small start-ups are typically the sole decision makers for their firms, in terms of practices. By definition, start-ups tend to be at the same stage of development wherefore differences may be more attributable to the preferences of the entrepreneur. The entrepreneur's preferences in terms of practices may be shaped by likelihood of becoming an

entrepreneur in the first place, past exposure in the business world, and the individual's stage in the career life cycle. Marital status, for instance, has been proven to be closely associated with motives for establishing one's own firm, especially among female entrepreneurs (DeMartino and Barbato 2003). The motivation driving entrepreneurship may cause different decisions as to the type of work environment, and hence practices, that are installed in the start-up. Accordingly, an additional matched sample of 91 start-ups were identified. In total, our analysis is based on comparisons of 91 parent-spawn dyad firms, 91 randomly selected established firms, 91 randomly selected start-ups, 91 propensity score matched established firms, and 91 propensity score matched start-ups as demonstrated in Figure 1.

Tables 2 and 3 consider the representativeness of the samples. Table 2 considers the five founder demographic attributes using the matching procedure across four samples: the established firm-spawn sample, the randomly identified sample, the sample identified through the matching technique, and the remaining unmatched sample of start-ups. The fourth group consists of the remaining 258 start-up respondents; that is, [535 – (3*91)], in the data set once the spawns, their matched start-ups and the randomly drawn respondents were removed. Whereas it is possible that some of these 258 remaining unmatched start-up respondents may be spawns of established firms, we did not have Statistics Denmark survey responses from those parent firms.

Table 2. Comparisons of Samples of Founders

Sample	Mean	*t*-value	Pr($T > t$)
Gender: Female			
Spawn sample	0.231		
Random sample	0.187	0.727	0.469
Matched sample	0.264	−0.510	0.609
Unmatched sample	0.196	0.750	0.452
Age			
Spawn sample	39.846		
Random sample	43.910	−2.622	0.010**
Matched sample	39.462	0.240	0.811
Unmatched sample	41.680	−1.640	0.102
Business experience			
Spawn sample	2.747		
Random sample	3.231	−0.774	0.440
Matched sample	2.407	0.600	0.550
Unmatched sample	2.574	0.400	0.690
Serial entrepreneur			
Spawn sample	0.132		
Random sample	0.143	−0.197	0.844
Matched sample	0.066	1.410	0.162
Unmatched sample	0.128	0.080	0.932
Marital status			
Spawn sample	0.571		
Random sample	0.637	−0.907	0.366
Matched sample	0.549	0.300	0.767
Unmatched sample	0.669	−1.780	0.075*

*$p < 0.10$; **$p < 0.01$.

One demographic description examined, for example, is that 23.1% of our spawn sample had female founders; whereas 18.7% of the random sample of founders were female, 26.4% of the founders in the matched sample were female, and finally, for the unmatched sample, the percentage of female founders was 19.6%. None of these differences are statistically significant. This comparison exercise reveals no systematic significant differences between the 91 dyad responses and any of the control groups on demographic attributes, except a small but significant difference in age when comparing with the randomly generated sample. We interpret these findings as indicating that the sample used in the analysis resembles a random sample, which hence suggests that results will be generally representative of Danish entrepreneurs. We considered if this matching secured representation of firm level characteristics by investigating firm size (in terms of number of employees) and industry affiliation. No statistical differences were found. The *t*-test on differences in firm size gave a *t*-value of −0.852 ($p = 0.395$). In terms of industry, a tabulation showed a χ^2 value at 1.935 ($p = 0.748$).

Table 3 compares characteristics of the 91 established parent firms against the control groups. The control groups of a random sample of established firms, the matched sample of established firms, and the unmatched sample of established firms were all drawn from the 552 established firms that answered the survey and did not have a dyad response from a start-up. Employment size is larger in our parent sample for two of the three control groups. Our sample of parent firms appears similar to the three control groups in terms of age, value of exports, use of the limited liability organizational form, and five categories of industry, including retail; transport and storage; knowledge intensive IT and finance services; knowledge intensive business consulting, law, and public relations (PR); and other knowledge-intensive services. Only in terms of exports do we find some significance when comparing with the unmatched sample. Overall, we interpret this to be indicative of a representative sample.

Dependent Variable: Similarity in Organizational Practices

We rely on questions from the survey to assess the organizational overlap between firms on the use of 10 common organizational practices. Table 4 presents the survey constructs and the related literature. These questions have been carefully picked from the literature to cover a range of different types of practices but also to include which practices are more likely to be observed among newly established firms. A myriad of other questions covering other practices could also

Table 3. Comparison of Samples of Established Firms

Sample	Mean	*t*-value	Pr($T > t$)
log(size)			
Parent firm sample	6.033		
Random sample	4.712	8.123	0.000*
Matched sample	5.892	0.790	0.431
Unmatched sample	4.860	10.410	0.000*
Firm age			
Parent firm sample	26.963		
Random sample	26.398	0.152	0.880
Matched sample	29.013	−0.690	0.489
Unmatched sample	24.930	0.860	0.391
Exports			
Parent firm sample	470,000,000		
Random sample	175,000,000	1.484	0.140
Matched sample	420,000,000	0.200	0.845
Unmatched sample	160,000,000	3.140	0.002*
Limited liability			
Parent firm sample	0.813		
Random sample	0.835	−0.388	0.699
Matched sample	0.780	0.550	0.583
Unmatched sample	0.818	−0.120	0.903
Retail			
Parent firm sample	0.286		
Random sample	0.285	0.000	1.000
Matched sample	0.253	0.500	0.618
Unmatched sample	0.249	0.750	0.451
Transport and storage			
Parent firm sample	0.121		
Random sample	0.077	0.990	0.323
Matched sample	0.143	−0.440	0.663
Unmatched sample	0.091	0.910	0.362
Knowledge-intensive services (IT & finance)			
Parent firm sample	0.165		
Random sample	0.110	1.074	0.284
Matched sample	0.165	0.000	1.000
Unmatched sample	0.133	0.830	0.408
Knowledge-intensive services (business consulting, law & PR)			
Parent firm sample	0.143		
Random sample	0.110	0.666	0.506
Matched sample	0.165	−0.410	0.683
Unmatched sample	0.133	0.260	0.793
Other knowledge-intensive services			
Parent firm sample	0.022		
Random sample	0.022	0.000	1.000
Matched sample	0.011	0.580	0.563
Unmatched sample	0.030	−0.440	0.663

*$p < 0.01$.

have been included, but many practices only become relevant once the firm develops and thus do not appear among newly started firms. Such questions would hence not be suitable for the purpose of this study. Responses refer to organizational practices in 2009, when the survey was conducted. Table 4 indicates that there are significant differences between the start-ups and established firms in terms of the 10 organizational practices. The start-ups exhibit a higher number of external sources of information and knowledge and have a greater focus on job security, job rotation, and cross-functional/disciplinary teams. This is very much in line with the nature of working in a start-up that operates under scarce resources and has more fluid organizational boundaries. Yet, the results also suggest open channels of communication are favored less by start-ups than by established firms. This may occur naturally at the start-up phase rather than being the result of a purposefully installed practices.

