

GREEN TO GONE? REGIONAL INSTITUTIONAL LOGICS AND FIRM SURVIVAL IN MORAL MARKETS

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ABSTRACT

A growing body of scholarship has studied the emergence of moral markets – sectors offering market-based solutions to social and environmental issues. To date, researchers have largely focused on the drivers of firm *entry* into these values-laden sectors. However, we know comparatively little about post-entry dynamics, or the determinants of firm *survival* in moral markets. This study examines how regional institutional logics – spatially bound, socially constructed meaning systems that legitimize specific practices and goals within a community – shape firm survival in emerging moral markets. Using a unique panel of firms entering the first eight years of the U.S. green building supply industry, we find that: 1) a regional market logic amplifies the impacts of market forces by increasing the positive impact of market adoption and the negative impact of localized competition on firm survival, 2) a regional proenvironmental logic dampens the impacts of adoption and competition on firm survival, and 3) institutional complexity - the co-occurrence of both market and proenvironmental logics in a region - negates the traditional advantages of *de alio* (diversifying incumbent) firms, creating an opportunity for *de novo* (entrepreneurial entrant) firms to compete more effectively. Our study integrates research on industry emergence, institutional logics, and firm survival to address important gaps in our knowledge regarding the evolution and growth environmental entrepreneurship in moral markets.

INTRODUCTION

“One of the central issues facing both business and society today is how to reconcile economics and the environment, economizing and ecologizing – those two forces of nature, each magnified by human culture, that make our life possible.”

William Frederick (1995, p. 151)

Human-induced climate change threatens biodiversity, reduces clean water access, increases catastrophic weather events, and jeopardizes the very subsistence of human life (IPCC 2018, Wallace-Wells 2019).

Increasingly, scholars have theorized that business can and should play a role in combating environmental problems such as climate change (Hoffman 2018, Howard-Grenville et al. 2014). Studies of renewable energy (Hiatt and Carlos 2019, Kapoor and Furr 2015, Pacheco et al. 2014, Sine and Lee 2009), organic agriculture (Lee 2009, Lee et al. 2017), and green building (Jones et al. 2019, York et al. 2018) have examined how such sectors develop. Collectively, these studies have increased our understanding of the emergence of moral markets – values-laden sectors whose core purpose is to offer market solutions to social and environmental issues (Conger et al. 2018, Corbett and Montgomery 2017, Georgallis and Lee 2020, Markman et al. 2019, Russo 2003, Wry and Zhao 2018, Zhao and Wry 2016).

To date, research has largely examined how firm entry impacts the emergence of moral markets (Durand and Georgallis 2018, Hoppmann and Vermeer 2019, Meek et al. 2010, Vedula et al. 2019). Our understanding of firm *survival* in this context is comparatively sparse (Georgallis and Durand 2017, Kapoor and Furr 2015). This gap is problematic given that traditional industry emergence research emphasizes not only entry, but also firm survival dynamics (Agarwal and Gort 1996, Baldwin and Gorecki 1991, Dunne et al. 2013, Malerba and Orsenigo 1996). While some have theorized how *de novo* (i.e. entrepreneurial startups) and *de alio* (i.e. diversifying incumbents) firms might compete in moral markets (Georgallis and Lee 2020, Hockerts and Wüstenhagen 2010), to our knowledge no studies have examined firm survival in this context.

This critical omission is worthy of exploration for two reasons. First, moral markets promise market-based solutions for the most intractable social welfare issues such as climate change, poverty, and inequality. Yet, for moral markets to help solve such issues, the firms that enter them must persist and

survive. This is a challenge, as moral markets encompass both a market logic of commercial business and a social welfare logic of addressing environmental and social issues (Georgallis and Lee 2020). Prior research has shown that firms often struggle when seeking to address multiple logics (Besharov and Smith 2014, Smith and Besharov 2019). Therefore, firm survival in moral markets is essential, but far from assured. Second, moral markets offer a compelling setting for expanding research on institutional complexity (Battilana and Dorado 2010, Greenwood et al. 2010, Lee et al. 2017) – settings in which firms face competing institutional demands. Recent literature has theorized that the organizational form of entrants (*de novo* startups versus diversifying *de alio* incumbents) could impact firms' efficacy within moral markets (Georgallis and Durand 2017, Wry and York 2017). By examining survival differences in *de novo* and *de alio* firms within moral markets, we may refine our understanding of how conflicting logics (Dunn and Jones 2010, Thornton and Ocasio 1999) influence market emergence.

In this study we seek to understand: 1) how the traditional drivers of firm survival may be altered within moral markets and 2) how institutional complexity within a moral market alters survival likelihood for *de novo* versus *de alio* firms. To address these questions, we theorize and test a model of survival in emerging moral markets shaped by regional institutional logics (Besharov and Smith 2014, Thornton et al. 2012, Thornton and Ocasio 2008) – spatially bound, socially constructed meaning systems that legitimize specific practices and goals within geographic communities (Durand et al. 2013, Greenwood et al. 2011, Lee and Lounsbury 2015, Vedula et al. 2019). Empirically, we model the survival of 1,233 firms that entered the U.S. green building supply industry during the first eight years (1999-2007) of its emergence. Two institutional logics, the *market* logic of commercial real estate and contradictory *proenvironmental* logic of reducing environmental impact (Lee and Lounsbury 2015) are salient in green building (Jones et al. 2019, York et al. 2018).

We find that: 1) a regional market logic *amplifies* the impacts of market forces by increasing the positive impact of market adoption and the negative impact of localized competition on firm survival, 2) a regional proenvironmental logic *dampens* the impacts of market forces by reducing the positive impact of market adoption and the negative impact of localized competition on firm survival, and, 3) institutional

complexity - the co-occurrence of both market and proenvironmental logics in a region - negates the traditional advantages of *de alio* firms and increases the likelihood of *de novo* firm survival.

Our study contributes to several literature streams. First, we extend the literature on moral markets to theorize and explain how regional logics may moderate competitive dynamics and survival in such values-laden sectors. Our findings suggest that these dynamics are more complex than simply buoying the chances of survival for firms that align with the dominant logic. Rather, regional logics can amplify or dampen both the positive and negative effects of a variety of factors on survival in ways requiring nuanced explanation. Second, we reveal that, within moral markets, institutional complexity may actually offer advantages to *de novo* hybrid organizations because they appeal to both a market and proenvironmental logic. Institutional complexity can give new firms room to differentiate themselves from more conventional incumbents. Third, by highlighting how regional logics can condition the impacts of market forces and organizational forms, our study extends the literature on institutions and entrepreneurship. Finally, we provide entrants in moral markets with practical guidance on how geographic entry decisions may impact their chances of survival.

THEORETICAL BACKGROUND

Moral markets explicitly seek to address social and environmental problems while *simultaneously* pursuing economic profit (Georgallis and Lee 2020). This focus on addressing social (e.g. economic development through microfinance (Wry and Zhao 2018)) and/or environmental problems (e.g. addressing climate change through renewable energy (Pacheco et al. 2014)) delineates such markets. New entrants into moral markets combine a market logic with a social welfare logic to define their identity and goals (Durand et al. 2013, York et al. 2016). While such firms maintain a commercial structure, part of the value they create accrues to the commons as public goods (Ostrom 2009). Thus, entrants into moral markets may not capture the same level of economic value as their purely commercial counterparts (Dart 2004, Ostrom 1990, Santos 2012). Therefore, firms operating exclusively in moral markets often need to expend more effort to build relationships within their community (Newbert and Tornikoski 2013) and

secure resources from those invested in their social welfare goals (Hillman et al. 2009, Villanueva et al. 2012). Unlike sectors with a dominant market logic, it is less clear how value can or should be captured by the firm or stakeholders in moral markets (Pache and Santos 2013b, Santos 2012). Accordingly, in moral markets, securing resources often involves additional negotiation which may be complicated or even adversarial (O’Neil and Ucbasaran 2016).

The emergence of moral markets has been measured by examining the entry of both *de novo* and *de alio* firms at the industry level (Georgallis et al. 2019, York and Lenox 2014). Several studies of moral market entry find that social norms movements often play an influential role (Durand and Georgallis 2018, Meek et al. 2010, Sine and Lee 2009). Social norms - collective beliefs regarding the morality of actions and products - may influence entrepreneurs to see opportunities based on their own beliefs (Weber et al. 2008). Social movements can help to define and delineate markets as morally superior, encouraging both political support, as well as a perception of opportunity (Waldron et al. 2019). Such activism can help establish regulations and infrastructure for emerging moral markets such as in the renewable energy sector (Pacheco et al. 2014, Pacheco and Dean 2015).

While the literature has shown these forces drive firm entry, we know far less about the drivers of firm *survival* in moral markets. Surprisingly little linkage has been made between extant studies of firm survival in emerging markets and the literature on moral markets. This is a critical oversight, as the promise of moral markets clearly cannot be realized if entrants do not survive. Because moral markets are beholden to both economic and social welfare goals, the values and beliefs embodied by institutional logics could be critical. Yet, the underlying assumption of current research is that entry alone is adequate to understand the potential of moral markets. Organizational scholars have long studied the determinants of survival in emerging markets, offering a starting point developing a theory of survival in moral markets.

Survival in Emerging Markets

Scholars have long examined and differentiated the drivers of *de novo* and *de alio* survival¹ within emerging markets (Carroll and Khessina 2006, Khessina and Carroll 2008). Three factors have been consistently shown to be important: market adoption, localized competition, and firm endowments (Josefy et al. 2017). First, in order for firms to survive within an emerging market, their products and/or services must achieve legitimacy and widespread *market adoption* amongst consumers; this insight applies to both *de novo* and *de alio* firms (Geroski 2003). However, when demand for new products and services is volatile, new entrants have smaller reserves to draw on to survive the lean early years. Because they are often reliant upon the emerging market and do not have extant sales from other product offerings (Carroll 1985), *de novo* are extremely sensitive to market adoption. This challenge is exacerbated in the early stages of industry emergence when entrants must often charge a price premium compared to current scaled market offerings and *de novo* firms have no cognitive legitimacy in the eyes of their customer base (Deeds et al. 2004, Shepherd and Zacharakis 2003, Zimmerman and Zeitz 2002). These factors also apply at a product level for *de alio* firms; they must incur the opportunity cost of entering emerging markets versus already successful product lines (Khessina and Carroll 2008, Steen and Weaver 2017). Thus, survival for *all* firms is positively related to market adoption in emerging markets.

Second, survival is also highly influenced by *localized competition*. When geographic markets are meaningful for resource distribution and firm outputs, localized competition is likely to intensify (Freeman and Audia 2006, Greve 2002, Sorenson and Audia 2000). This distinction is critical when considering “traded industries” where firms in one geographic location compete globally (e.g. Silicon Valley software firms), versus “local industries” where firms compete with each other within distinct

¹ The term failure is often utilized to denote withdrawal from a market for both *de novo* and *de alio* firms (Carroll and Khessina 2006). While we use this term throughout our theorizing for the sake of clarity, it is possible (although unlikely) that a *de novo* firm may pivot out of an emerging industry without actually failing to exist (e.g., bankruptcy) and likely that *de alio* exit may not be necessarily associated with firm failure (e.g., simply returning to focus on an extant market). We empirically address these differences in our sample described on pp.18-19, but for the sake of theory development, survival simply denotes that a firm leaves a market due to a lack of success (e.g., not due to a successful acquisition, exit through merger, rebranding, etc.) and no longer offers its products to the market.

geographic markets (e.g. Chicago-based construction contractors) (Delgado et al. 2015). Studies indicate that competitive intensity is a function of similarity in organizational resource requirements and target markets (Baum and Mezias 1992, Hannan and Freeman 1989, Lomi 1995). While early entry by both *de novo* and *de alio* firms can help legitimize an emerging market for all (Hiatt and Park Forthcoming), competition compounds as the overlap in resource requirements between firms grows along with the market (Barnett and Carroll 1987).

