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# THE GRAND TOUR: THE ROLE OF CATALYZING PLACES FOR INDUSTRY EMERGENCE

Paolo Aversa<sup>1\*</sup>, Emanuele Bianchi<sup>1</sup>, Loris Gaio<sup>2</sup>, Alberto Nucciarelli<sup>2</sup>

<sup>1</sup>Cass Business School, City, University of London

<sup>2</sup>University of Trento

\*Corresponding Author: [paolo.aversa.1@city.ac.uk](mailto:paolo.aversa.1@city.ac.uk)

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## ABSTRACT

Research on clusters highlights that some areas display superior conditions to locally nurture concentrations of businesses. But why do certain industries—despite ascribing their origin to specific locations—emerge away from their birthplace? We respond by qualitatively investigating the influence that the town of Arco, Italy, and its periodic event ‘RockMaster’ exerted on the emergence of the global sport climbing industry. We advance the concept of ‘catalyzing places’ that support the emergence and growth of industries through an ongoing, cyclical process of three forces—*centripetal* (i.e., attracting), *catalyzing* (i.e., reacting), and *centrifugal* (i.e., ejecting). The forces attract communities of practice to the place, expose them to intense, transformational experiences towards entrepreneurship, and ultimately induce them to establish their businesses elsewhere. By redeploying the resources and reputation acquired in the place, these scattered communities enact a collective phenomenon of user entrepreneurship, and ultimately industry emergence. We claim that the ongoing activities of the place, and the periodic ones of the event, are mutually reinforcing. We advance two novel elements, ‘portable economies’ and ‘springboard firms,’ which in catalyzing places exert the antithetical effect of ‘agglomeration economies’ and ‘anchor firms’ in clusters. We discuss our contribution to research on industry emergence, new practices, and user entrepreneurship.

*Keywords: Industry Emergence; Places; Practices; User Entrepreneurship; Events; Climbing.*

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*“We are all pilgrims who seek Italy.” (Johann Wolfgang von Goethe, 1790)*

Places have long inspired individuals and societies. In the nineteenth century, Johann Goethe’s *Italienische Reise* (1816) pictured a journey through Italy as a turning point for foreign artists trying to start a workshop or an art business in their home country. The term “Grand Tour” (Lassels, 1670) indicated the practice—common among young, wealthy European elites—of visiting several locations of the Italian peninsula to live an immersive cultural experience. This inspiring journey ultimately became foundational of some of the main artistic and intellectual movements in the 16<sup>th</sup> and 19<sup>th</sup> century, as well as the tourism industry in Europe (Towner, 1985).

Today, up to 6,000 tourists a day visit the Shaolin Temple, the birthplace of kung fu (Bhattacharjya, 2016; Hung et al., 2017). For many, a visit to the Temple is also an opportunity to train with the Shaolin monks, which is widely regarded both as an inspiring personal experience and a way to acquire the skills, contacts, and reputation to start a business in the martial art industry. Shifu Sharma, for instance, started India’s first martial arts training center shortly after training at the Shaolin Temple (Reshma, 2012). Many other kung fu entrepreneurs and business professionals ascribe their venture to a transformational experience in the Shaolin Temple, and several periodically return to the Temple to train (Seager, 2015). Although different in many regards, the Shaolin Temple and the Grand Tour share common traits: they are both renowned places attracting enthusiasts and offering them meaningful, sometimes life-changing experiences, which systematically spark and nurture related business ventures. By repeatedly influencing generations of visitors, these places have persistently supported amateurs in transforming their personal interests into a job or a business, thus supporting the emergence of industries worldwide.

Literature has traditionally examined different mechanisms that lead to industry emergence (e.g., Klepper & Graddy, 1990; Krugman, 1991; Schumpeter, 1942), and in recent years a growing academic conversation has advanced our understanding on the early phases of industry lifecycle (e.g., Moeen &

Agarwal, 2017; Moeen, Agarwal, & Shah, 2020). Among other elements, the literature has traditionally underlined the role of firms' geographic locations as a key factor for industry emergence (Porter, 1990; Powell, Koput, & Smith-Doerr, 1996). Industry scholars and economic geographers alike acknowledge that some areas nurture practices that cluster firms locally (Feldman, 2000; Pouder & St. John, 1996; Saxenian, 1996). Yet, it is noticeable that some industries can be located away from their foundational areas. For example, the global skateboarding industry (Draper, 2020) originated from the amateur surfing and skateboarding practices in California, which today is considered the “Mecca of skateboarding” (Keith, 2017).

Despite this phenomenon being common and relevant, our knowledge of the relation between place and industry emergence mostly focuses on the “clustering” effect, which explains how “initiating factors, processual dynamics and regional embeddedness” (Stephens & Sandberg, 2020) support the concentration of related industrial activities in an area (i.e., “clusters”—see Klepper, 2010; Porter, 2000; Saxenian, 1991). However, as the introductory vignettes illustrate, some places can sustain industry emergence without offering attractive features to establish new ventures locally; hence, such places may not present a localized concentration of firms, but rather they contribute to the emergence of industries in other locations. As the process supporting this phenomenon is still largely unknown, we ask: *what are the mechanisms by which certain places catalyze the emergence of industries, but not their local clustering?*

To address our research question, we conducted a longitudinal case study of how Arco, a small, isolated town in northern Italy, supported the emergence of the global sport climbing industry, also thanks to RockMaster—a yearly event hosted in loco. Many of the thousands passionate climbers who visited Arco or RockMaster ended up founding companies, innovating products and practices, hence initiating and progressively shaping an industry whose firms reside in different international locations. Our study identifies a process composed of three forces that certain places exert over scattered communities united by a common passion for a practice (e.g., arts, crafts, sports), forces we refer to as

*centripetal* (i.e., attracting), *catalyzing* (i.e., reacting), and *centrifugal* (i.e., ejecting) forces. These three forces support a “community of practice”—defined as “groups of people bound together by shared expertise and passion” (Wenger & Snyder, 2000: 139)—that eventually leads to the creation of entrepreneurial ventures. The *centripetal forces* cyclically attract communities to the catalyzing place, the *catalyzing forces* expose them to intense, often transformational experiences and accelerate their transition from enthusiasts to business professionals or entrepreneurs. Ultimately, the *centrifugal forces* induce them to leave and often return to their departure point where they establish their ventures. These forces help us define locations such as Arco as “catalyzing places,” or renowned areas that support the emergence and growth of an industry that is not locally clustered. By deploying resources, knowledge, and practices acquired in the catalyzing place, these scattered communities enact a collective phenomenon of user entrepreneurship, which forms an industry not clustered in the area where it originated. The place continuously nurtures the catalyzing forces and represents the ideal stage for special events, which intensify the catalyzing effect and bolster the reputation of the place—hence place and events are *mutually reinforcing*.

Our analysis shows that the mechanisms through which catalyzing places drive industry emergence significantly differ from those that support the formation of localized clusters. Cluster research emphasizes the linear, cumulative processes of industry emergence, as well as the importance of “agglomeration economies” (e.g., Porter, 1996; Shaver & Flyer, 2000) and “anchor firms” (e.g., Agrawal & Cockburn, 2003; Feldman, 2003). Our analysis proposes a novel *cyclical process* in which collective, scattered entrepreneurial efforts are continuously nurtured. We also define new elements that underpin this process model, such as “portable economies” and “springboard firms.” *Portable economies* identify a set of diverse and valuable resources which, despite originating in a specific place, are highly portable and redeployable. *Springboard firms* represent companies located in the catalyzing place that exert a dual function on the focal actors: on the one hand they provide knowledge, opportunities, and resources to start a business; on the other hand, they saturate local demand and pre-

empt local business opportunities, thus forcing the focal actors to grow their business elsewhere. Our process model helps explain how certain places (including clusters) nurture the businesses of professionals and entrepreneurs who are located away from the catalyzing place—a phenomenon which characterizes areas such as Silicon Valley (Saxenian, 2007). By dissecting a granular process of industry emergence, our study also responds to a recent call to consider the “precursors of industry formation” in order to “enhance our ability to support, harness, and mobilize the variety of actors that spark and incubate new industries” (Agarwal, Moeen, & Shah, 2017: 302). Our overall aim is to put “geography” back on the map of industry research by highlighting the central role of places in supporting entrepreneurship beyond the clustering phenomenon, and by discussing the critical implications for theory and practice.

## **THEORETICAL BACKGROUND**

### **Location and Industry Emergence: Clustered vs. Non-Clustered Industries**

The origin of industries has long been considered a central topic in economics and management studies (e.g., Agarwal & Tripsas, 2008; Klepper, 1997; Porter, 1990). Research on industry emergence has pointed to the role of triggers such as scientific discoveries, unmet user needs, or grand challenges (Agarwal & Bayus, 2002; Agarwal et al., 2017). The influence of geography and location in triggering industry emergence has been of particular interest to scholars (Audretsch & Feldman, 1996; Bell, 2005). Such conversations on the role of geography have almost exclusively focused on the concept of “clusters”—i.e., localized concentrations of firms and organizations engaging in related industrial activities (Braunerhjelm & Feldman, 2006). Because clusters tend to experience stronger growth and faster innovation (Belussi, Sammarra, & Sedita, 2010; Folta, Cooper, & Baik, 2006), and their localized “stickiness” may offset delocalization and de-industrialization (Markusen, 1996), clusters have gained scholarly increasing attention for the competitive advantage at the organizational, regional, and national level (Klepper, 2010; Krugman, 1991; Marshall, 1890; Porter, 1990; Saxenian, 1991). However, clusters represent an important but nonetheless limited sample within the population of



industries: indeed, many industries are often distributed across regions, countries, or even continents.<sup>1</sup> Locating in a clusters assumes access to ‘agglomeration economies’ (Feldman, 2000; Krugman, 1991; Lécuyer, 2006; Porter, 1996)—i.e., localized and non-transferrable concentrations of unique input factors and market opportunities. However, many firms may access resources and opportunities in a specific place, but ultimately leverage them to grow in different geographies.<sup>2</sup>

Scholarly understanding of how specific locations can support the emergence of non-clustered industries is still scant and fragmented across various conversations, which have mostly advanced in silos. In management studies, however, two lines of inquiry have highlighted the relevance of locations in sparking and sustaining innovation: research on new practices and research on user entrepreneurship. In the following sections, we review and integrate these two bodies of literature, which we believe offer complementary yet incomplete insights, to build the theoretical scaffolding supporting our investigation.

### **New Practices and Places**

The emergence of industries often corresponds to the establishment of new practices among a community of actors (Lampel, Lant, & Shamsie, 2000; Raffaelli & Glynn, 2014). Practices refer to “activity patterns across actors that are infused with broader meaning and provide tools for ordering social life and activity” (Lounsbury & Crumley, 2007: 995). New practices can renovate existing industries (Nelson, Anthony, & Tripsas, 2021; Raffaelli, 2019) or they can generate new ones (Kennedy & Fiss, 2009; Strang & Soule, 1998; Wooten & Hoffman, 2008). Practices often emerge in specific locations. The features of such locations (e.g., structure, accessibility, reputation)—or the ways

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<sup>1</sup> We define an industry as a group of organizations producing goods or services that are close substitutes (Geroski, 2001; Gort & Klepper, 1982; Porter, 1980). Thus, conceptually, a cluster can be seen as a *geographically concentrated* subset of an industry. Some industries might present both clustered manufacturing and scattered individual firms. For example, the automotive industry in the US presents both a concentration of production in the area of Detroit, Michigan, but also individual OEMs and suppliers located in other states.

<sup>2</sup> In other cases, the clusters’ localizing forces are temporary, periodic, or they may be offset by other counteracting forces that trigger phenomena of delocalization (Pickles & Smith, 2011), internationalization (Mitchell, Shaver, & Yeung, 1992), globalization (Fabrizio & Thomas, 2012), or the extinction of the industry itself. In other cases local clusters stop growing in loco, but provide opportunities for spin-offs or support to entrepreneurial activities in other locations (Saxenian, 2007).

the space is used (e.g., activities, spatial arrangement, sharing)—influence both the generation of new practices and their characteristics. This is why ‘space’ holds central importance for research on new practices (Furnari, 2014; Taylor & Spicer, 2007).

Some of the features related to the space and their use are *tangible*. For instance, scholars suggest that certain regions offer actors the opportunity to foster specific arrangements in terms of geographic propinquity and organization forms. In turn, these arrangements can shape how information flows through a community, with the potential to foster innovation (Owen-Smith & Powell, 2004). Sharing spaces also facilitates collective experimentation processes (Aversa, Formentini, Iubatti, & Lorenzoni, 2021a), allowing individuals to interact and combine their different skills to develop new activities and ideas (Furnari, 2014). This usually happens when the space is characterized by informal and spontaneous (micro)interactions between different types of individuals. For instance, insurance trading practices originated from British coffeehouses, where brokers, lawyers, sailors, ship owners, and intellectuals met to discuss joint arrangements (Ellis, 2011; Stringham, 2002). Similarly, informal club gatherings, such as the Homebrew Computer Club in Silicon Valley and the Motorsport clubs in the British Motor Valley, generated innovative practices for the computer industry (Langlois, 1992) and the motorsport industry (Aversa, Furnari, & Jenkins, 2021b), respectively.

Other features of the space and its use are *intangible*. Scholars use the term *place* to indicate a *space* equipped with such intangible features. In other words, a place is composed of both a space characterized by “people, practices, objects,” and “a meaningful location” (Cresswell, 2004: 7) enriched by “representations” (Gieryn, 2000: 465) and mythical associations (Collins, 2004). Research in environmental psychology (Gustafson, 2001; Lewicka, 2011) and social geography (Massey & Jess, 1995; Tuan, 1975, 1977) originally investigated how places are socially-constructed entities which hold an emotional, cultural, and political significance for individuals and groups. Institutional scholars have more recently observed how communities of actors simultaneously influence and are influenced by the place they operate within, i.e., actors use practices to imbue places with meanings, values, and

powerful associations, while places can instill meanings, values, and powerful associations into actors and their localized practices (Marquis & Battilana, 2009; Marquis, Lounsbury, & Greenwood, 2011). For example, Howard-Grenville, Metzger, and Meyer (2013) highlight the mutual effect of space and regional communities in re-energizing a collective identity following a period of decline. Places and localized interactions equip actors with intangible resources, such as emotional energy (Furnari, 2014), motivation, and instruments to shape institutions, while at the same time containing, mediating, and complicating actors' institutional work (Lawrence & Dover, 2015).

In sum, this conversation suggests that tangible and intangible features of places are foundational to new practices. However, this literature has only tangentially dealt with the notion of industry. Its studies usually observe the origin of new practices but overlook the important mechanisms that may (or may not) lead to industry emergence. Accordingly, the reasons why a place might generate and nurture businesses in a different location remains not fully understood if exclusively explored from this perspective.

### **User Entrepreneurship and Places**

The entrepreneurship literature has explored how tangible and intangible elements support new businesses, which can eventually lead to the emergence of industries (Anthony, Nelson, & Tripsas, 2016; Raffaelli, 2019). Among intangible elements, intense positive emotions (e.g., "passion," cf. Vallerand, 2015: 8) have been considered a key driver for entrepreneurship (Cardon, Wincent, Singh, & Drnovsek, 2009). Users are indeed passionate and engaged creators of innovations and businesses (Agarwal & Shah, 2014; Lüthje, Herstatt, & Von Hippel, 2005; Von Hippel, 1988). The users' personal and repeated experience of a common challenge often triggers innovative solutions (Lüthje et al., 2005: 959), which are initially developed to satisfy personal needs rather than capitalize on commercial opportunities. Yet the process of developing such solutions can motivate them to become entrepreneurs (Shah & Tripsas, 2007) or sell to a third party firm (Shah & Franke, 2003: 158) because they eventually recognize their solutions commercial potential (Autio, Dahlander, & Frederiksen, 2013; Haefliger,

Jäger, & Von Krogh, 2010). The practice of enthusiasts transforming their passion into a business is commonly explored in the literature on user entrepreneurship (Baldwin & Von Hippel, 2011; Shah & Franke, 2003).

User entrepreneurship (Baldwin, Hiennerth, & Von Hippel, 2006) differs in many ways from classic models of entrepreneurship (Shane & Venkataraman, 2000; Venkataraman, 1997). Among other aspects, user entrepreneurship is characterized by the public display of the innovation “in use,” which often happens in “communities of practice” (Wenger & Snyder, 2000). These communities, composed of individuals who share a hobby<sup>3</sup> or interest, provide direct feedbacks on possible applications, desirable features, and problems experienced (Shah & Franke, 2003; Wenger, 1999). Up to a certain point, innovation increases with the community size and the related members’ knowledge sharing (Baldwin et al., 2006: 1307), which enables high levels of novelty and creativity (Shah & Tripsas, 2007: 132). This motivates user innovators and entrepreneurs to actively engage with other community members, co-locate in specific areas to provide and receive feedback (Aversa et al., 2021b), and participate in specialized *events* where they can connect while showcasing their products and inventions in use (Hiennerth & Lettl, 2011). Such events enable collective engagement, which is often more beneficial than isolated efforts.

Communities of user entrepreneurs often populate specific places (Von Hippel, 1994), which can be located “outside the boundaries of the firm” (West & Lakhani, 2008: 223). These areas become the focal point for collective practices and events (Croidieu & Kim, 2018; Lüthje et al., 2005) and serve as key locations for members to collectively access resources that nurture their interests and their business initiatives, often leading to local industrial clusters (Aversa et al., 2021b). In conclusion, while it is clear that places matter for localized forms of user entrepreneurship, this literature has only

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<sup>3</sup> We define hobbies as leisure-based activities conducted for their intrinsic enjoyment, rather than for extrinsic rewards (Iso-Ahola, 1980). Scholars distinguish casual leisure (or amateur practices) from serious leisure (structured hobbies) based on their increasing level of deliberate effort, knowledge, skills, and personal commitment (Stebbins, 1982, 1997).

peripherally investigated how place facilitates industry emergence. We lack a comprehensive appreciation of the ways a location can drive entrepreneurship, as well as a granular understanding of the place-based processes supporting or hindering collective forms of user entrepreneurship. We are particularly unaware of why such drivers may, in several cases, *not* lead to firm clustering in these generative areas, but rather to industries scattered across other locations. What are the mechanisms by which certain places catalyze the emergence of industries in areas away from their birthplace? Our investigation explores this important, yet unanswered, question.

## **METHOD**

We draw upon secondary data, semi-structured interviews, and direct observation to develop a process model (Glaser & Strauss, 1967; Langley, Smallman, Tsoukas, & Van de Ven, 2013) that explains how catalyzing places support industry emergence and growth. We selected a case—the town of Arco and the emergence of the sport climbing industry—that was an exemplar of our broader phenomenon of interest (Eisenhardt & Graebner, 2007). By drawing on both historical and contemporary secondary data sources, our study embraces recent calls for integrating historical in management research (Argyres et al., 2020) with a special focus on industry incubation and emergence (Agarwal, Seojin, & Moeen, 2021; Kirsch, Moeen, & Wadhvani, 2014).

### **Research Setting**

We examined the role the town of Arco played in the emergence of the global sport climbing industry. Climbing has been used as a focal phenomenon in the social sciences and management research (Chatman, Greer, Sherman, & Doerr, 2019; Kacperczyk, 2019; Suarez & Montes, 2019). Similarly to other user-driven industries, such as breweries (Kroezen & Heugens, 2019), motorcycles (Di Maria & Finotto, 2008), or extreme sports (Hienerth, 2006; Lüthje et al., 2005), sport climbing allowed us to study technological evolution at the industry level (Cochrane, 2019).

### ***The sport climbing and its industry: An overview***

*The birth of sport climbing.* Sport climbing emerged in the late 1970s when a group of innovative

climbers in the United States and Europe departed from what is currently termed “traditional climbing” (Pavana, 2018; Wilkinson, 2019) and generated a unique sport practice, with its own products, technologies, techniques, sport federations, athletes, and enthusiasts (Carroll, 2017). Traditional climbing takes place outdoors on natural rocks, and it focuses on reaching a high, scenic destination by placing and then removing bolts as anchor points which climbers use during the ascent and the descent. It requires technical knowledge of climbing anchors and skill in placing/removing them, as well as understanding of the weather and the rock conditions. Slipping on the rock is dangerous, and climbers adopt moves to minimize the risk of falling. Because of the risk engendered by the lack of bolts and risk of slipping, traditional climbing is a niche practice and industry. On the contrary, sport climbing involves existing, pre-bolted routes and it can take place on rock walls, but is commonly practiced on artificial climbing walls, which can be located outdoors, but are often indoors in climbing gyms. It focuses on the act of climbing itself, rather than the destination, and the bolts are placed close to one another to allow the climber to hold anchors from any position, thus minimizing the danger of falling. Sport climbers need no technical skills or special materials to set-up anchors, nor specialized knowledge about the environment, particularly when climbing is practiced indoors. As slipping in sport climbing is usually safe, sport climbers can attempt more complex and risky climbing moves. Driven by the increased safety, accessibility of materials, and limited knowledge requirements, sport climbing has become a mass-market, global industry (Indoor Climbing, 2019; Daoust, 2018).