Establishing organizational heritage requires a systematic comparison of practices. We follow Gimeno and Woo (1996) in using a Euclidean measure to capture

Table 4. Practices Used for Measuring Organizational Similarity: Descriptive Statistics and *t*-Tests

No.	Practices	Scale	Start-up (N = 535)	Established (N = 643)	Difference (N = 1,178)
1	Number of external sources of information and knowledge used (a) suppliers of equipment, materials, components, and software; (b) customers and users; (c) competitors or other companies in your industry; (d) consultants, commercial laboratories or private R&D institutes; (e) universities or other higher education institutions; (f) public research institutes; (g) conferences, trade fairs, or exhibitions; (h) science journals or trade/technical publications; (i) industry affiliations; (j) online communities. Adapted from the Community Innovation Surveys.	0–10	1.647 [0.078]	0.991 [0.057]	−0.656 [0.097]**
2	To what extent does your firm prefer open channels of communication with easy access to important information? Adapted from Covin and Slevin (1989).	1–7 Likert	4.956 [0.056]	5.161 [0.062]	0.205 [0.084]*
3	To what extent does your firm prefer to get personnel to follow the formal procedures? Adapted from Covin and Slevin (1989).	1–7 Likert	4.632 [0.056]	4.696 [0.055]	0.064 [0.079]
4	To what degree does your firm prefer to let the final say rest with the formal leaders? Adapted from Covin and Slevin (1989).	1–7 Likert	4.560 [0.067]	4.606 [0.061]	0.046 [0.091]
5	When you think of your firm's promotion and recruitment process, to what extent does the firm emphasize employee's industry knowledge and experience? Adapted from Lepak and Snell (2002).	1–7 Likert	5.007 [0.069]	5.070 [0.066]	0.062 [0.095]
6	When you think of your firm's promotion and recruitment process, to what extent does the firm emphasize employees' personality traits related to taking initiative and exercising leadership? Adapted from Ichniowski, Shaw and Crandall (1995).	1–7 Likert	5.216 [0.055]	5.209 [0.057]	−0.007 [0.079]
7	If you think about your firm's employees, how much focus does your firm have on employees performing jobs that have a high degree of job security? Adapted from Lepak and Snell (2002).	1–7 Likert	4.474 [0.065]	3.952 [0.063]	−0.522 [0.091]**
8	If you think about your firm's employees, how much focus does your firm have on employees performing jobs that involve job rotation? Adapted from Lepak and Snell (2002).	1–7 Likert	3.575 [0.068]	3.163 [0.063]	−0.412 [0.092]**
9	If you think about your firm's employees, how much focus does your firm have on employees performing jobs that require participation in the cross-functional/disciplinary teams? Adapted from Lepak and Snell (2002).	1–7 Likert	3.899 [0.071]	4.119 [0.073]	0.220 [0.102]*
10	What percentage of employees has been eligible for cash bonuses based on individual performances? Adapted from Huselid (1995).	0–100	29.185 [1.464]	27.192 [2.148]	−4.663 [2.060]*

Note. Standard errors in brackets.
*$p < 0.05$; **$p < 0.01$, two-tailed test.

distance between two organizations' adopted practices. The measure can be expressed by

$$S_{jk} = \frac{\sum_{i=1}^{Q}\left[1 - \sqrt{\frac{(q_{ij}-q_{ik})^2}{m_i^2}}\right]}{Q}.$$

S_{jk} is the similarity between firm j and k. Q is the total number of organizational practices considered. The values q_{ij} and q_{ik} are, respectively, the responses of firm j and k to question i, and m_i is the maximum possible difference between respondents with reference to question i. The index is bounded between 0 and 1. A value of 0 indicates no overlap in the compared organizations' practices, and 1 indicates complete alignment of practices. We used the 10 constructs shown in Table 4 wherefore Q equals 10. The similarity index is calculated for 455 dyads—these include comparing the parents with their spawns (91); comparing the parents with the matched start-ups (91) and with the randomly assigned start-ups (91); and finally comparing the spawns with the matched established firms (91) and with the randomly assigned established firms (91).

Substantial differences may exist across industries in the ways that individual firms conduct business. We standardized questions at the industry level (one-digit level) before calculating the similarity index to make responses more comparative across questions, as well as across industries. This was done by calculating the mean and standard deviation of the industry for each question. Following this, the corresponding mean was subtracted from each response then divided by the standard deviation (given the firm's industry affiliation). This also modifies the values within questions so that the scales become pseudointervals. Standardizing allows us to remove much of the similarity that can be attributed to industry practices rather than inherited organizational practices. The standardization also evens out variations attributed to size differences.[3]

Explanatory Variables

To examine the intergenerational transfer of organizational practices, we exploit the sample design based on comparisons of randomly selected and matched established firms/start-ups. Considering the spawn as the focal firm, we construct a dummy variable equal to one when the organizational distance is computed for the parent-spawn dyad. This is the hypothesized variable of interest, and we will use it as the benchmark in our regressions. This benchmark category is used in two regression specifications, separated by whether the focal firm is the spawn or whether it is the parent firm. When the focal firm is the spawn, the comparison groups are (1) the spawn compared with the randomly assigned established firm and (2) the spawn compared with the propensity score matching assigned established firm. When the focal firm is the parent firm, the comparison groups are (1) the parent compared with the randomly assigned start-up and (2) the parent compared with the start-up that's been assigned, based on propensity score matching.

Parent Firm Control Variables

The occupational status of the founder at the parent firm may be significantly associated with the degree of heritage. We control for three parent occupational circumstances. *Rank at the Parent Firm* is captured by a wage premium, which tends to be correlated with responsibility (Cappelli and Cascio 1991, Baker et al. 1994). *Rank* is the individual's earnings position in the parent firm, measured by their percentile in terms of hourly wage. The lowest percentile corresponds to the highest earning individuals in the firm. These variables are from the IDA.

Motivated by Disagreement is based on survey responses from individual new firm founders about their motivations for transitioning into entrepreneurship (see, e.g., Klepper 2007, Klepper and Thompson 2010, Thompson and Chen 2011). Specifically, entrepreneurs who create new organizations as a reaction to dissatisfaction with work or work conditions at previous employers are represented by a disagreement dummy variable that allows us to validate the disagreement mechanism.

About one-third of founders were employed for three or more years by the immediately prior firm. *Tenure at Parent Firm,* is from the IDA and is a dummy variable indicating that we can confirm employment at the immediate prior firm for at least three consecutive years.[4]

Firm Comparison Control Variables

Firm comparison controls and controls on founder demographic characteristics are included to limit spurious correlations associated with organizational differences. Smaller firms may organize differently from larger firms (Aldrich 1999). Any observed differences in organizational practices between start-ups and established firms, or between parent firms and their spawns, may be attributed to a *Firm Size Difference*. Therefore, we include a variable measuring the absolute value of this difference in the number of employees in the dyad. Industry differences may play a role at lower levels of aggregation. Therefore, we include a dummy for whether the two compared firms are classified in the *Same Industry,* based on the three-digit detailed industry classification. Both of these were at least partially controlled for through a standardization of the organizational practice's questions ex ante calculating the dependent variable. We nevertheless include these

to account for any remaining differences attributed to these observables.

Founder and Start-up Control Variables

Hybrid entrepreneurs, who launch their new firms while maintaining their prior employment, are likely to have fewer resources and therefore may be more likely to copy the practices that mimic their prior organization. We control for hybrid entrepreneurs (Folta et al. 2010) by including a dummy for firms with founders who continued to work at their previous firms while setting up new firms. This variable is constructed using the IDA data on individuals who continued their affiliation with their previous firms after establishing new firms.

Advice from Former Colleagues provides entrepreneurs with greater understanding of the organizational practices at their prior firms. We include a dummy indicating whether the entrepreneur received advice from their former colleagues in the start-up phase: 14% of entrepreneurs indicated receiving advice. The entrepreneur survey questionnaire asked respondents to indicate their sources of advice and guidance; the question included multiple sources of advice, including former colleagues.

Multiple founders provide greater variety in the potential set of organizational practices (Fern et al. 2012). The existence of a *Cofounder* may lower the similarity in borrowing practices. Thirty-seven (40%) of the start-ups in our sample indicated having more than one founder. We control for *Growth of Parent Firm* using average employment growth two years prior to the establishment of the venture from IDA. High-growth parent firms are more likely to be perceived as having practices worth emulating. Because this is register data, we have been able to retrieve it for all parent firms. We include a variable, *Years Since Spawning*, indicating the number of years since the founder left the parent firm. Longer-established firms have gone through a process of adaptation to utilize the most relevant practices and have survived the market selection process; in addition, start-ups that have survived for a longer period may be more similar to the population of established firms. Table 5 presents descriptive statistics of the variables used in the analysis and the Pearson correlation coefficients. The correlation coefficients do not raise concerns about multicollinearity nor does the variance inflation factor, which is below 5 for all regressions.