Localized competition effects further intensify within less knowledge-intensive sectors where intangible assets are less critical (Sorenson and Audia 2000), the scope for product differentiation is limited (Krider and Putler 2013, Teller et al. 2016), and firms are of similar size (Ranger-Moore et al. 1995). Under these conditions, firms must rely on relational capabilities as a basis of competitive advantage, embedding themselves within the local community to build legitimacy (Newbert and Tornikoski 2013, Smith and Stevens 2010). Because of these factors, over time, increased localized competition is negatively related to both *de novo* and *de alio* survival within emerging markets.

Third, the *organizational endowments* of firms impact their ability to persist within emerging markets. Emerging markets provide fertile ground for *de novo* entrants, and growth and diversification for *de alio* incumbents (Markman and Waldron 2014). Each group brings different capabilities to bear within an emerging market. *De novo* firms have been shown to possess some advantages, such as the ability to bring more innovative products to market (Khessina and Carroll 2008) and to learn more quickly (Ganco and Agarwal 2009). However, *de alio* firms benefit from their prior experience (Chen et al. 2012, Khessina and Carroll 2008), can leverage an established reputation (Choi et al. 2016), and have the legitimacy of a recognizable brand and organization (Dencker et al. 2009, Ganco and Agarwal 2009). Moreover, while *de novo* entrants typically base their identity and products solely within an emerging industry (Khessina and Carroll 2008, Navis and Glynn 2010), *de alio* firms retain a broader, less specialized identity and can rely on their prior track record to justify their exploration of the new sector (Zhao et al. 2013). Thus, *de alio* firms typically outlast *de novo* entrants over time as markets consolidate

(Barnett and Freeman 2001, Bayus and Agarwal 2007, Cantner et al. 2006, Carroll and Hannan 2000, Helfat and Lieberman 2002, Khessina and Carroll 2008, Podolny et al. 1996).

Survival in Moral Markets?

While the above findings have been consistent across multiple industries, we argue that moral markets may present an exceptional context. Firms in new moral markets may be particularly sensitive to the effects described above because of the difference between the value they create and the value they can (or should) capture (Santos, 2012). Because moral markets exist, in principle, to benefit the environment or vulnerable populations, the products and services sold through them effectively demand a premium from buyers, exacerbating the challenges firms face. It is also possible that moral markets benefit some firms disproportionately in terms of localized competition and organizational endowments, particularly when there are perceived differences in the veracity and/or authenticity of firms' moral missions.

In their review of the moral markets literature, Georgallis and Lee suggest "...a focus on social context and identity can help explain instances of entry that are not fully explained by resource or capability-based theories" (2020, p. 65). We extend this insight to survival within moral markets. Entrants into moral markets seek to solve environmental or social issues through for-profit businesses, and therefore must address the demands of diverse audiences (Smith and Besharov 2019) when developing and portraying their identity (York and Lenox 2014). The distinctiveness of a moral market affects the way in which its members identify themselves (Gehman and Grimes 2017) and how new entrants are perceived (York et al. 2016). Thus, firm identities in moral markets are often shaped by their community (Conger et al. 2018, Grimes et al. 2018) and the feedback they receive (O'Neil and Ucbasaran 2016).

Further, perceptions of firms in moral markets are likely influenced by the lens through which audiences view the issue the market addresses (Ansari et al. 2013, Munir et al. 2021). By engaging in environmental and social issues, moral market participants are likely perceived either positively or negatively by different audiences (Hoffman 2015). Moral markets involve not only spanning logics, but also a convergence of activists, investors, industry groups, and policy makers. These diverse audiences have substantively different theories of value that influence their evaluation of firms in the market

(Paoletta and Durand 2015). Because of these logic combinations and collisions of diverse audiences, the meanings associated with a moral market are often unclear and contested (Weber et al. 2008).

In a related stream, the hybrid organizing and social entrepreneurship literature has recently begun to converge around localized solutions as critical to understanding how new firms and markets affect social change (Lumpkin and Bacq 2019, Peredo and Chrisman 2006). Moral markets tend to be “local” rather than “traded” industries (e.g. service firms seeking to train and employ returning citizens in a particular city or community) (Delgado et al. 2015). Even efforts to address social and environmental issues with a global scope are shaped by the local context in which they are developed and how firms translate local cultural factors as they scale (Gras et al. 2020). For these reasons, the question of survival in moral markets requires theoretical explanations beyond those offered for traditional emerging markets. We next theorize how localized differences in firm identities and audience perceptions may alter traditional factors of firm survival in moral markets.

THEORY DEVELOPMENT AND HYPOTHESES

We contextualize the extant literature on firm survival by theorizing the potential impacts of regional institutional logics. Building on Friedland and Alford (1991), Thornton and Ocasio (1999, p. 804) define institutional logics as “...socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality.” Logics are comprised of symbolic elements such as shared beliefs, interests, preferences, and goals, embedded within a region through material practices (Thornton and Ocasio 2008). Thus, a logics approach integrates regulative, normative, and cognitive forms of legitimacy (Scott 1995) to explain how institutional forces motivate behavior (Thornton et al. 2012).

Importantly for this study, the prevalence and strength of institutional logics varies across geographic regions (Greenwood et al. 2010, Lee and Lounsbury 2015, Marquis and Lounsbury 2007, Vedula et al. 2019). *Regional logics* – institutional logics that are particularly salient within a geographic

community - influence the actors within a community by legitimating organizations' goals and/or practices. For example, Lee and Lounsbury (2015) showed that a regional proenvironmental logic, defined as attributing high value to protection of the natural environment, positively influenced the environmental performance of chemical facilities on a regional basis. Lounsbury and Crumley (2007) found that mutual funds in Boston aligned with a regional trustee logic, whereas New York based funds emphasized growth and speculative investing, aligned with a regional professional logic of "money management." These findings suggest regional logics influence how actors both interpret and respond to stimuli in their local environment (Marquis et al. 2007, Marquis and Lounsbury 2007, Ocasio 2012).

Numerous researchers have examined the impact of the institutional environment on entrepreneurship, specifically focusing on the role of social movement organizations (SMOs) (Hiatt et al. 2009, Lounsbury et al. 2003, Pacheco and Dean 2015) and social norms (Meek et al. 2010) in moderating founding rates at a regional level. For example, York and Lenox (2014) showed that both local activism and environmental norms influence the entry of entrepreneurs into environmentally beneficial sectors; however, these factors had no influence on entry by incumbent firms. Building from this work, we theorize that regional logics act as perceptual filters for both firms and their stakeholders in regional communities (Lee and Lounsbury 2015, Vedula et al. 2019). Therefore, we argue that in the context of moral markets, regional institutional logics likely moderate the effects of the previously established drivers of firm survival discussed above.

Moral markets integrate market and social welfare logics (Grimes et al. 2013). A market logic valorizes economic efficiency and profits, with rewards going to the best performers, while a social welfare logic supports acting to resolve social and/or environmental problems (Pache and Santos 2013b). For this study, we focus on two established institutional logics that co-exist within moral markets such as green building): 1) the *market* logic to capture a commercial real estate focus on efficiency and profits and 2) the *proenvironmental* logic as a specific type of social welfare logic to capture an environmentalist focus on reducing the environmental and health impacts of commercial construction.

Market logic and Survival. We propose that a strong regional market logic, prioritizing economic profits, competitive advantage, and cost efficiency, will amplify the impact of economic forces on firm survival. Recent studies have suggested that market logics are manifested at a regional level through political conservatism (Lee and Lounsbury 2015, York et al. 2018). Politically conservative groups tend to advocate giving a greater share of resources to the highest economically performing members of society (Khayesi and George 2011). We expect regions with a strong market logic to have merit-based norms of resource allocation, with equity being preferred over equality (Lin and Si 2010, Mannix et al. 1995, Morgan and Sawyer 1979). Under this logic, members of the community who are deemed harder working and more talented receive more resources. This merit-based resource allocation norm produces a positive feedback loop between financial success and firm resources; successful firms are able to claim more resources, which in turn fuels further success (Morris et al. 2010).

In such regions, economic performance is the standard for the appropriateness of firms' mission and goals. Legitimacy is thus strongly coupled to market adoption of a firm's offerings (Shepherd and Zacharakis 2003). A market logic also heightens the inherent disparities in power between customers and suppliers in the value chain (Greve and Man Zhang 2017, Thornton 2002) as both parties are likely to pay increasing attention to market forces (Thornton and Ocasio 1999). Thus, firms are likely to focus on customers, competitors, and their financial performance in making strategic decisions (Glynn and Lounsbury 2005, Thornton 2004) such as whether to persist or exit the market (Gimeno et al. 1997, Wennberg et al. 2010). In sum, we expect that when a market logic in a region is stronger, downstream dependencies that firms face in terms of early market adoption of their services and products, as well direct competition between firms, will be amplified.

In the case of moral markets, regional dominance of a market logic shifts emphasis towards economic goals and away from the social welfare objectives of the market. For moral markets, legitimization of new technologies and practices creates underlying market adoption. For example, in the case of renewable energy, the fostering of cognitive and normative legitimacy for wind and solar practices translated into consumer demand for utilities to adopt them (Sine et al. 2005). In the organic foods

industry, widespread legitimization of farming without pesticides translated into demand for “safer” organic produce (Lee et al. 2017). We argue that these impacts are likely to be even more pertinent in regions dominated by a market logic, as firms, customers, and other stakeholders will rely on market signals, in the form of increased sales, to determine their strategies. Conversely, competition will create increased pressures as investors and other stakeholders can choose from a variety of organizations to support. While the drivers of competitive pressure on survival will be similar to traditional markets, we argue that regional logics will moderate competition’s impact within moral markets. Because competition can be viewed as offering greater choice and economic efficiency, a market logic valorizes and justifies the failure of firms that cannot effectively compete on price and/or efficiency. When a market logic is highly salient in a region, decisions will be made on the basis of profitability, sales growth, and efficiency rather than supporting social welfare goals. Audiences will view competitive pressure as a beneficial and justified mechanism for markets selecting “winners and losers” rather than seeking to grow the sector. Under such conditions, the impact of competition on firm survival will be stronger. Thus, we hypothesize:

H1a: In moral markets the positive relationship between market adoption and firm survival will be amplified (i.e., be more positive) when the market logic in a region is stronger.

H1b: In moral markets the negative relationship between localized competition and firm survival will be amplified (i.e., be more negative) when the market logic in a region is stronger.

Proenvironmental logic and survival. Just as with the market logic, the prevalence of a proenvironmental logic varies across regions. Because a proenvironmental logic prioritizes addressing and reversing environmental degradation (Lubell 2002), we expect it will influence assessments of the intrinsic, normative value of firms in moral markets focused on environmental issues. The salience of regional proenvironmental logics will likely reduce market-based pressures on firm survival by encouraging stakeholders to support such ventures as ethically preferable to alternatives (York et al. 2016). In moral markets, proenvironmental logics are often enacted by SMOs that formally organize and mobilize resources for collective action (Rao et al. 2000). For example, Sine & Lee (2009) showed how activism by the Sierra Club helped to legitimize and initiate the wind energy industry. Following these findings, Pacheco et al. (2014) found that “clean energy” activist groups emerged in the United States to

provide technical knowledge and supportive policies for new wind energy firms. These studies and others (Georgallis et al. 2019, Hiatt and Carlos 2019) suggest that entrants into moral markets can align their identity with proenvironmental logics to receive support from stakeholders.

In this way, entrants may be able to depict their organization as culturally aligned with a region, and thus, normatively legitimate (Lounsbury and Glynn 2001, Zhao et al. 2013). Hence, even in the face of lower demand for their products or heightened competitive pressure, firms in regions with strong proenvironmental logics may receive support and encouragement from the broader community. Such support, garnered from the belief that environmental protection is more important than economics, can alter firm exit thresholds (Gimeno et al. 1997). Firms that receive such psychological and economic support will likely persist longer (DeTienne et al. 2015, DeTienne and Chirico 2013, Eesley et al. 2018, Wennberg et al. 2010).