*The sport climbing industry.* The sport climbing industry encompasses all the businesses related to the design, manufacturing, and/or commercialization of products and services for sport climbing. It is composed of two main markets: (1) specialized products and technologies (e.g., production of artificial climbing walls, holds, and shoes), and (2) specialized services (e.g., climbing gyms, climbing schools, professional sport federations). Today, approximately 35 million sport climbers and 2,700 indoor climbing gyms are active worldwide (Indoor Climbing, 2019; Daoust, 2018). In the US alone, the 2012-2017 average annual revenue growth of the indoor climbing industry was 3.9% and in 2018

the overall revenues were \$638 million (IbisWorld, 2018). The global market size of the sport climbing products and technologies—mostly driven by the manufacturers in Europe and the US—is expected to reach \$740 million by 2024 (Lp Information, 2019). Sport climbing firms are affiliated with professional associations, such as the Climbing Wall Manufacturers’ Association in the United Kingdom (est. 1994) and the Climbing Wall Industry Association in the United States (est. 2003). Sport climbing is also an increasingly well-known, professional sport: in 2007 the International Federation of Sport Climbing (IFSC) was established to direct, regulate, and promote, climbing competitions. In 2016 sport climbing was included in the Olympic Games starting with the ‘Tokyo 2020’ edition (Bromhall, 2019).<sup>4</sup>

*Arco: The sport climbing capital.* Arco, a small town located in the Sarca Valley of north-east Italy is often referred to as “the rock climbing capital of the world” (Bridgeman, 2015) or the “Mecca of climbing.”<sup>5</sup> A small group of locally-based enthusiasts and professionals in Arco organize and coordinate various climbing activities and events throughout the year that attract numerous climbers to Arco. Of these events, the most famous is the RockMaster, the most prestigious invitation-only sport climbing competition, also known as the “Wimbledon of sport climbing” (Grimes, 2007), which takes place annually in Arco. Of the 185,000 annual visitors in Arco (most of which for sport climbing purposes) around 35,000 (18.9%) concentrate during the three days of RockMaster (Source: Garda Trentino, tourism business). Since the early 1980s Arco and the RockMaster competition stimulated the continued growth of the global sport climbing industry, an ongoing process that we trace in our investigation.

Arco presents three ideal features for our research. First, despite continuously attracting visits from climbing enthusiasts, athletes, and business professionals, it does not contain an industrial cluster,

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<sup>4</sup> The growing interest towards sport climbing is also fueled by the recent proliferation of related films, including the Academy Award winning documentary “Free Solo” (2018)—focusing on an extreme, niche version of sport climbing that is practiced outdoor, often on high rock walls, and without any sort of protection.

<sup>5</sup> Several international sources term Arco as the “Mecca of climbing.” Among others: [vivalaclimbing.com](http://vivalaclimbing.com); [thecrowdedplanet.org](http://thecrowdedplanet.org); [UKclimbing.com](http://UKclimbing.com); [www.alpinschule-dreizinnen.com](http://www.alpinschule-dreizinnen.com).

nor a notable concentration of specialized climbing manufacturers—with the exceptions of two companies (i.e., La Sportiva and Sint Roc). Second, despite being an area ideal for outdoor sport climbing on rock walls, Arco raised to its fame for artificial climbing walls—a technology that was pioneered in Arco and legitimized by RockMaster. The popularity of Arco’s artificial climbing walls suggests that visitors are attracted to Arco not because of its tangible qualities of the setting (i.e., the beautiful landscape, mild weather, and solid rock walls), but its intangible socially-constructed meanings and associations. Third, Arco has played an outsized role in the emergence and growth of the sport climbing industry. Because of the availability of granular, longitudinal archival data and the relatively small number of manufacturers in the industry, Arco was an ideal case study for qualitatively understanding the processes of industry emergence.

### **Data Collection**

[Insert Table 1 about here]

Table 1 presents our three main data sources and their use. First, we used secondary sources, both historical and contemporary, which we gathered by visiting specialized archives (e.g., the RockMaster private historical archive in Arco, and the Italian Alpine Club’s ‘SAT’ climbing library and historical archive in Trento, Italy), and through online search engines (e.g., Lexis-Nexis, Factiva, Google). We retrieved documents that allowed us to understand the complete history of sport climbing, ranging from the early mountaineering activities in the first half of the twentieth century, to the present day. We paid careful attention to firms producing sport climbing technical equipment and key climbing innovators and entrepreneurs, including those who had formerly been involved with Arco climbing activities. Overall, we collected a wide range of documents from sources such as books, archival documents, generalist and specialized press, journal articles, websites, online communities, and video documentaries for a total of approximately 3,000 pages.

We also conducted 41 semi-structured interviews (Corbetta, 2003) with different types of informants (for a total of approximately 25.5 hours). Thanks to the support of the local Arco climbing



community, we obtained direct, “unusual research access” (Yin, 1994) to many key informants and events.

First, we interviewed sport climbing experts to deepen our general understanding of our context and the role played by Arco. Next, we interviewed rock climbing fans, local organizers of sport climbing activities, and amateur and professional climbers that visited Arco for climbing reasons and/or competed at RockMaster. We focused on the experiences of individuals who visited Arco as amateur or professional climbers and then became entrepreneurs and business professionals in the industry. Next, we collected publicly available data from the 39 main manufacturers of climbing walls, holds, and shoes (some of which also produce apparel or climbing gear). We interviewed founders (or current entrepreneurs) of these firms, as well as some key employees (e.g., designers). As expected, many entrepreneurs and professionals started as climbers and ascribed their business venture to their visit(s) to Arco and RockMaster. We thus built 39 mini case studies about manufacturers’ history and their connection to Arco and RockMaster. All of the interviews were conducted in English, recorded, and transcribed.

Finally, we attended and observed the 33<sup>rd</sup> edition of RockMaster in 2019. Our aim was to deepen our understanding of the place and the event by directly experiencing some of the mechanisms we identified. We also attended social gatherings surrounding the event to have informal, impromptu conversations with athletes and their families, fans, volunteers, and organizers. See Table 2 for the complete list of interviews and their duration.

[Insert Table 2 about here]

## **Data Analysis**

In order to minimize retrospective sensemaking and biased interpretations, we investigated the older pre-commercialization phase of sport climbing by relying on archival sources; we used interviews and direct observations as we moved to the more recent, post-commercialization phases. Our data analysis proceeded in three steps.

*Step 1: Historical reconstruction of the events.* Using primary and secondary sources, we built a detailed timeline of main events in sports climbing since early activities in the 1970s until the 2010s. Once we established a timeline of the industry, we used the periodization recommended by Agarwal et al. (2017: 290) to identify two key phases in the history of climbing: the industry “incubation” phase and the “emergence and growth” phase<sup>6</sup>—two phases divided by the commercialization of the first product (i.e., the industry “inception”). We identified the inception as the very first sale of artificial walls used at RockMaster in 1988—this was the core enabling technology for sport climbing.<sup>7</sup> Our narrative covers both the incubation and emergence/growth phrases, but our analysis and theorization focus on the role of Arco in catalyzing the latter phase.

The emergence and growth phase starts with the establishment of the sport climbing practice in 1988 through the present day, focusing on the role of Arco and RockMaster in advancing the sport climbing industry. We used a combination of archival sources and expert informants to organize in chronological order the founding of the 39 main manufacturers, the introduction of new technologies (i.e., products and technical solutions), significant changes in sport climbing practices (i.e., techniques, competition formats), and the formation of supporting institutions (e.g., sport and industry associations). This allowed us to populate our initial chronology with events relevant for industry emergence, such as firms’ establishments, mergers, acquisitions, and terminations. It also helped us identify the main actors in the (often overlapping) sports and business domains. Given our interest in the scattered localization of this industry, we produced an interactive Google map of the geographic location of the sport climbing manufacturers.

*Step 2: Open coding.* Next, we open coded our data to identify concepts and mechanisms (Gioia

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<sup>6</sup> As the industry is still witnessing an increasing number of businesses specialized in products and services for this market, we claim the industry has not entered the maturity and shakeout stage yet.

<sup>7</sup> Experts agree that despite some rudimentary artificial climbing walls that existed in the ‘60s and ‘70s, the actual commercialization of artificial climbing walls (which triggered the rise of indoor climbing gyms) started with this sale in 1988 (Mittelstaedt, 1997; Simonson, 2016).

et al., 2013) that helped us understand how Arco supported the events in our historical reconstruction. We analyzed interviews and secondary data in parallel, iterating between data analysis and additional data collection informed by our emerging codes (Langley, 1999; Lincoln & Guba, 1985; Locke & Golden-Biddle, 1997). We focused on individuals, firms, practices, technologies, and institutions that characterized the establishment and development of sport climbing industry. For each new venture and innovation, we searched interviews and archival data for evidence of connections with Arco. We also searched our collection of documents for explicit references to what attracted entrepreneurs, professionals, and expert informants to Arco and the influence of their Arco experiences on their subsequent career choices. We eventually developed twenty-eight first-order codes (as per Gioia, Corley, & Hamilton, 2013) that we labeled by using (whenever possible) the terms used by our informants, thus reflecting their “concepts in-use” (Gephart Jr, 2004). We extensively discussed any discrepancy in our interpretations and shifted back to data coding whenever necessary.

*Step 3: Axial coding and process model.* Finally, we collapsed our twenty-eight first-order codes into nine, more abstract second-order themes, and then three higher-level aggregate dimensions (Gioia et al., 2013) on the basis of their similarities—a technique known as “axial coding” (Strauss & Corbin, 1998). The three overarching aggregate dimensions—i.e., centripetal forces (attracting), catalyzing forces (reacting), and centrifugal forces (rejecting)—related to what attracted people to Arco, how Arco influenced their professional career, and why they decided to locate their business elsewhere, respectively (see our code structure in Table 3).

[Insert Table 3 about here]

Finally, we returned to our historical timeline and the individual mini-cases to establish a temporal sequence among the three forces. This analysis helped us substantiate an intuitive cycle of events whereby centripetal forces attracted several individuals to the place, some of whom were then exposed to forces that “catalyzed” their determination to start a new business and/or shaped their business idea, only to then be induced by centrifugal forces to leave Arco to establish their business elsewhere. It also

pointed to the ongoing influence of these forces, as new passionate users were continuously attracted to Arco, some of them periodically contributing to the industry development by founding new firms and introducing important innovations. Together, these observations enabled us to depict a process-based model explaining how some places act as continuous catalysts for emergence and growth of industries that are not located in the catalyzing place. In this process, a distinct role emerged for the RockMaster event, which helped us detail the mutual reinforcement between periodic catalyzing forces at the event and those ongoing during the year. To confirm the reliability of our findings (Lincoln & Guba, 1985), we our interpretations to some of our key informants and used their feedback to refine our process model.

## FINDINGS

We present our findings in three parts. First, we provide a narrative of the incubation of the industry, with a focus on the establishment of Arco, the beginnings of RockMaster, and local sport climbing practices. Second, we assess the role of Arco and RockMaster in supporting the emergence and growth of the sport climbing industry. Third, we introduce our cyclical process model and provide an account of its constituting elements, which support the industry emergence and growth phase.<sup>8</sup> We define three aggregate dimensions (i.e., centripetal, catalyzing, centrifugal forces), and for each we offer a sequential narrative organized around the second-order themes. The first-order concepts are mentioned within the narrative in *italics*, while samples of representative quotes are in the Appendix<sup>9</sup>, Table A1.

### **Industry Incubation: Arco and the Establishment of Sport Climbing (1970s-1988)**

Through the centuries, Arco's mild weather and beautiful landscape made it a key destination for

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<sup>8</sup> The general process presented was actually generated at the end of our inductive theorization. Yet, to facilitate the comprehension of our process, we opted for a "model-led composition" (as per Berends & Deken, 2021: 141), which introduces the overall theoretical process and its constituting elements upfront, and then illustrates the empirical evidence using such theoretical scaffold as an organizing device.

<sup>9</sup> The appendix can be found at the link <https://mfr.osf.io/render?url=https%3A%2F%2Fosf.io%2Fjrf9z%2Fdownload>

intellectuals and artists during their Grand Tour in Italy.<sup>10</sup> Around five centuries later, in the early 1980s, a small circle of climbing pioneers—also mesmerized by Arco’s rare natural features—picked the little town at the foot of the Dolomites as the home base of their activities.

*“After a few trips to far away mountains, from the walls of Yosemite to those of Hoggar and Pamir, we realized that it was hard to find anything better than the Dolomites, so we settled down there. With Heinz [Mariacher], I experienced the birth and the evolution of sport climbing on the cliffs of Arco.” [Luisa Iovane, Professional Climber; Source: S.C.A.R.P.A.]*

They were part of a movement that started in the 1970s, in which some traditional climbers around Europe and the United States pre-equipped cliffs with permanent bolts. This innovative community of climbers radically broke with traditional climbing by shifting the goal from reaching high scenic destinations to climbing the most challenging (i.e., vertical, flat, slippery) walls, even if the destination was relatively low and fundamentally uninteresting.

*“Reaching the top of a mountain was not important to me; what mattered, instead, was the quality of my climbing performance.” [Maurizio “Manolo” Zanolla, Professional Climber; Source: Television Interview on channel LA7, 2011]*

Between 1982-1985 the community of climbers started to create a new set of shorter climbing routes in the rocks around Arco, to test and refine their climbing technique. These climbing walls became emblematic of the new “alternative” climbing movement, which had its own practices, technologies, aims, and ethos. As word spread that these renowned climbers had reunited in Arco, enthusiasts from all over the world started to visit this previously unknown town.

*“Legend and superheroes of all sorts of climbing practices gathered there.” (Stefan Glowacz, Source: Interview, 2019)*

Arco became a meeting place for members of this growing community to compare their skills and equipment on increasingly challenging walls. Yet, they soon realized new, specialized technologies and products were needed to improve their climbing technique. Yet, since none were available, they started adapting equipment that was originally created for other purposes.

*“I took off my climbing boots, wore a pair of ‘whatever sneakers,’ and I found myself in the future*

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<sup>10</sup> See among other evidence, Albert Dürer’s 1495 fine watercolor “View of the Arco Valley in Southern Tyrol” - Louvre collection: <https://collections.louvre.fr/ark:/53355/cl020108533>

*of climbing.” [Maurizio “Manolo” Zanolla; Source: Television Interview, 2011]*

These changes in the practice of climbing and the equipment used were quickly noticed by climbing enthusiasts as a distinct climbing movement stemming from Arco.

*“The dream of a small circle of visionaries became a movement, which brought about a proper revolution. As we all know, revolutions hint at the need for change. That’s what happened in Arco back then: a momentous change. There started a process which would have transformed the gear, the shoes and the way we climb forever, even more so our idea of performance, of mountaineering and our manner of relating to other enthusiasts like us. We moved from the concept of rope party to that of a team. That was a unique, magical, exceptional moment. Those were the days.” (Pavana, 2018)*

Arco’s town administrators decided to host a climbing event to further energize the local sport climbing practice. This aimed to be an opportunity to showcase new climbing technologies and techniques developed by their vibrant climbing community. Since sport climbing was competitive in nature—i.e., climbing the most difficult path, performing the most complex move, completing the climb in the shortest time—the organizers opted to host a sport contest. In July 1986, Arco thus offered to co-host the second edition of ‘Sportroccia,’ the first sport climbing competition, which was held in Bardonecchia (Piedmont region) the previous year. Arco’s climbing walls, scenery, and event management were so superior to Bardonecchia that Sportroccia was terminated and replaced the following year with ‘RockMaster,’ a climbing contest to be held annually in Arco. RockMaster was a turning point for the industry of sport climbing. Previously, all climbing competitions had taken place on natural rock walls, which, however, were constantly eroded by climbing. This was dangerous for the athletes, as rocks could become slippery, or break and release the bolts that held the climbers. Moreover, natural routes suffered from inconsistent climbing conditions, making competitions unfair because performances were non-comparable. Angelo Seneci, the technical director of RockMaster, thus decided to shift the contest from natural to artificial climbing walls—at the time an experimental, almost unknown solution, adopted in a handful of cases around the world. The first artificial wall was created by Seneci his friends with home supplies and bricolage techniques, as no commercial product was available for sale:

*“Back then, artificial walls almost did not exist (...) nobody knew how to make them at the beginning of the project (...) I went to talk to a professional that built scaffoldings in Trento, and when I explained my project to him...he thought that I was crazy! (...) We made panels together with some friends who practiced surf (...). Grips were made out of modeling clay, baked in my kitchen oven, and coated with grit in France. (...) We basically invented the first technologies linked to climbing walls and panels.” [Angelo Seneci, technical director of RockMaster and founder of Sint Roc; Source: Interview, 2019]*

The 1988 RockMaster debuted the first artificial ‘overhanging’ wall (i.e., a wall with a slope over 90 degrees), a precursor of modern artificial climbing walls. Shortly after the competition, the wall was sold to a gym in the nearby town of Rovereto. The sale marked the first product commercialization of the most central, enabling technology of the sport climbing industry, thus marking the end of the incubation phase and the beginning of industry emergence.

### **The Emergence of the Sport Climbing Industry and its Connections to Arco and RockMaster**

*The supporting role of Arco.* The town of Arco and the RockMaster competition have been central to the development of sport climbing and the sport climbing industry. In Figure A1 in the Appendix, we reconstructed a timeline of 57 main industry events with a line separating the ‘incubation’ and the ‘emergence and growth’ phases. The elements are grouped into firms (18); technologies (16); practices (13); and institutions (9). Out of the 57 events, 47 either i. happened in Arco: ii. happened at RockMaster, or iii. Were linked to or catalyzed by Arco. Moreover, every single element after the 1988 inception has some connection to Arco and/or RockMaster.

We also explored the links between Arco and major climbing manufacturers, which confirmed the international diffusion of the practice and the emergence of a distinct sport climbing industry. The manufacturing core of sport climbing industry has relied on 39 firms, which produce three specialized products: (1) artificial walls, (2) holds, and (3) climbing shoes. While some minor product categories—e.g., apparel, climbing gear (ropes, harnesses, anchors, etc.)—are shared with traditional climbing, we focused on these three product categories as they are unique to sport climbing.<sup>11</sup> Table A2 in the

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<sup>11</sup> By focusing exclusively on manufacturers, our approach represents a conservative and focused estimate on the influence of Arco and RockMaster on the sport climbing industry. Yet many entrepreneurs catalyzed by Arco opened other types of businesses, such as climbing gyms and training centers, traditional and online shops, distributors, firms in specialized publishing

Appendix provides a summary of these 39 companies.

Out of these 39 companies, 32 (ca. 82%) were found to be directly catalyzed by Arco, while 7 (ca. 18%) companies had no connection. In the emergence and growth phase, these 32 companies came to Arco for business ideas (14), opportunities to design products (27), opportunities to test products (29), and/or opportunities to launch new products (13). A total of 30 (76.9%) companies intentionally visited Arco to access these opportunities.<sup>12</sup> For the other 12 (30.7%) companies connected to Arco, actors were originally visiting for reasons unrelated to an existing business yet had happened to enjoyed experiences that serendipitously nurtured new or existing business ideas. However, all 12 firms which originally experienced an ‘unplanned exposure,’ purposefully returned to Arco for a ‘planned exposure.’ Table A2 also illustrates that there was an abrupt pivot in the production of sport climbing equipment: until the mid-80s, specialized products for sport climbing were provided by traditional climbing firms, but with the establishment of Arco in the mid-80s, firms began specializing in sport climbing technologies. We also found how the influence of Arco on manufacturers varied across time and different product categories. Figure A2 in the Appendix shows how many firms’ origins are linked to Arco over time—across (a) walls; (b) holds; and (3) shoes manufacturers. While initially all firms’ origins were linked to Arco, from the 1990s some are not—suggesting that other generative mechanisms emerge as the industry grows.<sup>13</sup>

*Companies’ localization.* Figure A3 in the Appendix presents the number of times that manufacturing firms mentioned a motivation to locate away from Arco: the origin of the founder (37); prior foundation of the firm (9); local demand (20); favorable business conditions (27); favorable

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and events. There are thousands of these firms across the globe with a connection to Arco, making it impossible for us to track. Our empirical section provided vivid examples of these types of businesses. Beyond the presented evidence, we can infer that Arco and RockMaster’s influence on the sport climbing industry is even greater than what we depict in this work.