Econometric Technique

Our dependent variable, the similarity index, is continuous, normally distributed, and truncated at 0 (indicating a complete lack of similarity) and at 1 (indicating perfect similarity). The truncated nature of the dependent variable would normally require a Tobit specification for the analysis. However, none of the comparisons proved to have a complete overlap or a complete lack of overlap. The densities of the similarity measures considering observations for which the spawn is the focal firm (left) and for which parent, the focal firm (right), are depicted in Figure 2. A standard ordinary least squares (OLS) technique is applied to assess the differences in similarity across observations. Using a Tobit provides similar results.

Results: Baseline Study—Is There Organizational Heritage in Organizational Practices?

Table 6 presents the results of the OLS regressions for the organizational similarity index. Column (1) presents results with the spawn as the focal firm. The results are benchmarked against the comparison of organizational practices between the spawn and its established parent firm. All the coefficients associated with the heritage variables are negative and highly significant (1% level); organizational practices are less similar for the focal spawn when compared with either the matched established firm or the randomly selected established firm. Column (2) provides results for when the focal firm is the parent firm. The results indicate that the parent firm is also more similar to its own spawn, in terms of organizational practices, than either randomly assigned or matched start-ups. The results indicate that not only do spawns resemble their parents more than other established firms but also that the parent firm is more similar in organizational practices to its spawn than to other start-up firms. Taken together, these results suggest that the spawns do not mimic established firms in general and that the parent firms do not select practices that are common to start-ups. The results are hence a strong indication for the transfer of organizational practices from parent to spawn.

Finding a significant lower estimate for dummies representing the matched samples compared with the corresponding estimate associated with the randomly selected samples would suggest an effect on organizational similarity operating through the observable characteristics used for matching. The results, however, hold regardless of considering the matched sample or the randomly selected sample as benchmarks. Furthermore, we do not find any significant difference between the two heritage related variables in the left column ($F(1, 260) = 0.71$, Prob $> F = 0.40$) nor between those in the right column ($F(1, 260) = 0.30$, Prob $> F = 0.58$). The heritage effect hence accounts for the major share of observed organizational similarity between parent and spawn. The significances and the explanatory power were found to be consistent when leaving out observations pertaining to the randomly assigned comparison groups, suggesting that the findings are not sensitive to the number of observations.

For the control variables, we find little effects whatsoever. Possibly because the considered samples within

Table 5. Descriptive Statistics and Pearson Correlation Coefficients

Variable name		Mean	Standard deviation	1	2	3	4	5	6	7	8	9	10
1	*Organizational similarity*	0.74	0.09										
2	*Disagreement*	0.08	0.28	–0.01									
3	*Tenure*	0.48	1.34	0.10	–0.07								
4	*Rank at parent firm*	0.69	0.24	0.07	0.09	0.02							
5	*Firm size difference*	786.74	1,713.65	–0.03	0.00	0.05	–0.02						
6	*Same industry*	0.17	0.38	0.02	0.06	–0.03	0.09	–0.03					
7	*Hybrid entrepreneur*	0.23	0.42	0.08	–0.04	0.65	–0.06	0.00	–0.03				
8	*Advice from former colleagues*	0.14	0.34	–0.01	0.07	0.00	0.10	–0.05	0.05	0.03			
9	*Cofounder*	0.43	0.50	–0.01	0.02	–0.16	0.06	–0.10	0.02	–0.09	0.03		
10	*Growth of parent firm*	0.06	0.16	–0.08	–0.05	0.03	–0.13	–0.02	0.10	0.03	–0.13	0.03	
11	*Years since spawning*	2.94	1.84	0.02	0.00	0.01	0.02	0.05	–0.22	0.02	0.01	–0.08	–0.13

Note. Correlation coefficients above 0.06 are significant at a 5% level.

start-ups and within established firms proved fairly similar. Any significance should therefore be found within group variations and not across.

Effect Sizes

The parameter estimates of the heritage variables seem small, suggesting that the effect sizes are limited though statistically significant. Indeed, the heritage estimates when the spawn is the focal firm is estimated to be –0.074. This indicates that spawns, on average, have approximately 9.4% (coefficient/constant, –0.074/0.787) more overlap in organization practices with their parent firms than they do with other established firms. The corresponding number when considering the parent as the focal firm is very similar, namely, 10.1%.

To evaluate the effect size of the estimates, we computed Cohen's *d* for the explanatory variables expressed as the difference in mean similarities between the groups, divided by the standard deviation of the combined sample of the considered groups for the estimates in Table 6. Cohen's *d* for the randomly selected start-ups is about 0.8, whereas the corresponding value for the matched start-ups is 0.7. Put differently, if we randomly drew from the parent-spawn comparison sample and the parent matched start-up (randomly assigned start-up) comparisons sample, we would find a greater similarity between the parent-spawn in 69% (71%) of the cases. Cohen's *d* for the parent as focal firm regressions are of a similar magnitude. Overall, these results suggest the effect is not trivial, indicating that the heritage have substantial implications for organizational genealogy.

Differences in Response Behaviors

The above results may be subject to bias because of extreme responses from entrepreneurs compared with the CEOs/HR managers. There are three reasons why entrepreneurs may provide comparable extreme

Figure 2. Density Plots of Similarity Measure Considering Spawn as the Focal Firm and Parent as the Focal Firm

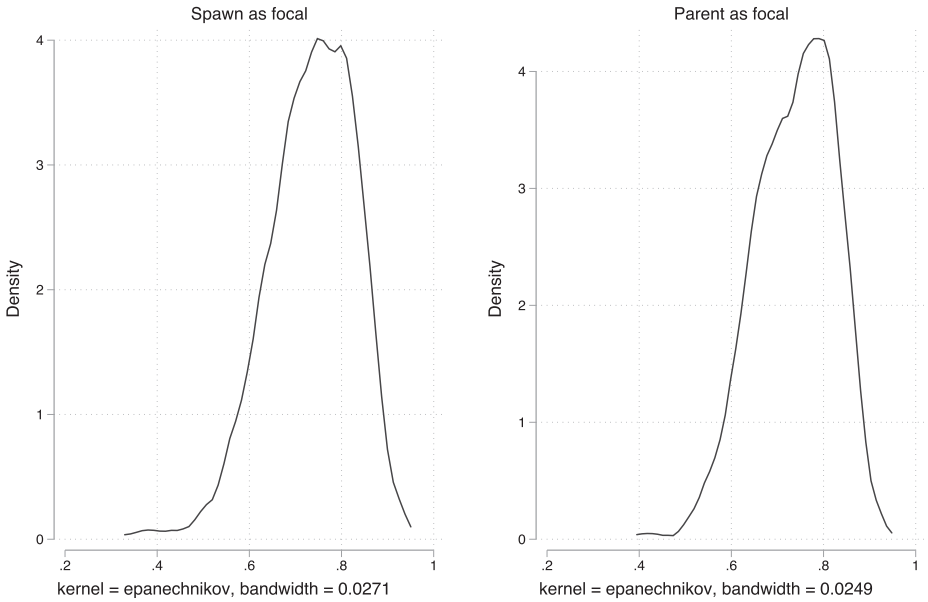


Table 6. Results of OLS Regressions Against Overlap in Organizational Practices

	Spawn as focal firm (1)	Parent as focal firm (2)
Heritage variables		
Spawn vs. matched established	–0.074**	
	[0.012]	
Spawn vs. randomly selected established	–0.085**	
	[0.013]	
Spawn vs. own parent firm	Benchmark	
Parent vs. matched spawn		–0.076**
		[0.013]
Parent vs. random sample start-up		–0.068**
		[0.013]
Parent vs. own spawn		Benchmark
Parent occupational controls		
Disagreement	–0.006	–0.000
	[0.020]	[0.018]
Tenure	0.007	0.004
	[0.004]	[0.005]
Rank at parent firm	–0.009	0.053*
	[0.025]	[0.022]
Firm comparison controls		
Firm size difference	–0.000**	0.000
	[0.000]	[0.000]
Same industry	–0.017	–0.004
	[0.015]	[0.014]
Founder and start-up controls		
Hybrid entrepreneur	–0.008	–0.014
	[0.015]	[0.018]
Advice from former colleagues	–0.007	–0.001
	[0.015]	[0.015]
Cofounder	0.012	–0.006
	[0.011]	[0.010]
Growth of parent firm	–0.018	–0.061*
	[0.036]	[0.036]
Years since spawning	0.003	0.001
	[0.003]	[0.002]
Constant	0.787**	0.756**
	[0.021]	[0.022]
Number of observations	273	273
F-test	7.520**	5.590**
R^2	0.180	0.196

