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Cluster status and new venture creation

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A R T I C L E I N F O

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A B S T R A C T

We examine how the social status of a cluster contributes to new venture creation. The key thesis of this paper is that cluster status facilitates new venture creation by providing positive decision cues for entrepreneurs; and it serves as a boundary condition of the relationship between cluster size and new venture creation. Based on a sample of township industrial clusters in China's Guangdong Province from 2005 to 2013, we demonstrate that a higher-status position of the focal cluster or status spillover from related clusters (i.e., geographically proximate or domain-overlapped clusters) results in higher levels of new venture creation in the focal cluster. We also find that the relationship between cluster size and new venture creation is stronger for lower-status clusters and for clusters with a lower level of status spilled from geographically proximate clusters. Our research has implications for both entrepreneurs and policy makers.

1. Executive summary

A *cluster* is a group of firms with similar products or services agglomerated in a particular area (Porter, 1998). Existing studies have explained entrepreneurial clustering using three main perspectives: *externalities* (Marshall, 1920), *legitimacy* (Suchman, 1995), and *competition* (Hannan and Carroll, 1992). However, these studies view clusters as existing independently rather than being embedded in a social system, thereby overlooking the possibility that *positional and relational elements* among clusters might play a role in entrepreneurial decision-making. This oversight is surprising, because the literature has provided strong support that actors often rely on the social status of entities to make decisions (see reviews by Piazza and Castellucci, 2014; Sauder et al., 2012).

In this work, we draw on social status theory to investigate the role of cluster-level status in entrepreneurial clustering. This includes both the status of the focal cluster (henceforth: *cluster status*) and the status spilled from related clusters (i.e., geographically proximate or domain-overlapped clusters; henceforth: *inter-cluster status spillover*). We theorize that cluster status and inter-cluster status spillover influence new venture creation within the focal cluster in two ways: directly, by providing a decision cue for entrepreneurs, and indirectly, by moderating the relationship between cluster size (number of incumbents) and new venture creation.

Results from 217 township industrial clusters (TICs) in China's Guangdong Province from 2005 to 2013 largely supported our hypotheses. We found that cluster status and inter-cluster status spillover had a positive, direct effect on new venture creation within clusters. We also found that cluster status and status spillover from geographically proximate clusters weakened the anticipated

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inverted U-shaped relationship between cluster size and new venture creation; such that the cluster size effect was weaker for clusters with a high-status position or a high level of status spilled from geographically proximate clusters.

Our findings contribute to scholarship in entrepreneurial clustering and social status. Specifically, we complement and enrich the literature on entrepreneurial clustering by theorizing and testing the direct and contingent roles of a key additional factor: the social status of clusters. We also advance the social status literature by theorizing and empirically demonstrating the influence of social status at the cluster level.

2. Introduction

Why do some clusters have higher levels of new venture creation than others? Prior literature has examined the benefits and detriments of agglomerating or clustering (e.g., Alcácer and Chung, 2007; Kalnins and Chung, 2004; McCann and Folta, 2008), arriving at three predominant explanations, including *externalities* (Marshall, 1920), *legitimacy* (Suchman, 1995), and *competition* (Hannan and Carroll, 1992). Building upon, yet extending, these explanations viewing clusters as existing *independently*, our work examines cluster-level status by stressing that clusters are *embedded in a social system*. Examining the social status of clusters is important, because previous literature has shown that actors frequently base their decisions on the social status of an entity (see reviews by Piazza and Castellucci, 2014; Sauder et al., 2012), with the salience of social status indicated at multiple levels (Piazza and Castellucci, 2014).

To expand our knowledge on entrepreneurial clustering, we draw on the social status literature (Podolny, 2005; Sauder et al., 2012; Washington and Zajac, 2005) to theorize the *relational and positional elements* that may exist among clusters. Specifically, we investigate two components of cluster-level status: cluster status (the static or direct component) and inter-cluster status spillover (the dynamic component). We define *cluster status* as a cluster's overall position or ranking within a social hierarchy that indicates prestige accorded to the cluster, while *inter-cluster status spillover* is the status spilled from other clusters that have some relatedness in the form of, for example, geographic proximity or domain overlap (i.e., industrial similarity) in a broader region (Zhang et al., 2009).

By conceptualizing status at the cluster level, we examine how cluster status and inter-cluster spillover affect new venture creation within clusters in two ways: directly, by providing a decision cue for entrepreneurs, and indirectly, by moderating the relationship between cluster size and new venture creation. We explore the direct effects of status by arguing that its three-fold functions – acting as a *signal* of quality, *intangible asset* with positional advantages, and *mobile resource* transferring to others (Piazza and Castellucci, 2014) – positively influence new venture creation within the focal cluster. We also rely on this understanding of social status to argue that cluster status and inter-cluster status spillover weaken the inverted U-shaped relationship between cluster size and new venture creation examined in prior studies (e.g., Chang and Park, 2005; Hannan and Carroll, 1992). Our work does not diminish the importance of the traditional explanations of clustering; rather, building upon them, we theorize another salient factor – social status.

We test our hypotheses using data from township industrial clusters (TICs) in China's Guangdong Province between 2005 and 2013. Guangdong provides an ideal setting to test our theory, because there are a large number of closely located TICs and the central government, as a highly influential third party, provides a ranking-based assessment of these TICs. This institutional context enables us to both capture variations in cluster status and discern clusters related by geographic proximity or domain overlap within the same sample pool, while still excluding extraneous factors such as provincial policies.

Our research contributes to the entrepreneurial clustering literature in two ways. First, we theorize and demonstrate the impact of cluster-level status as a salient yet understudied factor. Previous research has examined entrepreneurial clustering through various theoretical lenses, including externalities (agglomeration theory), legitimacy (sociological institutional theory), and competition (organizational ecology theory); however, these studies have not explicitly considered the interconnectedness between clusters. We extend this earlier work by demonstrating the salience of social status (social status theory), thereby shedding light on the *positional and relational elements* among clusters. In so doing, our work encourages a more comprehensive theory of entrepreneurial clustering.

Second, based on the three explanations noted above regarding the cluster-size effect (Chang and Park, 2005; McCann and Vroom, 2010), we identify cluster-level status as a boundary condition of the clustering effect. By identifying status in this way, our work provides a more finely grained theory of clustering. Taken together, these two contributions complement and extend the existing theoretical explanations for entrepreneurial clustering by deploying social status theory as a new lens of analysis.

Meanwhile, we extend the social status literature by conceptualizing status at the cluster level, thereby joining an emerging scholarly conversation regarding status at multiple levels of analysis (e.g., Piazza and Castellucci, 2014). We also bring China's TICs into the conversation on clusters, thereby adding to the limited knowledge of TICs (Jia et al., 2017) that are embedded in China's institutional context (Boisot and Child, 1996; Tan and Tan, 2005). In so doing, our endeavor extends contextualized entrepreneurship (Garud et al., 2014) and informs the literature on the role of institutional environments in new venture creation (e.g., Tan, 2006; Tan et al., 2013). Our research is also practically significant because, for entrepreneurs, it offers insights on their new venture creation decisions in TICs and, for policy makers, it demonstrates how cluster status attracts entrepreneurial investments.

3. Theoretical background

3.1. Externalities, legitimacy, and competition in clusters

The literature on the "pulling" and "pushing" factors of new venture creation is rich and varied, including institutional change (e.g., Tan, 2006; Wang and Tan, 2018) and social attachment to place (Dahl and Sorenson, 2010). Yet, the predominant explanations for clustering are externalities, legitimacy, and competition. As discussed in agglomeration theory, externalities denote a situation whereby the benefits of a cluster grow as a larger number of similar firms co-locate (Marshall, 1920). Clustering firms can benefit from externalities through access to skilled labor, specialized factor inputs, complementary suppliers, heightened customer demand, public goods (Kalnins and Chung, 2004; Marshall, 1920; McCann and Folta, 2008; Porter, 1998), and knowledge spillover (Alcácer and Chung, 2007) within agglomerated areas. These externalities increase new venture creation within clusters.

In addition, institutional scholars have suggested legitimacy as the reason why entrepreneurs create their ventures in agglomeration areas (Überbacher, 2014). In this perspective, embedded organizations gain legitimacy by fitting with their institutional context, including the changing institutional environment (Tan et al., 2013). One way to obtain such legitimacy is by imitating 'popular organizational forms' and by agglomerating in 'popular areas' – in other words, resembling a larger number of incumbents (DiMaggio and Powell, 1983). The underlying logic of such mimetic behavior is that fitting with the institutional context enables new ventures to enhance prospects for survival and growth (Fisher et al., 2016; Stinchcombe, 1965; Tan et al., 2013). Legitimacy is, thus, another factor that drives new venture creation within clusters.[1]

At the same time, clustering reveals detrimental effects – in specific types of clusters and under specific conditions (Tan, 2006). A central contention of organizational ecology (Hannan and Freeman, 1989) states that the proximity of similar firms amplifies competition for resources from suppliers, intermediates, investors, and local authorities, and also for customers in local areas (Baum and Mezias, 1992; Porter, 2000). This competition threat is particularly salient for new ventures, because incumbents are usually more established in the local network and thus better positioned in competitive interchanges.

Scholars have recently considered both the benefits and detriments of clustering (or agglomerating). For example, Chang and Park (2005) proposed an inverted U-shaped relationship between the number of incumbent multinational firms and the likelihood that a new multinational firm would enter the same location, arguing that a growing number of incumbents in an agglomeration area would contribute benefits at a decreasing rate, while they also exacerbate the detriments at an increasing rate. Likewise, Tan and Tan (2017) conceptualized a trade-off between two countervailing roles of large incumbents, finding a nonmonotonic relationship between incumbent organization size and subsequent local entrepreneurial activity. Similar relationships have also been suggested by the cluster life cycle theory (Folta et al., 2006; Menzel and Fornahl, 2009; Tan, 2006) and the density dependence model (Hannan and Carroll, 1992).