Intuitively, it would seem that this support would disproportionately benefit new firms that are perceived to be more authentically “green.” Indeed, prior research on entry finds that *de novo* firms, started specifically with the goal of entering emerging moral markets, are likely to be the earliest to do so, ignoring the economic viability or legitimacy of the market (Hiatt and Carlos 2019, York and Lenox 2014). However, in terms of survival, this benefit would likely accrue to both *de novo* and *de alio* firms that visibly embrace the moral mission of an emerging market (Ruef and Scott 1998). Rather than translating into differential support for firms, the overall market likely gains support from regional proenvironmental logics aligned with ecological goals. For example, in organic foods, later entrants of store-branded staples from large wholesalers such as Costco or Wal-Mart have been supported by consumers along with smaller, niche brands. As the social welfare goal (e.g., benefits of organic foods) obtains legitimacy, distinction between *de novo* or *de alio* firms’ products fades. Rather, all offerings achieve support that are aligned with salient regional logics; the market expands to support all entrants.

We therefore expect that, in regions with a strong proenvironmental logic, *all firms* entering into moral markets are likely to have a normative basis of legitimacy distinct from their financial performance. This is likely to lower their attention to market forces in making strategic decisions, such as whether to

persist in or exit the industry. Moreover, the normative orientation of the community in such locales also heightens the legitimacy of all entrants, and weakens external resource dependencies in the value chain.

Thus, we hypothesize that:

H2a: In moral markets addressing environmental degradation, the positive relationship between market adoption and firm survival will be dampened (i.e., be less positive) when the proenvironmental logic in a region is stronger.

H2b: In moral markets addressing environmental degradation, the negative relationship between localized competition and firm survival will be dampened (i.e., be less negative) when the proenvironmental logic in a region is stronger.

Institutional complexity and survival. Up to this point, we have discussed regions as being embedded in either a high market logic or a high proenvironmental logic. But what of the case when both logics are highly salient in a region? Following extant theory, regions may also be embedded within institutional complexity when multiple conflicting logics are prevalent (Friedland and Alford 1991, Greenwood et al. 2011, Lounsbury 2007, Micelotta et al. 2017). Because “there is no question but that many competing and inconsistent logics exist in modern society” (Scott 1995, p. 130), institutional complexity is common. Institutional logics designate “which means are meaningful” and which “means-ends couplets are thought appropriate” (Friedland 2002, p. 383) but they are not by definition oppositional. Multiple logics may simultaneously influence the goals that actors find important and also the means selected to achieve those goals (Greenwood et al. 2002). Logic complexity arises from differences between both the *goals* and the *means* associated with distinct logics. For example, Pache and Santos (2013b) describe how incompatibilities between market and social welfare logics create tensions within social enterprises. These organizations confront institutional complexity because certain practices are more aligned with a market logic’s banking means, yet incompatible with the poverty alleviation goals of a social welfare logic.

Institutional complexity exists in a regional community when the realization of one logic’s goals undermines the realization of another’s, because “goals reflect core values and beliefs and are evaluated based on a logic of appropriateness, making them hard to challenge or modify” (Besharov and Smith 2014, p. 367). Complexity occurs in geographic regions where multiple, historically conflicting

institutional logics are prevalent. For example, in many western college towns, (e.g., Boulder, CO; Eugene, OR; Missoula, MT) community focus on environmental sustainability is high, and simultaneously there is support for entrepreneurship and funding of startups, congruent with a market logic (see Figure A1 for additional regions embedded in institutional complexity within our sample). In such areas, firms that encourage environmental responsibility, and offer entrepreneurial solutions, are likely to find support from multiple audiences. However, such complexity can present a challenge to firms that cannot appease multiple audiences embedded in differing logics (Pache and Santos 2013a).

We theorize that organizational identity will act as a mechanism to determine how firms are differentially impacted by regional institutional complexity in moral markets. As reviewed above, market adoption, competition, and firm endowments offer well-established drivers of firm survival. However, recent work has suggested that the focus and congruence of firms' identities may also play a role (Georgallis and Lee 2020) in moral markets. A more *focused* identity aligns the firm solely with the moral market and can enhance perceptions of legitimacy, and thus, stakeholder support. In addition, identities that are *congruent* with an emerging market's goals and attributes can be linked to authenticity of firms in a moral market. We argue identity focus and congruence are driven by firms': 1) founding date, 2) declared mission, and 3) diversity (or lack thereof) of product offerings.

De novo entrants are often perceived as more authentic, and thus worthy of greater support (McKendrick et al. 2003) because they have no past record of providing products that are not congruent with the goals of the emerging market. For example, *de novo* craft brewers are often perceived as authentic to the "movement" of craft brewing; thus, they continued to thrive even with *de alio* large-scale breweries offering less expensive products mimicking "craft" beer styles (Carroll and Swaminathan 2000, Mathias et al. 2018). *De novo* firms are often deemed authentic due to their mission's alignment with the goals of differentiating an emerging market. Such identity dynamics have enabled new firms to compete in long established industries such as commercial radio (Navis and Glynn 2010), agriculture (Weber et al. 2008), and cuisine (Rao et al. 2003). By setting themselves apart as authentic purveyors of an emerging market, *de novo* firms can challenge more powerful incumbents. Further, they can do so while remaining

focused within the emerging market (Gehman and Grimes 2017). For example, Khessina and Carroll (2008) found that *de novo* firms stayed on the frontier of technology as a reflection of their focused identity and refused to branch out into more established product lines.

We argue that such dynamics will be heightened in moral markets. Firms with identities most congruent with the market's social welfare goals have been shown to be more likely to enter the market (Georgallis et al. 2019), be influenced by social norms (Meek et al. 2010), promote their participation in the market (Gehman and Grimes 2017), be influenced by social movements (York and Lenox 2014), and be *de novo* firms (Georgallis and Lee 2020). Based on these findings we argue that the identity of *de novo* and *de alio* firms will drive differential impacts of institutional complexity on survival.

De novo firms in moral markets explicitly integrate seemingly contradictory logics within the core values and goals of the organization (Battilana et al. 2017, York et al. 2018). While much of the literature proposes that such blending of logics within a firm creates tensions and challenges (Battilana and Dorado 2010, Grimes et al. 2019), recent work suggests such a hybrid identity can potentially lead to advantages for nimble, entrepreneurial firms (Conger et al. 2018, Mongelli et al. 2019). A focused identity in the emerging moral market could act as a resource for less path dependent and more adaptable startup firms. The agility of startups aligns with recent work suggesting that entrepreneurs with salient identities tied to both market and social welfare logics will develop unique business models (Wry and York 2017). Prior studies in the green building context have found that entrepreneurial entrants can successfully cross the "cultural chasm" and appeal to audiences embedded in both market and proenvironmental logics (York et al. 2018). We posit that because *de novo* firms in the green building sector explicitly integrate market and proenvironmental logics, and have an identity focused in the emerging moral market, they will be able to garner wider support in regions where both logics are highly salient.

In institutionally complex regions, *de novo* firms will likely be perceived as authentic to stakeholders embedded in either logic due to: 1) their identity being centrally founded within the emerging moral market, 2) their ability to appear more authentic to supporters of the social welfare goals

of the market due to their focus *only* in green building products, and 3) their ability to simultaneously show congruence with a market logic of entrepreneurial growth and a proenvironmental logic of ecological protection through their stated mission and greater flexibility. This broader basis of support likely will enable more creative business models, products, and strategies in the face of *de alio* entry. Thus, for *de novo* firms, rather than a challenge, institutional complexity presents an opportunity for institutional ambidexterity (Jarzabkowski et al. 2013). Because they have greater flexibility and are not beholden to path dependency, *de novo* firms may be able to take advantage of institutional complexity through their hybrid identity (Smith and Besharov 2019).

Conversely, institutional complexity presents problems for *de alio* firms because of prior resource commitments and path dependencies (Ganco and Agarwal 2009, Pache and Santos 2013a, Seo and Creed 2002). For these firms, simultaneously catering to the values espoused by two competing contradictory logics is likely to be quite difficult (Battilana and Dorado 2010). The challenges of attempting to cross over market categories have been well documented (Vergne and Wry 2014) due to audiences having confused perceptions of the organization's true identity. *De alio* entrants into moral markets face a double-edged sword of potential negative perceptions from their stakeholders. Because they already have an established identity located within an extant business, *de alio* firms will likely face scrutiny from SMOs and other groups supporting the social and environmental goals of the emerging moral market.

De alio firms do not, by definition, have focus in the emerging moral market. For example, multiple oil and gas companies have faced activist claims of "greenwashing" in their efforts to diversify into renewable energy (Waldron et al. 2019). The fear of being accused of hypocrisy can even lead *de alio* firms to hide legitimate social or environmental credentials that could aid their success in a moral market (Carlos and Lewis 2018). Conversely, when a moral market is in a nascent stage, *de alio* firms may also face skepticism from financial stakeholders such as investors and suppliers who view the new market as a distraction and less proven opportunity. Therefore, they will struggle to show congruence with the integrated social welfare and economic goals of emerging moral markets. These effects are likely even stronger within regions embedded in institutional complexity.

Based on the above, we argue that institutional complexity in a region will level the playing field between *de novo* and *de alio* firms. Institutional complexity will allow *de novo* firms to leverage their focused and congruent identity to appeal to a wider range of stakeholders within the region and garner greater support and resource access. *De alio* firms are less well-suited to handle institutional complexity due to their path dependency and established oppositional identity within an existing industry (Georgallis and Lee 2020). In combination, we expect that these dynamics should negate the well-established competitive advantages that *de alio* entrants typically possess over *de novo* firms over time (Carroll and Khessina 2006). In sum, we argue institutional complexity within a region will reduce the competitive advantage of *de alio* firms, and enhance the ability of *de novo* firms to persist. Thus, we hypothesize that:

H3a: In moral markets the likelihood of de novo firm survival will be higher in regions embedded in institutional complexity than in regions not embedded in institutional complexity.

H3b: In moral markets the likelihood of de alio firm survival will be lower in regions embedded in institutional complexity than in regions not embedded in institutional complexity.

DATA AND METHODS

Research Context

We tested our theory utilizing a unique panel of 297 *de novo* and 936 *de alio* firms (1,233 in total) that provided products and services for green buildings in the United States (U.S.), over the period 1999-2007. We chose this context for several reasons. First, we sought to identify an industry sector in which both market and proenvironmental logics were clearly salient. Because green buildings are designed to use less energy and water, and reduce the overall life cycle of environmental impacts through improved siting design, material selection and construction, they are inherently aligned with a proenvironmental logic (Hoffman and Henn 2008, Jones et al. 2019). Yet, the majority of green buildings are commercial real estate projects, beholden to a market logic.

When our sample period began in 1999, the term “green building” was little known, and associated with environmentalism. By 2008 however, the value of green building projects had increased to \$60 billion, comprising 10% of commercial construction, with \$464 million worth of construction registering with the U.S. Green Building Council’s LEED (Leadership in Energy and Environmental

Design) voluntary certification program (Jones et al. 2019). This increase in LEED adoption led to heightened demand for the underlying products and services required to engage in green building (Lockwood 2006, Nalewaik and Venters 2010). During the time period of our study (1999-2007) green building was a rapidly emerging moral market. Second, because we were interested in the impact of regional institutional logics, we needed a research context where local, community-based factors help determine firm performance. The construction business is well suited because building material supplies are a highly disaggregated and regional industry; during the period of our study, firms typically sold few products only in one geographic location. Third, we had access to reliable longitudinal data of both firm entry and exit during the green building supply sector's initial years. In sum, the green building provides a robust setting to better understand how regional logics impact the exit rates of both *de novo* and *de alio* firms in moral markets.