Note. Clustered standard errors in brackets.
*$p < 0.05$; **$p < 0.01$, two-tailed test.

responses. First, entrepreneurs tend to display representativeness bias and to generalize based on small, nonrandom samples (Tversky and Kahneman 1974). Observing (or not observing) a given practice in an organization may prompt the entrepreneur to conclude prematurely that the practice is either widely, or never, used. Second, entrepreneurs tend to provide extreme responses if questions are complex and time-consuming (Alpar and Spitzer 1989), thus providing answers in more extreme ranges than managers. Third, incumbent firms are more likely to consist of multiple units where practices may differ. Respondents from such organizations are likely to respond by providing values close to the average across the whole firm. New firms tend to be single-unit organizations where information about a practice is known.

We found that 2 of the 10 questions resulted in significantly more extreme answers from entrepreneurs than from managers: question 8 (concerning the focus on employees' performance in positions that involve job rotation) and question 10 (regarding the percentage of employees eligible for cash bonuses based on individual performance). To test for this potential bias, we omitted these questions in an alternative calculation of the similarity measure. No difference in the empirical results was found. Similarly,

we looked at standardized response values and found that questions 1 (regarding the number of external sources used) and 7 (concerning job security) had significantly different means. Removing these two questions did not alter the results. Finally, we also considered whether combining Likert scale values with ratio values (Questions 1 and 10) had any impact on the results by excluding the ratio-scale questions in the estimation. The results proved virtually consistent.

Results: Study 2—Which Organizational Practices Are (Not) Transferred?

Our baseline study shows a strong effect of organizational heritage in organizational practices. The range of organizational practices is, however, rich and nuanced. Some practices are narrow in scope, referring to specific tasks within a functional area, for example, a firm's practices for recruitment. Other practices, related to openness or job rotation are broader, spanning multiple functions across the organization (Kostova 1999, Zeitz et al. 1999).

It is unlikely that founders will exhibit a uniform interest in the transfer of all practices. Nor will they equally succeed in installing them as intended. To offer finer grained insights, we study practices one by one and investigate which of the 10 organizational practices contribute to our overall findings. We calculated separate similarity indexes using a simplified formula:

$$S_{jk} = 1 - \sqrt{\frac{(q_{ij} - q_{ik})}{m_i^2}}.$$

Again, S_{jk} is the similarity between firms j and k. The values q_{ij} and q_{ik}, respectively, are the responses of firms j and k to the organizational practice i, and m_i is the maximum possible difference between respondents with reference to question i.

Table 7 contains the results of this investigation. Only the heritage coefficients are reported across 20 regressions—10 where the spawn is the focal firm (left two columns) and 10 where the parent is the focal firm (right two columns). All estimates are in comparison against the benchmark of the similarity between the spawn and its own parent.

Results suggest that a number of practices are highly similar between the parent and the spawn. These practices include those that pertain to open channels of communication; cause personnel to follow formal procedures; state that the final say rests with the formal leaders; pertain to a high degree of job security; involve job rotation; relate to participation in cross-functional/disciplinary teams; and link promotion criteria to personal traits, related to taking initiative and exercising leadership. We find significant results regardless of which firm is the focal firm. The significance, however, is weak for some of these when using a random sample as a benchmark. Practices regarding openness in innovation activities, practices in which promotion criteria is based on industry knowledge and experience, and practices of cash bonuses do not exhibit significance, regardless of the focal firm.

Commonalities Across Practices

Results in Table 7 indicate that the organizational heritage is stronger among some practices than others. These differences may possibly be attributed to the coappearance of practices. To explore this further, we ran a principal component factor analysis across the 10 organizational practices. The results of the factor analysis are displayed in Table 8.

Four latent constructs could be identified through the factor analysis. The question on openness did not load into any of the factors, and the question on hiring practices with regard to industry knowledge and experience proved to be the only question loading into two separate factors. Factor 1 (F1) includes four questions that together capture items that pertain to *transparency and formalization* (questions 3, 4, 5, and 7). The investigation suggested heritage of such practices from parent to spawn with only one of the questions not exhibiting significance in heritage tendency. This also coincides with the question that loads least into the latent construct. Transparency and formalization may be value-driven management practices that all individuals in an organization are exposed to and hence more likely to adopt.

Factor 2 (F2) captures *skill development* and includes questions 8 and 9. Both questions associated with this latent construct have high factor loading (question 8 = 0.883 and question 9 = 0.848) and both of these were found to be associated with heritage, as displayed in Table 7. Together, these results suggest that entrepreneurs rely strongly on the practices of the parent firm when deciding on skill development. Practices that pertain to skill development are highly observable, and practices that all employees are exposed to make them more likely to be transferred from parent to spawn.

The third factor (F3) includes the two questions pertaining to open channels of communication, and hiring based on personality traits related to taking initiative and exercising leadership. It is difficult to discern what commonality these questions express. Perhaps this latent construct suggests firms have a greater extent of *participatory decision making*. This trait also seems to be transferred from parent to spawn at a significant level since both were found significant in Table 7.

The final factor contains the question on percentage of employees who are eligible for cash bonuses based on individual performance. The question on hiring based

Table 7. Similarity Across the Considered 10 Organizational Practices

		Spawn as focal firm; benchmark is spawn vs. own parent		Parent as focal firm; benchmark is parent vs. own spawn	
No.	Practices	Spawn vs. random	Spawn vs. matched	Parent vs. random	Parent vs. matched
1	Openness	−0.025 [0.027]	−0.041 [0.026]	−0.010 [0.027]	−0.006 [0.025]
2	Open channels of communication	−0.133*** [0.028]	−0.161*** [0.027]	−0.205*** [0.033]	−0.186*** [0.031]
3	Get personnel to follow the formal procedures	−0.045* [0.025]	−0.086*** [0.028]	−0.068** [0.030]	−0.105*** [0.029]
4	Final say rests with the formal leaders	−0.081** [0.036]	−0.070** [0.033]	−0.046 [0.036]	−0.103*** [0.038]
5	Employee's industry knowledge and experience	−0.040 [0.039]	−0.024 [0.038]	0.019 [0.044]	−0.009 [0.043]
6	Personality traits related to taking initiative and exercising leadership	−0.089*** [0.029]	−0.068** [0.029]	−0.070** [0.035]	−0.098*** [0.033]
7	High degree of job security	−0.089*** [0.031]	−0.100*** [0.033]	−0.184*** [0.034]	−0.112*** [0.033]
8	Involve job rotation	−0.137*** [0.035]	−0.124*** [0.030]	−0.095*** [0.034]	−0.095*** [0.036]
9	Participation in the cross-functional/disciplinary teams	−0.144*** [0.034]	−0.077** [0.032]	−0.084** [0.039]	−0.133*** [0.039]
10	Eligible for cash bonuses based on individual performances	−0.070 [0.050]	−0.034 [0.049]	0.065 [0.058]	0.085 [0.057]

Notes. Results of 20 OLS regressions. Standard errors are in brackets.
*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$, two-tailed test.