Although prior work has advanced our knowledge of entrepreneurial clustering, it has presented clusters as existing independently, leaving the influence of *relational and positional elements* among clusters less understood. Understanding a cluster's social position is critical given that clusters are also embedded in a social system. Consider, for example, TICs in China (Jia et al., 2017), wine appellations/regions (clusters) in California (Benjamin and Podolny, 1999), and hotel clusters in Texas (McCann and Vroom, 2010). To address this lack of understanding on the relational and positional elements among clusters, we investigate the role of cluster-level status.

3.2. *Cluster status and inter-cluster status spillover*

3.2.1. *Cluster status*

Status, derived from the field of sociology (Weber, 1978), is widely studied at individual, organizational, and industry levels (Sharkey, 2014). The early definition of organizational status pioneered by Podolny (1993) is almost economic, while later definitions reflect the anchoring of a social system and the significance of *rank* (Piazza and Castellucci, 2014). Evidence indicates that rankings established by an influential third party play a performative role in generating and reinforcing status dynamics rooted in deference and respect among social actors (Bermiss et al., 2014; Elsbach and Kramer, 1996; Espeland and Sauder, 2007).

As a result, *organizational status* is generally defined as the position or ranking of an organization in a social system (Sauder et al., 2012; Washington and Zajac, 2005). Status can be partially determined by economic indicators, as antecedents, such as prior product quality or performance (Podolny, 1993, 2005), yet status is conceptually independent of such indicators. Once an organization's status is bestowed by its ranking, status confers prestige and superiority to the entity regardless of its origin (Jensen and Roy, 2008; Stern et al., 2014).

While management scholars have long examined the salience of status in the decisions and performance of firms (Chung et al., 2000; Shipilov and Li, 2008), we conceptualize status at the cluster level because clusters are considered a 'striking feature' of modern economies and because scholars have emphasized the importance of studying a cluster of firms as a whole (Porter, 1998, 2000; Wang, 2014). In real-world contexts, wherein multiple comparable clusters are developed, differences between clusters have been seen as prominent (Porter, 2000; Wang, 2014; Zhang et al., 2009). Such differences breed deference, engendering a social hierarchy within which clusters are ordered according to varying status positions. Our view of *cluster status* draws from research on organizational status (Phillips and Zuckerman, 2001) and resonates with studies on rankings (Bermiss et al., 2014; Espeland and Sauder, 2007; Sauder and Lancaster, 2006). As can happen in the case of organizations, when an influential third party ranks clusters and releases the information, the evaluation can bestow status positions, create status dynamics, and guide evaluators working to infer the quality of the clusters.

To investigate the role of cluster status, we distinguished status from its predominant explanations – externalities, legitimacy, and competition, as shown in Table 1. Acknowledging the potential for partial overlap between status and these alternative explanations, we emphasize social status as a *distinctive* construct, as it has been frequently distinguished from legitimacy in prior work (e.g.,

[1] While institutional changes may "push" ventures away from the clusters as they evolve (e.g., Tan, 2006), the predominant argument in the literature is that new ventures desire legitimacy.

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Table 1
Comparison of cluster status, legitimacy, externalities, and competition.

	Status	Legitimacy	Externalities	Competition
Definition	The cluster's overall position or ranking within a social hierarchy of clusters (cf. Washington and Zajac, 2005)	A generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, and definitions (Suchman, 1995)	Economic gains from locating in close proximity to like firms (McCann and Folta, 2008)	Economic costs from locating in close proximity to like firms (Baum and Mezias, 1992)
Process/mechanism	Act as a signal of quality, intangible asset with positional advantages, and mobile resource that transfers to the embedded ventures	Act as a signal of taken-for-grantedness of being a member of a cluster, which is necessary for gaining support from key stakeholders such as political authorities, customers, and suppliers	Access to skilled labor, specialized factor input and complementary suppliers, heightened customer demand, public goods, and knowledge spillover	Suffer from the heightened costs in factor markets and lowered price in product markets
Source of benefits (+) or detriments (−) to potential ventures	● Status transfer (+) ● Performance (+) ● Survival (+)	● Survival (+) ● Sustainability (+)	● Economic benefits (+)	● Economic costs (−)
Given by	Third party (external authority)	Multiple local constituents	Other co-located firms	Other co-located firms

Bitektine, 2011; Deephouse and Suchman, 2008). More specifically, externalities focus on *economic gains* through access to multiple resources and benefits from other co-located firms. Competition in clusters emphasizes *economic costs* brought by co-located firms that drive up the costs in factor markets and that lower the price in product markets. Legitimacy and status have similar roots in sociology, yet they are two distinct concepts.[2] While legitimacy is a justification for the *appropriateness* of a group of organizations (Suchman, 1995), status highlights a hierarchical order based on *superiority* (Podolny, 2005). Building on existing explanations, we investigate how cluster status plays an additional role in entrepreneurial clustering.

3.2.2. *Inter-cluster status spillover*

Status can spill over and transfer between actors (Podolny, 1994, 2005). The spilled-over status, which can transfer from high-status to low-status actors (positive association) and from low-status to high-status actors (negative association), is an important source of status in addition to an actor's static (or direct) status (Washington and Zajac, 2005). This status spillover is prominent at the organization level because evaluators tend to make inferences about quality based on an actor's exchanges or social relations (Podolny, 1994; Washington and Zajac, 2005). Importantly, external audiences tend to assume "shared representations, interpretations, and systems of meanings about the characteristics of these interconnected firms" (Li and Berta, 2002: 345), and "one of these 'shared' characteristics may be the quality of products or services" (Li and Berta, 2002: 345). These shared representations are the cognitive connections built by external audiences based on the perceived collaborative and/or competitive interactions of two firms, leading to inter-firm status spillover.

As a corollary, we expect status spillover between two clusters that exhibit spatial or topical relatedness – geographic proximity or domain overlap (henceforth: *geographic status spillover* and *domain status spillover*). While geographic proximity reflects the spatial closeness between two clusters (henceforth: *neighbor clusters*), domain overlap refers to the extent to which a cluster's major industries correspond to those of the other clusters (henceforth: *peer clusters*) (Zhang et al., 2009). As such, geographic status spillover is the status spilled from all neighbor clusters to the focal cluster, while domain status spillover is the status spilled from all peer clusters in the broad region to the focal cluster.

Inter-cluster relatedness does not necessarily show in the form of explicit and direct contact, as with an inter-firm relation; instead, it presents as population interdependence that frequently exhibits mutualistic and competitive relations (Dobrev et al., 2006; Romanelli and Khessina, 2005; Zhang et al., 2009). Although the inter-firm relation frequently involves direct contact, while inter-cluster relatedness does so less often, both types of connections elicit evaluators' *perceptions* of competitive and collaborative interactions between entities. The perceived inter-cluster interactions thus allow evaluators to assume shared characteristics and to build cognitive connections between two related clusters, leading to inter-cluster status spillover.

4. Hypothesis development

4.1. *Cluster status and new venture creation*

Prior work has identified three key functions of status: acting as a *signal* of quality, *intangible asset* with positional advantages, and *mobile resource* that transfers to involved actors (Piazza and Castellucci, 2014). We build arguments on these functions to explain a positive effect of cluster status on new venture creation within clusters.

As a signal of quality, high cluster status reduces entrepreneurs' perceived risks when creating a new venture within a cluster (a certain industry in a certain place). Potential entrepreneurs, as "outsiders,"[3] often have limited information about a cluster, specifically its supporting facilities, factor suppliers and talents, market exposure, government support, economic conditions, and more importantly, constituted incumbents – making it challenging to evaluate the potential benefits of creating a new venture in the cluster. In this situation, we contend that cluster status provides a simplified, decontextualized, and widely accepted information cue enabling entrepreneurs to infer the quality of the cluster and their ventures' future prospects in the cluster (cf. Podolny, 1993, 2005). For instance, entrepreneurs intending to start a high-tech company may expect to regularly interact with high-quality incumbents and to benefit from knowledge spillover by creating new ventures in Silicon Valley or in other high-status, high-tech places. Overall, status signals the quality of the cluster, reduces uncertainties, and promotes new venture creation within the focal cluster.

As a 'reputation-like' intangible asset, high status confers positional advantages on the cluster. Entrepreneurs are encouraged to create new ventures in high-status clusters, because they expect positional advantages, such as securing greater access to resources like supporting facilities or money (Bothner et al., 2012), having more opportunities to make high-status affiliations (Jensen and Roy, 2008), enjoying privileges in exchanges (Castellucci and Ertug, 2010), and charging higher prices (Benjamin and Podolny, 1999). With positional advantages, high-status clusters, relative to low-status clusters, can better attract resource suppliers, customers, and government support (Benjamin and Podolny, 1999). These advantages are shared by all member firms operating in a high-status cluster, including new ventures.

Mobility is another distinctive function of status (Podolny and Phillips, 1996), whereby cluster status is expected to transfer and influence the status of the embedded new venture. The literature suggests that, when two actors are affiliated, the low-status actor

[2] In empirical tests, we included legitimacy controls, such as cluster size and previous new venture creation, which were frequently used as indicators of legitimacy in prior work (e.g., Chang and Park, 2005; Kuilman and Li, 2009).

[3] Relative to incumbent firms within the cluster, founding entrepreneurs are outsiders and face a level of uncertainty before creating their new ventures in the cluster.

receives status from the high-status actor, due to status being mobile (Podolny and Phillips, 1996). Accordingly, we argue that entrepreneurs prefer to create new ventures in and affiliate with high-status clusters to improve the status of their ventures. Our reasoning tracks that of workers capturing status through employment in high-status firms (Bidwell et al., 2015), as well as that of wineries increasing the status of their wines by affiliating with high-status regions (Benjamin and Podolny, 1999).