Sample

Our dataset examines organizations that entered and exited the U.S. green building supply industry from 1999-2007. We utilized the GreenSpec Directory of green building products and suppliers created by BuildingGreen, a non-profit organization focused on promoting green building practices (BuildingGreen 2007). It is important to note that while the U.S. Green Building Council (USGBC), the non-profit organization, that created the LEED building standard was founded in 1994, the GreenSpec directory was published annually from 1999-2007. GreenSpec identifies products screened through criterion including conserving natural resources, saving energy or water, or avoiding toxic emissions. For each product, the directory identifies the firm providing the product, and the firm's physical address. This data has been used by previous studies examining green building market (York et al. 2018, York and Lenox 2014). Our use of a directory as a proxy for measuring firm survival follows the longstanding practice of studies in the organizational ecology and entrepreneurship literature (Baum and Singh 1994, Carroll and Swaminathan 2000, Chen et al. 2012). We end our sample in 2007 to avoid the exacerbating impact of the 2008 U.S. real estate-driven recession. Additionally, GreenSpec moved to an online format that was continuously updated in 2008, negating our ability to track firm exit by year. We organized these data as a

firm-year panel, to identify the year when a firm first entered the sample, as well as its last year of operation. We computed all regional covariates at the metropolitan statistical area (MSA) level.

Dependent Variable

Firm exit. We use a Cox hazard modeling framework (see model and analysis section for more details) for the dependent variable of *firm exit*, a binary variable that takes the value of 0 for all years where the firm *survives* (i.e., was listed in the Greenspec directory) and is set to 1 for the first year where a firm is delisted in the GreenSpec directory (other than the final year of our sample window in 2007). The variable is set to missing (".") for all years prior to entry, as well as all years subsequent to a firm not appearing in the directory. To confirm that the exit of *de novo* firms from the Greenspec directory were actually due to firm failure, we: 1) conducted a web search for any evidence of the firm, and, 2) utilized the listing phone number to try to reach the firm. Of the 106 exits of *de novo* firms that we recorded from the GreenSpec directory, we found 4 firms that were still active. In robustness checks, dropping the active firms, there were no changes in our results². We repeated this procedure to confirm the exit of *de alio* firms. Of the 233 *de alio* firms delisted from Greenspec, we found 97 still open; none of these surviving firms featured green building products on their web page, confirming their exit from the green building market.

Baseline Independent Variables

Market adoption. We measured *market adoption* by calculating the number of LEED registered buildings (logged) in each MSA-year. This measure has been previously used to capture adoption in the green building context as it inherently requires the purchase of products and services that the firms in our sample offered (Jones et al. 2019, York et al. 2018).

Localized competition. We measured *localized competition* by calculating the number of active peer firms (logged) in the same MSA as the focal firm for each firm-year observation. We defined

² As noted in footnote 1, for the *de alio* firms, being delisted from the GreenSpec directory did not *necessarily* represent firm failure, but rather the decision to no longer operate within the green building sector.

industry peers at the granular product category level.³ For example, a firm producing doors and windows is unlikely to be in direct competition with one selling heating and air conditioning equipment. By restricting our measure to peers in the same product category we were able to more accurately identify localized competitive effects in this context.

De novo firm. We included a dummy variable to indicate if the focal firm was a *de novo* (1) or *de alio* (0) firm. We categorized firms as *de novo* based on their: 1) founding date, 2) mission statement, and 3) product offering. We first identified the founding year of each firm, through a search of company websites and online databases. Following prior work in entrepreneurship (Amezcuca et al. 2013, Shrader et al. 2000) that has designated new firms to be those 6 – 8 years old, as well as prior work in the green building sector (York and Lenox 2014), we parsed the sample into *de alio* firms founded before the year 1994 (5 years prior to the first GreenSpec listing in 1999) versus *de novo* firms founded after 1994. The year 1994 is significant as the year the USGBC was founded, signaling that green building became nationally known as an emerging moral market. Field interviews with green building entrepreneurs vetted this assumption, as many of the firms we met with had indeed been founded to enter the emerging green building market, signaled by the establishment of the USGBC. We found that *de alio* firms had a much longer heritage, as the construction supply industry is not particularly turbulent, barriers to entry are quite low, and firms often diversify into emerging markets.

Second, to verify the identity congruence of the *de novo* firms with the green building supply market, we validated the above age-based classifications through verifying the firm's mission statement. Using the WayBack Machine (<http://web.archive.org>), a digital archive of old and/or inactive websites, we located the oldest webpage for each firm available and analyzed the firm's original mission statement. Through our analysis we inferred whether the firm was established with the sole intent of servicing the green building industry and promoting a proenvironmental logic. We then examined the firm's mission

³ There were 22 product categories in our sample identified by the GreenSpec Directory including: composites, concrete, conveying systems, doors & windows, electrical, equipment, finishes, furnishings, general data, general requirements, heating & air conditioning, masonry, mechanical, metals, openings, plumbing, sitework, special construction, specialties, thermal & moisture protection, utilities, and wood & plastics.

statement each year that they were in the directory, and reviewed the company's history when available, to see if there was a change in focus over time. If the firm's mission statement clearly identified it as a green building-focused firm, then it was verified as *de novo*. If the mission indicated that the firm provided products and services to the full building industry, then it was verified as *de alio*.

Third, we examined the firms' product catalogs in the earliest year available and all years they were listed in the directory to verify their focus in the green building market. If the firm only sold the products listed in the GreenSpec directory, they were verified as *de novo*. If the firm sold a variety of products beyond those that met green building standards, then the firm was verified as *de alio*.

We were able to locate mission and product data for all but 61 of the 1,233 firms (5%). For firms we could not find these data for, we simply categorized firms as *de novo* if they were founded after 1994. We gain confidence in this classification based on our analysis; of the firms we found mission statements for, only 2 *de novo* firms as categorized by founding date did not have clear focused environmental mission (and were thus re-classified as *de alio*).

In sum, to be classified as *de novo*, a firm must have: 1) been founded after the creation of the USGBC in 1994 and hence less than 6 years old upon the creation of the GreenSpec directory in 1999, 2) explicitly stated a proenvironmental focus in its mission statement, and 3) only sold products for the green building market. Based on these criteria, we identified 297 firms of our sample as *de novo* entrants and 936 as diversifying *de alio* incumbents.

Moderating Variables

The state of the art in quantitative institutional logics research is to create multi-dimensional measures that capture underlying ideologies, norms, and instantiated practices (Lee and Lounsbury 2015, Vedula et al. 2019, Zhao and Wry 2016). In the context of our study, the two relevant and competing institutional logics are the *market logic* (promoting wealth creation) and *proenvironmental logic* (promoting protection of the natural environment) respectively (Lee and Lounsbury 2015, York et al. 2018).

Market logic. To compute this measure, we followed prior work (York et al. 2018), and created a factor composed of six items for each MSA-year observation in our sample. The first two items focus on

regional ideologies of a MSA's political leaders and citizens on a liberal-conservation continuum (source: Citizen and Government Ideology database, <https://rcfording.wordpress.com/state-ideology-data/>) weighted for each MSA by population. Our third item was the percentage of voters in a congressional district (aggregated to the MSA level) who voted Republican in national elections (source: DailyKos.com, <http://www.dailykos.com/news/Pres-by-CD>). Our fourth item was the ratio of contributions to Republican candidates relative to all donations in each county (aggregated to the MSA level) (source: Center for Responsive Politics, <https://www.opensecrets.org>). Our fifth item was a measure of the local tax burden for businesses (source: Moody's analytics, <https://www.economy.com/regions/us-states-and-metro-areas>). We reverse coded this measure to reflect a stronger market logic in an MSA. Our sixth and final item captured the density of labor unions in an MSA. Labor unions have long been theorized to directly conflict with a market logic (Friedland and Alford 1991, p. 257). As Western and Rosenfeld (2011, p. 536) empirically observed: "...unions offered an alternative to an unbridled market logic... As unions declined, not only did the logic of the market encroach on what had been the union sector, but the logic of the market deepened in the nonunion sector, too, contributing to the rise in wage inequality." To create this measure, we obtained data on the annual number of registered labor unions and similar labor organizations (NAICS code 813930) at the county level from the Quarterly Census of Employment and Wages. We then aggregated to the MSA level, reverse coded, and normalized by population to create a measure of labor union density (Western and Rosenfeld 2011). A principal component analysis of these six items loaded onto a single factor with an eigenvalue of 2.25 and an alpha value of 0.66. In sensitivity analyses, we examined the use of alternate measures and data sources for our items and also checked that our measure correlated well with other published metrics (Zhao and Wry 2016).

Proenvironmental logic. We similarly created a multi-dimensional measure of the *proenvironmental logic* in a MSA-year following prior studies (Zhao and Wry 2016) using multiple items to capture underlying ideologies, values, and practices. Our first item captured the environmental attitudes and ideologies of citizens in an MSA. To measure this, we used environmental voting record scorecard data from the League of Conservation Voters (Delmas et al. 2007, Kahn 2007). This metric, which ranges

from 0-100, measures how members of Congress vote on a range of environmental issues such as energy, climate change, and conservation. We averaged the LCV score across the congressmen and women representing each congressional district, and then matched congressional districts to MSAs, to aggregate the measure to the MSA level following prior work (Vedula et al. 2019). Our second, third, and fourth items measured the number, revenue, and assets of environmental non-profits per capita in an MSA respectively (source: National Center for Charitable Statistics, www.urban.nccs.org). Our fifth item measured the strength of social movement organizations focused on promoting green building practices through the number of non-profit organizations that were members of the USGBC per capita in each MSA. Prior studies have shown that activism by both environmental non-profits and technology-focused social movement organizations corresponds to a strong proenvironmental logic in a region (York et al. 2016). A principal component analysis of these five items loaded onto a single factor with an eigenvalue of 2.52 and an alpha value of 0.74.

Institutional complexity. Institutional complexity refers to situations where firms face incompatible prescriptions from multiple institutional logics (Greenwood et al. 2011, Smets and Jarzabkowski 2013). In the context of our study, this measure refers to situations where the *market logic* and the *proenvironmental logic* in a region are both at high levels. To compute this measure, we first generated a two-by-two matrix of *market* and *proenvironmental* logics for each year in our sample, using a median split (our results were also robust to using a mean split). We then created a dummy variable, to indicate either the absence (0) or presence (1) of *institutional complexity*. MSAs were categorized as exhibiting *institutional complexity* (1) in an observation year when both the *market* and *proenvironmental* logic values were above the sample median levels respectively (i.e., the high-high quadrant). See Figure A1 in the appendix for a table and heat map showing the regional distribution of institutional logics, highlighting complex regions.

Control Variables

We controlled for a variety of factors that may impact survival rates of firms. First, we controlled for *age at the time of entry* (i.e., first listing in the GreenSpec Directory). Second, we controlled for the number of

local policies in each MSA that were put into place to incentivize green building (source: USGBC and Database of State Incentives for Renewables and Efficiency, www.dsireusa.org). We expected that firms in regions with more policies should have a higher degree of regulatory legitimacy and hence be more likely to survive. Third, we controlled for the *cost of building permits* in each MSA (source: US Census Bureau). We expected that this capital expense should impact green building industry emergence, as well as the performance of LEED supplier firms. Fourth, we controlled for *market intermediaries per capita* in each MSA, by measuring the number of LEED-accredited practitioners divided by the MSA population. We expected that these individuals, in their efforts to enable the adoption of the LEED standard, would increase the demand for LEED and positively impact firm survival rates. Fifth, we controlled for the *energy price* (source: Moody's Analytics, www.moodyanalytics.com) in each MSA. Sixth, we controlled for the *water usage* in each MSA (source: US Geological Survey). We expected that the cost and usage rates of both these utilities could impact the adoption of practices such as LEED that reduce consumption (Asensio and Delmas 2017). Seventh, we controlled for average *daily temperature* in each MSA to address higher energy usage that may motivate adoption of LEED to reduce energy consumption due to heating and/or cooling (source: US Centers for Disease Control, <https://wonder.cdc.gov/wonder/help/nldas.html>). Eighth, we controlled for the affluence of each MSA in our sample by using a measure of *gross domestic product (GDP) per capita* (source: US Bureau of Economic Analysis), as regional munificence can have an impact on the survival rates of firms (Vaessen and Keeble 1995). Ninth, we controlled for the degree of *urbanization* in each MSA, by using the log number of inhabitants per 100 square miles, since this general characteristic of metro regions has been shown to impact firm survival (Amezcuca et al. 2020, Renski 2011, Ruef and Scott 1998). Tenth, we controlled for the number of *establishments per capita* to account for the overall level of business activity in an MSA (source: US Bureau of Economic Analysis). Eleventh, we controlled for the *manufacturing intensity* of each MSA (manufacturing jobs as a percentage of all jobs) (source: US Bureau of Economic Analysis). Given the manufacturing-intensive nature of the green building supply industry, we used this

measure to account for the availability of relevant regional human capital that can impact firm survival (Vedula and Kim 2019).