<sup>12</sup> We were not able to precisely track how many times and when each of the actors returned to Arco for a “planned exposure” to the local experiences and opportunities. However, most informants (entrepreneurs, executives, designers, professionals) mentioned that a “trip to Arco” had become a yearly activity, thus making the selection a much more frequent phenomenon than the treatment within the catalyzing place.

<sup>13</sup> The international development of sport climbing firms, the progressive diffusion of the Internet, and the globalization of trades allows (a minor group) of firms to obtain the necessary resources to nurture their activities without the support of Arco. Still most firms remain linked to Arco. See additional reflections related to this point in the discussion section.



climbing conditions (13); and other reasons (2) which included co-locating near to the parent company or to a spin-off. Figure A4 in the Appendix localizes the 39 firms, and groups them by main product type and connection to Arco. The weblink<sup>14</sup> or the QR code lead to an interactive Google map which includes insights about the companies and links to their websites.

*The influence of Arco on sport climbing practices and technologies.* Table A3 in the Appendix illustrates how Arco and RockMaster transformed the sport climbing industry through its a. Climbing practices (e.g., techniques, competitions, regulations); b. Artificial walls and holds; c. Climbing shoes; and d. Climbing gear (e.g., harnesses, ropes, carabiners, etc.). For each of these elements we present 1) the main innovations that became mainstream in sport climbing; 2) the (old and new) firms that, by engaging in Arco or at RockMaster, embraced the development of these technologies; and 3) the actors contributing to these technologies' development and adoption. Importantly, all these actors ascribed their innovations to an experience in Arco. Table A4 in the Appendix groups such individuals in three overarching types: i. business professionals (e.g., entrepreneurs, executives, product designers); ii. climbing professionals (e.g., athletes, instructors, representatives of sport institutions); and iii. climbing enthusiasts (e.g., amateur climbers, fans, photographers). These actors typically engaged in conversations with one another in Arco. The exchanges are summarized in Table A4 (e.g., business professionals contributing to climbing professionals; and vice versa). Such exchanges supported the development of climbing practices and climbing technologies (specifically, shoes), which we review next.

*Climbing Practices.* Arco contributed to the development of sport climbing techniques, competition formats, and safety regulations. For example, in 1989 RockMaster instituted a new competition, a speed race on two parallel, identical routes (the 'Parallel of Speed'), that was later

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<sup>14</sup> Link to the interactive Google map:  
<https://www.google.com/maps/d/u/0/viewer?mid=1NvtbFsReoVNYIZMjCdpkSs88i5D37EYn&ll=61.49091731991304%2C-88.56448606916678&z=4>

adopted by the UIAA/IFSC International Federation in 1998. RockMaster organizers also created new formats for existing competitions, such as the ‘KO Boulder Contest’ in 1999, or the ‘Duel’ for lead competitions in 2000. Today, most competitions worldwide, including the Olympic Games, are run with formats and rules that were originally born and/or developed in Arco.

*“At first, the event was a celebration of sport climbing; eventually, with RockMaster in 1987, we created a distinct discipline, with a system of rules that regulated the competition thoroughly.”*  
*[Mario Morandini, ASD RockMaster president; Source: Interview, 2019]*

The diffusion of these climbing practices happened in three ways. First, various key actors connected to sport climbing in Arco founded national and international sport federations, which allowed them to adopt solutions born in Arco. For example, Marco Maria Sclaris, a photographer at the first RockMaster, founded the Italian sport climbing association (FASI) in 1988, and the IFSC in 2007—of which he became the president. He leveraged his experience at RockMaster to extend similar practices and organizational arrangements to national and international sport climbing federations. Davide Battistella, who competed at Sportroccia ‘85 and RockMaster ‘88, adopted a similar approach when he became the president of FASI. Leonardo Di Marino, who competed in several editions of Sportroccia and RockMaster, became the official route tracer for RockMaster, IFSC world cups, and FASI national competitions, thus applying moves and techniques from RockMaster to other international contests. Francesco Coscia, a sport physician, specialized in issues and injuries related to climbing who started collaborating with RockMaster in 2004, founded and directed the IFSC medical commission in 2008, implementing RockMaster’s safety regulation plan in all IFSC international competitions.

*“[The practice of] speed climbing was born here, in Arco, with its own rules: when the international federation recognized this discipline, they took the wall of RockMaster as a blueprint to become the standard for the federal competitions (...) timekeeping system, billboards, etc. were born here, and this fostered, in turn, the technology development around holds (...) the first pressure buttons for starting blocks were first introduced here (...)”* *[Angelo Seneci; Source: Interview, 2019]*

Second, several athletes and enthusiasts who visited Arco were inspired to establish climbing

gyms or schools in their own country. They often adopted technologies and taught climbing techniques developed in Arco. For example, climbers Robyn Erbesfield (USA), Jindřich Hudeček (Czech Republic), Gregor Jaeger (Germany), Magnus Midtbø (Norway), and Didier Raboutoum (France), founded climbing gyms in their own country. Third, many athletes and enthusiasts became specialized climbing journalists or publishers, book authors, and public speakers, which diffused the knowledge and techniques acquired at Arco and/or RockMaster—see the athletes Patrick Edlinger (France), Lynn Hill (USA), and the expert Emanuel Cassarà (Italy).

*“My experiences at Arco with Angelo Seneci were foundational to my entrepreneurial career. There, I was inspired, and I was helped to get started.” [Jacky Godoffe, route tracer, former athlete at RockMaster; Source: Interview, 2019]*

*Climbing walls and holds.* Some early examples of bricolage artificial walls appeared in the US in the 1940s and in the UK in the 1960s, when pieces of natural rock were bolted into vertical, concrete walls at universities and in private homes. In 1987, the first climbing gym “Vertical World” opened in Seattle, WA, and featured such bricolage climbing walls (Figure 1 picture a1).

[Insert Figure 1 here]

Yet, no industrial production or commercialization of artificial walls existed until 1988, when Angelo Seneci built and then sold the first “overhanging” climbing wall (Figure 1, a2). This became a template for all artificial walls—many of which were designed and commercialized by companies or former athletes who visited Arco—e.g., Didier Robotou, winner of the 1989 RockMaster, developed climbing walls in the US; Ben Moon, who participated in several RockMaster editions since 1986, opened Moon Climbing (UK) in 2002. Figure 1, a3 shows a recent picture of the “Vertical World” gym in Seattle, WA, which has adopted walls based on the Arco’s original overhanging structure.

*Climbing shoes.* Artificial walls and holds required new climbing shoes. To climb smooth, slippery overhanging walls, climbers moved from the boots used in traditional climbing—such as the EB “Super Gratton” (Figure 1, b1)—to lighter, more flexible, climbing shoes, equipped with downturn (i.e., curved), sticky rubber soles. These were inspired by a series of innovative shoe models that La

Sportiva developed in Arco with sport climbing pioneers such as Heinz Mariacher (Austria) and Stefan Glowacz (Germany). The rubber and downturn sole of the “Mariacher” shoes (1982) and the “SG” shoes (1988)—see Figure 1, b2—radically influenced the design of climbing shoes around the world—see the modern EB “Nebula” shoes in Figure 2, b3.

*“Arco and RockMaster introduced the first artificial overhanging climbing walls, and shoes had to be adapted to them. The first overhangs created the problem that athletes needed softer, less rigid shoe, that were locked onto overhanging panels and held with the heels. On natural rocks, heels were never used, but they were important with artificial overhangs (...) shoes become prehensile.” [Lorenzo Delladio, CEO of La Sportiva; Source: Interview, 2019]*

Many climbers collaborated with firms to design shoes in Arco.

*“As an athlete, you would do the competition and then visit their factory to talk about shoes, products, basically trying to decide how to make them stronger.” [Robyn Erbesfield; Winner at RockMaster and founder of ABC Kids Climbing; Source: Interview, 2019]*

Other climbers exported climbing shoes to their home country, and eventually started producing the shoes themselves. Stefan Glowacz, who won Sportroccia in 1985 and three RockMaster editions, founded Red Chili in Germany; while Jan Zima, a RockMaster participant, founded Rock Empire in the Czech Republic. Other companies, such as Ocun and or Hudy Sport (both from the Czech Republic) developed and tested their products in Arco.

### **Industry Emergence and Growth: Arco, RockMaster, and the Forces of the Catalyzing Place (since 1988)**

#### ***A cyclical process for industry emergence through catalyzing places***

The emergence of the sport climbing industry starts after the establishment of a ‘catalyzing place’: a renowned location that supports the emergence and growth of industries which are not clustered near their origin. After the commercialization of the first product (i.e., the climbing wall), firms specializing in sport climbing products and services began to emerge. The global diffusion of sport climbing, the creation of industry associations, and the rise of specialized media all lead to the growth of sport climbing. This process is depicted in Figure 2.

[Insert Figure 2 about here]

Our model starts in the industry emergence phase, after the catalyzing place has already been established, and thus focuses on the continuous, cyclical influence of the place rather than its genesis. The catalyzing place exerts three forces over dispersed communities of practice, which operate by mobilizing its constituting elements (represented in Figure 2 by the second-order themes). The three forces sustain a process made of four sequential phases (see numbers in parentheses): (1) the centripetal forces “attract” communities to the place to experience its tangible and intangible features; (2) the catalyzing forces make individuals “react” to the features and experiences of the place, and equip them with resources, know-how, and reputation to start a business; (3) the centrifugal forces “eject” individuals from place due to local entry barriers and inferior conditions for entrepreneurship; and (4) individuals establish a series of business activities in areas away from the catalyzing place (e.g., home countries, locations with supporting conditions, areas where the resources acquired increase in value). These forces mobilize community members around the catalyzing place: new visitors are attracted to the place and former visitors periodically return (i.e., centripetal) to (re)live the intense experiences that support their venture (i.e., catalyzing), and then they leave the place (i.e., centrifugal) to pursue business opportunities elsewhere—hence the circular arrows depicting an ongoing, *cyclical* process.<sup>15</sup>

The presence of an event in the locale is a distinct feature of the catalyzing place (dotted circle in Figure 2) that “enhances” the main forces (see dotted arrows). While the event is periodic and has a more intense set of activities compared to the activities happening through the year in the catalyzing place, the evidence in Table A5 in the Appendix suggests that both the place and the event are driven by similar forces and mechanisms (see also the relation between second order themes vi., v., and vi. in Figure 2). For example, the event bolsters the visibility and reputation of the place, and it represents an additional attraction, thus enhancing the *centripetal* forces. During the event, the interactions, emotions, and engagements are more concentrated and intense, thus enhancing the *catalyzing* forces.

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<sup>15</sup> The entrepreneurial ventures constitute the emergence of an industry which in our case spans multiple continents—hence we term it “global.”

And finally, the event leaves the visitors with additional resources (prices, money, knowledge, contacts, reputation) to redeploy elsewhere. Still, the periodic nature of the event pushes visitors to leave the place—thus enhancing the *centrifugal* forces. In conclusion, when the features of the catalyzing place fit the aims and needs of the event, the two end up *mutually reinforcing* each other (see black curved arrows): the place provides an ideal stage for the event, while the event strengthens the reputation and visibility of the place. In the following sections, we review each of the three forces in greater detail.

### ***The centripetal forces***

Since the early 1980s, the sport climbing community has been visiting and returning to Arco. Centripetal means “tending or moving towards a center” (Oxford Dictionary). We thus define centripetal forces as the characteristics of a place and its socio-cultural activities that induce members of a community to visit the place to experience its features and/or local activities.

*Distinctive resources and features.* Arco was a *renowned reputation* for sport climbing. During the first half of the 1980s both Italian and international climbers developed *pioneering climbing practices* in Arco, and their deeds made the location famous (Stefanello, 2017). The opportunity for unknown climbing enthusiasts to compare themselves with (and learn directly from) climbing legends became one of Arco’s distinctive features.

*“Climbers used to go to Arco to meet other climbers, to exchange views, and to see how the sport climbing was evolving. There was an incredible hunger for comparisons. (...) There, in 1986, I found myself climbing a crag with someone I did not know. (...) I later found out, watching Sportroccia, that he was Ben Moon: he won the competition that year.” [Emilio Previtali, blogger, and alpine guide. Source: Emilio Previtali Blogspot blog, 11 October 2014]*

After pioneering the first artificial wall in 1988, Arco developed a reputation for always having the latest innovations in sport climbing. Visitors were eager to scout *groundbreaking technologies* in walls, holds, and shoes, which allowed them to experience the “top-notch routes” in Arco [Robyn Erbesfield, Interview, 2019]. Mountaineering and traditional climbing companies such as Beal, Cassin, Camp, Edelrid, La Sportiva, Petzl, and S.C.A.R.P.A., started to visit Arco to engage with some of the

climbers who were training and testing new equipment in loco.

*“In the second half of the 1980s, I was the product manager of S.C.A.R.P.A., sponsor of the first edition of RockMaster 1987, and I regularly visited Arco in order to see first-hand how the world of sport climbing was evolving. There was an incredible ferment in Arco, you could see businesses “springing up” from the sport climbing practice.” [Maurizio Giordani, former Italian professional athlete, and product specialist at S.C.A.R.P.A.; Source: Interview, 2019]*

The artificial climbing walls also led to *pioneering practices* and cutting-edge formats in bouldering, parallel, and lead races—first adopted at RockMaster and then in most international contests. Such new practices offered—to those who mastered them—the opportunity to become professional instructors, trainers, and open climbing schools around the world.

*Personal incentives to visit.* Climbing in Arco was also instrumental to enhancing one’s *personal reputation* in the climbing world. Competing at RockMaster was the “the most anticipated (climbing) event of the year” [Nicholas Hobley, Interview, 2019].

*“A commentator approached me and my friend (...) and asked us about our biggest dream in climbing. I replied that I dreamed of winning RockMaster.” [Adam Ondra, professional climber and world champion; Source: Interview, 2019]*

RockMaster also provided *material rewards*, as athletes were often offered money, sponsorships, products, and (door) prizes, which were considered very generous, especially when sport climbing was still a niche practice. For example, in 1986, the RockMaster winner received 40 million lira and a car. In Arco and during RockMaster, athletes were “treated like stars” [Robyn Erbesfield, Interview, 2019], with local hosts covering their expenses in full—which was unusual since the athletes were, at the time, barely known. The growing presence of expert climbers in the area also enhanced individual *learning opportunities* by providing technical and professional know-how to perfect materials, solutions, products, which helped new businesses emerge and thrive. Finally, individuals were attracted to Arco in order to (re)live the *positive emotions* of the “festive and joyful atmosphere” [Davide Battistella, Interview, 2019] that characterized the place and the event, which were often remembered as “exciting” and “beautiful.”

*“Athletes here are happy (...) they are in a town that lives for climbing, they are at ease here.”*

[Angelo Seneci, Source: Interview, 2019]

*Community incentives to visit.* Arco fostered a community that engaged in various *exchanges*—including knowledge, resources, goods, and contacts. Unlike other competitive places, community members in Arco—both locals or visitors—engaged in *interactions* that were both *competitive and cooperative*: fierce contests were characterized by a friendly and supportive approach among participants, enthusiasts, and fans.

*“Athletes always shared everything in order to learn; they wanted to win but also to complete the route. They helped each other to reach the end.” [Nicholas Hobley, journalist and sport climbing expert; Source: Interview, 2019]*

The exchanges of ideas allowed members to engage in a spontaneous process of *collective sensemaking* that facilitated changes in the global practice. These were embodied not only in new techniques and technologies, but also in the distinctive physicality of Arco community members.

*“These climbers broke with the classic imagery of traditional mountaineers (...) these new climbers, with no beard (...) long hair, big muscles, pink trousers, and yellow tops appeared as a nice contrast.” (Riccardo Decarli, Source: Interview, 2019)*

This progressively led to collective *identity building* for the community of climbers, where Arco “represented (...) a new consciousness, a new way of living and interpreting climbing” (Luisa Iovane, Source: S.C.A.R.P.A.).

### ***The catalyzing forces***

Arco visitors were exposed to events which were accelerated and intensified by the specific features of the place and experiences within the place. We term these accelerated reactions catalyzing forces—a “catalyst” being an “element which increases the rate of a reaction in a process” (Oxford Dictionary). We define catalyzing forces as local conditions that intensify community interactions, knowledge sharing, and emotional associations in the place.

*Place-specific individual and community sharing.* As Arco was considered the focal place for climbing innovations, visitors’ attention was focused on *sharing technologies and practices* [Davide Battistella, Interview, 2019]. Sharing was the most common activity in loco. It was ongoing through



the year but intensified during RockMaster, which offered “a sort of a B2B event where you could also talk directly to fans and have access to professional athletes” [Giulia Delladio, Executive at La Sportiva, Interview, 2019]. Sharing could happen between individuals and organizations, and among individuals (see Table A5 for details). For instance, athletes and firms often shared with one another. The former could access the newest and most advanced solutions, while the latter could obtain feedback, testing, and commercial endorsements.

*“In Arco, I got to use and test Petzl’s harnesses (...) using their products during the competition, I would give them my feedback.” [Lynn Hill, former RockMaster winner; instructor, author, public speaker; Source: Interview, 2019]*

Notable is the contribution of what we term the ‘springboard firms’ located in Arco—Sint Roc (walls and holds) and La Sportiva (shoes). After developing the first overhanging wall in Arco (1988), Angelo Seneci founded Sint Roc (est. 1989), a firm specialized in the production and sale of artificial walls and holds. Its product development was driven by collaborations with athletes:

*“The connection with athletes and route tracers, here in Arco was essential (...) There was a concrete, technical relationship with them. For example, François Legrand, a sport climbing legend, used to come to Arco very often to study new solutions and products. Jacky Godoffe, international speed climbing athlete, came to Arco to shape the holds of the speed climbing wall. Many others, such as Tribout, Laillè, Di Marino, Lella, were involved in the creation of new technologies and solutions.” [Angelo Seneci; Source: Interview, 2019]*

La Sportiva (est. 1928) produced footwear for traditional climbing until 1982, when it released a pair of light climbing shoes with sticky rubber soles called ‘Mariacher,’ the namesake of a climbing pioneer in Arco who had collaborated on the product design. Later, in 1987, La Sportiva launched the “SG” shoes, the first model with a downturn shape, also developed with (and named after) another famous climber: Stefan Glowacz. These designs inspired the manufacturing of modern climbing shoes around the world. La Sportiva and Sint Roc became official sponsors and partners of RockMaster and have since partnered with athletes visiting Arco. The collaborations between climbers and these two local companies supported the mutual exchange of climbing know-how and the awareness of business opportunities, which were instrumental to climbers aiming to start their own business. Collaborations

typically involved product design, development, and testing, for which the athletes received monetary compensations, visibility opportunities, and technical sponsorships. *Sharing* also happened between climbers—both enthusiasts and athletes—which often led to business partnership.

*“In Arco I started getting interested in designing shoes together with Heinz Mariacher. (...) This was the beginning, the base of Red Chili, because I got a lot of experience in making shoes, creative ideas from these guys. I became quite curious afterwards to set up my own climbing shoe company.” [Stefan Glowacz, Source: Interview, 2019]*

Participants also *shared rituals*, such as the “gesturing and mimicking of the (climbing) passages” [Riccardo Decarli, Interview, 2019], which later became common techniques in the sport. Fans asked athletes for “a signature or a picture” [Lorenzo Delladio, Interview, 2019], which became valuable artifacts to pass *shared memories* and emotions across generations. Overall, the *exposure to diverse actors* (e.g., business and climbing professionals, climbing enthusiasts—see Table A5), allowed the community members to envision and project themselves into different roles within the sport climbing world. In particular, individuals who became business professionals, entrepreneurs, and apical figures, were regarded as role models.

*“Some people like my friend Pietro, who is working with La Sportiva, for a while was in the athletes’ group and was designing shoes (...). The guy that invited me to Italy for RockMaster, Marco Sclaris, is now the head of the Olympic committee representing climbing in the world!” [Lynn Hill, Source: Interview, 2019]*

Several community members were inspired to emulate them, thus embracing business and professional roles in the industry by redeploying ideas, technologies, and practices seen in Arco.

*“Arco’s artificial climbing walls were an inspiration for my future ventures as a professional artificial wall builder. I always looked at how the walls in Arco were built, what changes were made, what new things were introduced.” [Didier Raboutou, Source: Interview, 2019]*

These experiences were transformational as actors morphed their identity, values, and activities in order to embrace a new role within the sport climbing world—for example, by moving from being a professional climber to becoming a business professional in sport climbing.