Taken together, we argue that the three key functions of status explain a positive effect of cluster status on new venture creation within a cluster. Hence:

Hypothesis 1. *Cluster status is positively related to new venture creation within that cluster.*

4.2. Inter-cluster status spillover and new venture creation

Our arguments for the inter-cluster status spillover effect involve two steps. First, the focal cluster receives status spilled from related clusters (i.e., geographically proximate or domain-overlapped clusters [in a broad area]). Second, following the working mechanisms explained in Hypothesis 1, status spilled from related clusters, *in addition to static cluster status*, positively influences new venture creation within the focal cluster. We focus on the status-spillover arguments and rely on the arguments of Hypothesis 1 for the second step.

We hypothesize that status spills over when clusters are geographically proximate. Our arguments parallel organization-level status research, which supports the idea that status spills over by exchange or association relations – including both collaborative and competitive associations (Washington and Zajac, 2005). For example, a newly established firm will gain status spillover from highly prestigious collaborators or competitors (e.g., Apple Inc.). The underlying logic of the status spillover effect is that evaluators tend to *assume* shared representations of the newly established firm and its high-status associates, given the *anticipated* interactions of the two firms. This is a cognitive connection formed by the evaluator to infer the quality of the newly established firm. Such inferences can complement the directly achieved (static) status and aid decision making (Bothner et al., 2015).

We contend that a cluster, like an individual or a firm, also receives status spillover from neighbor clusters. Specifically, a low-status cluster close to high-status neighbor clusters will be viewed as an attractive place to initiate new ventures, because entrepreneurs *assume* shared representations of two geographically proximate clusters based on their *perceived* mutualistic and competitive interactions. The literature has shown that geographic proximity intensifies mutualistic and competitive "interactions" of two organizational populations, including cross-cluster learning, knowledge and information sharing, attention amplification, and even competition for general human and financial capital (Dobrev et al., 2006; Romanelli and Khessina, 2005; Zhang et al., 2009).

Given these anticipated "interactions," we posit that entrepreneurs establish cognitive connections (i.e., they assume spillover of benefits/drawbacks) and assume shared representations of two neighbor clusters, leading to geographic status spillover. To illustrate with a contemporary example, the high-status Humen township cluster increases the recognition of the broad geographical area nearby, which in turn draws increasing attention and recognition to the clusters neighboring the Humen township.

It is important to acknowledge that these shared representations and cognitive connections influence entrepreneurial decision-making, regardless of any actual accrued benefits. That is, because the *perception* is that the spilled-over status from neighbor clusters equals directly-achieved cluster status – both have the three functions of status despite their different sources. In this way, the spilled-over status from neighbor clusters triggers the mechanisms of Hypothesis 1 – namely, as a *signal* of a focal cluster's quality, as an *intangible asset* conferring positional advantages shared by new ventures in the focal cluster, and as a *mobile resource* for new ventures in the focal cluster (cf. Piazza and Castellucci, 2014). With this in mind, we propose:

Hypothesis 2. *Geographic status spillover is positively related to new venture creation within the focal cluster.*

With a similar rationale in Hypothesis 2, we contend that status also spills over when two clusters in the broad region share overlapped domains – that is, industries. More specifically, the industry of a low-status focal cluster overlapping with high-status peer clusters in the broader area will seem attractive for initiating new ventures because, based on their *perceived* competitive and mutualistic interactions, entrepreneurs *assume* shared representations of two peer clusters in the broad region. Operating in overlapping industries within the same general area, two peer clusters share a mutualistic relationship through knowledge exchange, information sharing, and attention amplification (Dobrev et al., 2006; Romanelli and Khessina, 2005; Zhang et al., 2009), while also competing for resources such as specialized inputs and customers (Baum and Mezias, 1992; Porter, 2000). Although such competition may have a negative *economic* effect, it produces a positive status spillover effect, because competing with a high-status cluster increases recognition by and exposure to external audiences (Washington and Zajac, 2005).

Given the perceived "interactions" discussed above, we contend entrepreneurs assume shared characteristics of two peer clusters and establish cognitive connections based on similarities between industries – leading to domain status spillover. Returning to the example of Humen township cluster discussed above, note that this high-status township cluster, which specializes in the garment industry, increased public recognition of this domain in the broad area of Dongguan City where the township is embedded, while also making the public more aware of the city's relatively unknown garment clusters.

Integrating the above perspectives, we argue that entrepreneurs make decisions using shared representations and cognitive connections of domain-overlapped clusters. Specifically, status spilled through domain overlap (in the broad area) is viewed as a *signal* of the focal cluster's quality, as an *intangible asset* providing positional advantages, and as a *mobile resource* transferring to new ventures in the focal cluster, in line with Hypothesis 1. Therefore, we propose:

Hypothesis 3. *Domain status spillover is positively related to new venture creation within the focal cluster.*

4.3. Status effects on the cluster size – new venture creation relationship

Beyond a direct effect, we argue that social status also moderates the anticipated inverted U-shaped relationship between cluster size and new venture creation.[4] More specifically, we contend that status shapes this relationship by weakening the salience of the benefits of size-based externalities and legitimacy, as well as the detriments of sized-based competition. Externality benefits, as noted above, originate from access to skilled labor, specialized factor input and complementary suppliers, heightened customer demand, public goods, and knowledge spillover among firms in *local* areas (e.g., Porter, 1998). We argue that such benefits are less critical for new ventures in high-status clusters. As the signaling role of high-status position increases the clusters' visibility and fosters the trust of external audiences, these high-status clusters attract resource suppliers and customers from *distant* places (i.e., outside of the cluster) – thus lowering transaction costs for ventures inside high-status clusters (cf. Podolny, 1993). Given that low transaction cost is one of the major benefits associated with size-based externalities (Porter, 1998), high-status position of a cluster makes this benefit less salient. In addition, as an intangible asset, high-status position confers positional advantages to new ventures, increasing their bargaining power over other distant resource parties, such as suppliers and regional governments (Shipilov and Li, 2008). Further, high-cluster status motivates distant resource suppliers to exchange with new ventures in the focal cluster as a way of improving their own status – since status, itself, is a mobile resource. Thus, among high-status clusters, larger clusters are less likely to be distinguished from smaller clusters despite the discrepancies in externality benefits. These arguments indicate that cluster status makes externality benefits derived from cluster size less salient.

The legitimation mechanism is also less salient for new venture creation in high-status clusters. The literature argues that high-status actors are themselves legitimacy-assured, even though they might deviate from typical behavioral norms (Phillips and Zuckerman, 2001; Sauder et al., 2012). This means that legitimacy, as expressed by cluster size, is less critical when the cluster is of high status. In addition, while size-based legitimacy indicates the presumptive appropriateness of new venture creation within a "popular" cluster (McCann and Vroom, 2010), status hierarchy provides an objective and ordinal reference point enabling potential entrepreneurs to easily evaluate *how much* benefit, if any, they might receive by creating new ventures in a certain cluster (Bitektine, 2011). We aver, then, that status position provides a more useful information cue for potential entrepreneurs than does size-based legitimacy. On the other end of the continuum, low-status clusters usually remain unbeknown within a group; thus entrepreneurs find them more concerning. In these situations, entrepreneurs are more likely to imitate incumbents when making decisions such as creating new ventures in a popular/specialized industry, in the process relying on the signaling role of size-based legitimacy as a salient information cue (DiMaggio and Powell, 1983). In sum, cluster status weakens the value of size-based legitimacy signals.

Intensified competition for resources, which is driven by size, leads to detrimental effects that are also weakened by high-cluster status. Previous studies have shown that intensified competition threatens entrepreneurial activities because resource exhaustion forces price increases (Baum and Mezias, 1992; Hannan and Freeman, 1989). We argue that this threat is less severe in high-status clusters, because high-status position, by signaling quality, provides resources for new ventures by continuously attracting resource suppliers and customers from distant places (Podolny, 1993). High-status position also increases bargaining power in resource acquisition activities (Shipilov and Li, 2008), given that high-status clusters are likely to attract adequate resource suppliers and therefore reduce the threat of intensified competition. In sum, cluster status weakens the competition detriments driven by cluster size.

Overall, the higher a cluster's status position, the weaker the size effect on new venture creation because status renders size-based externalities, legitimacy, and competition less salient. Thus,

Hypothesis 4. *Cluster status weakens the inverted U-shaped relationship between cluster size and new venture creation within* the *cluster, mitigating both the positive linear and negative quadratic size effects.*

We further predict that inter-cluster status spillover, as a moderating factor, weakens the size effect—the salience of externality and legitimacy benefits, and the detriments of competition—on new venture creation within the focal cluster. This prediction follows from the inter-cluster status spillover arguments detailed in Hypotheses 2 and 3, as well as the discussion of the weakening role of cluster status outlined in Hypothesis 4.

More specifically, we propose that geographic status spillover reduces the salience of size-based externalities from within the cluster. As previously explained, high status spilled from neighbor clusters signals quality and attracts *distant* resource suppliers (e.g., investors, general human capital), making *nearby* resource providers less important and rendering externalities from within the cluster less salient (cf. Podolny, 1993). Because status is socially accepted and assured of legitimacy (Phillips and Zuckerman, 2001), status spilled from neighbor clusters also reduces the salience of size-based legitimacy in new venture creation decisions. Further, as argued in Hypothesis 4, the detriments of competition are reduced in clusters that are close to high-status neighbors given that spilled status can attract adequate resource suppliers and customers from distant places and thus reduce competition threats. These mechanisms, overall, indicate that geographic status spillover weakens the relationship between cluster size and new venture creation within the focal cluster. In a parallel sense, and following the arguments presented in Hypotheses 3 and 4, status spilled from domain-overlapped clusters also weakens the size effect on new venture creation within the focal cluster. These arguments, in total, yield two additional hypotheses, namely:

[4] In the interest of parsimony, we do not present a formal hypothesis on the inverted U-shaped relationship between cluster size and new venture creation. However, we did empirically test this relationship at the outset.