In addition to these firm and regional level controls, we also included a full set of industry, regional, and temporal dummy variables to address omitted variable bias in our models at: 1) the firm's product category to account for industry specific factors that could impact new venture survival, 2) the MSA and state level, to account for any time invariant regional factors and 3) year dummies, to account for any macro-economic temporal trends.

Model and Analysis

We used a Cox proportional-hazard regression model (*stcox* command in Stata), to model the likelihood of a firm exiting from the GreenSpec directory in a calendar year. This semi-parametric model is flexible and well suited to our analysis as it makes no assumptions about the functional form of the hazard function and instead derives it from the underlying data (Allison 1995). The dataset is structured with a set of annual observations, 1999-2007, for each firm, allowing for model covariates to vary by time. Left-side truncation is not an issue in our sample, given that our data collection window starts with the initial *GreenSpec* directory publication. The model structure accounts for right-side truncation in the sample, as we end our observation period at 2007.

RESULTS

From 1999-2007, the total number of firms was 1,233, of which 339 were removed from GreenSpec (survival rate of 72.5%). 297 *de novo* firms entered the industry and 106 of these (approximately 36%) failed. 936 *de alio* diversifying incumbents entered the industry, and 248 of these (approximately 26%) exited the market. Thus, while there were fewer *de novo* than *de alio* entrants during the study period, their failure rate (i.e., likelihood of exit from the GreenSpec directory) was comparatively higher. Table 1 shows descriptive statistics, variance inflation factors, and pairwise correlations between the variables in our model. All bivariate correlations for theoretical variables of interest were in the direction we expected, and we found no concerns of multicollinearity (mean VIF=1.85).

 Insert Table 1 about here

Next, we carried out a series of multivariate analyses which we report in Table 2. Because the Cox hazard model estimates the hazard rate of firms exiting from the sample, a negative β corresponds to a lower likelihood of firm exit (i.e., a higher survival probability), while a positive β corresponds to a higher likelihood of firm exit (i.e., a lower survival probability). In Model 1, we only include control variables. We observe that the likelihood of firm survival is higher for firms that enter at an older age ($\beta=-0.005$, $p=0.03$), are located in MSAs with more LEED accredited practitioners ($\beta=-0.16$, $p=0.09$), a higher GDP per capita ($\beta=-0.08$, $p=0.05$) and where water usage rates are higher ($\beta=0.17$, $p=0.06$). In Model 2, we introduce the baseline effects. As expected, we observe that the likelihood of firm survival is higher in MSAs where there is higher *market adoption* of LEED ($\beta=-0.72$, $p=0.01$), and lower in MSAs where there is more *localized competition* ($\beta=0.54$, $p=0.10$). We also observe that *de novo* firms are less likely to survive than *de alio* firms ($\beta=0.67$, $p=0.00$).

In economic terms, our results indicate that a tenfold (log-unit) increase in the number of LEED registered buildings in an MSA relative to its existing level would increase the probability of firm survival by 14.79% relative to the baseline level ($p=0.5-\{\exp(\beta)/[1+\exp(\beta)]\}=0.5-\{\exp(-0.61)/[1+\exp(-0.61)]\}=0.1479$). Conversely, a tenfold (log-unit) increase in the number of LEED suppliers in an MSA relative to its existing level would decrease the probability of firm survival by 13.18% relative to the baseline level ($p=0.5-\{\exp(\beta)/[1+\exp(\beta)]\}=\{\exp(0.54)/[1+\exp(0.54)]\}=0.1318$). Ceteris paribus, *de novo* firms have a probability of survival that is 16.15 % lower than *de alio* firms ($p=0.5-\{\exp(\beta)/[1+\exp(\beta)]\}=0.5-\{\exp(0.67)/[1+\exp(0.67)]\}=-0.1615$).

In Model 3, we introduce the institutional logics variables. We find no statistically significant main effects between the strength of an MSA's *market logic*, its *proenviromental logic*, or the presence of *institutional complexity* on firm survival rates. In Model 4, we examine the moderating effects of the *market logic* variable. We observe that the interaction terms with both *market adoption* and *localized competition* are statistically significant ($\beta_{\text{Market adoption*Market logic}}=-3.88$, $p=0.06$; $\beta_{\text{Localized competition*Market$

$\beta_{\text{logic}}=12.18, p=0.02$). Thus, we find support for Hypotheses 1a and 1b. We plot these interactions in Figure 1, converting the coefficients to survival probabilities to facilitate the interpretation of economic effects.

Insert Figure 1 about here

In Figure 1a, we observe that the positive relationship between market adoption and firm survival is amplified by the strength of the market logic in an MSA-year (i.e., the solid line is steeper than the dashed line). That is, in MSAs with a stronger market logic, firm failure rates are more sensitive to market adoption rates. At the mean level of market adoption (0.7), we observe that the probability of firm survival is 5.55% higher in MSAs with a strong market logic (solid line) compared to those with a weak market logic (dashed line). At one standard deviation above the mean level of market adoption (1.3), we observe that the probability of firm survival is 9.53% higher in MSAs with a strong market logic (solid line) compared to those with a weak market logic (dashed line).

In Figure 1b, we observe that the negative relationship between localized competition and firm survival is amplified by the strength of the market logic in an MSA-year (i.e., the solid line is steeper than the dashed line). At the mean level of localized competition (0.25), we observe that the probability of firm survival is 8.39% lower in MSAs with a strong market logic (solid line) compared to those with a weak market logic (dashed line). And at one standard deviation above the mean level of localized competition (0.53), we observe that the probability of firm survival is 16.05% lower in MSAs with a strong market logic (solid line) compared to those with a weak market logic (dashed line).

In Model 5, we examine the moderating effects of *proenvironmental logics*. We observe that the interaction terms with both *market adoption* and *localized competition* are statistically significant ($\beta_{\text{Market adoption*Proenvironmental logic}}=2.98, p=0.05$; $\beta_{\text{Localized competition*Proenvironmental logic}}=-7.11, p=0.10$). We thus find support for Hypotheses 2a and 2b. We plot these interactions in Figure 2 to interpret the economic effects, again expressed as the probability of firm survival.

Insert Figure 2 about here

In Figure 2a, we observe that the positive relationship between market adoption and firm survival is dampened by the strength of the proenvironmental logic in an MSA-year (i.e., the solid line is less steep than the dashed line). That is, in markets with a stronger proenvironmental logic, firm survival probabilities are less influenced by market adoption rates. At the mean level of market adoption (0.7), we observe that the probability of firm survival is 1.95% higher in MSAs with a strong proenvironmental logic (solid line) compared to those with a weak proenvironmental logic (dashed line). At one standard deviation above the mean level of practice adoption (1.3), we observe that the probability of firm survival is 2.73% lower in MSAs with a strong proenvironmental logic (solid line) compared to those with a weak proenvironmental logic (dashed line).

In Figure 2b, we observe that the negative relationship between localized competition and firm survival is dampened by the strength of the proenvironmental logic in an MSA-year (i.e., the solid line is less steep than the dashed line). At the mean level of localized competition (0.25), we observe that the probability of firm survival is 15.64% higher in MSAs with a strong proenvironmental logic (solid line) compared to those with a weak proenvironmental logic (dashed line). At one standard deviation above the mean level of localized competition (0.53), we observe that the probability of firm survival is 22.35% higher in MSAs with a strong proenvironmental logic (solid line) compared to those with a weak proenvironmental logic (dashed line).

In Model 6, we examine the moderating effects of *institutional complexity* with the organizational form (*de novo* vs. *de alio*) variable. We observe that the interaction term is statistically significant ($\beta_{\text{De novo firm} \times \text{Institutional complexity}} = -0.78, p = 0.09$). We thus find support for Hypothesis 3a. We plot this interaction in Figure 3.

 Insert Figure 3 about here

In MSAs without institutional complexity, *de novo* firms had a survival probability of 32% (hazard rate of exit=2.14), in comparison to the *de alio* firm baseline survival probability of 50% (i.e.,

baseline hazard rate of exit=1). This means that the probability of *de novo* firm survival was 18% lower than *de alio* firms, *ceteris paribus*. However, in MSAs with institutional complexity, we observe that the survival probabilities of the two firm types are equal, with *de novo firms* just as likely to survive as their *de alio* counterparts. The probability of survival=40% for *de novo* firms (hazard rate of exit=1.48), while the probability of survival=40% for *de alio* firms (hazard rate of exit=1.51). Thus, we also find support for Hypothesis 3b. Comparing a region without institutional complexity to one where it is present, the survival likelihood of *de novo* firms increases by 8%, while that for *de alio* firms decreases by 10%, effectively eliminating the 18% initial spread between survival rates of the two organizational forms.

Sensitivity Analyses

We carried out a series of additional sensitivity analyses to ensure that our findings were robust to alternate methods of operationalizing variables and model specifications. First, for control variables and baseline effects that could be measured in multiple ways, we replaced the covariates we used with alternate metrics. Because *local policies* for LEED building come in the form of both incentives and mandates, we used these two separate measures instead of a single combined count of LEED policies. Next, we replaced our measure of *GDP per capita* with *household income* and *poverty rates* to capture the affluence of each MSA. In addition, we created an alternate measure of *market adoption* by using the number of LEED certified buildings (rather than LEED registrations) in an MSA. Finally, we measured *localized competition* at a narrower product subcategory (instead of product category) level. Results from these alternate specifications of our control variables were consistent with our main models.

Second, we also ensured that the key moderating institutional logics variables were robust to alternate specifications. We replaced items capturing ideologies that underpin each region's *market logic* with alternate measures of liberalism vs. conservatism (source: Americans for Democratic Action). We used alternate NAICS-based industry codes (source: Quarterly Census of Economics and Wages) to identify environmental non-profit activity for the *proenvironmental logic* measure. Our results were robust to these alternatives. While we inherently conceptualize institutional complexity as categorical and multidimensional, we also examined whether our results would be robust to operationalizing it along a

continuum. To do so we created an alternate specification of this variable by summing (or alternately multiplying) the market logic and proenvironmental logic measures. As shown in Figure 4 below, our results were robust to this alternate specification ($\beta_{\text{De novo firm} \times \text{Institutional complexity continuous}} = -3.66, p=0.07$). We observe that with increasing institutional complexity, the survival likelihood of *de novo* firms increases (solid line) and the survival likelihood of *de alio* firms decreases (dashed line), and that the difference between the two lines converges to zero at high levels of institutional complexity (dotted line).

 Insert Figure 4 about here

Third, we re-ran our analyses with alternate model specifications. We first used a stratified Cox hazard model, referred to as a frailty model, where data was stratified by year instead of using year fixed effects. Second, we replaced the continuous time assumption in the Cox model with a discrete-time logistic regression specification. As a third test, we used a piecewise exponential hazard rate model with year-fixed effects (Guler and Guillén 2010, Vedula and Matusik 2017), where we allowed the underlying hazard function to vary over each time period (i.e. each year). Finally, we re-ran our analysis on a subset of *de novo* firms to ensure robustness of our findings regarding the impacts of proenvironmental logics and institutional complexity on their survival. While we saw some instances of increased p-values (e.g., .16 vs. .09 for an interaction term) all of our results were directionally consistent and robust to these alternate model approaches.