Table 8. Results of Factor Analysis Across the Considered 10 Organizational Practices

No.	Practices	F1: Transparency and formalization	F2: Skill development	F3: Participatory decision making	F4: Individual experience	Uniqueness
1	Openness					0.581
2	Open channels of communication			0.861		0.242
3	Get personnel to follow the formal procedures	0.764				0.393
4	Final say rests with the formal leaders	0.740				0.375
5	Employee's industry knowledge and experience	0.429			−0.462	0.523
6	Personality traits related to taking initiative and exercising leadership			0.790		0.305
7	High degree of job security	0.502				0.620
8	Involve job rotation		0.883			0.180
9	Participation in the cross-functional/ disciplinary teams		0.848			0.219
10	Eligible for cash bonuses based on individual performances				0.792	0.308
	Eigenvalues	1.771	1.725	1.672	1.086	
	Average interim covariance	0.402	1.433	0.958	3.814	
	Scale reliability coefficient	0.438	0.643	0.614	0.013	

Note. Only factor loadings above 0.4 reported.

on employees' experience loads negatively into this factor. We did not find any evidence of transfer of these two practices, related to *individual experience*, from the parent to the spawn. Further, the scale reliability coefficient for this factor is very low, making it of less interest in this context.

Discussion of Findings

We provide strong evidence for transmission of organizational practices from parent firms to their spawns. On the basis of an extensive review of extant literature, we identify five potential mechanisms that may be responsible for the transmission of organizational practices.

First, evidence shows that founders are likely to identify an opportunity proximate to the businesses of their former employers (Klepper 2001, Dencker et al. 2009, Roberts et al. 2011, Campbell et al. 2012, Kim and Steensma 2017). They will pursue ideas parents do not want to pursue either because these ideas would have cannibalized existing products or because the market is estimated to be too small (Klepper 2001, Baker et al. 2003, Klepper and Sleeper 2005). When there is some degree of overlap of activities, it is natural that the founder first and foremost turns to the parent firm for inspiration or even to replicate organizational practices.

Second, regardless of the extent of business overlap, a founder's prior experience in a particular organization leads to the formation of highly sticky, contextually determined knowledge structures and shapes the founder's preferences, perceptions, and beliefs (Chatterji 2009, Fern et al. 2012, Ganco 2013). Further, entrepreneurs have little time to explore and devise new practices, and the computational load created by ambiguity can quickly outstrip their bounded processing power. In solving organizational problems, founders are thus more likely to heavily rely on methods and standard operating procedures learned from prior employment experience (Gavetti et al. 2005).

Third, founders poach founding team members from their prior organizations (Phillips 2002, Ganco 2013, Agarwal et al. 2016, Shah et al. 2017). This is because they have superior information on motivations, capabilities, and personalities of their coworkers and hiring them could enable exploitation of collectively held interdependent knowledge (Shah et al. 2017). When founders bring a team of their former colleagues into their start-ups, it is likely that they also replicate organizational practices from their prior firm contexts. Transferring familiar practices will enable a far more effective exploitation of the team's collective capabilities and reduce the uncertainty and potential tensions associated with the new organizational environment.

Fourth, over time an internal network of professional advisors develops in organizations as people seek information, advice, and opportunities for problem solving among their colleagues (Beckman 2006, Huy 2011). Employees routinely categorize their peers as friends and display a strong preference to interact with them. Mobility out of an organization will not prevent individuals from exploiting their personal networks, especially when they need advice (Baker et al. 2003). Drawing upon social capital from the former organization will produce solutions in a cost-effective manner (Agarwal et al. 2004, Ruef 2005). The validity of this advice will also be perceived as higher; Baker et al. (2003) found that entrepreneurs

relied on their professional networks as their primary means of access to information about organizational practices and advice about the various problems encountered during the process of founding their new firms.

Fifth, in their quest for resources, lacking a credible narrative account, founders must convince external parties of the organization's viability (Santos and Eisenhardt 2009). An organization's viability can be anchored in the legitimacy of its structures and processes, as these often serve as easily observed and monitored proxies for less visible targets of evaluation. Thus, founders are often forced to disclose signals about their structures and practices that will help resource providers assess the underlying quality of their operations (Higgins and Gulati 2003, Beckman 2006). Research shows that external resource holders allocate significant attention to founders' previous affiliations (Higgins and Gulati 2006, Santos and Eisenhardt 2009). Mimicking the practices of founders' prior organizations conveys an expectation of reliability and accountability (Ruef 2005). It offers founders the advantage of accumulating legitimacy through the creation of a social frame of reference for external resource holders (Santos and Eisenhardt 2009). These five mechanisms together can help us make sense of our finding that in addition to replicating knowledge and routines (Klepper 2001, Burton et al. 2002, Roberts et al. 2011, Fern et al. 2012, Basu et al. 2015, Agarwal et al. 2016), founders also import organizational practices from their prior employment.

Our further investigation shows that not all practices seem to find their way into the new firms. The literature on mimetic adoption (Greve 1998, Rivkin 2000, Miner et al. 2001) and practice replication (Kostova 1999, Winter and Szulanski 2001, Gavetti et al. 2005, Gaba and Dokko 2016) informs us that practice transfer has an instrumental dimension (i.e., motives and incentives) and a cognitive dimension (i.e., conception and articulation). Neither dimension alone is sufficient to explain the transfer of organizational practices (Basu et al. 2015, Gaba and Dokko 2016).

The instrumental dimension encapsulates the strategic and economic motives for replicating a practice. Founders are likely to demonstrate greater preference for replicating a practice if they see value and fit with the requirements of a start-up. The cognitive dimension draws attention to the cognitive impediments to replication. Founders should have a good understanding of how the practice is conceived and implemented. Imperfect information can reduce the appeal of a practice (Zeitz et al. 1999, Rivkin 2000, Dokko and Gaba 2012), and when faced with incomplete understanding, entrepreneurs may abandon efforts to make a true replication, given resource constraints. If they attempt to replicate practices, they will have to rely on heuristics and improvisation in interpreting and defining the practice, and the resulting practice will likely be a deviation from the targeted practice (Rivkin 2000, Gavetti et al. 2005).

In general, the world of organizational practices shows considerable heterogeneity in terms of the degree of compatibility with the organizational context of start-ups. Similarly, some practices are better understood than others for various reasons. Some practices are generally well codified, leaving little room for improvisation, customization, or idiosyncratic elements, and there is less controversy around their meanings and functions (Miner et al. 2001, Winter and Szulanski 2001), whereas others are historically and culturally situated and acquire symbolic and normative meanings for organizational members—a meaning that goes beyond technical efficiency and is accompanied by considerable subtle and tacit knowledge (Kostova 1999, Rivkin 2000). Some practices affect everybody directly or are performed by most employees, which also leads to a more widespread understanding of these practices. On the other hand, only a small select group of organizational members may be aware of some other practices and have a good understanding of the specific knowledge about the activities that compose these practices (Sørensen and Phillips 2011, Dokko and Gaba 2012). Some practices might show little variation across firms, or even industries, because of institutional pressures, and hence, compared with firm-specific ones, these practices are generally better understood (Teece 2007, Bromiley and Rau 2014).

Scholars in the HR field highlight that HR practices are well-codified and better understood (Lado and Wilson 1994, Huselid 1995, Huselid et al. 1997). This more comprehensive understanding is aided by the fact that HR practices are also far more regulated and that they pertain to the set of practices to which the majority of employees—regardless of their ranks, tenures, or functional specializations—are exposed (Baron et al. 1996, 2001). As a result, competitive advantage does not come from the HR practices but the way HR practices are configured (Lado and Wilson 1994, Huselid et al. 1997). Among the practices we studied, five are HR-related and tend to be clearly defined and causally unambiguous, including (1) promoting individuals based on personal traits related to taking initiative and exercising leadership, (2) job rotation, (3) cash-based compensation, (4) offering job security, and (5) hiring employees based on knowledge and industry experience. For these practices, there is little necessity for founders to draw exhaustive inferences and delineate a normative template from the complex inner world of their prior organizations.