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Hypothesis 5. *Controlling for cluster status, geographic status spillover weakens the inverted U-shaped relationship between cluster size and new venture creation within the focal cluster, mitigating both the positive linear and negative quadratic size effects.*

Hypothesis 6. *Controlling for cluster status, domain status spillover weakens the inverted U-shaped relationship between cluster size and new venture creation within the focal cluster, mitigating both the positive linear and negative quadratic size effects.*

5. Methods

5.1. Research context – township industrial clusters (TICs)

A TIC, also known as a "specialized town" or a "single-product town" (*zhuan ye zhen* in Chinese), refers to a specialized industry in a township-level division (henceforth: *township* or *town*)[5] that is administered by the township government (Jia et al., 2017). A TIC has a defined geographic territory, an administrative boundary, and a specialized industry. To be officially recognized as a TIC, a township government must obtain, from the provincial government, approval for its specialized industry, a status that is relatively difficult to achieve. We employ approval from the provincial government as the identification criteria for TICs, because such approval explicitly identifies the specialized industry and indicates that the township government supports it. Since 2000, when only seven out of 1926 (0.36%) townships in Guangdong were approved and certified as TICs, additional townships obtained approval each year. As of 2013, 363 out of 1585 (22.9%) townships in Guangdong were approved as TICs.

TICs in China have formed and grown due to economic reforms and open-door policies designed to promote ownership reform of stated-owned enterprises (SOEs) and the private economy (Jia et al., 2017; Wang, 2014). Ownership reform from SOEs to privately owned enterprises (POEs) in China exhibits unique features, including the rise of township and village enterprises (TVEs) in the 1980s and their decline in the 1990s (Luo et al., 1998: 33). TVEs represent a unique ownership type that is different from other well-researched ownership types such as SOEs, POEs, and foreign owned enterprises (Peng et al., 2004; Tan, 2002). For example, compared with POEs, TVEs have lower political risk and have higher access to resources through township government leaders. Compared with SOEs, TVEs receive much less in government subsidies and are pressured to be more efficient. TVEs also have disadvantages, especially compared with POEs, such as lacking the private property rights that might encourage profit-seeking. Given these disadvantages, TVEs experienced a sharp decline after 1996, when the private economy became increasingly dominant (Peng, 2001). In the wake of this privatization, TICs in China became not only a powerful engine of the regional and national economies but also a legitimate administrative form (Wang, 2014).

TICs, especially in coastal areas such as Zhejiang, Jiangsu, and Guangdong Province, have bloomed since 2000, with exemplars including the garment cluster in Humen Town, the hardware cluster in Chang'an Town, and the leather cluster in Shiling Town. These TICs have contributed in substantial ways to both the national economy and international markets. For example, in 2016, Guzhen Town, dubbed the "China Lighting Capital," had revenue of 19.03 billion RMB and approximately 70% of the market share of lamps and LEDs in China (Guzhen town's official website, 2017).

Although TICs exhibit the basic features of Western clusters (e.g., Silicon Valley, the Manhattan hotel industry, Texas-based computer companies), such as high externalities, legitimacy, and competition, they also show some characteristics unique to China's institutional environment (Boisot and Child, 1996; Tan and Tan, 2005). For example, TICs are highly embedded in the institutional context of China, and the co-alignment and co-evolvement of environment and firm nourish clusters and clustered firms alike (Tan and Tan, 2005). While local governments strive to promote their regional economies, thereby supporting the growth of local TICs (Jia et al., 2017), the central government focuses more on how these clusters can collectively contribute to the national economy.

As a result, China's TICs provide an ideal empirical setting for our study for two reasons. First, investigating our model requires a context with multiple clusters exhibiting variation in cluster status and variance in geographic proximity and domain overlap between clusters. The large number of TICs in China's Guangdong province, which are ranked by the central government, present such a setting, while at the same time allowing us to exclude extraneous factors such as provincial policies. Second, existing research on clusters has focused on advanced economies, with little attention to emerging countries and scant knowledge of TICs in China. This is surprising given that China is the largest emerging economy with TICs playing a critical role within it (Wang, 2014). By understanding TICs in China, we are better positioned to both assess clusters in other emerging economies and to offer theory-based comparisons with clusters in Western economies.

5.2. Data

The TIC lists for our investigation (2005–2013) were retrieved from the Association for the Promotion of Towns of Industry Clusters of Guangdong Province (POTIC), a non-profit group supported by the Science and Technology Department of Guangdong Province. The listed TICs have increased from seven to 413 between 2000 and 2016. Due to data limitations, our sample includes an unbalanced distribution of industrial TICs from 2005 to 2013.[6]

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[5] Township-level division is the fourth-level administrative division of China, following province, prefecture, and county-level divisions. Detailed information about township-level divisions in Guangdong can be found in Wikipedia (https://en.wikipedia.org/wiki/List_of_township-level_divisions_of_Guangdong).

[6] The formation and growth of TICs in China have occurred with the ownership reform of stated-owned enterprises, which increased considerably

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To obtain TIC-level statistical data, and because TIC aggregations were not directly available, we aggregated firm-level variables to get the values of corresponding cluster-level variables. Relying on the Annual Industrial Survey Database (2005–2013), compiled by the Chinese National Bureau of Statistics (CNBS), we identified all clustered firms (firms in the specialized industry of each township) in Guangdong. This database provides comprehensive demographic and financial information about industrial firms with annual sales of at least 5 million RMB (approximately 775,675 USD, based on the official 2013 exchange rate). These are firms that together produce 95% of China's total industrial output.

We then used demographic information – affiliated township, address, and industry – to identify clustered firms and their affiliated clusters, before relying on all clustered firms' financial information to calculate cluster-level variables.[7] As this database surveyed industrial enterprises, our final sample includes only TICs specialized in industrial sectors (industrial TICs). The number of industrial TICs each year from 2005 to 2013 were 110, 131, 147, 175, 179, 185, 193, 203, and 217, yielding an unbalanced dataset of 1540 cluster-year observations. We also used the *Guangdong Statistical Yearbook* to obtain data on city GDP per capita, as well as *City Yearbooks* to code cluster political ties.

5.3. Variables

5.3.1. New venture creation within clusters

Following prior work (Kuilman and Li, 2009; Wang and Tan, 2018), we used the annual count of new ventures established within each TIC (the specialized industry of the township) as the proxy for venture creation within clusters. We identified new ventures established as legal entities in each TIC and for each year. To reduce possible endogeneity bias, we predicted the current values of new venture creation using the values of independent variables and controls in the previous year.

5.3.2. Cluster status

We used a township's rank created and published by CNBS as the proxy for its TIC's status position.[8] The CNBS, representing the national government that is highly influential, assessed and published the "Top-1000 townships" in China in early 2005 (based on 2003 data) and at the end of 2006 (based on 2005 data).[9] This publicly available ranking is based on 25 indicators of the development level, living conditions, and the development potential of each township (see Appendix A in supplemental material). We used the ranking of townships by the CNBS to represent the status of their TICs for three reasons. First, previous studies have often used the ranking of organizations produced by a well-known third party, such as *U.S. News & World Report*, as the proxy for organizational status (Phillips and Zuckerman, 2001; Stern et al., 2014). Similar third-party rankings representing status include "Moody's ratings of insurance companies, Michelin's and AAA's ratings of restaurants, and J.D. Power's ranking of automobiles" (Sauder et al., 2012: 269). Like organizational rankings, the township rankings created and published by the central government enjoy almost a monopoly in terms of public attention (Espeland and Sauder, 2016: 5).

Second, rankings produced by an influential third party are a *key* factor affecting public judgments and perceptions about the quality of an entity (Sauder and Espeland, 2009). From the perspective of external audiences including potential entrepreneurs, ranking is used as a simplified and decontextualized decision cue due to its social property as a signal rather than its economic antecedents. While we acknowledge the potential for a township's rank to be partially determined by economic indicators, the literature suggests that once the status is determined, prestige is conferred (Podolny, 2005).

Third, a township's rank by the CNBS is largely underpinned by its specialized industry. Thus, equating a township's rank to its TIC's rank has face validity, given that, as noted previously, decision makers frequently use simplified and decontextualized cues. Overall, our approach here largely follows the tradition of some previous research on status (e.g., Stern et al., 2014). Later, we will present a check for robustness by using a difference-in-difference approach combined with propensity score matching, thereby mitigating the endogeneity concern caused by possible economic determinants of status ranking.

To develop the status measure, we extracted, from the "Top-1000 townships" lists, raw rankings of all townships specialized in industrial sectors in Guangdong Province.[10] We then reverse-coded (raw rankings subtracted from 1001) the amounts, such that a larger value represented a higher status. For example, in 2005, Humen Town in Dongguan City was ranked 1 st and had a status of

(*footnote continued*)
beginning in 2005 (Wang, 2014). In addition, the ranking of townships, our measure of cluster status, was first released in early 2005, indicating that observable status hierarchy has existed since that time. Moreover, the *Annual Industrial Survey Database* is only available for years prior to 2013. Due to these constraints, our sample period is 2005–2013.

[7] Since most variables (DV, IVs, and controls) in our models systematically use underrepresented aggregate values, the potential for measurement error is less important.

[8] We acknowledge the possible measurement error by equating the ranking of a township to the ranking of its TIC. We reviewed our sample TICs and found that each was the only specialized industry in their townships at the time of the ranking. In 2013, only two townships had two specialized industries (namely one township had two TICs), although results were consistent by excluding these cases. While only suggestive, this evidence indicates the ranking of a township is highly related to its specialized industry (its TIC). This can also be supported by our interviews with entrepreneurs who suggested that rankings were largely the reflection of TICs, as well as by the organizational status literature wherein scholars measure the status of scientists using the academic status of the school from which they graduated (Stern et al., 2014).