DISCUSSION

In this study, we found that regional institutional logics can shape the survival of firms entering into emerging moral markets. We extended prior work by showing that the strength and distribution of market and proenvironmental institutional logics can moderate the established positive effects of market adoption and negative effects of localized competition on firm survival. Our findings suggest that a stronger market logic in a region amplifies the impacts of economic forces and a strong proenvironmental logic dampens the impacts of economic forces, enabling firms to persist in the face of lower demand and higher competition. Further, our findings suggest that *de novo* firms can benefit from institutional complexity -

situations where both market and proenvironmental logics are strong in a community – to reduce the survival disparity they typically face relative to *de alio* firms. These findings contribute to research on firm survival and to understanding the relationship between institutions, entrepreneurship, and moral markets.

Regional Logics and Firm Survival

While well-established insights regarding the *relative* competitive advantages of *de novo* and *de alio* firms hold in moral markets, the values-laden nature of such markets does moderate these effects. We show that the impact of adoption and competitive pressure within a moral market is filtered through regional institutional logics. Entrepreneurship scholars have long focused on the strategic impact of co-located peers and formal institutions; however, this study suggests that the broader socio-cultural environment, embodied by regional institutional logics, may also be a critical consideration.

Institutional logics scholars have begun to understand how regional variation may impact the behavior and practices of firms; yet, logics have been little explored as a strategic resource for firms in emerging markets (Durand et al. 2013). Our findings indicate that the extent that firms benefit from, or are hurt by, adoption and competition effects respectively may be conditioned by the strength of regional logics. Although prior studies suggest strong proenvironmental logics may encourage entry by *de novo* firms (York and Lenox 2014), we find that *de novo* firms in the green building sector did not improve their survival chances versus *de alio* firms in regions with a high proenvironmental logic. This finding is important for both understanding the impact of logics on entrepreneurial firms, and for advising such firms on entry strategy.

While current work suggests the proenvironmental logics may help firms through greater regional valuation of their environmental mission (Lee and Lounsbury 2015, Meek et al. 2010), our results suggest that *de novo* firms, but not *de alio*, actually have a better chance to survive under conditions of institutional complexity. This is a critical insight, because it runs counter to our current understanding that institutional complexity presents an obstacle for firms (Greenwood et al. 2011, Vergne and Wry 2014). Our findings suggest that, on a regional basis, institutional complexity presents greater challenges for

diversifying incumbents and opportunity for startups within moral markets. When *de novo* firms' identity is aligned with complex regional logics, they may not only enjoy greater legitimacy but also be insulated from competition by incumbents who are viewed as less authentic. We believe the distinctiveness of *de novo* firms in respect to diversifying incumbents may be drawn into sharper contrast under institutional complexity. Thus, regional logics may create a form of socio-cultural munificence, providing a strategic resource to new firms. Future studies should examine the impact of institutional complexity across other moral markets, as well as emerging markets based in authenticity, such as artisan or craft industries (Solomon and Mathias 2020). One pertinent extension of our work would be to the hybrid organizing literature (Battilana and Dorado 2010, Battilana and Lee 2014, Lumpkin and Bacq 2019) to understand how social enterprises may benefit from regional complexity.

Survival in Moral Markets

The literature on hybrid organizations has posited that firms attempting to blend multiple institutional logics (e.g. market and proenvironmental logics will face challenges in acquiring resources (Battilana and Lee 2014, Kraatz and Block 2008) and resolving internal tensions (Tracey et al. 2011). In contrast, our findings suggest that a dual identity congruent with an emerging moral market could be an asset for new ventures under institutional complexity. Because such organizations can emphasize a market logic, but also shift focus to social welfare logics as needed, they may be able to wield institutional logics as a dual-edged sword, appealing to stakeholders motivated by either logic (York et al. 2018).

For entrants within emerging moral markets, we offer, to our knowledge, the first empirical study to directly examine how the institutional environment impacts survival. Future research could explore how organizations adapt to shifting conditions over time, how they frame their practices in contrast to larger competitors, and the implications of such actions for their performance. While such studies could take place within moral markets, we believe the promise of understanding the role of regional logics in industry emergence, strategic success, and new firm survival could extend well beyond such values-laden sectors. Ongoing research about when and why firms survive should continue to attend to how important audiences make sense of and renegotiate the meaning structures that define moral markets. In this way,

researchers may flip the lens to focus on how social welfare logics become engrained or corrupted, co-opted, or muted over time such that the moral distinction of markets becomes either taken for granted or irrelevant. We expect that the survival or demise of firms in these industries will be the crucial factor in how these dynamics play out in the long run.

Extending Research on the Competition and Coexistence of Multiple Logics

We also contribute to the broader literature on institutional complexity by showing how competing logics can help or harm different firms, thus shaping industry dynamics (Carroll and Khessina 2006). Our study extends prior research aiming to better understand the mechanics of logics at multiple levels, (Thornton and Ocasio 2008) supporting work that explores conflicting logics institutionalized at the geographic region level (Lounsbury 2007). We show that competing logics function as (de)legitimizing forces at the industry/market level, thus extending work conceptualizing logics as embedded within communities (Lee and Lounsbury 2015, Thornton et al. 2012). Our findings suggest that logics' legitimizing effects interact with localized competition to affect industry dynamics and ultimately, firm survival. Finally, we show that institutional complexity within a region may affect competition in complex ways, extending work on competing logics (Dunn and Jones 2010, Thornton and Ocasio 1999).

Through doing so, we respond to calls for research into “ecologies of logics” (Dunn & Jones, 2010:144) to explore potential interactions in overlapping contexts such as regions, professions, or cultures. Dunn and Jones (2010) demonstrated how multiple logics are instantiated and why attention paid to them is specific to the context in which they are embedded. Their study found support for the effects of context jurisdiction, but their argument that differentiation in the missions of new versus older firms would drive logic plurality was not supported. We found that logic complexity within a region impacted firm survival differentially for *de novo* versus *de alio* firms, and hence, the extent to which firm differentiation can occur. Our findings suggest that Dunn and Jones' non-finding may be a question of causal direction or perhaps bidirectionally. More importantly, our study suggests that logic plurality can create opportunity for differentiation of practices, and importantly affect firm outcomes.

We also extend Lounsbury's (2007) work on competing logics' effects on industry dynamics which showed that competing logics can become an "enduring fixture of (an) industry." Our study provides new insight into the structuring of competing logics through our three prototypical regional cases: 1) one in which a longstanding logic remains dominant, 2) a recently introduced logic becomes dominant, and 3) instantiated competing logics. Our findings showed that these different logic arrangements affect industry dynamics (in our case, the population composition of a new moral market) in complex ways such as dampening and amplifying of both positive and negative effects of traditional drivers of survival. Our study differs from theoretical expectations that dominant logics tend to be the most important in shaping new markets. In the case of moral markets specifically, our findings are particularly salient. While dominant cultural support for the social objectives of a moral market, on its face, would seem to be best for supporting the firms most aligned with those social objectives, this may not always be the case. In sum, our findings suggest multiple opportunities for future work to explore the competition between, and coexistence of, regional logics in much greater depth. Much of this work could be done within the emerging literature on institutions and entrepreneurship.

Institutions and Entrepreneurship

Our findings also expand on the broader literature examining the relationship between institutions and entrepreneurship (for a review see Tolbert et al. 2011). While prior work has shown that both social movements and social norms can impact entrepreneurial entry, to our knowledge, this is the first study to theorize and test how such normative forces impact the survival of entrepreneurs. We thus expand on Hiatt et al.'s (2009) finding that shifting beliefs linked to social movements could increase the failure of targeted businesses, to illustrate how supportive logics can help firms to survive in nascent moral markets.

In addition, while prior studies have examined how institutions impact entrepreneurial entry in regions (e.g. Eesley et al. 2018), we build on this emerging literature to show how regional institutional logics may help *de novo* entrants survive. Beyond these contributions, we examined the broader sociocultural environment to better understand how more highly diffused institutional logics may interact with economic conditions and the competitive environment within a sector. We show that the effect of

institutional logics may not simply be supportive for emergent moral markets, but may also interact with market adoption rates and competitive dynamics within a sector to predict firm survival.

By highlighting the role that institutional logics play in moderating both the impacts of economic forces as well as organizational forms, we extend the literature on regional entrepreneurship, institutions, and innovation. For example, a number of studies have looked at how location-based factors such as industrial clusters (Wennberg et al. 2010), localized knowledge spillovers (Gilbert et al. 2008), and social networks (Dahl and Sorenson 2012) can shape the survival likelihood and competitive advantages of firms. However, this literature largely focuses on high-growth, technology ventures such as venture-backed firms (Vedula and Fitza 2019). We know far less about the competitive dynamics in industry contexts where technology plays a comparatively small role (Sorenson and Audia 2000) or where firms rely to a larger extent on the institutional environment (Hopp and Stephan 2012). Within this stream, the few studies that have used logics to study regional entrepreneurial dynamics have modeled firm responses to regional logics as homogenous (e.g. Miller et al. 2017, Vedula et al. 2019). Other work has suggested that firms offering innovative technologies are more highly influenced by regulatory and cognitive support than traditional firms (Sine et al. 2005); yet in the green building market we study, there was little innovation. Our study adds to this nascent body of work by explicitly recognizing that heterogeneity in firm characteristics and the distribution of regional institutional logics can lead to different responses (Greenwood et al. 2010, Lee and Lounsbury 2015) and consequently different outcomes.

Limitations

As with any empirical study, ours has several limitations. First, our data is limited in that we have no effective controls at the firm level beyond age at entry, firm location, and product category. However, we gain comfort from the tight identification of firms within narrow product categories, the use of multiple fixed effects, and the controls we are able to implement at the industry and regional levels. Our hope is that future studies within moral markets will be able to more tightly control for firm-level effects and validate our findings that regional logics, and specifically institutional complexity, can influence the fate of firms in emerging industries. Second, as with all studies that use industry directories, we also cannot

infer the exact motivations of firms to either discontinue their operations, or exit the industry. With that said, our research verifying the high failure rate of delisted *de novo* firms assures us their withdrawal was not due to acquisition or strategic choice.

CONCLUSION

The time left to avoid an existential climate crises is rapidly vanishing (IPCC 2021). To avoid catastrophic climate impacts, markets must emerge and evolve to embrace the moral imperative of reducing carbon emissions. This study has important implications for both *de novo* and *de alio* entrants into such emerging moral markets. Our findings suggest that the ability of these ventures to benefit from localized legitimation and be shielded from localized competition effects is dependent on prevalent regional institutional logics. We also demonstrate that *de novo* firms entering into institutionally complex regions can increase their ability to compete with larger, diversifying incumbents within moral markets. This pattern of results extends a series of studies in the green building industry to chart the journey of environmental entrepreneurs that address environmental problems through launching for-profit ventures (York, O'Neil et al. 2016). First, such entrepreneurs are more likely than incumbent firms to follow socio-cultural cues and enter the green building market in regions with strong environmental values and movements (York and Lenox 2014). These entrants have a strong influence on green building adoption, regardless of the prevalent logics within a region (York et al. 2018, Jones et al. 2019). However, our findings here indicate that such an approach to location choice may be misleading. Under such conditions, it we find that environmental entrepreneurs indeed are likely to go from green to gone. They are counterintuitively better off embedding themselves in institutional complexity, as they can bridge stakeholders from both market and proenvironmental perspectives. Thus, we emphasize that understanding the role of entrepreneurship in addressing the climate crises is a critical imperative for researchers (George et al. 2021, Howard-Grenville et al. 2014, Markman et al. 2019). Our hope is this research expands our understanding of how moral markets may not only emerge, but also persist, to help address daunting challenges such as climate change.