*Spatial and temporal compression.* Arco is a small, 24 square miles town of 16,000 inhabitants. It is *spatially confined*, located in a valley surrounded by mountains and a lake. It has always been

isolated from major cities; it had no industries, no highways, no airport or train station, no university, and no major attractions aside from beautiful nature and climbing facilities. Arco's small town center was where "climbers, fans, and curious" (Benedetti & Sclaris, 1987: 84) met, particularly during RockMaster, when the demographic density in the area almost doubled.

*"...stands that in the 2 days of the competition were crowded from early in the morning by spectators and insiders: circa 6,000 the people attending the event during the two days." (Benedetti & Sclaris, 1987)*

Such confinement disfavored long or permanent stays, but suited short, intense, recurring visits.

*"My visits [in Arco] were short, full and intense periods of time, but they are the ones I remember the most" [Didier Raboutou, winner of RockMaster 1989 and artificial walls entrepreneur; Source: Interview, 2019]*

Away from their daily commitments and jobs, visitors "immersed" themselves in sport climbing. Conscious of their *limited time* in Arco, they often *crowded* their visits with many *activities* organized all year long by locals in the sport climbing community. This intensified during RockMaster—which offered three days of back-to-back events (Abrate, 1988).

*Place-specific emotional energy.* Arco was often remembered as a truly *exciting* place, characterized by a "unique, both relaxed and competitive vibe" [undisclosed informant; Interview, 2019]. New formats and technologies were introduced to spectacularize the climbing practice.

*"With artificial walls, competitions became more spectacular. (...) we were able to re-define the show." [Angelo Seneci; Source: Interview, 2019].*

Recurring visitors in Arco felt a *sense of belonging and familiarity*, due to the informal lifestyle and friendliness of community members, regardless of their status.

*"During the days of their Olympics, free climbers have peacefully invaded Arco, bringing a breath of light-heartedness, occupying camping slots and bars, chatting, coming together loudly and cheerfully, above every kind of barriers." (L'Adige, 1986)*

However, Arco visitors were also driven by personal *ambitions*, whether to outperform peer members in sport climbing competitions, solutions, or businesses.

### ***The centrifugal forces***

The centripetal and catalyzing forces alone may suggest a classic phenomenon of clustering, in

which actors ultimately move to the catalyzing place to establish and nurture their businesses as it provides daily access to valuable resources and experiences. However, we were surprised to find that visits to Arco almost never turned into permanent relocations. Despite several attractive features in loco, those who identified a business opportunity ultimately left Arco to pursue their venture elsewhere. This “ejection” was due to centrifugal forces— “centrifugal” meaning “moving or tending to move away from a center” (Oxford Dictionary). We define centrifugal forces as characteristics of a place and/or its socio-cultural activities that induce members of a community to leave the place to establish business activities elsewhere.

*Personal incentives to leave.* Various personal and professional reasons accounted for the regular exodus of visitors after their trip to Arco. First, the *attachment to other meaningful locations* often pushed members to return to their hometowns or other places of interest.

*“I didn’t move to Arco because of family pressure.” [Jacky Godoffe; Source: Interview, 2019]*

Climbers often desired to “visit climbing areas around the world” [Stefan Glowacz, in (Mantovani, 1988)] to experience different walls, prove their worth, and—if involved in a business—find new customers and partners. After developing an international reputation by climbing in Arco and at RockMaster, they *strived for recognition in other areas* where they could reap the benefits of their growing popularity. Their reputation enabled them to obtain funding and support to start new businesses, and any products they created or endorsed would be considered high quality. For instance, the German climber Stefan Glowacz became a sport icon in his country after winning at RockMaster (Mantovani, 1988), thus attracting various business opportunities and allowing him to become an acclaimed author in sport climbing.

*Portable economies.* Visitors soon realized that most of the tangible and intangible resources acquired in Arco were not bound to the place. They could instead be re-deployed in other locations where there was a rising demand for sport climbing products, solutions, and experts’ know-how. *Reputational resources* obtained in Arco were among the most important resources to transfer.

*“Arco provided me with fame, and if you are famous, people at home are interested in you because you are an expert in your field.” (Lynn Hill; Source: Interview, 2019)*

The exchanges taking place in Arco offered valuable knowledge in the form of new ideas, business expertise, technical know-how, and professional contacts. Such knowledge was easy to access in Arco, but quite rare elsewhere, thus increasing its value if redeployed in other places. This was particularly likely in the 1980s, when the very first sport climbing companies started, but production was limited, communication technologies were costly and ineffective, and international trades and exports were complex—hence most niche industries operated only at a national level. Thus, new technologies first emerged in Arco, but then were engineered and manufactured as commercial products in other countries. Sponsorships, monetary payments, and awards from competing in RockMaster also offered *financial resources* to start new ventures, which were particularly advantageous for climbers establishing their business in countries with weaker currency and lower labor cost (see the proliferation of firms catalyzed by Arco in Eastern Europe).

*“[Jindřich Hudeček] arrived in Italy as an athlete for the RockMaster competition (...) won some prizes, like a million lire, a small amount in Italy, a big amount in Eastern Europe—a much poorer area (...) with the first few millions lira went back to Prague and bought some small shops.” (Lorenzo Delladio; Source: Interview, 2019)*

*Local entry barriers.* Arco was unsuitable to establish new businesses due to *resource-based entry barriers*, which were characterized by Arco’s scarcity of local demand, few spaces for industrialization (often in isolated locations), and limited support systems—e.g., venture capital, related industries, logistic infrastructure. This made the region unappealing for new firms.

*“Bringing raw materials to Arco (...) meant 3% increase in the overall total costs” (Roberto Santini, Marketing Manager at RockMaster; Source: Interview, 2019)*

In addition, public and private institutions (e.g., local policy makers, banks, investors) offered little material support to new businesses (Prandi, 2007), particularly if run by foreigners. Talking about sport climbing in Arco, informants claimed that:

*“People and politicians don’t tribute it the importance that it deserves (...) the phenomenon is not leveraged as it should, and a targeted policy has never been implemented.” [Albino Marchi in*

(Prandi, 2007)]

Fierce opposition from the few firms in Arco (e.g., La Sportiva) also created *local competition-based entry barriers*. By being strongly embedded within the region, these few but powerful firms managed to capture most local business opportunities. The dual role of the ‘springboard firms’ was thus not only to provide know-how to aspiring entrepreneurs, but also to pre-empt the local demand, thus disincentivizing new firms to co-locate. With La Sportiva dominating the local market for climbing footwear since the 1920s and Sint Rock as the exclusive artificial wall supplier for RockMaster and local gyms, local demand was saturated. Other areas offered “better opportunities to grow” (Mariacher, 2009: 95)—including a growing customer base, venture capital, and infrastructure. This is why the sport climbing industry ultimately did not cluster in Arco, the place that catalyzed it, but spread across the world.

## DISCUSSION

We started our investigation to understand why certain places nurture the emergence of industries. Our study identified and defined a novel concept, *catalyzing places*, as renowned locations which—thanks to their tangible and intangible features—support the emergence and growth of industries that are not clustered around the place itself. We identified a process composed of three sequential forces—i.e., *centripetal* (i.e., attracting), *catalyzing* (i.e., reacting), and *centrifugal* (i.e., ejecting)—by which these places exert an ongoing, cyclical influence over scattered communities of practice bound by shared passion for a specific activity. Communities are attracted to the place’s unique features, and individual and community incentives (i.e., centripetal forces). A visit to the catalyzing place inspires and equips actors with tangible and intangible resources to transform their hobby into a business. The place-specific emotional energy shared by community members, combined with the spatial and temporal crowding of actors and activities, intensifies the sharing of knowledge and opportunities (i.e., catalyzing forces).

This happens in normal conditions and is amplified during specialized events aimed to promote

the practice in an intensified form. The reputation and catalyzing nature of the location makes it ideal to stage such specialized events. The events, in turn, enhance the reputation and catalyzing opportunities of the place. Hence, the ongoing catalyzing processes at the place and the periodic ones during events are *mutually reinforcing*. However, despite being inspired and equipped by the place, actors do not start their businesses *in loco*. Driven by various personal reasons, and by challenging conditions in the area, they move elsewhere to redeploy the resources acquired at the catalyzing place. Surprisingly, some of these resources (e.g., reputation, know-how, currency) are portable and often enjoy greater value elsewhere, thus providing further reasons to leave the place (i.e., centrifugal forces). Overall, the cyclical and ongoing nature of this catalyzing process sustains many actors and their businesses, thus nurturing a collective phenomenon of entrepreneurship and industry emergence, which does not happen through, nor is not explained by, firm clustering.

We propose that catalyzing places exert at least two different types of effects on the communities of practice: a *treatment* and a *selection* effect (see evidence in Table A2). The treatment effect operates when users and enthusiasts visit the place to engage with local practices, and serendipitously identify new business opportunities—i.e., they enjoy an ‘unplanned exposure’ to supporting experiences. This is more common when the place is not yet renowned as a catalyst for businesses; thus, this effect might better characterize the pre-commercialization phase (i.e., incubation). While less common, the place can also exert a treatment effect in later phases of emergence and growth and influence visitors who are unaware of the place’s catalyzing role. The selection effect, instead, implies that the actors are aware of the catalyzing role of the place for business, and thus purposefully decide (i.e., self-select) to visit the place to source opportunities—i.e., they enjoy a ‘planned exposure’ to supporting experiences. In general, the selection effect happens in a later period, once the catalyzing place is already established and renowned, which mostly corresponds to the post-commercialization phase (i.e., emergence and growth). The two processes are not mutually exclusive, and in most cases spontaneous treatment leads to recurring selection, as actors might first be serendipitously inspired by catalyzing experiences at the

place and then, once aware of such opportunities, purposefully return to be further exposed. Through these combined effects, catalyzing places support the transition from users into entrepreneurs and business professionals, thus nurturing new and established businesses in an industry.

**Main Contribution: The Role of Places and User Entrepreneurship in Industry Emergence**

Our study extends prior work on industry emergence (e.g., Agarwal et al., 2017; Klepper, 1996, 1997) by shedding light on the generative role of places for new industries, in a conversation that has almost exclusively associated space and geography to clustering (Porter, 2000; Saxenian, 1996; Tallman, Jenkins, Henry, & Pinch, 2004). Our study suggests a relation between space and industry that cluster research is not able to fully explain; specifically, in the *absence of agglomeration economies* other types of industries might emerge. Our contribution sheds light on a non-trivial phenomenon as in conditions of scattered actors, the role of specific areas might not be as evident as in conditions of localized agglomerations (such as in Duranton & Puga, 2004; Porter, 1996). Our study also fosters a granular, qualitative understanding of the early phases of an industry, which scholars have noted is largely understudied (Agarwal et al., 2017; Aversa et al., 2021b; Moeen & Agarwal, 2017; Moeen et al., 2020).

Research has focused on the influence of various factors in supporting or inhibiting industry and cluster emergence—see for example the role of “actors, actions, and triggers” in Agarwal et al. (2017)—yet the role of space has often been treated as peripheral, at best. Our study argues that certain places are central in influencing the actions of entrepreneurs and communities of practice (Wenger, 1999; Wenger & Snyder, 2000) even beyond the boundaries of the place itself. Prior work hints at the role of the tangible and intangible features that draw communities to specific areas (Croidieu & Kim, 2018), and that space may be organized in ways that sustain their practices *in loco* (e.g., Lüthje et al., 2005; Von Hippel, 1994). Our work builds on these reflections on localization by detailing the place-based elements that offer collective engagement and (re)energize visitors, (Shah & Tripsas, 2007), thus counteracting the tendency of isolated actors to abandon their business venture (Haefliger et al., 2010).



Among the various place-based elements we reviewed, intangible resources deserves further reflection. Our work points to the importance of users' collective emotions, which can be shared even in a scattered, disconnected community. The place originally instills vivid emotions and association into the actors and revamps them when they return for further visits. Emotions (Cardon, Foo, Shepherd, & Wiklund, 2012) and shared meanings (Anthony et al., 2016) have been identified and empirically explored as key enablers of business venturing (Aversa et al., 2021b). Yet, they have mostly been theorized as individual- (Cardon et al., 2009; Murnieks, Mosakowski, & Cardon, 2014) or team-level features (Cardon, Post, & Forster, 2017). Our study not only responds to recent calls to investigate the emotional microfoundations of collective forms of entrepreneurship (see Aversa et al., 2021b for an exception), but also shows how these originate in a specific area and travel through space and time to bind scattered actors into one, distinct community. The ongoing, cyclical influence of the three forces (Figure 2) in our model provide multiple opportunities to revamp actors' attachment to practices that are foundational to new businesses.

In explaining how these scattered actors (and their businesses) are supported, we dissect the various elements underpinning three overarching forces and—more importantly—we analyze their sequence to illustrate a process of industry emergence and growth. Rather than solely focusing on the impact of discrete factors—which offer a useful but incomplete understanding of the phenomenon (e.g., Bell, 2005; Folta et al., 2006)—we develop a process model of industry emergence. We build from the relatively few papers on space and industry that have proposed a process model (e.g., Ferriani, Lazerson, & Lorenzoni, 2020; Lounsbury, Ventresca, & Hirsch, 2003) by offering a granular examination of the three sequential forces through which places support industry emergence. Specifically, our study complements the typically linear, cumulative understanding of industry emergence and growth (e.g., Agarwal et al., 2017; Klepper, 1997), by suggesting an alternative ongoing and cyclical process. While we acknowledge that our centripetal (i.e., attracting) and catalyzing (i.e., reacting) forces might in part overlap with those traditionally exerted by clusters

(Clark, Feldman, Gertler, & Wójcik, 2018; Tallman et al., 2004), we posit that the centrifugal (i.e., ejecting) forces we identify, as well as our conceptualization of industry emergence as a cyclical processes, are new. Moreover, among others two elements within this process model stand out as particularly novel: *springboard firms* and *portable economies*.

### ***Springboard firms***

Springboard firms exert an important, dual role. They support new entrepreneurship by equipping visitors with technical and business know-how to develop new products and solutions (see their role within the catalyzing forces). However, they are also tightly embedded in the local society where they hold dominant market positions. This allows them to pre-empt and saturate local demand, thus limiting opportunities for new ventures to be established in the catalyzing place. As ‘springboards’ these companies help users perform the traditional ‘leap’ towards entrepreneurship (Shah & Tripsas, 2007), but they also create a disincentive to cluster locally, thus projecting visitors into different geographies, and contributing to the establishment of an industry away from the catalyzing place. Springboard firms in catalyzing places thus operate antithetically to anchor firms in clusters (Agrawal & Cockburn, 2003)<sup>16</sup>, which traditionally serve as technological gatekeepers providing idiosyncratic support and opportunities to businesses *in loco* by attracting skilled workers, (Spigel & Vinodrai, 2020), creating spillovers (Feldman, 2003), nurturing serial entrepreneurship (Ferriani et al., 2020), and orchestrating the local network of firms (Baglieri, Cinici, & Mangematin, 2012; Lazerson & Lorenzoni, 1999). Hence, accessing the support of springboard firms is a key motivation for actors (and businesses) to visit the catalyzing place—thus contributing to the centripetal forces—while effectively and efficiently acquiring important knowledge and opportunities—thus contributing to the catalyzing force. Yet, they also incentivize actors to develop their business elsewhere—thus contributing to the centrifugal forces.

### ***Portable economies***

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<sup>16</sup> Anchor firms are also termed ‘anchor tenant firms’ (Agrawal & Cockburn, 2003) or “leading firms” (Lazerson & Lorenzoni, 1999).

Portable economies are diverse and valuable assets which, despite originating in a specific place, are highly portable and redeployable. This means that their value does not diminish, and may even increase, when they are used in a different area with favorable conditions—e.g., inferior labor cost, convenient exchange rate, growing demand. Such assets may include material and financial resources, but also knowledge, contacts, and reputation. Portable economies vary substantially from agglomeration economies, which have been extensively researched in cluster literature and include localized concentrations of specialized suppliers (Krugman, 1991; Marshall, 1890), skilled workers (Porter, 1990), accessible infrastructures (Baum & Haveman, 1997), knowledge (Tallman et al., 2004), technology (Iammarino & McCann, 2006), and spillovers (Marshall, 1890). Like agglomeration economies, portable economies are enhanced by the concentration of individuals and activities in a specific area—which can increase the creation and access to various resources such as know-how, contacts, and visibility. However, distinct from agglomeration economies, portable economies are not bound to a place. By being idiosyncratic to the place and “sticky,” (i.e., non-portable), agglomeration economies attract and retain firms in a specific area (Feldman, 2000; Markusen, 1996; Von Hippel, 1994). Actors must locate in the proximity of to the focal area to benefit from the advantages of the agglomeration economy. This involves financial and personal commitment, which can create significant opportunity-costs (Amit, Muller, & Cockburn, 1995) both for early entrepreneurs (typically lacking resources) and more established ones (whose path dependencies and sunk costs might offset the benefits accessible in the cluster). Such opportunity-costs can in turn inhibit entrepreneurs’ motivation (Shane, Locke, & Collins, 2003) and hinder the pursuit of new business ideas. Our contribution shows that temporary visits to the catalyzing place are sufficient to access portable economies. These visits nurture the establishment and development of collective forms of entrepreneurship, and thus industry emergence. Compared to agglomeration economies (Braunerhjelm & Feldman, 2006), portable economies are more affordable but no less valuable for industry emergence. Appreciating the role of portable economies thus complements our understanding of the

traditional industry emergence process (Klepper, 1996; Moeen et al., 2020) and further disentangles the mechanisms leading to clusters from the mechanisms leading to an industry (Aversa et al., 2021b) by proposing a new condition which substitutes the lack of agglomeration economies in our phenomenon.

### **Wider Implications: Contributions to New Practices and Events**

Our study also contributes to work exploring the role of space in the emergence of new practices (e.g., Furnari, 2014; Howard-Grenville et al., 2013; Lawrence & Dover, 2015; Marquis et al., 2011) by linking the practices (e.g., see evidence in Table A2) to collective entrepreneurial activities, and ultimately to the emergence of an industry. Scholars have emphasized how the creation of new practices is enabled and mediated by actors' positions (e.g., Owen-Smith & Powell, 2004; Powell & Sandholtz, 2012), as well as by successful interaction “rituals” and “catalysts” (Furnari, 2014).<sup>17</sup> Places serve as stages where communities gather to (re)energize collective identities and practices—an important matter which the literature is far from fully understanding. Accordingly, Howard-Grenville et al. (2013: 133) suggest that “future work could explore how colocation generates and sustains experiences, meanings, and emotional responses that drive interactions among individuals, organizations, and their communities.” Yet, such an effect might not just be local. Indeed, Lawrence and Dover (2015: 403) called for “institutional work that is more broadly dispersed geographically.” By investigating the forces exerted by catalyzing places, we respond to both of these calls, and show that localized interactions can enable new practices and industries across multiple geographies. Specifically, our process details the emergence of a series of practices (their products and technologies—see Tables A2 and A3) and a related industry driven by a scattered community that re-engages through reunions in the catalyzing place. We thus suggest that the permanent co-location of

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<sup>17</sup> The catalyzing places share commonalities with the so-called ‘interstitial spaces’ (Furnari, 2014)—such as the ‘liminality’ (Howard-Grenville, Golden-Biddle, Irwin, & Mao, 2011), the ‘emotional energy’ (Collins, 2004: 125), and the ‘interaction rituals’ (Furnari, 2014). Yet, they extend the “small-scale” perspective with processes which span multiple geographies, ultimately creating practices and industries on a global scale. Accordingly, we posit that despite rooted in similar theoretical and phenomenological premises, the ‘catalyzing places’ and ‘interstitial spaces’ should be considered conceptually distinct.

communities discussed in the literature (e.g., Anderson, 2006; Autio et al., 2013) is a helpful yet optional requirement for the creation of collective identities, practices, and related industries. An intense temporary co-location might suffice if other enabling conditions are present—e.g., the periodic influence of centripetal forces which bring back the community to (re)live the catalyzing experiences.