[9] The Chinese central government released the "Top-1000 townships" list twice before 2013, once in February 2005 and again in December 2006.

[10] In 2005's "Top-1000 townships" list, 151 TICs were from Guangdong and 60 were specialized in industrial sectors, whereas, in 2006's "Top-1000 townships" list, 121 were from Guangdong and 51 were specialized in industrial sectors. The two ranking lists are available upon request.

1,000, while Nanlang Town in Zhongshan City was ranked 468th with a status of 533. As unknown actors are usually classified into a low-status group (Bitektine, 2011), we assigned a value of *0* to townships not on the “Top-1000 townships” lists. Because new ventures created in 2005–2006 were influenced by the early 2005 rankings, while those created after 2006 were affected by both sets of rankings, we used a cluster's early 2005 status to predict new venture creation in 2005 and 2006, and we relied on the average status of 2005 and 2006 to predict new venture creation after 2006. The subsequent “Top-1000 townships” list beyond 2006 was not available until 2016, and our analysis presumes entrepreneurs will use available status signals to make decisions.

To enhance the validity of using township ranking to measure cluster status, and assuming that entrepreneurs are similar over time, in 2018, we conducted a survey of 214 top executives in Guangdong. We asked respondents to evaluate the status of a list of 90 industrial TICs in Guangdong and averaged the responses of all top executives who reported some entrepreneurial experience ($n = 127$). This allowed us to calculate a surveyed status of each TIC before assessing any correlation with reversed rankings extracted from the 2017 “Top-1000 townships” list. The surveyed status was, to a significant degree, positively correlated with the reversed rankings ($r = 0.433$, $p < 0.001$). In addition, using a 7-point Likert scale ranging from 1 (*strongly disagree)* to 7 (*strongly agree*), we asked respondents to indicate their agreement with the following statement: “The ‘Top-1000 townships’ rankings published by the central government reflect the level of prestige (including respect and esteem) of the ranked townships.” The average rating (5.63) fell beyond the scale's mid-point of 4, further validating our ranking-based status measure.

5.3.3. Geographic status spillover

Geographic status spillover, which captures status spilled from all geographically proximate clusters, is calculated as the difference between the average status of geographically proximate clusters weighted by geographic proximity (Lin et al., 2009) and the focal cluster. Our 217 sample clusters yielded 23,436 (217*216/2) paired clusters. Following previous studies to measure geographic proximity (e.g., Zhang et al., 2009), we calculated the difference between the maximum geographic distance (727.19) and each value of spherical distance as the value of geographic proximity for each cluster pair. Then we used these geographic proximity values to calculate weighted-average status spilled from geographically proximate clusters using the following formula:

$$\mathrm{GSS_{it}} = \left\{ \sum_{\mathrm{j=1}}^{\mathrm{k_t-1}} [\mathrm{CS_{jt}} \times \frac{\mathrm{GP_{ij}} - \bar{\mathrm{GP}}_{\mathrm{ij}}}{SD(\mathrm{GP_{ij}})}]/(\mathrm{k_t} - 1) \right\} - \mathrm{CS_{it}},$$

where $\mathrm{GSS_{it}}$ refers to geographic status spillover to cluster *i* in year *t* and $\mathrm{CS_{jt}}$ represents the status of cluster *j* in year *t*. $\mathrm{GP_{ij}}$ is the geographic proximity between cluster *i* and cluster *j*. $\bar{\mathrm{GP}}_{\mathrm{ij}}$ is the average and $SD(\mathrm{GP}_{ij})$ is the standard deviation of geographic proximity between cluster *i* and all other clusters. $\mathrm{k_t}$ refers to the number of clusters in year *t*. $\mathrm{CS_{it}}$ captures the status of cluster *i* in year *t*.

5.3.4. Domain status spillover

Domain status spillover is the difference between the average status of domain-overlapped clusters in the broad region and the focal cluster status. Here, we first determined the specialized industry of each cluster; if two clusters within 100 km (roughly the average distance between two cities in Guangdong) had the same specialized industry, we classified them as domain-overlapped clusters in the same broader region – namely peer clusters (Zhang et al., 2009). Then, we averaged the status of all peer clusters and subtracted by the focal-cluster status as the proxy of domain status spillover.

5.3.5. Cluster size

We counted the number of firms in every TIC each year as the measure of cluster size (Hannan and Carroll, 1992; Zhang et al., 2009). Cluster size acted as a control when we predicted the direct effects of cluster status and inter-cluster status spillover (in Hypotheses 1, 2, and 3), offering a proxy for externalities, legitimacy, and competition. When investigating the moderating role of status (in Hypotheses 4, 5, and 6), we modeled cluster size as an independent variable.

5.3.6. Control variables

To address alternative explanations, we controlled for a list of cluster-level variables representing traditional explanations. *Previous new venture creation* is the number of new ventures created in the cluster in the previous year, potentially legitimizing subsequent new venture creation within the same cluster (Kuilman and Li, 2009). *Cluster per capita sales*, the ratio of total sales to total employees of all specialized firms within the cluster, indicates the relative demand in product markets to the supply in labor markets. *Cluster political ties*, measured by the counts of governmental officials' visits to each cluster documented in *City Yearbooks*, may allow a cluster to access valuable information and resources. We do not control for industry, because industries are highly correlated with TICs.

We included controls at city level, an administrative level above township, because variation in cities reveals different opportunities within their located clusters (Zhang et al., 2009). *City GDP per capita* is included because the local customers' purchasing power may motivate new venture creation. *Provincial capital city* denotes a city's political importance, affording critical resources to the located clusters. Following Zhang et al. (2009), we created a dummy variable to code the provincial capital city as *1* and sub-provincial cities as *0*.

To partial out the economic externalities and legitimacy spillover effects from neighbor or peer clusters (Zhang et al., 2009) that could confound the corresponding status spillover effects, we also controlled for a set of relevant variables, including *geographic cluster size*, *geographic per capita sales*, *geographic previous venture creation*, *domain cluster size*, *domain per capita sales*, and *domain* *previous venture creation*. All these variables were calculated based on the average value of neighbor or peer clusters.

5.4. Model specification

One of our modeling techniques involved generalized estimating equations (GEE) to accommodate intertemporal correlations among repeated measures of each individual cluster (Liang and Zeger, 1986). This was because cluster observations could be autocorrelated, given that some cluster-specific factors (e.g., geographical location) remained constant across years. We specified a negative binomial distribution with a log link function (the DV was a count variable with an over-dispersed distribution), defined an autoregressive (AR) correlation structure (AR structure assumes observations closer in time are more highly correlated) (Hilbe, 2011), and used robust standard error estimators to mitigate potential heteroscedasticity (White, 1980). Because the AR correlation structure required at least two observations in each panel, we excluded from our estimation 15 panels with only one observation. Our final sample, therefore, consisted of 1509 observations.

Our second modeling technique, which we relied on because of the potential endogeneity of cluster status, involved the difference-in-difference (DID) method combined with propensity score matching (PSM). We used this as a complementary technique to test Hypotheses 1, 2, and 3.

6. Results

Table 2 presents the correlation matrix and summary statistics of all relevant variables. While most pairs of independent and control variables have low correlations, independent variables are highly correlated (absolute values ranged from 0.50 to 0.94), as anticipated. Statistically, we would expect inter-cluster status spillover variables to be partially determined by cluster status and, therefore, highly correlated, given that prior research has shown status and status spillover influence each other (Podolny and Phillips, 1996; Washington and Zajac, 2005). Since all other correlations are low to moderate, we followed traditional methods by mean-centering interaction terms. To further mitigate multicollinearity concerns and Type 1 errors (Kalnins, 2018), we did several tests to assess the robustness of our results, including dropping highly correlated control variables and estimating models with only variables that were of theoretical interest (Kalnins, 2018). Across these tests, our results were consistent.

Model 1 in Table 3, the baseline model, includes all control variables; it shows that new venture creation in the previous year had a strong positive effect on new venture creation in the subsequent year, supporting the traditional arguments for a legitimacy effect. Previous venture creation in neighbor clusters also positively influenced current new venture creation in the focal cluster, suggesting legitimacy spillover effects across neighbor clusters (Kuilman and Li, 2009). Domain per capita sales had a negative effect, suggesting peer clusters drove up competition in product markets. In addition, and contrary to our expectations, city GDP per capita had a negative influence. Consistent with prior agglomeration studies, the linear term of cluster size had positive and significant effects, while the squared term of cluster size had negative and significant effects. This confirmed the anticipated inverted U-shaped relationship between cluster size and new venture creation within clusters.

Model 2 reveals a positive and significant effect of cluster status on new venture creation ($b = 0.001$; $p < 0.001$). With new venture creation modeled as a limited dependent variable (LDV) in this paper, we calculated the marginal effect of cluster status at each observation. Following previous studies (Pe'er et al., 2016; Wiersema and Bowen, 2009), we wrote a STATA code (available upon request) to generate a graph depicting the marginal effect (ranging from 2.73×10^{-5} to 9.33×10^{9}) and the associated z value (ranging from 1.25 to 7.56) at each observation. Our results indicated that 1502 of 1509 observations had positive effects at least at the 10% level. When all control variables were set at their means, the marginal effect of cluster status was 0.0005 with a z value of 4.07 ($p < 0.001$). Therefore, an increase in status ranking of 100 increased the number of new ventures created within the cluster (the specialized industry of the township) by about 5%, holding all other factors fixed. These analyses provide strong support for Hypothesis 1.