TABLE 1

Descriptive statistics, variance inflation factors, and correlation matrix

Variables	Mean	S.D.	VIF	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Firm exit	0.06	0.23	1.01																	
2 Firm age at time of entry	28.71	34.22	1.2	-0.03																
3 Local policies	0.3	0.71	1.55	-0.01	-0.02															
4 Cost of building permits	5.47	0.49	1.94	-0.03	-0.09	0.34														
5 Leed accredited practitioners	0.81	1.1	2.04	-0.04	-0.01	0.24	0.07													
6 Energy cost	0.12	0.04	1.94	-0.02	-0.02	0.41	0.37	0.01												
7 Water usage	2.37	3.03	1.93	0.01	0.05	0.33	0.3	-0.01	0.44											
8 Average daily temperature	64.07	8.8	2.37	0	-0.1	0.05	0.4	-0.17	0.03	-0.01										
9 GDP per capita	44.1	7.78	2.01	-0.01	0.01	0.38	0.25	0.4	0.35	0.34	-0.24									
10 Urbanization	0.25	0.28	1.38	0.03	0.02	-0.14	-0.3	-0.08	-0.03	-0.32	-0.13	-0.12								
11 Establishments per capita	0.03	0.003	1.8	0	-0.02	0.14	-0.05	0.32	-0.03	0.01	-0.4	0.38	0.02							
12 Manufacturing intensity	0.13	0.07	1.65	0.03	0.13	-0.21	-0.31	-0.21	-0.33	-0.21	-0.22	-0.19	0.22	-0.18						
13 Market adoption	0.73	0.62	3.56	-0.04	0.01	0.52	0.46	0.55	0.31	0.51	-0.03	0.56	-0.38	0.19	-0.27					
14 Localized competition	0.25	0.28	1.58	0.01	0.07	0.32	0.32	0.14	0.28	0.44	-0.1	0.39	-0.28	0.2	-0.1	0.5				
15 De novo firm	0.19	0.39	1.17	0.08	-0.37	0.05	0.05	0.05	0.01	-0.02	0.06	0.01	-0.03	0	-0.07	0.05	0.01			
16 Market logic	0.14	0.06	2.64	-0.01	-0.09	-0.24	0.03	-0.19	-0.43	-0.35	0.51	-0.44	-0.03	-0.17	0.12	-0.33	-0.28	0.01		
17 Proenvironmental logic	0.1	0.07	2.23	-0.02	-0.02	0.23	0.02	0.41	0.25	0.17	-0.32	0.45	-0.05	0.44	-0.37	0.36	0.21	0.05	-0.52	
18 Institutional complexity	0.09	0.28	1.33	0	-0.04	-0.05	-0.08	0.12	-0.14	-0.16	-0.18	-0.05	0	0.31	-0.01	-0.03	-0.01	0.02	0.09	0.26

n=6,030 observations from 1,233 firms. $|r| > 0.03$ were significant at the 95% confidence level. 2 sided t-tests.

TABLE 2. Cox hazard models. Hazard rate of firm exit= $\exp(\beta)$. A positive coefficient thus indicates a higher hazard rate of a firm experiencing an exit event from the study sample (i.e., a lower survival)

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Controls						
Firm age at time of entry	-0.00* (0.00)[0.03]	-0.00 (0.00)[0.42]	-0.00 (0.00)[0.43]	-0.00 (0.00)[0.45]	-0.00 (0.00)[0.39]	-0.00 (0.00)[0.44]
Local policies	-0.02 (0.11)[0.87]	0.03 (0.11)[0.80]	0.02 (0.11)[0.84]	-0.00 (0.11)[0.99]	0.01 (0.11)[0.91]	0.02 (0.11)[0.84]
Cost of building permits	0.48 (0.86)[0.58]	0.69 (0.88)[0.43]	0.72 (0.89)[0.41]	0.94 (0.91)[0.30]	0.80 (0.91)[0.38]	0.74 (0.89)[0.40]
LEED accredited practitioners	-0.16+ (0.09)[0.09]	-0.07 (0.09)[0.41]	-0.07 (0.09)[0.44]	-0.08 (0.09)[0.39]	-0.11 (0.10)[0.26]	-0.07 (0.09)[0.42]
Energy cost	-5.91 (5.74)[0.30]	-5.69 (5.55)[0.31]	-5.59 (5.55)[0.31]	-5.00 (5.44)[0.36]	-5.16 (5.54)[0.35]	-5.88 (5.56)[0.29]
Water usage	0.17+ (0.09)[0.06]	0.23** (0.09)[0.01]	0.24** (0.09)[0.01]	0.22* (0.10)[0.02]	0.24** (0.09)[0.01]	0.24** (0.09)[0.01]
Average daily temperature	0.02 (0.08)[0.83]	0.03 (0.08)[0.73]	0.03 (0.08)[0.69]	0.04 (0.08)[0.61]	0.04 (0.08)[0.64]	0.03 (0.08)[0.67]
GDP per capita	-0.08* (0.04)[0.05]	-0.07+ (0.04)[0.10]	-0.06 (0.04)[0.17]	-0.08+ (0.04)[0.06]	-0.07+ (0.04)[0.09]	-0.06 (0.04)[0.17]
Urbanization	-11.43 (87.31)[0.90]	-82.39 (96.12)[0.39]	-85.51 (96.96)[0.38]	-73.99 (98.27)[0.45]	-72.05 (99.43)[0.47]	-74.19 (96.52)[0.44]
Establishments per capita	-11.21 (60.61)[0.85]	9.99 (58.66)[0.86]	7.89 (58.86)[0.89]	12.99 (57.50)[0.82]	5.09 (57.01)[0.93]	8.80 (58.63)[0.88]
Manufacturing intensity	5.01 (5.04)[0.32]	6.40 (5.05)[0.21]	6.35 (5.08)[0.21]	6.56 (5.08)[0.20]	5.57 (5.13)[0.28]	6.47 (5.13)[0.21]
Baseline effects						
Market adoption		-0.72** (0.26)[0.01]	-0.73** (0.27)[0.01]	-0.20 (0.38)[0.61]	-1.06** (0.33)[0.00]	-0.73** (0.26)[0.01]
Localized competition		0.54+ (0.33)[0.10]	0.54+ (0.33)[0.10]	-0.93 (0.67)[0.17]	1.39* (0.63)[0.03]	0.52 (0.33)[0.12]

De novo firm		0.67*** (0.16)[0.00]	0.67*** (0.16)[0.00]	0.70*** (0.16)[0.00]	0.66*** (0.16)[0.00]	0.76*** (0.17)[0.00]
Main effects of regional institutional logics						
Market logic			0.77 (1.98)[0.70]	0.37 (2.04)[0.86]	0.72 (2.08)[0.73]	0.68 (1.99)[0.73]
Proenvironmental logic			-0.47 (2.85)[0.87]	-1.42 (3.14)[0.65]	-2.74 (3.64)[0.45]	-0.37 (2.83)[0.90]
Institutional complexity			0.17 (0.35)[0.62]	0.19 (0.37)[0.60]	0.21 (0.36)[0.55]	0.41 (0.34)[0.23]
Moderating effects of regional institutional logics						
Market adoption * Market logic				-3.88+ (2.07)[0.06]		
Localized competition * Market logic				12.18* (5.09)[0.02]		
Market adoption * Proenvironmental logic					2.98+ (1.55)[0.05]	
Localized competition * Proenvironmental logic					-7.11+ (4.31)[0.10]	
De novo firm * Institutional complexity						-0.78+ (0.46)[0.09]
Product category dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
MSA dummies	Yes	Yes	Yes	Yes	Yes	Yes
State dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations (firm-year)	6030	6030	6030	6030	6030	6030
Firms	1233	1233	1233	1233	1233	1233
Exits	339	339	339	339	339	339
McFadden's Pseudo R ²	0.09	0.10	0.10	0.10	0.10	0.10

Standard errors in parentheses. P values in square brackets. +p<=0.10, *p<=0.05, **p<=0.01, ***p<=0.001

FIGURE 1

Probability of firm survival as a function of market adoption (panel A) and localized competition (panel B). The response curves are shown for weak (mean-1 std) (dashed lines) and strong (mean + 1 std) (solid lines) levels of the *market logic* variable

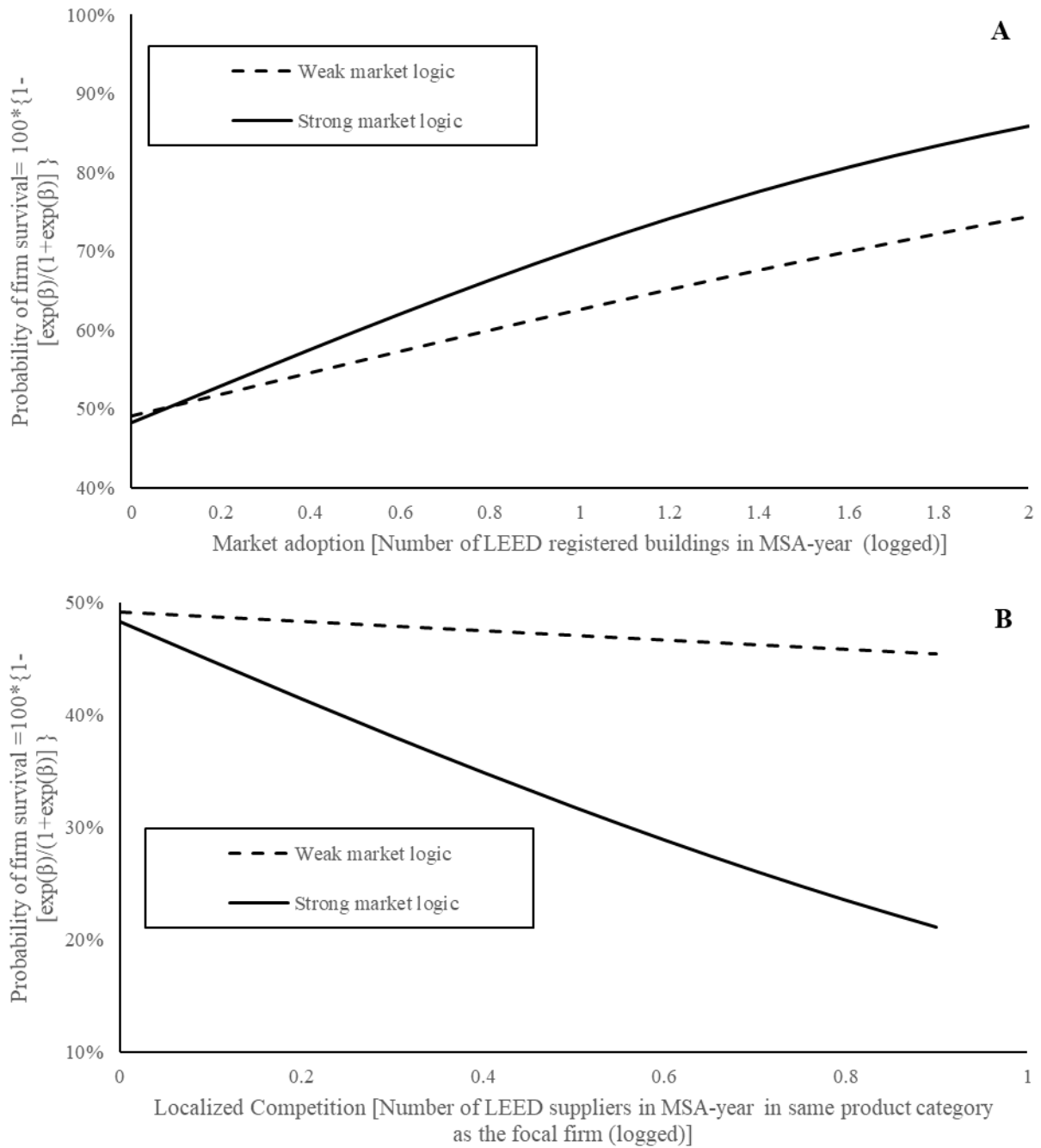


FIGURE 2

Probability of firm survival as a function of market adoption (panel A) and localized competition (panel B). The response curves are shown for weak (mean-1 std) (dashed lines) and strong (mean + 1 std) (solid lines) levels of the *proenvironmental logic* variable