We also contribute to the literature by exploring places that shape, rather than being shaped by, institutions. Our study shares the main assumptions in the institutional literature: places are locations imbued in socially-constructed meanings, and associated with material, cultural and emotional values (Lawrence & Dover, 2015: 373). Yet, rather than focusing on the localized actors' efforts to influence pre-existing higher-order institutions (e.g., Lawrence & Dover, 2015), we explain a phenomenon when such institutions are nonexistent (Scott, 2001), which often occurs when new practices and industries emerge (Aldrich & Fiol, 1994; Alvarez, Young, & Woolley, 2015). Our contribution thus complements studies in institutional theory (Lawrence & Dover, 2015) and social geography (Gieryn, 2000; Massey & Jess, 1995; Tuan, 1977) by highlighting the role of places not only in generating new practices, but also in constructing the institutions that will ultimately legitimize them (such as the climbing federations – see findings and Table A2).

Our case study also illustrates how the contribution of communities of actors to tangible and intangible features of a place may vary with time. Indeed, actors may initially populate specific places due to their tangible features (e.g., convenient geographic location, access to material resources—see the ideal features of Arco we presented), which enable the establishment and development of practices through artefacts and technologies—e.g., abandoned swimming pools in Dogtown and Venice Beach, CA, supported a new skateboarding practice in the mid-1970s (Roth, 2004). Yet, our study provides a comprehensive overview of how an accrual of intangible, socially-constructed meanings and associations allow places to support the establishment of symbolic rituals (Anand & Watson, 2004; Collins, 2004), the genesis and nurturing of individual and collective identities (Howard-Grenville et al., 2013; Kroezen & Heugens, 2019), the definition of group boundaries (Halbawachs, 1980), and the

actors' attachment to an area (Manzo, 2003)—all aspects that, as shown with the case of sport climbing, can reinforce the practices of a new industry.

Lastly, our work contributes to the literature on *events* (Lampel & Meyer, 2008), which can (re)focus the actors' attention (Hoffman & Ocasio, 2001; Nigam & Ocasio, 2010) and provide tangible and intangible support to the emergence of new practices (Hardy & Maguire, 2010; McInerney, 2008), businesses and associations (Garud, 2008; Giudici, Reinmoeller, & Ravasi, 2018), and industries (Meyer, Gaba, & Colwell, 2005). Despite broadly acknowledging the importance of the locations for the events, these studies have yet to explore how the actual features of a place influence the events hosted and their outcomes. Our study provides an initial attempt to disentangle the ongoing role of the place from that of periodic events. It proposes that the two possess similar, *mutually reinforcing* catalyzing mechanisms (in Figure 2 see the enhancing role of 'place-specific emotional energy' and 'spatial and temporal compression' on 'place-specific individual and community sharing' for both the place and the event). When the reputation and the distinctive features of a place fit the nature and aims of a specialized event, the place often becomes the ideal stage to host an event centered around the key practices of the community. This ideal fit maximizes the visibility, allure, and potential of the event. The event—if successful—can in turn enhance the visibility and reputation of the place, and influence visitors by intensifying the catalyzing processes they are exposed to. And if recurring, the specialized event can periodically re-energize both the community and the place itself.

### **Boundary Conditions and Generalizability**

We carefully considered the boundary conditions of our contribution, exploring the limits to generalizability, and acknowledging possible alternative explanations. We start by acknowledging that our process model is primarily applicable to the industry "emergence and growth" phase and in situations where alternative catalyzing mechanisms are not dominant (e.g., professional certifications). Several locations and related events aim to achieve the reputation and influence of catalyzing places, yet few of them manage to. We infer this is because they lack one or more of the enabling elements

presented in our analysis. We thus leveraged two sport climbing cases as comparable counterfactuals—one alternative place and one alternative event—which, although internationally renowned, did not contribute to the emergence of the sport climbing industry. Tables A6 and A7 in the Appendix compare Arco against Verdon Gorges (France), and RockMaster against Vaulx-en-Velin’s competitive event, across the second-order themes underpinning the catalyzing forces. The tables show that these cases lack several enabling elements in comparison to Arco and RockMaster—which suggests why they never achieved a catalyzing role.

We started this work by pointing those two renowned cases—the Grand Tour and the Shaolin Temple—could both be considered catalyzing places. To explore to the extent to which our findings can generalize to other cases, we identified eleven cases (see Table A8 in the Appendix) from different settings and periods that can be considered catalyzing places. This allowed us to separate the necessary conditions from other recurring, yet optional features. All eleven cases possess the necessary conditions to be catalyzing places: they are renowned areas which supported the emergence and growth of industries across multiple locations, through the cyclical process of three forces we identified. We thus realized that while an influence on scattered practices is a necessary condition, some of these catalyzing places might as well present firm *clustering* in the focal area (see for example Murano, the “Glass Island” of Venice, Tech City in London, UK, or Silicon Valley in California). Yet from a certain point onward, these places might have increasing entry barriers and operational costs (e.g., market saturation, fierce competitors, costly real estate, limited space or infrastructures), that disfavor the establishment of new ventures locally, hence exerting centrifugal forces on aspiring entrepreneurs (The Economist, 2018). In such cases, the clusters become attractive for temporary visits during which interested actors try to maximize the acquisition of knowledge, resources, and opportunities necessary to support business ventures established elsewhere. For example, increasing number of students, professionals, and entrepreneurs periodically visit Silicon Valley (Saxenian, 2007), suggesting that this cluster is shaping industries within and beyond its local boundaries (Lécuyer, 2006). Silicon Valley

appears to combine both the traditional features of a cluster and of a catalyzing place (O'Mara, 2005, 2019), as it inspires “entrepreneurial communities worldwide” (Mask, 2016), spreads practices, favors external spinoffs, and ultimately nurtures the emergence of global industries. Catalyzing places can also be present for varying *durations* of time, with some being permanent (e.g., the Shaolin Temple) and others temporary, either because their catalyzing effect ceased (e.g., Dogtown for skateboarding), or because they underwent discontinuous phases (e.g., ‘Track Town’ in Eugene, OR, for the running industry). They can also *extend* to varying numbers of locations, with some being localized in a single place (e.g., Rishinkesh, India, for yoga and meditation) and others extending to multiple locations (such as the U.S. Blues Highway, which connects several influential ‘music towns’ that influenced the global music industry, or the aforementioned Grand Tour in Italy). Lastly, with the diffusion of the Internet, they may also present different *materiality* as they can be hosted in physical or virtual spaces (i.e., online). An interesting case of this kind is the Burning Man, which is known for its extravagant community that meets once a year in Black Rock City, NV, to foster groundbreakingly creative ideas and practices among its participants (often workers in creative industries). What is less known, however, is that this community also continues its activities throughout the year online. Thanks to the diffusion of online environments, communities increasingly create virtual meeting places to nurture activities, which could spark a variety of businesses. The challenges posed by Covid-19 have further incentivized community-based “virtual places,” which span several domains: academia, arts and crafts, science and engineering, social and political activism. While the catalyzing role of these virtual places is still unclear, we believe our work offers a viable framework for future studies.

Moved by precision and parsimony, we focused on a very specific outcome: the emergence of a global, technology-driven industry. Yet, we cannot rule out that our process might, to a certain extent, explain the combined effect of certain places and events in generating other important phenomena, such as creative industries (e.g., Cannes and its Film Festival), artistic movements (e.g., Venice and its Biennale exhibition), international policies (e.g., Davos and its World Economic Forum), or academic



debates (e.g., the cities of the Academy of Management Meetings). It is, however, important to reflect on the boundary conditions underpinning the place versus the event—which in our work emerged as *mutually reinforcing*. Yet, we acknowledge that, under certain conditions, one of the two elements might prevail over the other. First, we posit that places tend to remain relevant when the events they host are a reinforcement and celebration of activities already happening on an ongoing basis at the location (see ongoing sport climbing activities in Arco, but also the ongoing kung fu practice at the Shaolin Temple). This requires the constant presence of actors (often locals or locally-based) to facilitate consistent, coherent goals between the practices at the event and those during the rest of the year. When places are merely selected for their utility to temporarily host an event (i.e., without any underpinning coherence between the everyday activities and event activities), the event may remain predominant, while the place might struggle to create and maintain its own catalyzing role and identity once the event is over (e.g., the case of Davos outside of the period of the World Economic Forum, but also some of the cities hosting the Olympic Games or the World Expo).

Second, while some places manage to maintain their role despite being spread across multiple locations or extended areas (e.g., The Blues Highway or the Grand Tour), events rotating across multiple locations often prevent the establishment of a “self-standing” catalyzing place. For example, the Academy of Management Annual Meeting, despite recursively returning to a relatively small set of cities (e.g., Boston, MA; Chicago, IL; Philadelphia, PA; etc.), has not been particularly rooted in any of them. Thus, its catalyzing activities and knowledge exchanges seldom persist in the city beyond the conference itself.<sup>18</sup> Instead, by being consistently hosted in Stockholm, over the years the Nobel Prize Ceremony has contributed to the flair and reputation of the Swedish capital and has acted as

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<sup>18</sup> When events rotate across locations, the catalyzing role can be, to a certain extent, associated with the country where these locations are. The Academy of Management Annual Meeting has traditionally been hosted in, and associated with, the United States and American academic institutions. The recent inclusion of hosting locations outside the United States (e.g., Montreal, Vancouver, Copenhagen) will expand the geographical reach of the initiative and its inclusivity, while possibly attenuating the association with American institutions’ catalyzing function. In the long run, this could also shift the perception of the AOM’s catalyzing function as “less American” and “more international.”

steppingstone for a series of ongoing public cultural initiatives promoted and organized by the Nobel Foundation and the Nobel Prize Museum.<sup>19</sup>

### **Limitations and Future Research**

Our research has evident limitations due to the qualitative nature of the study and the use of interviews, which can be potential sources of biases or informants' sensemaking aimed at strategically supporting the interested interpretation of dominant elites—which we tried to limit through careful use of archival data. Future studies should use different techniques to identify and measure new factors, mechanisms, and outcomes, to shed light on alternative explanations that our qualitative approach cannot rule out.

Our study focused on ongoing processes that follow the industry incubation stage—i.e., after early users selected a place for their practices. Our research cannot provide a generalizable explanation for what causes early users to select a specific place that will eventually perform a catalyzing role. In Arco, tangible features such as the beautiful landscape, the mild weather, and the solid rock quality attracted the first climbers, while intangible features became prominent later. However, other places might be initially selected due to socially constructed meanings and associations. Future research should examine the selection and genesis of a catalyzing place more systematically.

We also acknowledge that there could be alternative explanations to the emergence of the sport climbing industry. In particular, evidence suggests that before the 1980s the climbing community was fragmented and disconnected. Arco offered a “meeting point” that brought these actors physically closer to share knowledge, practices, and emotions. Moreover, the later rise of the Internet and other modern communication technologies also closed geographic and social distances, which further accelerated the diffusion of sport climbing and the growth of its industry. It is thus reasonable to wonder if, without Arco's catalyzing role, the global sport climbing industry would have eventually

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<sup>19</sup> See for example: <https://www.nobelprize.org/public-events/>

emerged because of better communication tools. Yet, experts concur that the contribution of Arco provided additional value to mere online exchanges, and its role as a catalyst is demonstrated by the thousands of people who still visit the area despite the fact that most of the know-how necessary to start a sport climbing business is readily available online.

Finally, our qualitative research design cannot provide a test of causality, thus leaving several questions open on the relation and influence of the place vs. the event. We know that the rise of Arco as the “Mecca of Climbing” preceded the establishment of RockMaster as the “Wimbledon of Climbing.” Yet it is unknown whether Arco would maintain its catalyzing role without RockMaster; or whether RockMaster—if relocated—could potentially transform an anonymous space into a catalyzing place. Despite acknowledging the mutual reinforcement of the place and the event in our theorization, anecdotal evidence seems to suggest that the place could maintain its importance independent of the event, at least in the short term. First, RockMaster originated in a different area (Bardonecchia) but, to rise to its fame, it had to move to a more suitable location (Arco)—i.e., a renowned climbing city offering better resources for the practice. Recently, many major events mobilized the global sport climbing community, but none has risen to the status of RockMaster, possibly because these events are hosted in places which lack a catalyzing role (see counterfactuals—Tables A6 and A7). Second, in summer 2020 RockMaster was cancelled due to concerns over Covid-19 contagion in the Arco area. Despite the challenges and risks of travelling to Arco, evidence showed that many members of the international sport climbing community reunited in Arco to carry on the usual practices. Arco thus remained the focal point to gather the community, even in extreme circumstances and the absence of RockMaster. However, this anecdotal evidence is not definitive proof of place existing in absence of an event, and we encourage future research to explore the causal nexus between places and events with ad-hoc instruments.

## **CONCLUSIONS**

The investigation of geography within industry studies has been so tightly connected to the

clustering phenomenon that scholars have often overlooked important topics, such as the generative synergies between localized phenomena and non-clustered industries. This lack of attention has been further exacerbated by the growing interest in the rise of digitization and globalization. Indeed, in an increasingly small and connected world, and where—in part due to pandemic contingencies—virtual spaces seem to have substituted physical locations for most interactions, it is reasonable to ask whether there is still “a space for place” (cf. Gieryn, 2000) in management research. In other words, will geographies and locations continue to profoundly influence, inspire, and nurture human activities? Responses have been mixed, and some scholars have even claimed we might be witnessing “the death of geography” (Morgan, 2004). We, instead, believe that physical locations do (and will) greatly influence individuals and organizations in several non-obvious yet valuable ways. We argue that places still matter in modern societies and investigating the processes connecting specific areas to the emergence of industries that are not locally clustered—as we tried to do in this study—is important for theory and practice. It can unveil, among other aspects, ways to influence the growth and localization of emerging industries *ex-ante*. This may promote a better understanding of the geographical dimensions of industry emergence, thus supporting the adoption of a proactive, informed approach to compelling phenomena *early-on*, such as clustering, industrial spill-overs, delocalization, or globalization. To date, practitioners and policy makers have often addressed these phenomena *ex-post* and through a fragmented perspective. Our investigation unveiled a “bottom-up” phenomenon, specifically the emergence of an industry driven by passionate communities, and we refrain from depicting this as the sole outcome of an agentic design. Still, given the positive externalities that such places entail, we invite executives and policy makers to consider our insights to facilitate the catalyzing role of places and events, as targeted actions can indeed create generative mechanisms to support the transformation of amateur practices into businesses.

Goethe’s opening quote—penned at the end of his journey through Italy—reminds us that individuals and communities, through time and space, have continuously sought locations that can

inspire and support the realization of their inner aspirations—which often take the form of businesses and entrepreneurial projects. The generative mechanisms connecting these places to collective actions are far from being fully unveiled. And yet we hope our study might start to shed light on a conversation which—in our opinion—is worth a longer scholarly journey, or in other words, a “grand tour.”

**TABLE 1**  
**Data Sources and Use**

<b>Type of data</b>	<b>Sources</b>	<b>Use in the Analysis (e.g., gathering, triangulating)</b>
<i>Published secondary sources</i>	<i>Climbing-related documents:</i> industry reports [4], history books [12], online (archival) newspaper and journal articles and webpages [62], documentaries [6], books and publications about Arco [9]. Total pages: 2,247.	Familiarize with the concepts of sport and competition climbing. Support the reconstruction of the steps that led to the birth of the sport climbing industry. Frame Arco in the global context of climbing.
<i>Archival secondary sources</i>	<i>Società degli Alpinisti Tridentini (SAT) archive [Biblioteca della Montagna, Trento (Italy)]:</i> Rivista Club Alpino Italiano (CAI), 1980 – 2004 [10]; Rivista della Montagna, 1980 – 2000 [20]; Alp, 1985 – 2000 [17]; Alp – Speciale Ritratti, 2008 – 2010 [2]; High, 1985 – 1990 [1]; Rotpunkt, 1985 – 2001 [30]. Total pages: 458.	Clarify event timelines. Define the technological innovation in climbing products. Integrate, and cross-check interview insights. Support the reconstruction of the history of Arco, and its role in promoting new practices and technologies.
	<i>S.S.D. Arrampicata Sportiva Arco archive:</i> archival national press releases, 1987 – 2018 [50]; events’ posters and playbills, 1987 – 2018 [34]; lists of participants, winners, and sponsors and company’s statutes, 1987 – 2018 [27]; technical documentation for climbing walls and competitions [29]; photographic material [10]. Total pages: 260.	Check facts and observations to overcome the limitations of historical accounts. Obtain more granular verification of the background work of organizers. Keep track of structural changes between RockMaster editions.
<i>Interviews</i>	<i>Preliminary interviews with experts</i> that experienced the birth of sport climbing.	Familiarize with the practice of rock climbing and sport climbing, the technological evolution of climbing products.
	<i>Focused interviews with professional climbers and entrepreneurs</i> that used to visit Arco.	Investigate the mechanism by which Arco fostered that triggered and sustained the emergence of sport climbing practice and related industry.
	<i>Focused interviews with competitors, entrepreneurs, organizers, and experts</i> that were involved in the first editions of RockMaster.	Investigate the dynamics within Arco’s sport climbing events that fostered Arco’s catalyzing effect.
<i>Observations</i>	<i>Participation to 2019 IFSC youth world championship [Arco, Italy] and 2019 RockMaster [Arco, Italy]:</i> informal conversations with organizers, athletes, journalists, fans, entrepreneurs, and volunteers, ranging from brief exchanges to longer talks during RockMaster events and press events.	Integrate historical observations with current informants’ accounts, to improve our understanding of Arco’s dynamics, support emerging interpretations. Discuss insights from observation, clarify uncertainties regarding history and technologies of sport climbing.

**TABLE 2**  
**Interviews with Informants**

<b>Name</b>	<b>Role</b>	<b>Profile</b>	<b>Interviews</b>	<b>Min</b>
Battistella, Davide	Former athlete / Expert	Competed in Sportroccia '85 and RockMaster '88; president of FASI.	1	30
Calzà, Sergio	Organizer	Vice-president of RockMaster, former president of Arco's Club Alpino Italiano (CAI).	1	65
Coscia, Francesco	Expert	Sports Doctor expert in climbing; director of the IFSC medical commission.	1	40
Decarli, Riccardo	Expert	Author of alpinism and climbing books, journals, and magazines; librarian and historian at Biblioteca della Montagna, Trento; witnessed the first editions of RockMaster.	1	96
Delladio, Francesca	Executive	Communication executive at La Sportiva	1	30
Delladio, Giulia	Executive	Executive at La Sportiva.	1	40
Delladio, Lorenzo	Entrepreneur	CEO of La Sportiva (Italian climbing shoes manufacturer).	2	70
Di Marino, Leonardo	Former Pro Athlete / Expert	Competed in several editions of Sportroccia and RockMaster; official route tracer for IFSC international competitions, FASI national competitions, and RockMaster.	1	35
Erbesfield, Robyn	Former athlete / Entrepreneur	Winner of RockMaster '94; founder and coach of ABC Kids Climbing.	2	30
Facchini, Mario	Organizer	Press secretary of RockMaster.	1	25
Ghisolfi, Claudia	Athlete	Participated to several editions of RockMaster as athletes.	1	32
Ghisolfi, Stefano	Athlete	Participated to several editions of RockMaster as athletes.	2	45
Giordani, Andrea	Entrepreneur; M. Giordani's brother	Climbing and mountaineering practitioner, business consultant and mountain products designer; co-founder and owner of a mountain equipment distribution company.	2	45
Giordani, Maurizio	Former Athlete / Entrepreneur	Mountain guide; part of the Italian Academic Alpine Club and the French « Groupe de Haute Montagne » (GHM); competed in Sportroccia 1985 and Sportroccia 1986; published three books on Marmolada.	2	60
Godoffe, Jacky	Former Athlete / Entrepreneur	Competed in several editions of Sportroccia and RockMaster; official route tracer for IFSC competitions and RockMaster; National trainer of the French climbing teams.	1	30
Hill, Lynn	Former athlete / Entrepreneur	Winner of 5 RockMaster (1987, 1988, 1989, 1990, 1992); sport climbing instructor, author, public speaker.	1	55