Model 3 tests the effect of geographic status spillover. The coefficient of geographic status spillover was positive and significant ($b = 0.005$; $p < 0.01$). Further, even though the high correlation between cluster status and geographic status spillover prevented the analysis of marginal effect for each observation, when all control variables were set at their mean values, the marginal effect of geographic status spillover was 0.002 and the z value was 2.64 ($p = 0.008$), supporting Hypothesis 2. Similarly, Model 4 shows that domain status spillover was positively and significantly related to new venture creation ($b = 0.001$; $p < 0.05$). A marginal effect graphical analysis (the marginal effect ranged from 5.81×10^{-6} to 1.77×10^{9}; the z value ranged from 0.70 to 5.01) further indicated that the majority of observations (1453 of 1509) supported a positive role of domain status spillover. When all control variables were set at their means, the marginal effect of domain status spillover was 0.0003, with a z value of 2.50 ($p = 0.013$). Collectively, these analyses support Hypothesis 3. Therefore, our analysis indicates, when holding other factors fixed, an increase of 100 in the status difference between neighbor or peer clusters and the focal cluster increased expected new ventures within the focal cluster by at least 3%.

Hypothesis 4 predicted that cluster status would weaken (flatten) the inverted U-shaped relationship between cluster size and new venture creation. To test this hypothesis, we followed Haans et al.'s (2015) suggestion for testing flattening in (inverted) U-shaped relationships. Regarding an inverted U, a flattening occurs when the coefficient of the second-order interaction term is positive and significant (Haans et al., 2015). Based on this criterion, the sign and p value of the second-order interaction term in Model 5 ($b = 0.002$; $p < 0.05$) indicate initial support for Hypothesis 4. Given our LDV (nonlinear) models, we further examined true interaction effects (Wiersema and Bowen, 2009). We wrote a STATA code (available upon request) to compute the true interaction effect and the associated z value at each observation, as well as to generate the scatter plot in Fig. 1a. While the true interaction effect

Table 2
Descriptive statistics and correlation matrix.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. New venture creation within clusters	1															
2. Cluster status	0.12*	1														
3. Geographic status spillover	−0.09*	−0.94*	1													
4. Domain status spillover	0.00*	−0.50*	0.59*	1												
5. Cluster size /10^2	0.22*	0.48*	−0.47*	−0.20*	1											
6. Previous new venture creation	0.28	0.13*	−0.11*	−0.01	0.30*	1										
7. Cluster per capita sales /10^3	−0.04	0.01	0.06*	0.02	0.01	−0.03	1									
8. Cluster political ties	0.02	0.26*	−0.23*	−0.12*	0.14*	0.01	0.00	1								
9. City GDP per capita /10^3	0.00	0.64*	−0.50*	−0.18*	0.33*	0.03	0.22*	0.02	1							
10. Provincial capital city	−0.01	0.03	0.00	0.01	0.01	−0.01	−0.02	−0.04	0.25*	1						
11. Geographic cluster size /10^2	0.09*	0.60*	−0.32*	0.00	0.27*	0.12*	0.17*	0.19*	0.65*	0.10*	1					
12. Geographic per capita sales /10^3	0.05*	0.37*	−0.08*	0.03	0.12*	0.05*	0.20*	0.10*	0.54*	0.09*	0.74*	1				
13. Geographic previous venture creation	0.14*	0.29*	−0.13*	0.02	0.13*	0.26*	0.02	0.10*	0.16*	0.02	0.47*	0.36*	1			
14. Domain cluster size /10^2	0.11*	0.40*	−0.30*	0.33*	0.42*	0.15*	0.03	0.10*	0.40*	0.02	0.47*	0.26*	0.20*	1		
15. Domain per capita sales /10^3	−0.01	0.17*	−0.13*	0.19*	0.17*	0.01	0.17*	0.03	0.29*	0.04	0.19*	0.20*	−0.01	0.43*	1	
16. Domain previous venture creation	0.13*	0.24*	−0.20*	0.16*	0.28*	0.25*	−0.04	0.11*	0.14*	−0.03	0.23*	0.09*	0.42*	0.54*	0.15*	1
Mean	0.59	222.65	−129.38	71.99	0.32	0.66	0.39	0.41	33.70	0.01	0.07	0.02	0.19	0.32	0.29	1.33
SD	2.06	337.97	286.82	322.30	0.37	2.10	0.44	1.29	23.58	0.11	0.07	0.08	0.44	0.30	0.28	2.33

Note: n = 1509 cluster-year observations; * $p < 0.05$.

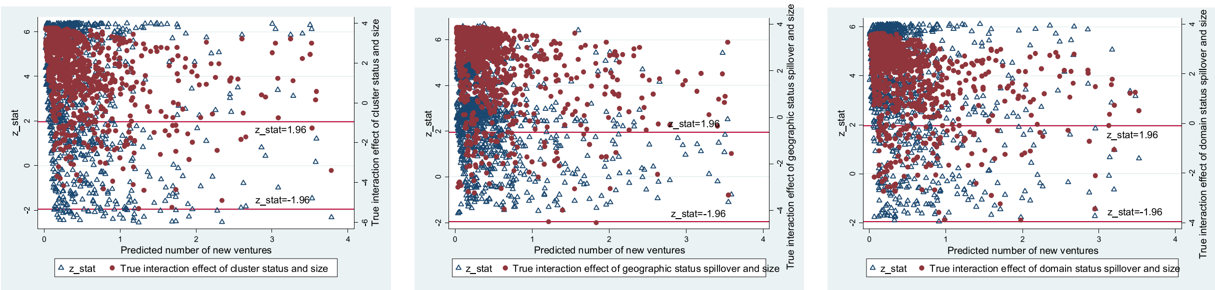
Table 3
GEE models on new venture creation within clusters.

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Previous new venture creation	0.478***	0.667***	0.560***	0.629***	0.623***	0.483***	0.559***	0.462***
	(0.017)	(0.015)	(0.017)	(0.016)	(0.015)	(0.016)	(0.015)	(0.016)
Cluster sales per capita $/10^3$	−0.010	0.098	0.042	0.169	0.083	0.028	0.157	0.112
	(0.124)	(0.129)	(0.130)	(0.118)	(0.138)	(0.139)	(0.123)	(0.124)
Cluster political ties	0.024	0.025	−0.012	0.019	0.016	−0.028	0.010	−0.033
	(0.032)	(0.035)	(0.037)	(0.033)	(0.037)	(0.041)	(0.036)	(0.039)
City GDP per capita $/10^3$	−0.032***	−0.032***	−0.039***	−0.032***	−0.033***	−0.040***	−0.033***	−0.041***
	(0.005)	(0.005)	(0.006)	(0.005)	(0.005)	(0.006)	(0.005)	(0.006)
Provincial capital city	0.601†	1.150***	0.992**	1.113**	1.124**	0.943**	1.038**	0.839**
	(0.343)	(0.349)	(0.318)	(0.354)	(0.354)	(0.317)	(0.359)	(0.322)
Geographic cluster size $/10^2$	3.241†		−2.784			−2.640		−2.885
	(1.784)		(2.330)			(2.405)		(2.731)
Geographic cluster sales per capita $/10^3$	2.134		−1.319			−1.030		1.266
	(1.537)		(2.036)			(2.334)		(2.132)
Geographic previous venture creation	0.370*		0.281†			0.315*		0.139
	(0.174)		(0.157)			(0.148)		(0.184)
Domain cluster size $/10^2$	0.524			−0.061			0.178	0.391
	(0.507)			(0.463)			(0.442)	(0.517)
Domain cluster sales per capita $/10^3$	−1.055*			−0.944			−1.136†	−1.243*
	(0.502)			(0.581)			(0.654)	(0.558)
Domain previous venture creation	0.042			0.066*			0.049†	0.042
	(0.033)			(0.027)			(0.028)	(0.033)
Cluster size $/10^2$	2.324***	1.836***	2.094***	1.877***	2.116***	2.464***	2.254***	2.636***
	(0.407)	(0.411)	(0.391)	(0.416)	(0.371)	(0.381)	(0.370)	(0.390)
Cluster size ^{2}	−1.319**	−1.215**	−1.253**	−1.080*	−1.853*	−2.208**	−2.011**	−2.630***
	(0.466)	(0.408)	(0.429)	(0.442)	(0.722)	(0.844)	(0.649)	(0.694)
Cluster status		0.001***	0.006***	0.002***	0.001***	0.005**	0.002***	0.005**
		[0.0005]						
		(0.000)	(0.002)	(0.000)	(0.000)	(0.002)	(0.000)	(0.002)
Geographic status spillover			0.005**			0.005*		0.004†
			[0.002]					
			(0.002)			(0.002)		(0.002)
Domain status spillover				0.001*			0.001**	0.000
				[0.0003]				
				(0.000)			(0.000)	(0.000)
Cluster status × Cluster size					−0.002*	−0.002	−0.002	0.000
					(0.001)	(0.003)	(0.001)	(0.003)
Cluster status × Cluster size ^{2}					0.002*	0.008†	0.002	0.010*
					(0.001)	(0.004)	(0.001)	(0.005)
Geographic status spillover × Cluster size						−0.000		0.003
						(0.003)		(0.004)
Geographic status spillover × Cluster size ^{2}						0.006		0.009
						(0.005)		(0.006)
Domain status spillover × Cluster size							−0.000	−0.001
							(0.001)	(0.001)
Domain status spillover × Cluster size ^{2}							−0.001	−0.001
							(0.001)	(0.001)
Constant	−0.508*	−0.341†	0.074	−0.212	−0.178	0.264	−0.011	0.493*
	(0.205)	(0.188)	(0.248)	(0.213)	(0.188)	(0.257)	(0.187)	(0.242)
Alpha	2.902	3.121	2.834	3.003	3.081	2.766	2.911	2.658
Wald Chi-square	2773***	4103***	3136***	3478***	4153***	3019***	3671***	3067***

Notes: 202 panels of 1509 observations (15 panels omitted from estimation because not possible to estimate correlations for those groups); standard errors in parentheses; marginal effects of status variables in square brackets; *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.1$.