We think that the variation in replication of organizational practices related to HR is due to variation in the instrumental dimension. Not all these practices are strategically and economically useful and relevant to

founders' needs and goals. In particular, the practice of *cash-based compensation* offers the least fit with the start-up contexts, and thus, it is perhaps not surprising that it is not replicated. Start-ups are typically cash-constrained (Aldrich 1999, Baker et al. 2003). Founders would rather deploy scarce cash to grow the business rather than to incentivize employees. Indeed, financial compensation and incentive systems in start-ups typically rely upon equity and options (Bengtsson and Hand 2013).

In our view, the practices of *promoting individuals based on personal traits related to taking initiative and exercising leadership* and *job rotation* have a high degree of compatibility with the requirements of the start-up context, and therefore we observe evidence of their transfer. Start-ups are entrepreneurial environments, which continuously encounter organizational and market-related problems and technological challenges (Baker et al. 2003, Phillips 2005). They need to revise their business models on an ongoing basis, keep pushing their innovation efforts, and search for better ways of connecting with customers—all under the constraints of capital and talent shortages and time pressures. Individuals are expected to contribute heavily to various problems that hamper growth of the start-up, develop and lead initiatives that can strengthen the start-up, and show willingness to perform a variety of tasks in different teams to move the start-up forward (Baron et al. 2001, Baker and Nelson 2005). These practices ensure that such behaviors are institutionalized (Lado and Wilson 1994). They also convey strong signals to the market for entrepreneurial talent. Those who join entrepreneurial firms tend to appreciate gaining exposure to task variety and diverse learning opportunities and are intrinsically motivated to take initiative and lead change (Ozcan and Reichstein 2009, Carnahan et al. 2012). These practices are also important tools to better match skills to tasks in the fluid, fast-changing task environment in start-ups.

Interestingly, we uncovered evidence for the replication of the practice of *job security*. At first glance, this practice does not appear highly compatible with start-up contexts. Start-ups must continuously evolve their business model, capabilities, and offerings, which suggests that they need to maintain flexibility in terms of disbanding certain capabilities, replacing others, and adopting entirely new capabilities (Baron and Hannan 2002). Job security can lock them into a certain set of skills, which may no longer prove relevant (Baron et al. 1996, 2001). Yet, alternative arguments exist that support its replication. First, initial employees of start-ups tend to join from the founders' prior work contexts (Phillips 2002, Ganco 2013, Agarwal et al. 2016, Shah et al. 2017). When these work contexts offer job security, the opportunity cost of venturing out of these environments is greater, and as a result, the founder is likely to replicate this in the start-up to lower the opportunity cost for former colleagues. Second, founders may be pressed to offer job security in a bid to attract some valuable and capable employees beyond former colleagues, who are otherwise making an uncertain and risky career move. Indeed, in a recent survey, an overwhelming majority of science and technology talent indicated that the lack of job security and employment stability was the factor they would dislike most about working in a start-up (Roach and Sauermann 2010).[5] Last but not least, unlike most other HR practices, the formal practice of job security is not particularly widespread, even in established companies. Founders who have enjoyed job security—a relatively rare perk—in their prior employment are likely to show an appreciation for it.

Similarly, we think that *the practice of hiring employees based on knowledge and industry experience* is valuable in the start-up context. Studies indeed document that industry-specific knowledge and experience residing in human capital are key precursors to start-up success (Chatterji 2009, Campbell et al. 2012, Carnahan et al. 2012), which partly explains why founders demonstrate a strong tendency to poach talent from their previous organizations (Phillips 2002, Ganco 2013, Agarwal et al. 2016, Shah et al. 2017). Contrary to these studies, however, we find no evidence for systematic transfer of this practice. We speculate that this may have to do with resource shortages and riskiness of start-ups in that, beyond initial founding teams, founders may be unable to attract seasoned talent as they are unable to pay attractive compensation, and the uncertain nature of start-ups may also deter experienced talent who favor security.

The remaining five practices pertain to organizational practices associated with internal communication, decision making, control, and internal and external collaboration. Compared with the HR practices above, we expect these as a group to be less well-articulated (Lado and Wilson 1994, Huselid et al. 1997, Kostova 1999, Zeitz et al. 1999). Within this group, variation exists, which furnishes some ground for explaining why only a subset of these practices seems to be transferred.

Our empirical analysis shows that the following practices are likely to be transferred by the founders from their previous organizations: *open channels of communication* (internal communication) and *cross-functional/disciplinary team formation and participation* (internal collaboration). These practices are highly compatible with the start-up context and the founders should gain much from replicating them. Start-ups need to maintain an open environment in which employees have immediate access to information; are empowered to reflect and challenge ongoing operations, initiatives, and processes; are encouraged to share knowledge and information; and feel that they can freely bring their ideas to the attention of others (Baron et al. 1996,

Aldrich 1999, Baron et al. 2001, Ferriani et al. 2012). Further, employees working in start-ups tend to be generalists, willing to assume responsibility for a wide range of tasks and work activities (Klepper 2001, Ozcan and Reichstein 2009, Sørensen and Phillips 2011, Carnahan et al. 2012).

We also find a greater likelihood of replication for the practice of *requiring the personnel to follow formal procedures* (control) and the practice of *formalized hierarchical decision making* (decision making). The former practice is a straightforward one for founders to understand and conceptualize. Its instrumental value has to do with the need to have some degree of discipline, predictability, and efficiency in the uncertain and chaotic world of start-ups, where resources are limited and time is of the essence (Walsh and Dewar 1987). It is important to note that neither this practice nor the arguments in favor of it imply that founders should engage in elaborate attempts to create formal procedures and codes. A loose, informal structure promoting compliance based on a shared dedication to the organization and its goals is in the interest of the start-up (Walsh and Dewar 1987); nevertheless, founders still need to integrate and control behavior to resolve ambiguities in interactions among a group of people who have very little history together. They must develop the infrastructure for coordinated patterns of behavior and install a mindset of accountability and getting things done efficiently.

As for the latter practice, we argue that its replication again has to do with instrumental reasons, as cognitive impediments should not be powerful enough to deter replication or generate miscopying. Following the same reasoning for the former practice, this practice also makes sure that founders get to impose some level of structure on behavior and efficiency orientation. Further, such formalized decision making is essential to establishing the priorities in an environment in which there is a frenzy of experimentation (Walsh and Dewar 1987, Aldrich 1999). Last but not least, as start-ups are fragile businesses, most decisions carry "life or death" implications, which makes it imperative that founders get deeply involved in making them. Still, one must recognize that start-ups are vibrant and family-like organizations, in which a shared sense of mission and distributed accountability are key. Thus, it is unlikely that founders will strive to be autocratic leaders or will not seek consensus (Baron and Hannan 2002).

Our results revealed no evidence for replication of the practice of *openness* (external collaboration). To us, this is the practice likely to pose the greatest cognitive impediments to replication, as it is more complex and broader in scope than the others. Openness can well be conceived as a "strategic organizational practice" (Kostova 1999). Transfer of such practices requires significant cognitive investment, and when their transfers occurs, they may easily result in superficial mapping whereby they become essentially less clear and more removed from the original practice (Greve 1998, Rivkin 2000, Miner et al. 2001, Gavetti et al. 2005). We also struggle to see the instrumental benefits of openness in the context of start-ups in a straightforward fashion especially because active pursuit of such a diverse set of external knowledge and innovation collaborations could place considerable strain on the start-up's limited financial and human resources. Start-ups also have limited absorptive capacity to reap value from such collaborative efforts (Laursen and Salter 2006). Last but not least, as start-ups adjust their business models, there is a risk of getting locked into network relationships that may quickly prove redundant, if not distracting.

Despite our forays into the topic, however, much work still remains to be done before the origins of organizational practices in start-ups is fully understood. Our stylized findings lay a fairly substantial base upon which to build a rich theory and open critical avenues of research. We present a summary of our findings and potential mechanisms behind them in Tables 9 and 10.