Hobley, Nicholas	Expert	Journalist, director, and editor at Planetmountain.com.	1	40
Mantinger, Christian	Former athlete / Entrepreneur	Former sport climbing athlete at national level; owner of HIGH5 Climbing Service.	1	42
Mase, Mirko	Entrepreneur	Alpine guide and owner of King Rock indoor climbing gym in Verona, Italy.	1	35
Morandini, Mario	Organizer	President of RockMaster; Arco's former councilor for tourism.	2	65
Ondra, Adam	Athlete	Winner of 3 RockMaster (2011, 2015, 2016); professional climber.	1	39
Raboutou, Didier	Former Athlete / Entrepreneur	Winner of RockMaster 1989; co-founder of ABC Kids Climbing; professional builder of artificial climbing walls.	1	30
Rocca, Sergio	Entrepreneur	Alpinism enthusiast; producer and director of alpinism documentaries; climbing gym. owner; participated in several editions of RockMaster as a fan.	1	35
Santini, Roberto	Organizer	Marketing manager for RockMaster.	2	120
Solaris, Marco M.	Expert	Former photographer and reporter during the earliest editions of RockMaster; founder of FASI in 1988 and current president of IFSC	1	45
Seneci, Angelo	Organizer / Entrepreneur	Technical director of RockMaster since 1987; owner and founder of Sint Roc Srl.	3	120
Shubert, Jakob	Athlete	Winner of RockMaster 2019; qualified athlete for 2020 Olympic Games.	1	30
Stefanello, Vinicio	Expert	Journalist, director, and editor at Planetmountain.com.	1	30
Taliento, Floriano	Organizer	Organizer of RockMaster since Sportroccia in 1986.	1	80
Tondini, Nicola	Entrepreneur	Alpine guide and owner of Rock Spot indoor climbing gym in Milano, Italy.	1	30
Undisclosed informant	Former athlete /Entrepreneur	Internationally renowned climber which opened dozens of new classic and crag routes; founder and co-owner of a chain of climbing stores.	1	30
Undisclosed informant	Business executive	International relations manager in a large company manufacturing and distributing mountain equipment.	1	35
<b>Total</b>			<b>41</b>	<b>1,534 (25.5h)</b>


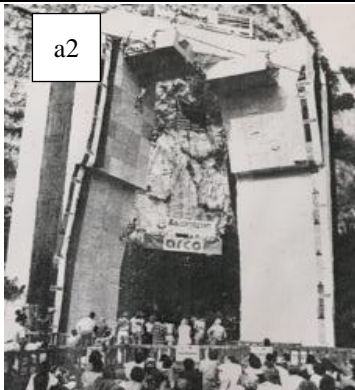




**TABLE 3**  
**Final Data Structure and Codes**

First-order concepts	Second-order themes	Aggregate dimensions	
(1) <i>Renowned Reputation</i> : mythical stories and legends about pioneering actors and activities in Arco.	i. Distinctive Resources and Features	Centripetal Forces	
(2) <i>Ideal Setting</i> : favorable climate and unique landscapes of the Arco area. Legendary sport climbing sites; easy-to-reach, and high-quality climbing walls.			
(3) <i>Pioneering Practices</i> : Innovative climbing techniques, spectacular competition formats. Competent management able to arrange and offer high-quality services to athletes, sponsors, and visitors all through the year.			
(4) <i>Groundbreaking Technologies</i> : innovative products and solutions available in Arco and at RockMaster.			
(5) <i>Personal Reputation</i> : fame, credibility and exposure tributed to the actors who climbed in the Arco area and participated (possibly with success) to RockMaster, an exclusive, invitation-only event.	ii. Personal Incentives to Visit		
(6) <i>Material Rewards</i> : Companies in Arco remunerating athletes and experts for product testing, development, and endorsement; generous monetary prices, gifts, and awards for top performers at RockMaster.			
(7) <i>Learning Opportunities</i> : insight on the new trends in sport climbing; exposure to innovative competitive formats, products, solutions, and technologies. Possibility to enlarge one's contact network.			
(8) <i>Positive Emotions</i> : Arco's natural environment ideal for relaxing periods surrounded by nature. Experience of positive, fulfilling emotions. Familiar and welcoming setting.	iii. Community Incentives to Visit		
(9) <i>Exchanges</i> : possibility to socialize and engage in friendly meetings with mountaineers, athletes, enthusiasts, and entrepreneurs to exchange ideas, experiences, and know-how.			
(10) <i>Collective Sensemaking and Identity Building</i> : collective discussions and reasoning on the nature of the practice and the development of the sport climbing industry, and its specific collective identity.			
(11) <i>Competitive and Cooperative Interactions</i> : mix of competitive and cooperative practices that enable athletes, amateurs, and firms to compare their quality with peers and competitors, while improving their abilities.	iv. Place-Specific Individual and Community Sharing		Catalyzing Forces
(12) <i>Sharing Technologies</i> : access to technological innovations for sport climbing: shoes, walls, and holds.			
(13) <i>Sharing Practices</i> : engagement with different business activities and innovative sport climbing practices.			
(14) <i>Sharing Rituals and Memories</i> : visitors share common rituals which involve the hand-over of know-how about climbing. Fans and athletes exchange pictures, signatures, memorabilia, and other tangible artefacts of memories.			
(15) <i>Exposure to Diverse Actors</i> : engagement with and observation of heterogeneous participants (e.g., international athletes and fans, business professionals, and entrepreneurs in the sport climbing industry) and organizations (e.g., new international companies, local springboard firms, sport associations and federations, media).			

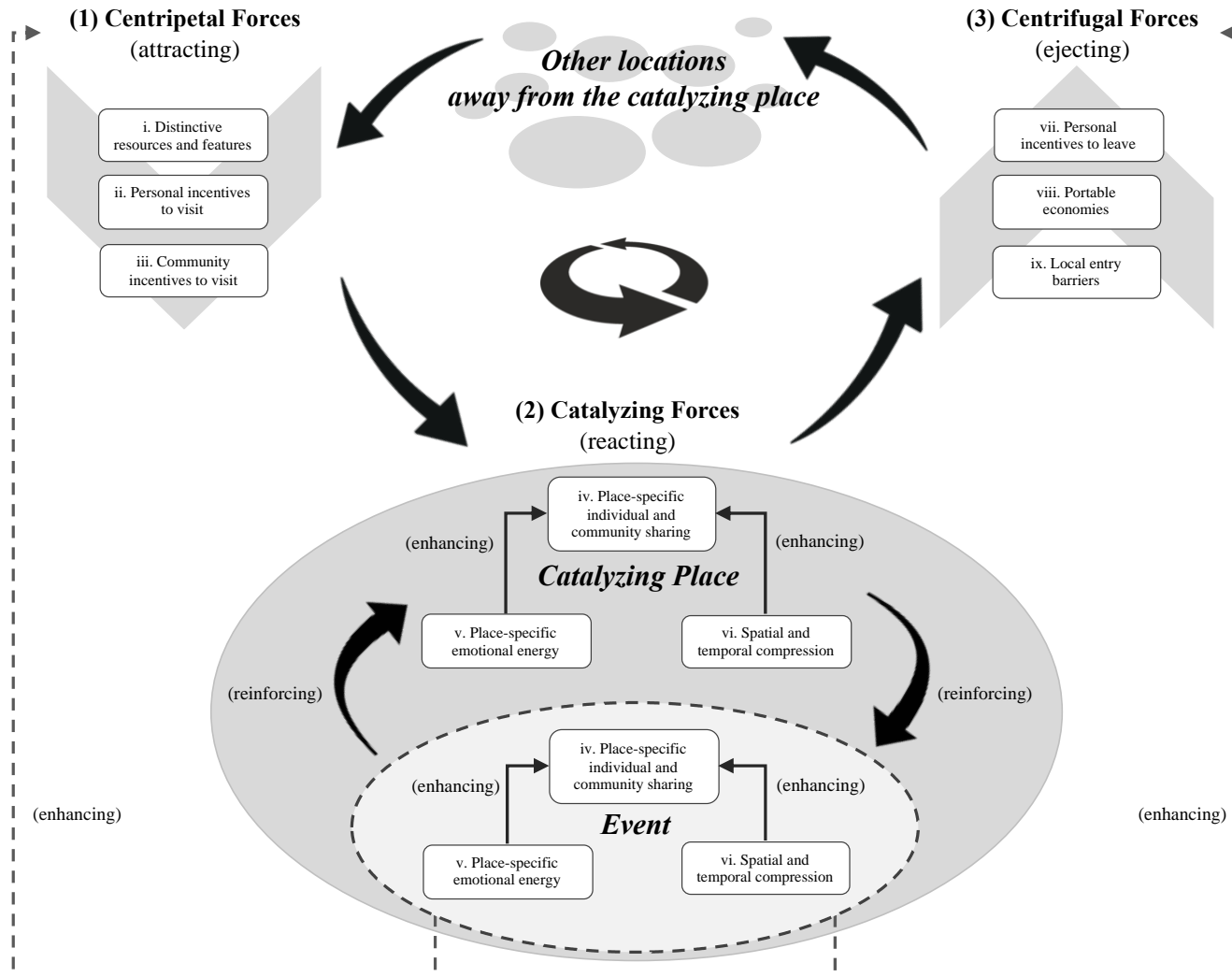


(16) <i>Excitement</i> : Visitors associate Arco to a friendly approach to sport climbing, away from formalism and duties. Arco's natural and artificial resources and RockMaster's innovative technologies and formats impress the visitors.	v. Place-Specific Emotional Energy	Centrifugal Forces
(17) <i>Sense of Belonging and Familiarity</i> : visitors associate Arco to a comfortable and informal lifestyle, in contact with nature and away from formalism and duties.		
(18) <i>Ambition</i> : Firms visit Arco to develop products or capture market opportunities. Athletes and enthusiasts visit Arco to excel in the sport and successfully compete against peers.		
(19) <i>Spatial Confinement</i> : Arco is a small, isolated town. All the activities take place in a small area.	vi. Spatial and Temporal Compression	
(20) <i>Time Limitation</i> : sport climbing in Arco is a seasonal activity and visits to Arco during the year last a limited amount of time. RockMaster dates are limited to lasts three days only.		
(21) <i>Crowding of Activities</i> : During their short stays visitors engage with many activities. Crowding of activities is exacerbated during RockMaster, which presents an intense program of events.		
(22) <i>Attachment to Other Meaningful Locations</i> : visitors are attached to other locations where they want to return (e.g., hometown, areas that are the center of their personal and business interests).	vii. Personal Incentives to Leave	
(23) <i>Strive for Recognition in Other Areas</i> : The reputation derived from climbing in Arco (or winning at RockMaster) spreads in the international community. This motivates visitors to reap the benefits of such growing popularity in other areas.		
(24) <i>Reputational Resources</i> : athletes gain international recognition and climbers increase reputation for having climbed in Arco and at RockMaster. This creates business opportunities to capture outside Arco.	viii. Portable Economies	
(25) <i>Knowledge Resources</i> : by visiting Arco, actors acquire valuable knowledge which it rare elsewhere. This includes know-how and contacts which are valuable to capture business opportunities.		
(26) <i>Financial Resources</i> : climbers acquire financial and material resources that can be easily transferred and redeployed elsewhere. Sometimes their value increases abroad (e.g., currencies).		
(27) <i>Local Resource-Based Entry Barriers</i> : Arco's public institutions offer limited support to sport climbing ventures (e.g., limited areas for industrialization; costly logistics; limited venture capital; lack of research centers.)	ix. Local Entry Barriers	
(28) <i>Local Competition-Based Entry Barriers</i> : ( <i>Springboard Firms</i> ): presence of local companies, strongly embedded in the area, which pre-empt the local business opportunities, and create entry barriers.		

**FIGURE 1**  
**Evolution of the Artificial Walls, Holds, and Climbing Shoes Through the Catalyzing Role of Arco**

	Before Arco	Catalyzing influence of Arco	After Arco
<i>a. Artificial walls and holds</i>	<p>a1</p>  <p>1987 – Vertical World, Seattle (US)            (First bricolage climbing wall)</p>	<p>a2</p>  <p>1988 – RockMaster, Arco (Italy)            (First commercialized overhanging wall)</p>	<p>a3</p>  <p>2000s – Vertical World, Seattle (US)            (Modern overhanging wall)</p>
<i>b. Climbing shoes</i>	<p>b1</p>  <p>1970 – EB “Super Gratto” shoes (First climbing shoes with sticky rubber sole)</p>	<p>b2</p>  <p>1987 – “SG” La Sportiva shoes            (First curved shoes with downturned sole)</p>	<p>b3</p>  <p>2000s – EB “Nebula” shoes            (Modern climbing shoes with downturn sticky rubber sole)</p>

**FIGURE 2**  
**The Catalyzing Place and its Cyclical Process for Dispersed Industry Emergence**  
**(4) Entrepreneurial Activities**



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**ONLINE APPENDIX**

**THE GRAND TOUR:  
THE ROLE OF CATALYZING PLACES FOR INDUSTRY EMERGENCE**

**Paolo Aversa<sup>1\*</sup>, Emanuele Bianchi<sup>1</sup>, Loris Gaio<sup>2</sup>, Alberto Nucciarelli<sup>2</sup>**

<sup>1</sup>Cass Business School, City, University of London

<sup>2</sup>University of Trento

\*Corresponding Author: [paolo.aversa.1@city.ac.uk](mailto:paolo.aversa.1@city.ac.uk)

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**TABLE A1**  
**First-Order Concepts: Selected Evidence**

	<b>Representative quotes</b>
<i>1. Renowned Reputation</i>	<p>“They invited people that were well-known climbers from around the world, that had stories, and had a lot to do with the history of climbing in their own country; they were like ambassadors of climbing in addition to being very good climbers in very different ways.” (Lynn Hill, Interview, 2019)</p> <p>“Three places are credited as the birthplaces of modern recreational climbing: the Peak and Lake Districts of England, the Elbe Sandstone region of Southeaster Germany, and the Dolomites of Northern Italy.” (Wilkinson, 2019)</p>
<i>2. Ideal Setting</i>	<p>“Arco had the advantage of nicer landscapes and a great climate.” (Adam Ondra, Interview, 2019)</p> <p>“We started to climb all seasons—winter excluded .... the limestone of Sarca Valley is good on solid and non-cracked plates ... sometimes you walk for hours in the mountain and climb over loose scree just to reach a few meters of walls comparable to the extreme walls in Arco.” (Camanni, 1985)</p>
<i>3. Pioneering Practices</i>	<p>“Climbers used to go to Arco to meet other climbers, to exchange views, and to see how the sport climbing was evolving. There was an incredible hunger for comparisons. (...) There, in 1986, I found myself climbing a crag with someone I did not know. (...) I later found out, watching Sportroccia, that he was Ben Moon: he won the competition that year.” (Previtali, 2014)</p> <p>“In those early years the young Bassi, together with Heinz Mariacher, Maurizio "Manolo" Zanolla, Luisa Iovane and Bruno Pederiva formed part of a select group (visionary and non-conventional) that became one of the driving forces behind the evolution of sport climbing at crags and on the larger rock faces. In doing so they, along with a handful of other climbers, revolutionized all the conceptions, preconceptions, and beliefs that had prevailed until then among climbers. Their base was the valley around Arco, their aim a totalizing dream.” (Stefanello, 2004)</p> <p>“For 20 years we pioneered the format of ‘speed’ [competition] using the formulas of the ‘parallel’ and ‘duel’ ...it is one of the formats born in Arco, at RockMaster, that has been adopted by the international federation 20 years later.” (Angelo Seneci, Interview, 2019)</p>
<i>4. Groundbreaking Technologies</i>	<p>“We built a climbing stadium, for the first time in the history of climbing, complete with stands and spaces dedicated to journalists and television operators [the next year] we decided to build an artificial climbing wall, reversing the standards of that period.” (Mario Morandini, Interview, 2019)</p> <p>“In the second half of the 1980s, I was the product manager of S.C.A.R.P.A., sponsor of the first edition of RockMaster 1987, and I regularly visited Arco in order to see first-hand how the world of sport climbing was evolving.” (Maurizio Giordani, Interview, 2019)</p> <p>“The fact that it was redpoint and on sight made for really nice balance for the climbers, you could always see who the best climbers were because you had two different styles (...) The quality of the route setting (of Arco) was always top-notch.” (Robyn Erbesfield, Interview)</p>
<i>5. Personal Reputation</i>	<p>“It was the most anticipated event of the year (...) An invitation to RockMaster was really prestigious: competing at RockMaster was a great achievement, winning was the dream of every climber at that time.” (Nicholas Hobley, Interview, 2019)</p>

6. <i>Material Rewards</i>	<p>“If there was one event that I have always wanted to win, then it's the Arco RockMaster ... It was the second competition ever, and you only get to come if you're invited ... In climbing terms, this is the Wimbledon of competitions.” Gaz Parry, in (Grimes, 2007)</p> <p>“Athletes were very well paid, Angelo [Seneci] was the first one to give a door prize to every participant.” (Nicholas Hobley, Interview, 2019)</p>
7. <i>Learning opportunities</i>	<p>“I also remember that, when I was competing, they would pay for us to come from America to do the competition: an athlete was treated like a star. They paid for accommodation, hotels, and airfare.” (Robyn Erbesfield, Interview, 2019)</p> <p>“... I wanted to live a first-hand experience to form an opinion [about sport climbing].” (Mariacher, 2009a)</p> <p>“Arco’s artificial climbing walls was an inspiration for my future endeavors as a professional artificial wall builder. I always looked at how the walls in Arco were built, what changes were made, what new things were introduced.” [Didier Raboutou, Source: Interview, 2019]</p>
8. <i>Positive Emotions</i>	<p>“The atmosphere was extremely festive and joyful.” (Davide Battistella, Interview)</p> <p>“Athletes here are happy (...) they leave the climbing stadium, and they are in a city that lives for climbing, they are at ease here.” (Angelo Seneci, Interview, 2019)</p>
9. <i>Exchanges</i>	<p>“Four days in which people met, exchanged experiences.” (Angelo Seneci, Interview, 2019)</p> <p>“Arco was a moment to connect (...) everyone was there (...) people that participated RockMaster had the same age, more or less, as the spectators, it was easy to empathize with them.” (Riccardo Decarli, Interview, 2019)</p>
10. <i>Collective Sensemaking and Identity Building</i>	<p>“[Arco] represented not only the solution to difficulties initially perceived as insurmountable, but also a new consciousness, a new way of living and interpreting climbing.” (Luisa Iovane, S.C.A.R.P.A. Website)</p> <p>“These climbers broke with the classic imagery of traditional mountaineers (...) these new climbers, with no beard (...) long hair, big muscles, pink trousers, and yellow tops appeared as a nice contrast.” (Riccardo Decarli, Interview, 2019)</p>
11. <i>Competitive and Cooperative Interactions</i>	<p>“Given how climbing was developing, it was logic to me that, sooner or later, the competition would be the only way to seriously compare with each other (...) I was attracted by the idea of direct comparison in front of spectators and judges.” (Mariacher, 2009a)</p> <p>“Athletes always shared everything in order to learn; they wanted to win but also to complete the route. They helped each other to reach the end.” (Nicholas Hobley, Interview, 2019)</p> <p>“At that time [the 1980s and 1990s] there was not an extreme competition, fun was the essential component for spectators and athletes.” (Riccardo Decarli, Interview, 2019)</p>
12. <i>Sharing Technologies</i>	<p>“In Arco, I got to use and test Pestle’s harnesses (...) Together with the sponsor relationship with them, using their products during the competition, I would give them my feedback.” (Lynn Hill, Interview, 2019)</p> <p>“Arco and RockMaster introduced the first artificial overhanging climbing walls, and shoes had to be adapted to them. The first overhangs created the problem that athletes needed softer, less rigid shoes, that locked onto overhanging panels and holds with the heels. On natural rocks, heels were never used, but they were important with artificial overhangs (...) shoes become prehensile ...” (Delladio Lorenzo, Interview, 2019)</p> <p>“The connection with athletes and route tracer, here in Arco was essential (...) There was a concrete, technical relationship with them. For example, François Legrand, a sport climbing legend, used to come to Arco very often to study new solutions and products. Jacky Godoffe, international speed climbing athlete, came in Arco to shape the holds of the speed climbing wall. Many others, such as Tribout, Laillè, Di Marino,</p>

Lella, were involved in the creation of new technologies and solutions.” (Angelo Seneci, Interview, 2019)

“Back then, artificial walls almost did not exist (...) nobody knew how to make them at the beginning of the project (...) I went to talk to a professional that built scaffoldings in Trento, and when I explained my project to him...he thought that I was crazy! (...) We made panels together with some friends who practiced surf (...). Grips were made out of modeling clay, baked in my kitchen oven, and coated with grit in France. (...) We basically invented the first technologies linked to climbing walls and panels.” (Angelo Seneci, Interview, 2019)

*13. Sharing Practices*

“... exposition of products to the public during competition (...) It was a unique event, a sort of a B2B event where you could also talk directly to fans and have access to professional athletes.” (Giulia Delladio, Interview, 2019)

“Many soles of Boreal shoes - which had great soles but they didn't work as shoes overall - were taken apart and fitted on our own (shoe) models, and given to Manolo, Mariacher to be tested on Arco's walls (Lorenzo Delladio, interview, 2019)