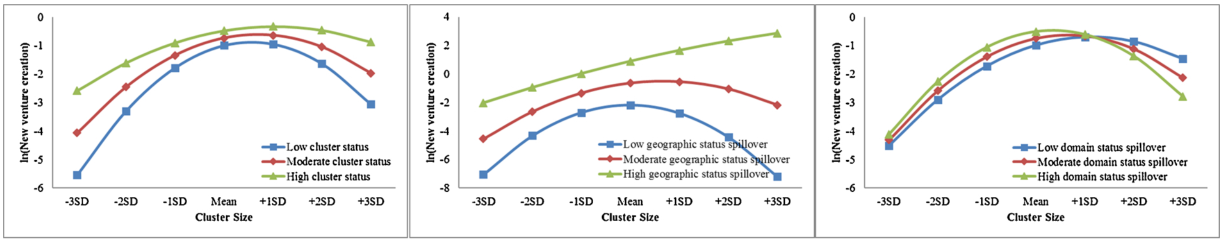
ranged from -1.88 × 10^9 to 3.75, the z value varied from -3.60 to 6.40. Among all 1509 observations, 1184 showed a significant true interaction effect at least at the 10% level. Moreover, when all controls were set at their means, the value of true interaction effect was 2.11, with a z value of 5.70 ($p < 0.001$).

To further assess the moderation effect of cluster status on the inverted U, we calculated the slope changes at different levels of cluster status following Haans et al.'s (2015) recommendation. First, we selected three meaningful values of cluster status (111, 222, and 333, as shown in Appendix B) – where each value generated an inverted U-shaped curve – and then we computed the turning point for each curve. Second, we calculated the slope (S) at a given distance ($a = 20$) from the left of each turning point. The resulting slopes indicated that, the higher the cluster status, the smaller the changes in the slope (i.e., the flatter the curve), given the same changes in cluster size in the left of the turning point. We repeated this step for different a distances and found that S values were always smaller when cluster status was higher. The pattern held if we moved a to the right side of the turning point. These calculations suggest that the inverted U-shaped relationship was flattened by cluster status. Finally, we graphed the relationships between



a b c

Fig. 1. True interaction effects of cluster status/inter-cluster status spillover and cluster size (95% observations).



a b c

Fig. 2. Cluster-size effect on new venture creation at different levels of cluster status/inter-cluster status spillover.

cluster size and new venture creation at *low* (one standard deviation below the mean), *moderate* (at the mean), and *high* (one standard deviation above the mean) levels of cluster status in Fig. 2a. The graph showed that low-status clusters had the steepest inverted U, while this shape was weakened with increasing cluster status. These deeper analyses strongly support Hypothesis 4.

Replicating the approach for checking the moderation effect of cluster status, we conducted the same three steps to test the moderation effect of geographic status spillover. The coefficient of the second-order interaction term in Model 6 was positive but insignificant (b = 0.006, p = 0.176); however, the true interaction effect graph (Fig. 1b) showed a considerable number of observations (1157 out of 1509) had a positive and significant true interaction effect (from -1.63 × 10^5 to 3.89, with the *z* value ranging from −1.59 to 6.67.) When all controls were set at their means, the true interaction effect was 2.46 with a *z* value of 6.46 ($p < 0.001$). We then computed the slopes for three meaningful values of geographic status spillover (Appendix B), and the results showed the slope change was smaller when geographic status spillover was higher, suggesting the inverted U was flattened by geographic status spillover. We also plotted the inverted U at *low*, *moderate*, and *high* levels of geographic status spillover in Fig. 2b. The graph indicates consistent results, supporting Hypothesis 5.

Model 7 is estimated to test Hypothesis 6, which predicted a weakening role of domain status spillover in the cluster size–new venture creation relationship. The sign and *p* value do not support Hypothesis 6 (b = 0.001; $p > 0.1$); the graphical analysis (Fig. 1c) revealed that the true interaction effect ranged from -5.72 × 10^{18} to 3.63, with *z* value varying from -2.14 to 6.14 and with 1249 out of 1509 observations showing positive signs at a 10% level. Moreover, when all control variables were set at their means, the true interaction effect was 2.25, with a *z* value of 6.09 ($p < 0.001$). Based on the coefficients in Model 7, we then plotted the moderating relationships in Fig. 2c. The plot did not show a salient weakening role of domain status spillover. The slope calculation (Appendix B) also indicated unsupported results. These mixed findings did not support Hypothesis 6.

To complement our GEE approach while testing Hypotheses 1, 2, and 3, we performed DID analysis combined with propensity score matching (PSM). The effect of status may be due to economic determinants rather than to its social property; thus, DID tests, combined with PSM, can mitigate the possible effects of unobserved temporal (within-cluster) and sectoral (between-cluster) determinants, including those unobserved economic factors. The DID method compares the difference in the outcome for a treatment group (before and after treatment) to the difference in the outcome for a control group (also before and after treatment) with similar characteristics (Rosenbaum and Rubin, 1983).

Our study conceived of cluster status and positive/negative geographic/domain status spillover[11] as the treatment. Specifically, we viewed pre-2005 years as the pre-treatment period and post-2005 years as the post-treatment period. If clusters were ranked on

[11] When viewing positive geographic status spillover as the treatment, we coded the variable as *1* if the average status of neighbor clusters was higher than the focal cluster status; otherwise, we coded it as *0*. Similarly, we coded negative geographic status spillover as *1* if the average status of neighbor clusters was lower than the focal cluster status; otherwise, we coded it as *0*. We did analogous coding for positive and negative domain status spillover.

Table 4
Balancing tests (Two-sample t test after matching).

	Weighted variables	Mean control	Mean treated	T-test comparison (p-value)
Model 1	New venture creation	0.656	0.890	0.201
(cluster status as the treatment)	Cluster size $/10^2$	18.097	22.061	0.183
	Previous new venture creation	0.646	0.750	0.549
	Cluster sales $/10^6$	1.387	1.347	0.903
	Cluster specialized labor $/10^3$	7.217	7.633	0.757
	Specialized industry	26.824	26.091	0.758
Model 2	New venture creation	0.467	0.528	0.694
(positive geographic status spillover as the treatment)	Cluster size $/10^2$	9.410	9.975	0.811
	Previous new venture creation	0.432	0.495	0.677
	Cluster sales $/10^6$	0.390	0.662	0.122
	Cluster specialized labor $/10^3$	2.499	3.073	0.501
	Specialized industry	29.997	29.212	0.729
Model 3	New venture creation	0.538	0.521	0.912
(negative geographic status spillover as the treatment)	Cluster size	14.090	14.444	0.907
	Previous new venture creation	0.462	0.435	0.849
	Cluster sales $/10^6$	1.144	0.823	0.292
	Cluster specialized labor $/10^3$	4.886	4.743	0.906
	Specialized industry	23.423	25.429	0.386
Model 4	New venture creation	0.518	0.593	0.657
(positive domain status spillover as the treatment)	Cluster size $/10^2$	12.576	13.288	0.813
	Previous new venture creation	0.469	0.500	0.841
	Cluster sales $/10^6$	0.583	0.668	0.657
	Cluster specialized labor $/10^3$	3.398	3.687	0.757
	Specialized industry	27.518	28.025	0.829
Model 5	New venture creation	0.765	0.857	0.666
(negative domain status spillover as the treatment)	Cluster size $/10^2$	21.297	23.119	0.624
	Previous new venture creation	0.606	0.738	0.508
	Cluster sales $/10^6$	1.267	1.675	0.285
	Cluster specialized labor $/10^3$	6.034	9.089	0.027
	Specialized industry	25.151	27.357	0.365

the 2005 “Top-1000 townships” list, they were included in the treatment group; otherwise, they were in the control group. To address possible year-to-year spurious variance, we relied on the mean values for pre- and post-treatment variables in our database covering data from 1998 to 2013. As such, the mean values of 1998–2004 were the proxies for pre-treatment variables, while – to maintain symmetry – the mean values of 2006–2012 were the proxies of post-treatment variables.

To identify control groups with similar characteristics (Li, 2013), we matched treatment groups with control groups based on five observable characteristics: specialized industry, cluster size, previous new venture creation, cluster sales, and cluster specialized labor. These five characteristics are influential in entrepreneurs' new venture creation decisions, as suggested by previous studies on firm decisions (e.g., Chang and Park, 2005; McCann and Vroom, 2010). We used Stata's “diff” command, combined with kernel-based matching, and imposed a common support for the analysis (Villa, 2011). The kernel matching procedure identifies matches using weights inversely proportional to the distance between treated and control observations (Heckman et al., 1998). By adopting the DID approach with a sample matching procedure, we controlled for unobserved – but constant – differences between clusters that received status treatment and clusters that did not. The balancing tests (see Table 4) indicated the matching procedure was satisfactory. As such, we used DID to evaluate the treatment effects, with results presented in Table 5.

Model 1 in Table 5 shows that control and treatment groups do not differ in new venture creation prior to status ranking being published but *do* differ significantly after the publication of the status ranking ($D = 0.544$; $p = 0.006$). The DID test between two groups was also significant ($DID = 0.527$; $p = 0.059$), suggesting variation in new venture creation in a cluster was influenced by the status treatment. Thus, the DID test supported Hypothesis 1. Following a similar procedure, Models 2–5 in Table 5 viewed positive and negative geographic status spillover and domain status spillover as the treatments, respectively, while controlling for the status ranking of the focal cluster. The DID analysis showed significant results for the treatment effect of positive and negative geographic status spillover, as well as negative domain status spillover; but it did not support the positive domain status spillover. These results suggest that both geographic status spillover and negative domain status spillover increase new venture creation, thereby supporting Hypotheses 2 and 3.