Future Research Directions

We find strong evidence for intergenerational transmission of practices. Our results show that about 70% of the comparisons of start-ups and other established firms are less similar than the average similarity between a parent organization and its spawn and that the overlap in organizational practices is almost 10% greater between a spawn and its parents than between the spawn and other established firms. The overlap between a parent and its spawn is similarly greater than the parent and other start-ups.

In light of this evidence, there are at least three additional issues future research should address. First, because of the exploratory nature of our study, we refrained from hypothesizing about the specific mechanisms through which organizational practices in parent firms come to be replicated in spawns. Our extensive reading of the literature suggests that five potential mechanisms may be at play (Table 9). Obviously, these are different mechanisms, and it is important to understand which of them underlie or dominate the transfer of practices. Thus, there is a strong need for theory-based research that offers fine-grained insights into the mechanisms.

The second important direction for future research would be to examine the boundary conditions of replication. In particular, we initiate a call for research on founder characteristics as a moderator of the replication choices. The genealogical research has made important strides here. Studies have shown that founder characteristics (e.g., expertise, tenure, and experience) influence the extent of knowledge and resource transfers from parent firms to new ventures (Cliff et al. 2006,

Table 9. Study 1: Do Organizational Practices Actually Transfer from Parents to Spawns?

Stylized findings	Potential theoretical mechanisms
There is a strong effect of heritage in organizational practices: • About 70% of the comparisons of start-ups and other incumbents are less similar than the average similarity between a parent organization and its spawn. • The overlap in organizational practices is almost 10% greater between a spawn and its parents than between the spawn and other incumbents. • The overlap between a parent and its spawn is similarly greater than the parent and other start-ups.	***The relevance and applicability of practices due to market overlap*** Founders are likely to identify an opportunity proximate to the businesses of their former employers, which raises the relevance and applicability of parent's practices (Klepper 2001, Dencker et al. 2009, Roberts et al. 2011, Campbell et al. 2012). ***Experiential learning and contextual understanding*** Founder's prior experience in a particular organization leads to the formation of highly sticky, contextually determined knowledge structures. In solving organizational problems, founders are thus more likely to heavily rely on methods and procedures learned from prior employment experience (Chatterji 2009, Ganco 2013, Agarwal et al. 2016). ***Origins of initial teams in start-ups*** Founders largely draw upon former colleagues to form their initial teams in their start-ups (Phillips 2005, Ganco 2013, Agarwal et al. 2016, Shah et al. 2017). Transferring familiar practices enables more effective exploitation of the team's collective capabilities and reduces the uncertainty and potential tensions associated with the new organizational environment. ***The influence of social networks*** Over time an internal network of professional advisors develops in organizations as people seek information, advice, and opportunities for problem solving among their colleagues (Beckman 2006, Huy 2011). Drawing upon social capital from the former organization will produce solutions in a cost-effective manner (Phillips 2002, Baker et al. 2003, Ruef 2005). ***The need to signal legitimacy and convey an expectation of reliability*** Because of the liability of newness, founders are often forced to disclose signals about their structures and practices that will help resource providers assess the underlying quality of their operations. Mimicking the practices of their prior organization offers the advantage of accumulating legitimacy through creation of a social frame of reference (Beckman 2006, Higgins and Gulati 2006, Santos and Eisenhardt 2009).

Table 10. Study 2: If So, What Types of Practices Are Transferred (or Not)?: Stylized Findings and Potential Theoretical Mechanisms

Stylized findings	Practice	Instrumental value	Cognitive barriers	Potential explanations
These practices (on the right) appear to be transferred by the founders	Job rotation *(HR learning and career development)*	High	Low	• Start-ups need to move employees between tasks and positions to keep pushing the innovation efforts, searching for better ways of connecting with customers, and enabling better skill match. • Entrepreneurial talent prefers exposure to variety (e.g., learning and challenge). Job rotation is necessary to attract and retain them.
	Promoting individuals based on entrepreneurial traits and initiative taking *(HR promotion)*	High	Low-medium	• Start-ups continuously encounter organizational and market-related problems and technological challenges. This promotion policy is critical to attract, retain, and nurture entrepreneurial talent who can solve these problems rapidly and effectively.
	Job security (*HR job security*)	Medium-high	Low	• Founders tend to form their initial teams with former colleagues. The opportunity cost of leaving secure jobs is significant for them. • Founders may be pressed to offer job security in a bid to attract valuable and capable employees into risky, uncertain start-ups. • Job security is increasingly a rare perk in established firms. Founders who enjoyed job security are likely to show an appreciation of it.
	Cross-functional team formation and participation *(internal collaboration)*	High	Low	• Start-ups face complex, "life-threatening" challenges that require cross-functional problem-solving efforts. • Under human capital shortage, start-ups need to deploy individuals to a variety of tasks in different teams to move the start-up forward. • Entrepreneurial individuals are more likely to work in start-ups that emphasize internal collaboration.
	Open channels of communication *(internal communication)*	High	Low-medium	• Start-ups need a constant stream of innovative ideas and solutions from employees to rapidly solve their internal problems, learn, and adapt. When leadership is dismissive or not responsive, employees are less likely to contribute their ideas and may even quit under frustration.
	Requiring personnel to follow formal procedures *(control)*	Medium-high	Low	• There is a need to have some discipline, predictability, and efficiency in the uncertain and chaotic world of start-ups, in which resources are limited and time is of the essence.
	Formal hierarchical decision making (*decision making*)	Medium-high	Low-medium	• Founders need to impose some level of structure on behavior and efficiency orientation. • Formal hierarchical decision making is essential to establishing the priorities in an environment in which there is a frenzy of experimentation. • Start-ups are fragile businesses. Most decisions carry "life or death" implications, which makes it imperative that founders get deeply involved in making them.

Table 10. (Continued)

Stylized findings	Practice	Instrumental value	Cognitive barriers	Potential explanations
There is no evidence of transfer of these practices (on the right)	Cash bonuses for individual performance (*HR compensation*)	Low	Low	• Start-ups are typically cash constrained. Financial compensation and incentive systems in start-ups rely upon equity and options.
	Hiring based on employee's experience (*HR recruitment*)	Medium-high	Low	• Start-ups might be unable to attract seasoned talent as they are unable to pay attractive compensation. • The uncertain and fluid nature of the start-up might deter experienced talent.
	Openness (*external collaboration*)	Low-medium	High	• Active pursuit of openness could place considerable strain on the start-up's limited financial and human resources. • Start-ups also have limited absorptive capacity to reap value from such collaborative efforts. • As start-ups adjust their business models, there is a risk of getting locked into network relationships that may quickly prove redundant, if not distracting.

Ganco 2013, Basu et al. 2015, Agarwal et al. 2016). Whether such founder characteristics affect the adoption of organizational practices from previous work contexts remain unknown. Similarly, research in this vein has shown that start-ups are frequently motivated when employees have disagreements with their employers (Klepper 2001, Agarwal et al. 2004, Phillips 2005, Ferriani et al. 2012, Shah et al. 2017). Future research could investigate the influence of disagreements on the extent to which practices are transferred between generations of firms. Notwithstanding the unique and critical insights such a founder-focused perspective will generate, we also advocate another line of research that complements these insights, one that examines the influence of external stakeholders on founders' choices and behaviors. For instance, evidence shows that venture capital firms tend to champion the spread of particular organizational practices and structures (Baron and Hannan 2002). Our sample does not include start-ups that received venture capital, which limits the generalizability of our findings to new businesses that do not receive venture capital. The influence of other external stakeholders, such as start-up incubators and institutions, on replication attempts also warrants research.

Third, we recommend that additional research be conducted into whether practice inheritance drives future performance of start-ups. A growing stream of genealogical work has sought to establish the influence of the transfer of knowledge, resources, and capabilities on the performance of the start-ups (Phillips 2002, Chatterji 2009, Dencker et al. 2009, Sørensen and Phillips 2011, Basu et al. 2015), as well as the performance of the firms from which the founders originated (Campbell et al. 2012, Agarwal et al. 2016, Kim and Steensma 2017). A similar long-term and longitudinal assessment of practice transfer will greatly benefit our understanding of the sources of start-up failure and the performance heterogeneity in firm populations. Because urgency is a hallmark of founding (Winter and Szulanski 2001) and as the top priority of a founder is the survival of the new firm (Phillips 2005), in transferring organizational practices from the parent, the founder may show less concern for their long-run effects on the new organization. If this is the case, then replication may well produce deleterious consequences for start-ups.