“I started getting interested in designing shoes together with Heinz Mariacher. (...) This was the beginning, the base of RedChili, because I got a lot of experience in making shoes, creative ideas. I became quite curious afterwards to founding my own climbing shoe company.” (Stefan Glowacz, Interview, 2019)

“We always gave feedback to sponsors and producers.” (Robyn Erbesfield, Interview, 2019)

*14. Sharing Rituals and Memories*

“In addition, seeing the athletes climbing an artificial wall helped us seeing their movements. We wanted to see their movements, comment on them, have fun.” (Riccardo Decarli, Interview, 2019)

“Athletes were not used to be recognized in public, but in Arco they were stopped in the streets for a signature or a picture.” (Lorenzo Delladio, Interview, 2019)

“...a lot of young people, who collected stickers, t-shirts, caps, posters, memories of every kind; everyone got away with a completely unprecedented image of Arco and Trentino.” (Cronaca di Trento, 1986)

*15. Exposure to Diverse Actors*

“Some people like my friend Pietro, who is working with La Sportiva, for a while he was in the athletes' group and was designing shoes (...) The guy that invited me to Italy for RockMaster, Marco Sclaris, is now the head of the Olympic committee representing climbing in the world.” (Lynn Hill, Interview, 2019)

“RockMaster is a competition, but it is also a celebration. The beauty of it is that you find yourself with people that are not from your country, you meet athletes with less pressure [of the competition] (...) and exchange some words.” (Claudia Ghisolfi, Interview, 2019)

“It was a moment to connect with La Sportiva; as an athlete, you would do the competition and then visit the factory to talk about the shoes, the products, basically trying to decide how to make the product stronger” (Robyn Erbesfield, Interview, 2019)

*16. Excitement*

“In an artificial structure, you can define the show (...) much freer than with a natural wall (...) we led an evolution in formats of competition and in tracing routes that increased the overall spectacularism [of RockMaster].” (Angelo Seneci, Interview, 2019)

“With a liberating roar the fans (circa 4000 people were there since morning) welcome Patrik Edlinger ...for the evening, a speed contest was organized, in parallel, and the

	show ‘inflames’ the spectators, that cheers loudly for Rolando Larcher.” (Benedetti & Sclaris, 1988)
17. <i>Sense of Belonging and Familiarity</i>	<p>“The health plan adopted by international competitions started here (...) thanks to the friendliness of the environment (...) the environment is both professional and familiar.” (Francesco Coscia, Interview, 2019)</p> <p>“During the days of their Olympics, free climbers have peacefully invaded Arco, bringing a breath of light-heartedness, occupying camping slots and bars, chatting, coming together loudly and cheerfully, above every kind of barriers.” (L’Adige, 1986)</p>
18. <i>Ambition</i>	<p>“A commentator approached me and my friend (...) and asked us about our biggest dream in climbing. I replied that I dreamed of winning RockMaster.”(Ondra, 2019)</p> <p>"If there was one event that I have always wanted to win, then it's the Arco Rockmaster (...) Yeah, it's a great privilege to compete in a field like this, never mind win. In climbing terms, this is the Wimbledon of competitions." (Garry Paz, UKC, 2007)</p> <p>"Red Chili has existed for over 20 years. We have gained loads of experience in all respects and are more motivated than ever to build the most perfect rock climbing shoe in the whole wild world. Who else than we, the climbers, could do this job any better?" (Red Chili, 2021)</p> <p>"If you work with your heart and your intellect, the only result can be excellence: a product that is perfected over time in order to entrust every shoe with the desire to stretch beyond its limitations in total harmony with the philosophy of an entire company." (S.C.A.R.P.A., 2021)</p>
19. <i>Spatial Confinement</i>	<p>“Every night, the porches of ‘Caffè Trentino,’ in the town square, would be invariably filled with climbers, fans, and curious (...) party in a club organized for climbers, almost all of them went there ...” (Benedetti &amp; Sclaris, 1987)</p> <p>“With its 15,000 inhabitants, the town of Arco is located north of Lake Garda (...) The town of Arco is surrounded by a number of rocky mountains and thus known as a popular climbing area.” (Trentino.com)</p>
20. <i>Time Limitation</i>	<p>“It was a short period of time, full and intense, but it is the one I remember the most” (Didier Raboutou, Interview, 2019)</p> <p>“Athletes stayed here four or five days ...” (Angelo Seneci, Interview, 2019)</p>
21. <i>Crowding of Activities</i>	<p>“... RockMaster Arco has built a proper climbing stadium (...) at the base of the competition wall (...) stands that in the 2 days of the competition were crowded from early in the morning by spectators and insiders: circa 6000 the people attending the event during the two days.” (Benedetti &amp; Sclaris, 1987)</p> <p>“Athletes will compete over 2 itineraries: Saturday 10 September ‘onsight’ (...) Sunday 11 ‘redpoint’ (...) the night of Saturday 10 in the ‘parallel’ of speed.” (Abrate, 1988)</p>
22. <i>Attachment to Other Meaningful Locations</i>	<p>“I opened, with some friends, an import company for climbing materials. At a certain point, though, I noticed that I felt like I was a traveling employee. I decided to leave everything and visit climbing areas around the world...” Stefan Glowacz in (Mantovani, 1988)</p> <p>“I love my birthplace, Fontainebleau: there, I can do what I really love, that is bouldering.” (Jacky Godoffe, Interview, 2019)</p> <p>“Everyone wants to be home.” (Robyn Erbesfield, Interview, 2019)</p> <p>“I didn’t move to Arco because of family pressure.” (Jacky Godoffe, Interview, 2019)</p>
23. <i>Strive for Recognition in Other Areas</i>	<p>“In the early 1980s Edlinger was one of the most famous men in the country. Aged just 24, he appeared in the magazine Paris Match under the headline “Les Français de l’Année,” or French Persons of the Year, photographed at the Palais Garnier (the Paris opera house) alongside the actors Gérard Depardieu and Sophie Marceau ...” (Douglas, 2014)</p>

	<p>“[The German climber Stephan Glowacz] made his fans scream, a troop (...) arrived [at RockMaster] directly from Germany to follow his deeds.” (Bizzarro, 1986)</p>
24. <i>Reputational Resources</i>	<p>“Arco provided me fame, and if you are famous people at home are interested in you because you are an expert in your field.” (Lynn Hill, Interview, 2019)</p>
25. <i>Knowledge Resources</i>	<p>“I met a lot of people from my home area, that moved to Arco especially for the competition, because they had become fans of mine. This was really like being a Rockstar.” (Stefan Glowacz, Interview, 2019)</p> <p>“La Sportiva, Five Ten, S.C.A.R.P.A. (...) I always talked with them there. We discussed about materials, products.” (Didier Raboutou, Interview, 2019)</p>
26. <i>Financial resources</i>	<p>“RockMaster 87: Participating athletes for the RockMaster trophy will come from Italy, France, U.S.A., England, Spain, Switzerland, Austria, Germany, Spain, Yugoslavia, Japan, and Belgium” (Official Statement of RockMaster, 1987)</p> <p>“I also remember that, when I was competing, they would pay for us to come from America to do the competition.” (Robyn Erbesfield, Interview, 2019)</p> <p>“[Jindřich Hudeček] arrived in Italy as an athlete for the RockMaster competition (...) won some prizes, like a million lire, a small amount in Italy, a big amount in Eastern Europe—a much poorer area (...) with the first few millions lira went back to Prague and bought some small shops.” (Lorenzo Delladio; Source: Interview, 2019)</p>
27. <i>Local Entry Barriers</i>	<p>“People and politicians don’t attribute (to RockMaster) the importance that it deserves (...) the phenomenon is not leveraged as it should, and a targeted policy has never been implemented.” Albino Marchi in (Prandi, 2007)</p> <p>“The local commercial setting wasn’t specialized, it had only some general stores, there was no specific experience on sport market or outdoor sport market. The local economy was not trying to follow any specific development plan.” (Mario Morandini, Interview, 2018)</p> <p>“Bringing raw materials to Arco (...) meant 3% increase in the overall total costs ...” (Roberto Santini, Interview, 2019)</p> <p>“Companies here did not go beyond selling or developing innovation, they did not produce here...this is more of a global shopping window.” (Giordani, Interview, 2020)</p>
28. <i>Local Competition-Based Entry Barriers (Springboard Firms)</i>	<p>“During a travel in the US with Massimo Ripamonti, I understood that, overseas, the market offered better opportunities to grow.” (Mariacher, 2009b)</p> <p>“The local demand was saturated with LaSportiva. I preferred to open in a place with less competition for climbing shoe!” (Stefan Glowacz, Interview, 2019)</p> <p>“Sint Roc works well in the area of Arco and has supplied all local gyms, and RockMaster of course. There was not much else “to sell” for us there.” (Didier Roboutou, Interview, 2019)</p> <p>“The relationship that exists between the town of Arco and La Sportiva goes a long way back and has marked the history of climbing as we know it today. Back in 1987, feeling the area’s climbing potential, La Sportiva dedicated one of the first climbing guides to the area, to Arco’s climbing crags. Those years also saw the beginning of the partnership between La Sportiva and the glorious RockMaster ...” (La Sportiva.com)</p>



**TABLE A2**  
**Manufacturers of Climbing Artificial Walls Holds, Shoes, and Their Connection to Arco**

Firm	Location	Est.	Shoes	Walls	Holds	Apparel	Other sports	Linked to Arco	Unplanned Exposure (Treatment)	Planned Exposure (Selection)	Business idea	Product design	Product testing	Product launch
1. Millet	Anancy-le-Vieux (F)	1921	○		○	○	○	○		○			○	○
2. Lowa Sportschuhe GmBH	Jetzendorf (D)	1923	○			○	○	○		○			○	
3. La Sportiva	Ziano di Fiemme (I)	1928	○			○	○	○	○	○	○	○	○	○
4. Calzaturificio S.C.A.R.P.A. S.p.A.	Asolo (I)	1938	○				○	○		○		○	○	○
5. EB escalade	Voiron (F)	1947	○				○	○		○		○	○	
6. Calzados Boreal	Villena (E)	1975	○			○	○	○		○		○	○	
7. DMM International	Gwynedd (UK)	1981				○		○		○		○	○	
8. Metolius Climbing	Bend OR (US)	1983		○	○			○	○	○	○			
9. ENTRE-PRISES	Saint-Vincent-de-Mercuze (F)	1985		○	○			○	○	○	○	○	○	
10. Five Ten (Adidas)	Redlands (US) Herzogenaurach (D)	1985	○				○	○		○		○	○	
11. Art Rock Kletterwände	Jenbach (AT)	1989		○	○			○		○		○	○	○
12. Sint Roc	Arco (I)	1989		○	○			○	○	○	○	○	○	○
13. Cheeta-climbing	Biel (CH)	1990			○			○	○	○	○	○	○	○
14. HUDYsport	Decin (CZ)	1990	○	○	○	○		○	○	○	○	○		
15. Saltic	Zlin (CZ)	1991	○				○	○		○		○	○	
16. Andrea Boldrini	Bourg-de-Péage (F)	1991	○					○		○			○	
17. Eldorado Walls	Louisville (US)	1994		○	○									
18. King Kong Climbing Walls	Keswick (UK)	1994		○	○			○		○		○	○	
19. AIX	Prague (CZ)	1996		○	○			○	○	○	○	○	○	○

ONLINE APPENDIX

20. Great Trango Holdings	Lafayette CO (US)	1996	○	○		○	○	○	○	○	○			
21. Red Chili	Isny (D)	1996	○		○	○	○	○	○	○	○	○	○	
22. TR-walls	Prague (CZ)	1996		○	○		○		○		○	○	○	
23. Volx holds	Chessy Les Mines (F)	1996			○									
24. Ocut	Mnichovo Hradiště (CZ)	1998	○		○	○	○		○		○	○		
25. Walltopia	Sofia (BG)	1998		○	○									
26. Freestone	Saint-Baldoph (F)	2000			○		○		○		○	○	○	
27. Holdz	Horbury (UK)	2000			○		○		○		○	○		
28. Schlamberger P & J d.o.o.	Ljubljana (SI)	2000			○									
29. Climblock sas	Rovereto (I)	2001		○	○		○	○	○		○	○		
30. Garra Climbing Shoes	Madrid (E)	2001	○											
31. eXpression Climbing Holds	Crac'h (F)	2002			○		○	○	○	○	○	○	○	
32. Moon Climbing	Sheffield (UK)	2002		○	○		○	○	○	○	○	○	○	
33. Mad Rock	Santa Fe (US)	2002	○				○		○			○		
34. Evolv	Los Angeles (US)	2003	○				○		○		○	○		
35. Boulder Home LLC	Boulder (US)	2005		○	○		○	○	○	○	○	○	○	
36. So iLL	St. Louis (US)	2005	○		○	○								
37. Flathold Sàrl	Moutier (CH)	2006			○		○		○	○	○	○		
38. Escape Climbing	St. Paul (US)	2006			○									
39. Rock Empire s.r.o.	Decin (CZ)	2007	○		○	○	○		○	○	○			
<b>Total</b>			18	13	26	10	8	32	12	32	14	27	29	13
<b>Total %</b>			46.2%	33.3%	66.7%	25.6%	20.5%	82.2%	30.8%	82.2%	35.9%	69.2%	74.4%	33.3%

**TABLE A3**  
**The influence of Arco and RockMaster on the Main Technologies and Practices in Sport Climbing**

<b>Technologies and Practices</b>	<b>Innovations</b>	<b>Organizations</b>	<b>Actors</b>
<i>a. Climbing Practice</i> (e.g., techniques, competition formats, regulations)	<ul style="list-style-type: none"> <li>- Climbing techniques.</li> <li>- Training techniques.</li> <li>- Competition regulations and formats.</li> <li>- Safety regulations.</li> </ul>	<ul style="list-style-type: none"> <li>- <i>New sport climbing federations:</i> IFSC, IFSC medical commission; FASI (I).</li> <li>- <i>New teaching and climbing facilities:</i> Lynn Hill Climbing (US), ABC Kids Climbing (US), Hudy climbing gyms (CZ).</li> </ul>	<ul style="list-style-type: none"> <li>- <i>Entrepreneurs:</i> Robyn Erbesfield, Lynn Hill, Jindřich Hudeček, Magnus Mitdbø, Marco Maria Scholaris.</li> <li>- <i>Developers:</i> Davide Battistella, Leonardo Di Marino, Francesco Coscia.</li> </ul>
<i>b. Artificial walls and hold</i>	<ul style="list-style-type: none"> <li>- Walls: architecture and engineering.</li> <li>- Holds: design and ergonomics.</li> <li>- Walls and holds: Components and chemical processes.</li> </ul>	<ul style="list-style-type: none"> <li>- <i>New firms:</i> Sint Roc (I), Moon Board (UK), Kletterfabrik Köln (D), High 5 Climbing Service (I).</li> </ul>	<ul style="list-style-type: none"> <li>- <i>Entrepreneurs:</i> Ben Moon, Gregor Jaeger, Angelo Seneci, Christian Mantinger</li> <li>- <i>Developers.:</i> Didier Raboutou.</li> </ul>
<i>c. Climbing shoes</i>	<ul style="list-style-type: none"> <li>- Downturn sole shape design and ergonomics.</li> <li>- Sticky rubber sole components and chemical processes.</li> </ul>	<ul style="list-style-type: none"> <li>- <i>Existing firms:</i> La Sportiva (I), S.C.A.R.P.A. (I), Boreal (E), Five Ten (US)</li> <li>- <i>New firms:</i> Red Chili (G)</li> </ul>	<ul style="list-style-type: none"> <li>- <i>Entrepreneurs:</i> Maurizio Delladio, Stefan Glowacz</li> <li>- <i>Importers:</i> Gerry Moffat, Jean Baptiste Tribout.</li> <li>- <i>Developers:</i> Roberto Bassi, Christian Core, Robyn Erbesfield, Lynn Hill, Yuji Hirayama, Marc Le Menestrel, Francois Legrand, Heinz Mariacher, Isabelle Patissier, Maurizio Zanolla.</li> </ul>
<i>d. Climbing gear</i>	<ul style="list-style-type: none"> <li>- Materials, weight, and ergonomics.</li> <li>- Safety and durability.</li> </ul>	<ul style="list-style-type: none"> <li>- <i>Existing firms:</i> Cassin (I), CAMP (I), Edelrid (D), Petzl (D,) Beal (F), Metolius (US).</li> <li>- <i>New firms:</i> Hudy Equipment Stores (CZ), Moon Climbing (UK), Rock Empire (CZ).</li> </ul>	<ul style="list-style-type: none"> <li>- <i>Entrepreneurs:</i> Riccardo Cassin, Jindřich Hudeček, Ben Moon.</li> <li>- <i>Importers:</i> Jean Baptiste Tribout, Gerry Moffat.</li> <li>- <i>Developers:</i> Robyn Erbesfield, Marc Le Menestrel, Yuji Hirayama, Francois Legrand, Isabelle Patissier, Didier Raboutou.</li> </ul>

**TABLE A4**

**Dyadic Contributions Between Different Types of Actors in Arco, Supporting the Development of the Sport Climbing Industry**

	<b>Business Professionals</b> (e.g., entrepreneurs, executives, product designers)	<b>Climbing Professionals</b> (e.g., athletes, instructors, representatives of sport institutions)	<b>Climbing Enthusiasts</b> (e.g., amateur climbers, fans, photographers)
<b>Business Professionals</b> (e.g., entrepreneurs, executives, product designers)	<i>Business Professionals contributing to Business Professionals</i> <ul style="list-style-type: none"> <li>• Business and product ideas</li> <li>• Market knowledge</li> <li>• Partnerships</li> <li>• Commercial contracts</li> <li>• Vicarious learning</li> </ul>	<i>Business Professionals contributing to Climbing Professionals</i> <ul style="list-style-type: none"> <li>• Technical and brand sponsorships</li> <li>• Product development and testing</li> <li>• Business and product ideas</li> <li>• Market knowledge</li> <li>• Partnerships and commercial contracts</li> <li>• Employment opportunities</li> <li>• Contacts</li> </ul>	<i>Business Professionals contributing to Climbing Enthusiasts</i> <ul style="list-style-type: none"> <li>• Exposure to new products</li> <li>• Gadgets, free product trials</li> <li>• Opportunities to meet the famous athletes</li> </ul>
<b>Climbing Professionals</b> (e.g., athletes, instructors, representatives of sport institutions)	<i>Climbing Professionals contributing to Business Professionals</i> <ul style="list-style-type: none"> <li>• Technical and brand endorsements</li> <li>• Product development and testing</li> <li>• Product feedbacks</li> <li>• User knowledge</li> <li>• Partnerships</li> <li>• Contacts</li> </ul>	<i>Climbing Professionals contributing to Climbing Professionals</i> <ul style="list-style-type: none"> <li>• Technical and product know-how</li> <li>• Climbing practices</li> <li>• Business collaborations</li> <li>• Contacts</li> <li>• Encouragement and support</li> <li>• Vicarious learning</li> </ul>	<i>Climbing Professionals contributing to Climbing Enthusiasts</i> <ul style="list-style-type: none"> <li>• Narratives and characters</li> <li>• Excitement and sense of belonging</li> <li>• Events and socialization opportunities</li> <li>• Climbing practices</li> <li>• Technical and product know-how</li> <li>• Vicarious learning</li> </ul>
<b>Climbing Enthusiasts</b> (e.g., amateur climbers, fans)	<i>Climbing Enthusiasts contributing to Business Professionals</i> <ul style="list-style-type: none"> <li>• Brand endorsements</li> <li>• Product feedbacks</li> <li>• User knowledge</li> <li>• Contacts</li> </ul>	<i>Climbing Enthusiasts contributing to Climbing Professionals</i> <ul style="list-style-type: none"> <li>• Support and motivation</li> <li>• Recognition and identification</li> <li>• Product feedbacks</li> <li>• Climbing practices</li> <li>• User knowledge</li> </ul>	<i>Climbing Enthusiasts contributing to Climbing Enthusiasts</i> <ul style="list-style-type: none"> <li>• Memorabilia</li> <li>• Technical and product know-how</li> <li>• Climbing practices</li> <li>• Business collaborations</li> <li>• Personal contacts</li> </ul>

**TABLE A5**  
**Ongoing Influence of Arco (Place) vs. Periodic Influence of RockMaster (Event)**

Second-order themes	Ongoing influence of Arco (Place)	Periodic influence of RockMaster (Event)
i. Distinctive Resources and Features	Ideal setting, advanced organization, technologies, and practices available in the area.	Additional availability of ideal setting, superior organization, technologies, and practices at the event.
ii. Personal Incentives to Visit	Personal reputation, material rewards (money, sponsorships), learning, positive emotions, and well-being obtained from visiting Arco.	Enhanced personal reputation, and additional money and awards, learning positive emotions, and well-being obtained from competing (and eventually succeeding) at RockMaster.
iii. Community Incentives to Visit	Opportunity for socializing, exchanging ideas, social comparison, coopetition, identity building, and collective sensemaking from visiting Arco.	Additional opportunity for socializing, exchanging ideas, social comparison, coopetition, identity building, and collective sensemaking from attending RockMaster.
iv. Place-Specific Individual and Community Sharing	Visitors in Arco share spaces, purposes, knowledge, rituals, memories, emotions.	Attendants and participants to RockMaster can further share spaces, purposes, knowledge, rituals, memories, emotions.
v. Place-Specific Emotional Energy	Engaging with sport climbing activities in Arco offers fun and enjoyment, surprise, personal drive, thrill, and relax.	RockMaster participants enjoy additional fun and enjoyment, surprise, personal drive, thrill, and relax.
vi. Spatial and Temporal Compression	Arco presents clear geographical boundaries, reduced space, and spatial crowding of the (climbing) activities. Visits to Arco present clear temporal boundaries, reduced time available, and temporal crowding of the activities.	Increasing visitors during RockMaster enhance the perception of geographical boundaries, reduce space, and increase the spatial crowding. Being concentrated during a few days, RockMaster increases the temporal boundaries, reduced time available, and temporal crowding of the activities.
vii. Personal Incentives to Leave	Visitors in Arco leave the place due to attachment to other locations, need for external recognition, inferior sense of belonging, and external incentives.	RockMaster participants recognize the transient nature of the event which enhances the attachment to other locations, the need for external recognition, the inferior sense of belonging, and the external incentives.
viii. Portable Economies	Visitors in Arco obtain resources such as international fame and reputation, disperse contacts, unique knowledge and expertise, and financial resources; these can be valuable if redeployed somewhere else.	RockMaster participants (particularly if successful) obtain additional resources such as international fame and reputation, personal contacts, unique knowledge and expertise, financial resources; these are valuable if redeployed somewhere else.
ix. Local Entry Barriers	Visitors in Arco aiming to build a business career in the sport climbing industry recognize that the place offers limited resources, inputs, factors, and institutional support, local demand, isolated space, as well as aggressive local competitors, complex logistics. Finally, they recognize the seasonal nature of the experience.	RockMaster participants aiming to build a business career in the sport climbing industry recognize that the event does not offer any support for permanent business initiatives, as it is a short, periodic happening.