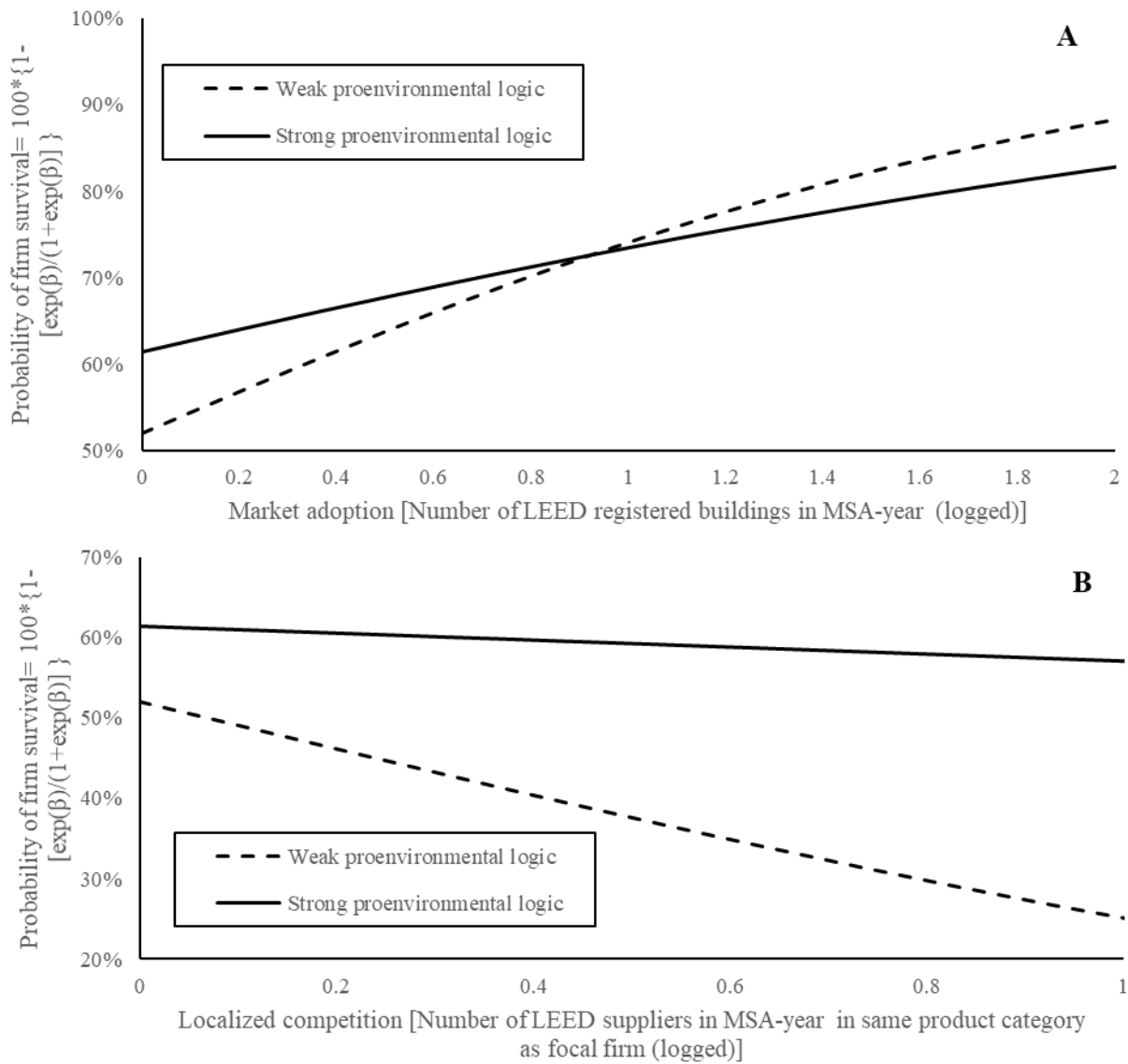


FIGURE 3

Probability of firm survival for *de novo* (solid columns) and *de alio* (striped columns) firms in MSAs where institutional complexity is absent and present respectively. Note that the baseline probability of survival is 50% (i.e., hazard rate of exit=1)

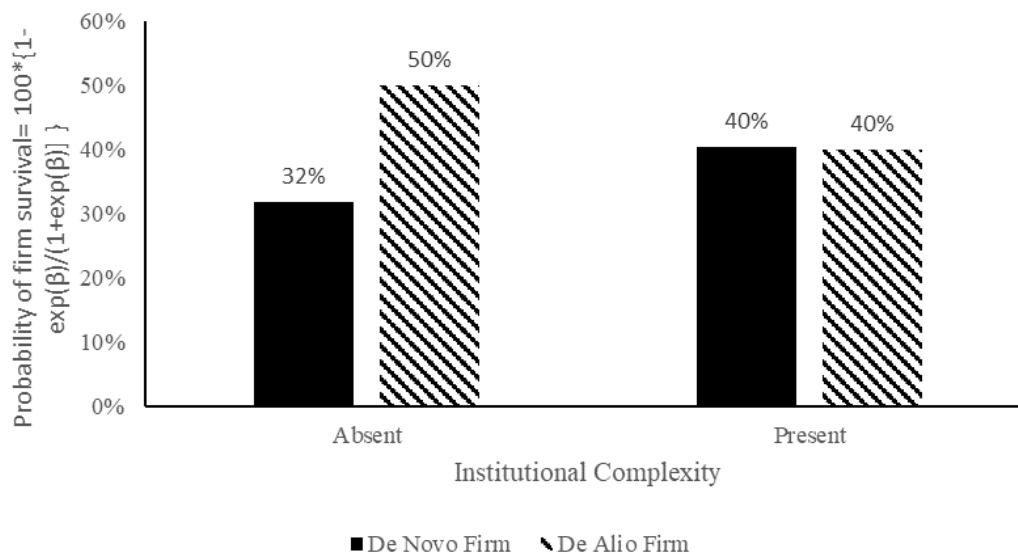
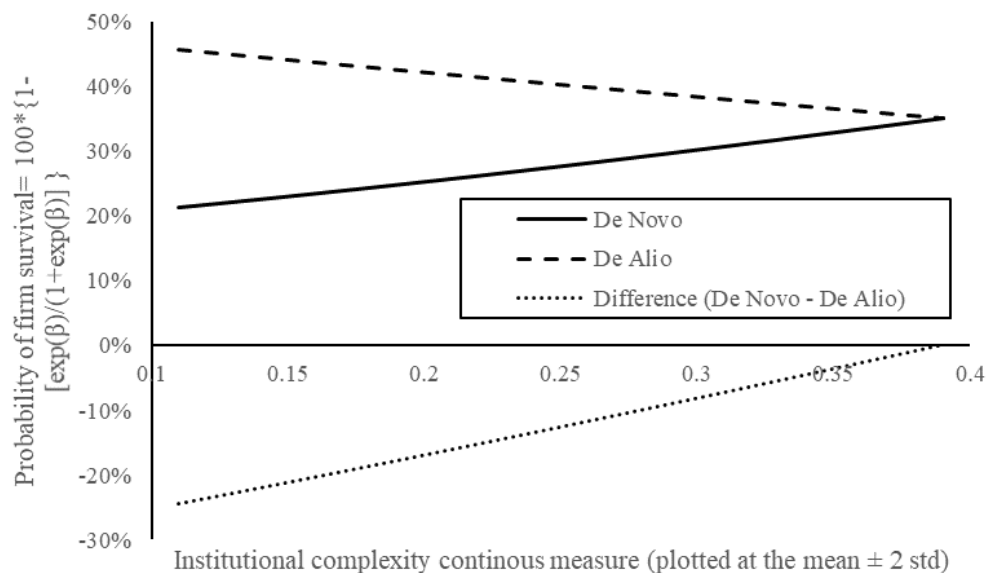


FIGURE 4

Probability of firm survival for *de novo* (solid line) and *de alio* (dashed line) as a function of the level of institutional complexity in an MSA (alternate specification of complexity as the sum of the market and proenvironmental logic). Note that the baseline probability of survival is 50% (i.e., hazard rate of exit=1)



APPENDIX

FIGURE A1

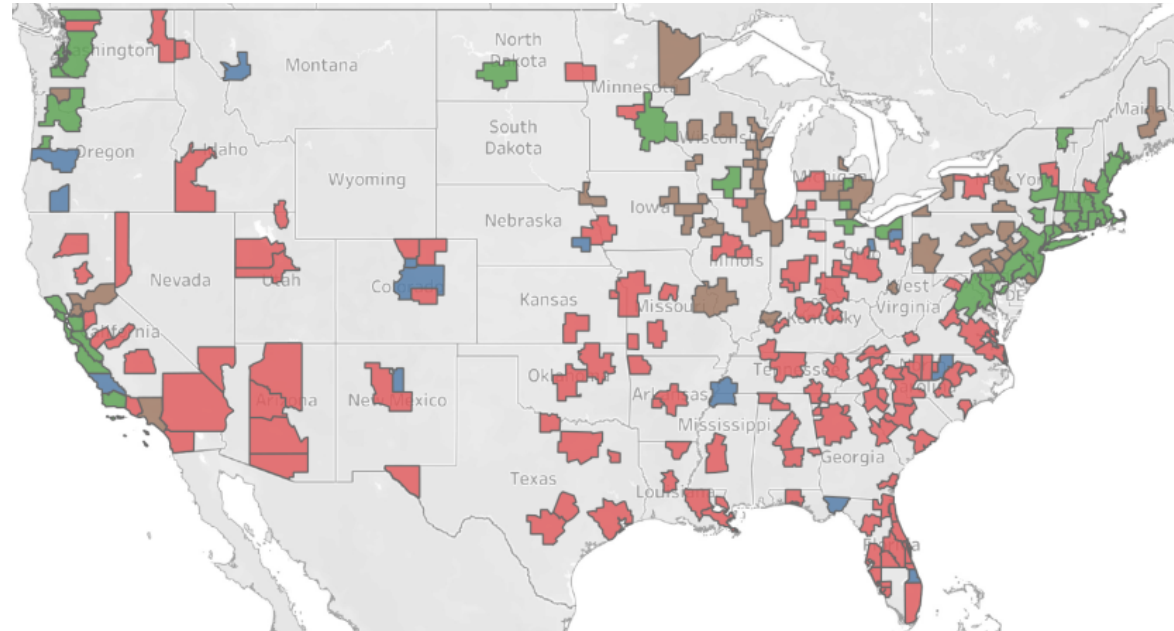
Heat Map of Distribution of Regional Institutional Logics. Institutionally complex MSAs (i.e., high on both the market logic and proenvironmental logic) are shown in blue and listed in the table to the left of the heat map.

MSAs with a dominant market logic (i.e., high market logic and low proenvironmental logic) are shown in red. MSAs with a dominant proenvironmental logic (i.e., low market logic and high proenvironmental logic) are shown in green.

MSAs with low levels on both market and proenvironmental logics are shown in brown.

Institutionally complex regions

MSA Name	MSA Code
Akron, OH	10420
Anchorage, AK	11260
Boulder, CO	14500
Denver-Aurora, CO	19740
Durham, NC	20500
Eugene-Springfield, OR	21660
Lincoln, NE	30700
Medford, OR	32780
Memphis, TN-MS-AR	32820
Missoula, MT	33540
Port St. Lucie, FL	38940
San Luis Obispo-Paso Robles, CA	42020
Santa Fe, NM	42140
Tallahassee, FL	45220
Honolulu, HI	46520



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