Together, these studies will offer a rich and nuanced picture of which start-ups replicate organizational practices, as well as when and why, and how replications matter for their performance. We, however, think that it is also essential for future research to dig deeper into the question of what is being transferred. The second part of our exploratory study casts some light on this question. We find that among the practices we studied, some were not expropriated from the parent firms.

The range of organizational practices is wide. We were able to study only a segment of these, which is a limitation

of our work. The natural next step therefore is to investigate other practices relevant to start-up contexts to offer a fuller picture of practice replication. One particular contribution of these studies will be to help reconcile two somewhat disparate views of new venture creation. A more sociologically grounded view holds that founders often have a specific organizational logic (i.e., a model or blueprint) when designing their ventures and that these logics are inextricably linked to preexisting arrangements (Rao 1998, Baron et al. 2001). Another view posits that founders start from a "blank slate" when designing structure and culture (Burton et al. 2002) and that the process of organization formation allows for more degrees of freedom in generating new types of organizations with greater variety of organizational practices (Aldrich 1999, Ruef 2005). Identification of the full range of practices that are replicated will help us understand the extent by which organizational experimentation and innovation occur in start-up practices.

Future research will also benefit from empirically examining the mechanisms that influence why certain practices are replicated, whereas others are not. We consider this as a very fertile ground for novel theory building in that there is not only an instrumental dimension to replication of a given practice, but there is also a cognitive dimension. Further, considerable variation exists among organizational practices in terms of these dimensions. Characterizing various practices along these dimensions can be a fruitful starting point for disentangling which practices get to be transferred and which do not. For instance, one conjecture can well be that the kind of organizational practices founders prefer least to import are those that are ill-conceived and offer little instrumental value. Similarly, such a framework can also set the stage for theorizing about why deviations from the target practice occur during the process of transfer.

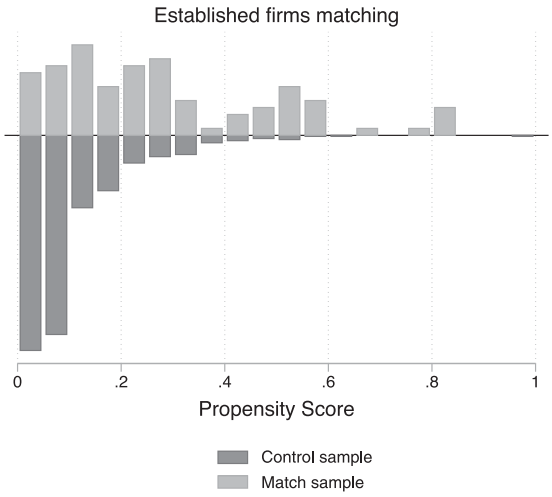
Beyond this baseline, we need additional theory development on each dimension, though the instrumental dimension seems to hold greater promise for novel contributions. The literature on replication (Winter and Szulanski 2001, Gavetti et al. 2005, Gaba and Dokko 2016) and mimetic adoptions (Greve 1998, Rivkin 2000, Miner et al. 2001) has produced rich insights on cognitive barriers, showing that when practices are poorly understood because of causal ambiguity, they are either unlikely to be reproduced or critical inferential errors are built into their reproduction, leading to major deviations. Little, however, is known about how founders define, appraise, and assess the instrumental value of a practice and how they reconcile or make trade-offs between various conflicting instrumental objectives under the pressing conditions of start-up founding (e.g., the legitimacy reward versus economic cost of replication). Unpacking these questions will significantly enhance the theory on microfoundations of practice replication.

Conclusion

How a founder assembles an organization has a momentous consequence for how the organization evolves, innovates, and performs over time (Dencker et al. 2009, Ganco and Agarwal 2009, Walter et al. 2014). A burgeoning literature shows that structural characteristics, resources, and capabilities of existing organizations are transmitted to new firms through founders' individual career histories (Phillips 2002, Agarwal et al. 2004, Chatterji 2009, Campbell et al. 2012, Ferriani et al. 2012, Cirillo et al. 2013, Basu et al. 2015, Agarwal et al. 2016, Kim and Steensma 2017). However, we lack a clear understanding of whether organizational practices are also transferred, and if so, which ones. In this exploratory study, we provided extensive evidence for interorganizational transfer of organizational practices. Through a detailed identification strategy, we also showed that at least some practices are uniquely replicated between the founders' new firms and their parent firms. This suggests that replication is a key driver of diffusion of some practices across cohorts of firms, but this very same replication also preserves some degree of heterogeneity among populations of firms.

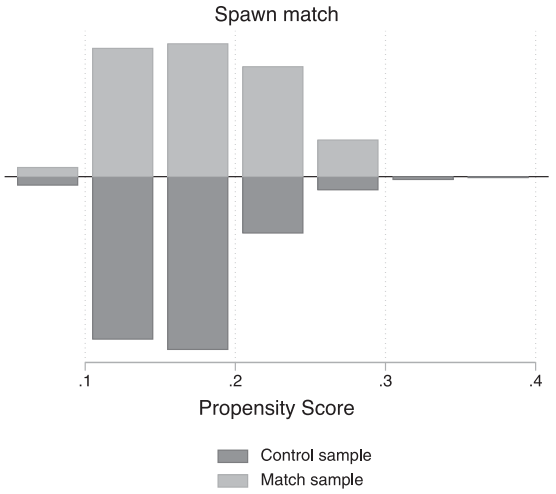
Appendix A

Figure A.1. Performance of One-to-One Propensity Score Matching Procedure Identifying the Matched Sample of Established Firms



Note. Statistics after matching: pseudo-R^2 = 0.009; LR χ^2 = 2.16; $p > \chi^2$ = 0.976. Figure A.1 graphs the balance between the established firm groups in the matching procedures using predicted propensity scores. The propensity score matching technique seeks to identify a control sample that mirrors the treatment sample in terms of likelihood of belonging to the treatment sample given observables. A perfect match would produce a histogram of the control sample that is a perfect mirror of the histogram representing the treatment sample. The test statistics reported below the graph are insignificant, suggesting the histograms cannot be considered statistically different. The matching procedure hence has produced a control sample with a similar propensity score profile as the treatment group.

Figure A.2. Performance of One-to-One Propensity Score Matching Procedure Identifying the Matched Sample of Start-ups



Notes. Statistics after matching: pseudo-R^2 = 0.012; LR χ^2 = 2.97; $p > \chi^2 = 0.704$. Figure A.2 graphs the balance between the considered groups in the matching procedures using predicted propensity scores. The propensity score matching technique seek to identify a control sample that mirrors the treatment sample in terms of likelihood of belonging to the treatment sample given observables. A perfect match would produce a histogram of the control sample that is a perfect mirror of the histogram representing the treatment sample. The test statistics reported below the graph are insignificant suggesting the histograms cannot be considered statistically different. The matching procedure hence has produced a control sample with a similar propensity score profile as the treatment group.

Endnotes

[1] Seventeen firms had ceased operation. The majority, 3,392 (99.5%), were still active at the time of sampling and hence received the survey.

[2] This timeframe was required to get a sufficiently large and heterogeneous sample and also reflects the time required to incorporate and register a new firm. Our results would be potentially biased downward, underestimating the significances and hence providing conservative conclusions at best.

[3] The results based on standardized questions are only slightly weaker than those using the nonstandardized questions (available upon request), suggesting response calibration.

[4] We tested whether an arbitrary value of 3 affected our results by relaxing it to two years prior and four years prior; the results were consistent.

[5] In our sample, the average for this practice is higher for start-ups than it is for established companies, which further speaks to these points.

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