6.1. Robustness tests

We performed a variety of sensitivity tests to further evaluate the robustness of our findings, with results summarized here and with additional details presented in Appendix C. First, considering that entrepreneurs may need more than one year to prepare their new businesses, we evaluated our findings by using a two-year lag period. All results were consistent with those reported. Second, we found consistent results by viewing prefectural cities as the broader region within which to identify peer clusters, because *city* is a better-recognized administrative division than *county*, while also introducing more meaningful variation into our data than would be

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Table 5
Difference-in-difference (DID) tests of Hypotheses.1–3

		Before			After			Diff-in-Diff
		Control	Treated	Diff (T-C)	Control	Treated	Diff (T-C)	
Model 1	New venture creation	0.616	0.633	0.017	0.576	1.120	0.544	0.527
(cluster status as the treatment)	Standard error			[0.196]			[0.196]	[0.277]
	P-values			(0.931)			(0.006)	(0.059)
	N	65	37		65	37		
Model 2	New venture creation	0.234	0.304	0.070	0.120	0.547	0.427	0.357
(positive geographic status spillover as the treatment)	Standard error			[0.129]			[0.129]	[0.182]
	P-values			(0.586)			(0.001)	(0.052)
	N	32	23		32	23		
Model 3	New venture creation	0.214	0.134	−0.080	0.735	0.198	−0.537	−0.457
(Negative geographic status spillover as the treatment)	Standard error			[0.172]			[0.172]	[0.243]
	P-values			(0.643)			(0.002)	(0.063)
	N	24	31		24	31		
Model 4	New venture creation	0.576	0.568	−0.008	0.828	1.004	0.176	0.184
(positive domain status spillover as the treatment)	Standard error			[0.296]			[0.296]	[0.418]
	P-values			(0.978)			(0.552)	(0.660)
	N	57	38		57	38		
Model 5	New venture creation	1.190	0.782	−0.408	3.541	0.917	−2.623	−2.215
(negative domain status spillover as the treatment)	Standard error			[0.521]			[0.521]	[0.736]
	P-values			(0.437)			(0.000)	(0.004)
	N	13	19		13	19		

Note: The DID tests were based on 2005's cluster list (namely $N_{before} = 110$; $N_{after} = 110$), because these clusters have experienced the status shock. Some samples were dropped automatically during the matching procedure, resulting in reduced sample sizes reported in the table.

possible with *province*.

Third, we operationalized positive status spillover and negative status spillover variables using spline functions. The results supported the positive status spillover effect but not the negative status spillover effect. This resonates with earlier work emphasizing status spillover from high-status actors (Bidwell et al., 2015; Pollock et al., 2010). Fourth, due to the high correlation between cluster status and inter-cluster status spillover, controlling cluster status when evaluating status spillover effect may possibly distort our results; as such, we also estimated status spillover effect using a subsample of zero-status clusters. The results were largely consistent but revealed weaker significance levels. Fifth, as the endogenous nature of cluster size may bring reverse-causality concerns, we employed the two-stage instrumental variable method to test all hypotheses. The results were analogous with those reported.

To further evaluate the unstated assumptions (e.g., whether township rankings are known and used by potential entrepreneurs) and the working mechanisms of cluster status and inter-cluster status spillover, we undertook two additional analyses. We conducted semi-structured interviews with seven entrepreneurs who created new ventures in Guangdong, and we searched news reports using Factiva, WiseSearch, and three mainstream news websites in China. From this investigation, we determined that entrepreneurs likely know about township rankings. All seven interviewees agreed with this premise, and news reports indicated the same. We also found that entrepreneurs are interested in township rankings, with six interviewees attesting to this notion and news reports indicating likewise. Finally, we concluded that the rankings of the focal township, neighbor, or peer townships could indicate perceived economic benefits in the eyes of entrepreneurs (agreed to by six out of the seven interviewees). These observations support the existence of status dynamics at the cluster level, as well as the idea that entrepreneurs assume shared representations between neighbor or peer clusters. Given space constraints, our qualitative evidence is reported in Appendices D and E.

7. Discussion

We examined how cluster status and inter-cluster status spillover influence new venture creation within clusters, finding that status position and status spillover from geographically proximate or domain-overlapped clusters in a broader region are salient factors influencing new venture creation within clusters. Our results also support the moderating effects of cluster status and geographic status spillover on the anticipated inverted U-shaped relationship between cluster size and new venture creation. In particular, for clusters with a high-status position or a high level of geographic status spillover, cluster size shows a weakened inverted U-shaped effect. Statistically, these results (presented in Fig. 2) also indicate that the status effect is contingent on cluster size: The substantial influence of status on new venture creation is more salient for small- to moderate-sized clusters, whereas in large-sized clusters, the value of higher status is less prominent. We posit that, for larger-sized clusters, about which entrepreneurs have more information, status is a signal less critical to reducing uncertainties.

7.1. Theoretical implications

Our research provides primarily theoretical contributions to the literature on entrepreneurial clustering by highlighting the role of cluster status. First, we extend prior studies on entrepreneurial activities in clusters by theorizing and empirically demonstrating the

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substantive roles of cluster status and inter-cluster status spillover. Previous studies have mainly focused on intra-cluster externalities and competition – or legitimacy conferred by external social actors – to explain why firms enter into clusters (Chang and Park, 2005); yet these studies have failed to address the situation that a cluster might also be embedded in a social hierarchy of clusters. As a consequence, prior work has overlooked the potential importance of cluster-level status, which reflects a cluster's position or relation in a social system. While the magnitude of a cluster's status depends on all other clusters in a social system (e.g., Podolny, 2005), the existing explanations of new venture creation within clusters – externalities, legitimacy, and competition – do not. In other words, our work contributes to an understanding of the positional and relational elements among multiple clusters, with implications for future research in multi-cluster contexts.

Our research also underscores the anticipated inverted U-shaped relationship between cluster (or population) size and new venture creation in clusters. Previous studies have proposed both advantages and disadvantages of clustering, resulting in an inverted U-shaped cluster-size effect (Chang and Park, 2005; McCann and Vroom, 2010); yet, we found that this relationship varies across clusters with different status positions or with status spilled from geographically proximate clusters. As such, our study responds to the call for regional or cluster-level contextual attributes for new venture legitimation mechanisms (Überbacher, 2014) – and these results may prompt future studies to explore the boundary conditions of the relationship between cluster size and new venture creation. Through these contributions, we complement and extend the existing theoretical lenses (i.e., agglomeration theory, sociological institutional theory, and organizational ecology theory) to explain the entrepreneurial activities in clusters with a new theoretical lens: social status theory.

Additionally, our work extends the status literature by conceptualizing status at the cluster level: by going beyond the levels of the individual, organization, or industry that have been investigated in prior research. Thus, we complement the arguments that status may be relevant at multiple levels of analysis (Piazza and Castellucci, 2014), and we also broaden the pathway for future explorations of status dynamics at various levels.

Finally, by using China's TICs as the empirical context, our work sheds light on clusters in under-researched countries. While most cluster studies focus on the United States or other advanced economies, with a few looking at emerging economies, we know little about TICs, despite their economic significance throughout China. In this regard, our work illuminates China's environmental and institutional influences on entrepreneurship.

7.2. Practical implications

For entrepreneurs, our research provides insights regarding how cluster status affects the decision process of new venture creation, thereby informing entrepreneurial decision-making. More specifically, our findings demonstrate that, when making new venture creation decisions, many entrepreneurs use cluster status or status spilled from related clusters. Our arguments emphasize that status affects an outsider's evaluation of the cluster, which in turn influences the flow of resources into the cluster and which further facilitates new venture growth and survival. Additionally, our findings indicate that cluster status or status spilled from geographically proximate clusters renders other decision factors, such as externalities, legitimacy, and competition, less important. Whereas much of the previous research on new venture creation has focused on these factors, we demonstrate that the social status of clusters diminishes their relevance to entrepreneurial decision-making.

Our findings also have important implications for cluster administrators and policy makers. Our work demonstrates the salience of cluster status and inter-cluster status spillover in promoting local entrepreneurship and in encouraging regional employment and economic growth, meaning that policy makers may devote attention and resources to managing the social positions of their clusters. Regional governments play a critical role in the development and upgrading of their located clusters; thus, regional governments' policies on developing and promoting their clusters' high-status positions, or their clusters' relatedness with other high-status clusters, may attract entrepreneurial investments and, by extension, create opportunities for cluster growth.

7.3. Future research

While our work breaks ground in important ways, this study acknowledges certain limitations. First, we addressed only a readily definable type of cluster boundary: township industrial clusters. Future studies might consider cluster boundaries identified by more fine-grained methods, such as a density-based algorithm (see Alcácer and Zhao, 2016). Second, while we have followed prior studies, we concede that our status measurement is imperfect, even as it remains the best publicly available ranking (e.g., Stern et al., 2014). We call for future studies to draw on rich data to further enhance our understanding of cluster status.

Third, because we have only data on clusters specialized in industrial sectors, future research could validate our results in *non*-industrial sectors. Fourth, our empirical setting, TICs in China's Guangdong Province, may diminish the generalizability of our findings due to the subnational diversity within China (Ma et al., 2013). Our results might also be compromised by China's deep roots in Confucianism, given the tradition's strong hierarchical, relational, and cultural underpinning, as well as by the unique institutional and historical context of China when compared to Western countries (Boisot and Child, 1996; Tan and Tan, 2005). Accepting these caveats, future research could corroborate the role of cluster status in other subnational regions or countries, or it could attend to changing institutional environments, including local entrepreneurship policies of different TICs.

Fifth, future studies might investigate our research context – TICs in China – in even greater detail, perhaps examining the behavior of TICs and TVEs, as compared to other well-researched ownership types (Peng et al., 2004; Tan, 2002), while also tracking the evolution of TVEs and TICs. Sixth and finally, future research could attend to inter-firm ties or tie-related factors within a cluster, going beyond our focus on cluster levels. Studies along the lines of those adumbrated above could, like the present research, speak to

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the larger and interactive issues of new venture creation, industry clusters, and social status, thus yielding critical insights for a wide range of researchers, practitioners, and policy makers.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.jbusvent.2019.105985.

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