**TABLE A6**  
**Comparison between Arco, Italy (case) vs. Verdon Gorges, France (Counterfactual)**

<b>Elements</b>	<b>Verdon Gorges, France</b>	<b>Arco, Italy</b>
<i>i. Distinctive Resources and Features</i>	<i>Moderate</i> - superior setting for climbers.	<i>High</i> - superior setting and practices for climbers; superior organizers and technologies for competition climbers.
<i>ii. Personal Incentives to Visit</i>	<i>Moderate</i> - exiting, mystic, and emotional place for climbers.	<i>High</i> – emotional attachment; learning opportunity and well-being for climbers; money and reputation for athletes.
<i>iii. Community Incentives to Visit</i>	<i>Low</i> – no community gatherings; no local communities.	<i>High</i> – Community gatherings with RockMaster; local community.
<i>iv. Place-Specific Individual and Community Sharing</i>	<i>Low</i> – little contact between individuals, isolated place with few people.	<i>High</i> –heterogeneous visitors and springboard organizations interacted at the events and at crags during the day and in the city center during the night.
<i>v. Place-Specific Emotional Energy</i>	<i>Moderate</i> – Isolated place, far from civilization; nicer landscape; dangerous walls.	<i>High</i> – emotions arising from RockMaster events; sense of community; dangerous practices.
<i>vi. Spatial and Temporal Compression</i>	<i>Moderate</i> – valley delimited by high walls; confined space, no gathering events.	<i>High</i> – small town delimited by rock walls and water, with gathering events lasting no more than a week.
<i>vii. Personal Incentives to Leave</i>	<i>High</i> – emotional attachment to other locations, inferior sense of belonging, willingness to explore of climbers.	<i>High</i> – emotional attachment to other locations, inferior sense of belonging, willingness to explore of climbers; athletes’ extern incentives to travel.
<i>viii. Portable Economies</i>	<i>Low</i> – modest sponsorships and company collaborations.	<i>High</i> – significant sponsorships and company collaborations.
<i>ix. Local Entry Barriers</i>	<i>High</i> – isolated place with complex logistic and limited resources, inputs, factors, local demand.	<i>High</i> – limited resources, institutional support, competitors; complex logistic; high competition.
<b>Catalyzed industry emergence</b>	<b>No</b>	<b>Yes</b>

**TABLE A7**  
**Comparison between Arco’s RockMaster (case) vs. Vaulx-en-Velin’s indoor climbing competition on artificial walls (Counterfactual)**

<b>Elements</b>	<b>Vaulx-en-Velin Competition</b>	<b>RockMaster (Arco, Italy)</b>
<i>i. Unique Resources and Features</i>	<i>Low</i> – the location did not offer superior settings or technologies for climbing.	<i>High</i> - superior setting and practices for climbers; superior organizers and technologies for competition climbers.
<i>ii. Personal Incentives to Visit</i>	<i>Moderate</i> – low money and reputation incentives; moderate learning opportunities.	<i>High</i> – emotional attachment; learning opportunity and well-being for climbers; money and reputation for athletes.
<i>iii. Community Incentives to Visit</i>	<i>Low</i> – no community gatherings; no local communities.	<i>High</i> – Community gatherings with RockMaster; local community.
<i>iv. Place-Specific Individual and Community Sharing</i>	<i>Moderate</i> – little contact between individuals outside the event, heterogeneous visitors but no springboard organizations.	<i>High</i> –heterogeneous visitors and springboard organizations interacted at the events and at crags during the day and in the city center during the night.
<i>v. Place-Specific Emotional Energy</i>	<i>Moderate</i> – Regular city landscape, energy arising only from the event.	<i>High</i> – emotions arising from RockMaster events; sense of community; dangerous practices.
<i>vi. Spatial and Temporal Compression</i>	<i>Moderate</i> – regular city with no confined space, the only gathering of climbers was during the event.	<i>High</i> – small town delimited by rock walls and water, with gathering events lasting no more than a week.
<i>vii. Personal Incentives to Leave</i>	<i>High</i> – emotional attachment to other locations, inferior sense of belonging, willingness to explore of climbers; athletes’ external incentives to travel.	<i>High</i> – emotional attachment to other locations, inferior sense of belonging, willingness to explore of climbers; athletes’ extern incentives to travel.
<i>viii. Portable Economies</i>	<i>Low</i> – modest prices; inferior number of contacts.	<i>High</i> – significant sponsorships and company collaborations.
<i>ix. Local Entry Barriers</i>	<i>Low</i> – the city is industrialized and close to Lyon.	<i>High</i> – limited resources, institutional support, competitors; complex logistic; high competition.
<b>Catalyzed industry emergence</b>	<b>No</b>	<b>Yes</b>

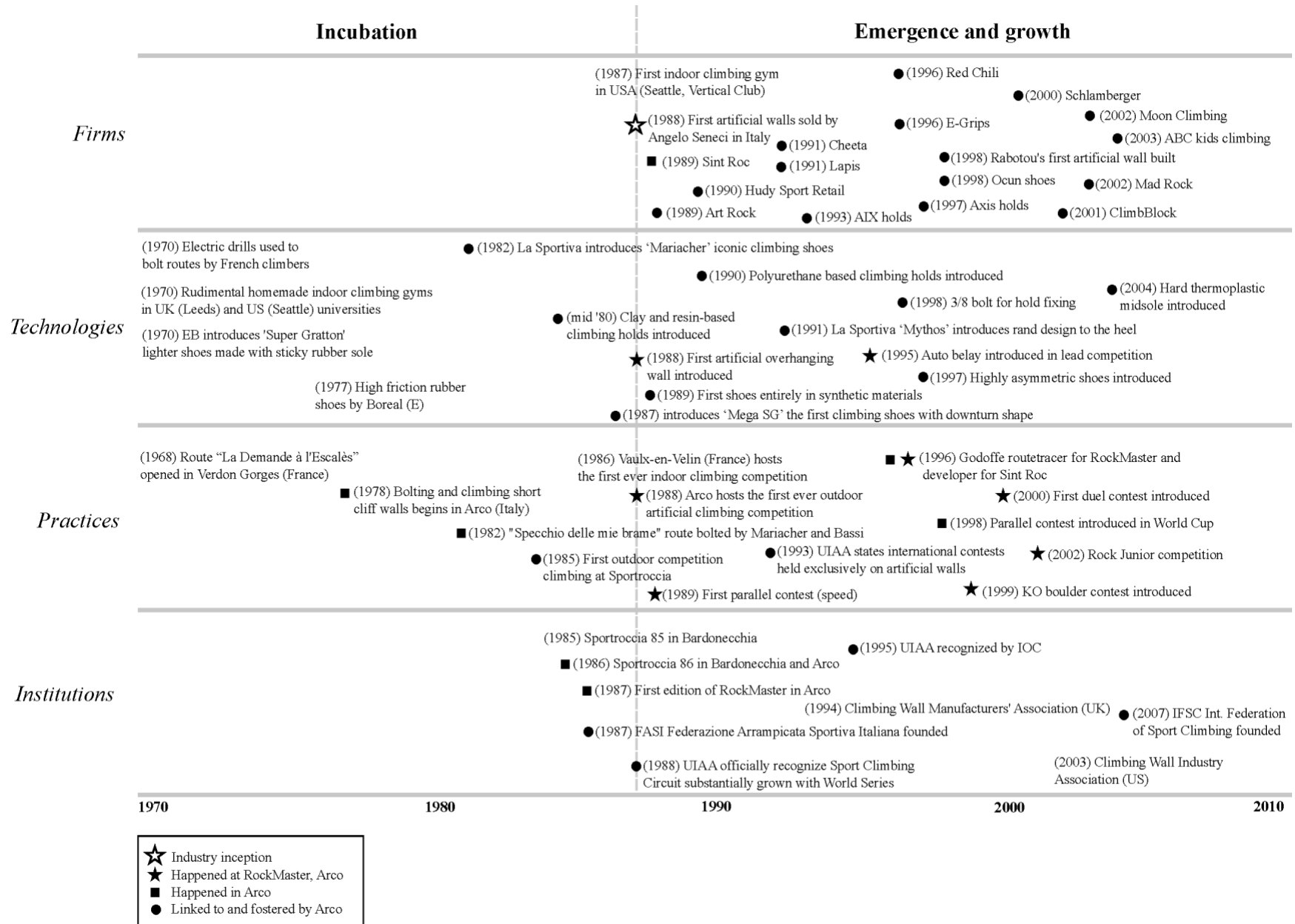
**TABLE A8**  
**Examples of Catalyzing Places Across Diverse Recurring Features**

#	Place location	Influence	Clustering		Duration		Event		Extension		Materiality	
			Local cluster: the place presents clustering in addition to the catalyzing effect on scattered industries.	No local cluster: the place presents no clustering and it only exerts a catalyzing effect on scattered industries.	Permanent: the place continuously exerts its catalyzing function.	Temporary: the place temporarily or discontinuously exerts its catalyzing function.	Event-based: the location is further enhanced by a periodic event.	Not event-based: periodic events, if any, have no additional enhancing effect.	Localized: the place occupies a specific location.	Extended: the place occupies a group of locations or an extended area.	Physical: the place occupies a geographical location.	Virtual: the place occupies a virtual space online.
1	<b>Arco</b> Trentino, Italy	Sport climbing industry		●	●			●		●		
2	<b>Burning man</b> Black Rock City, NV and online	Creative industries		●	●			●		●		●
3	<b>Dog-Town</b> Santa Monica, CA, USA	Skateboard and surfing industry		●		●			●		●	
4	<b>Grand Tour</b> various locations, Italy	Artistic and intellectual production (XVI- and XIX century)		●		●			●		●	
5	<b>Murano Island</b> Venice, Italy	Glass blowing industry	●		●				●		●	
6	<b>The Blues Highway</b> Nashville, TN; Memphis, TN; Tinuca, MS; Clarksdale, MS; New Orleans, LA; USA	Music industry		●	●				●		●	
7	<b>Rishikesh</b> Uttarakhand, India	Yoga and meditation		●	●			●		●		
8	<b>Shaolin Temple</b> Henan Province, China	Kung Fu and martial art industry		●	●				●		●	
9	<b>Silicon Valley</b> Palo, Alto, CA, USA	Tech start-ups	●		●				●		●	
10	<b>Tech City</b> London, UK	Tech start-ups	●		●				●		●	
11	<b>Track Town</b> Eugene, OR, USA	Running industry		●		●		●		●		

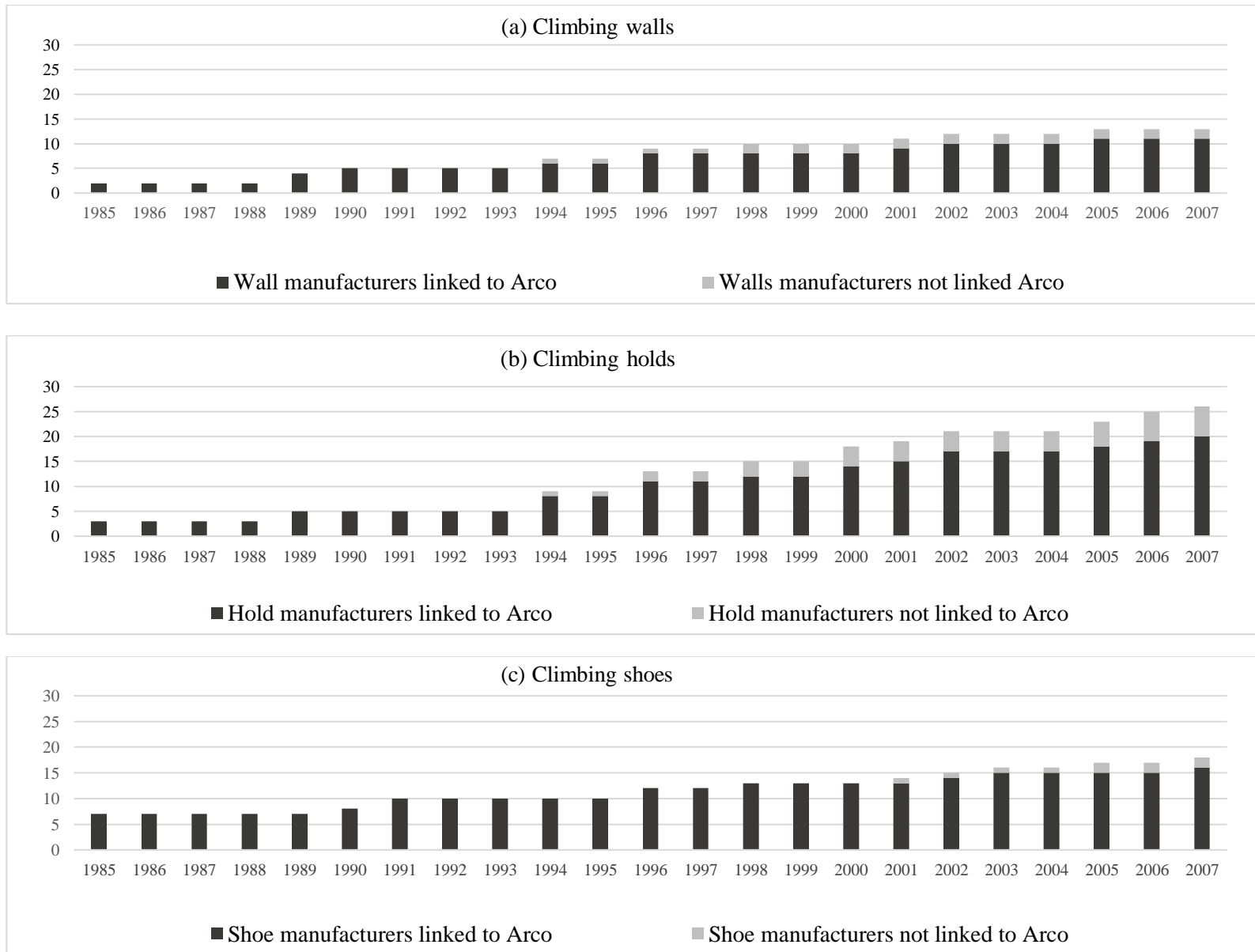


FIGURE A1

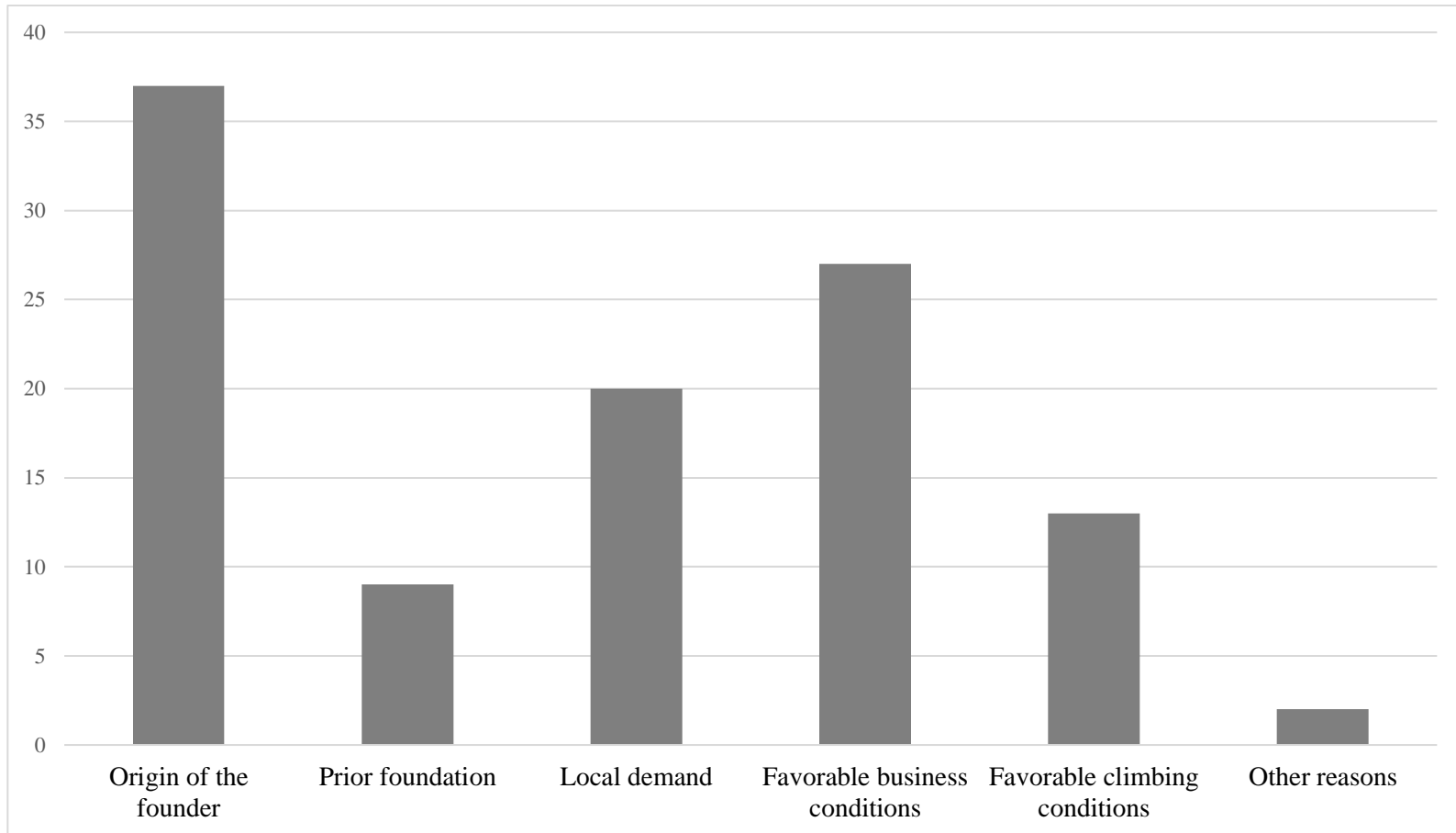
Timeline of the Sport Climbing Industry: Firms, Technologies, Practices, and Linkages to Arco and RockMaster



**FIGURE A2**  
**Linkages to Arco of the Manufacturers of Climbing Walls, Holds, and Shoes**

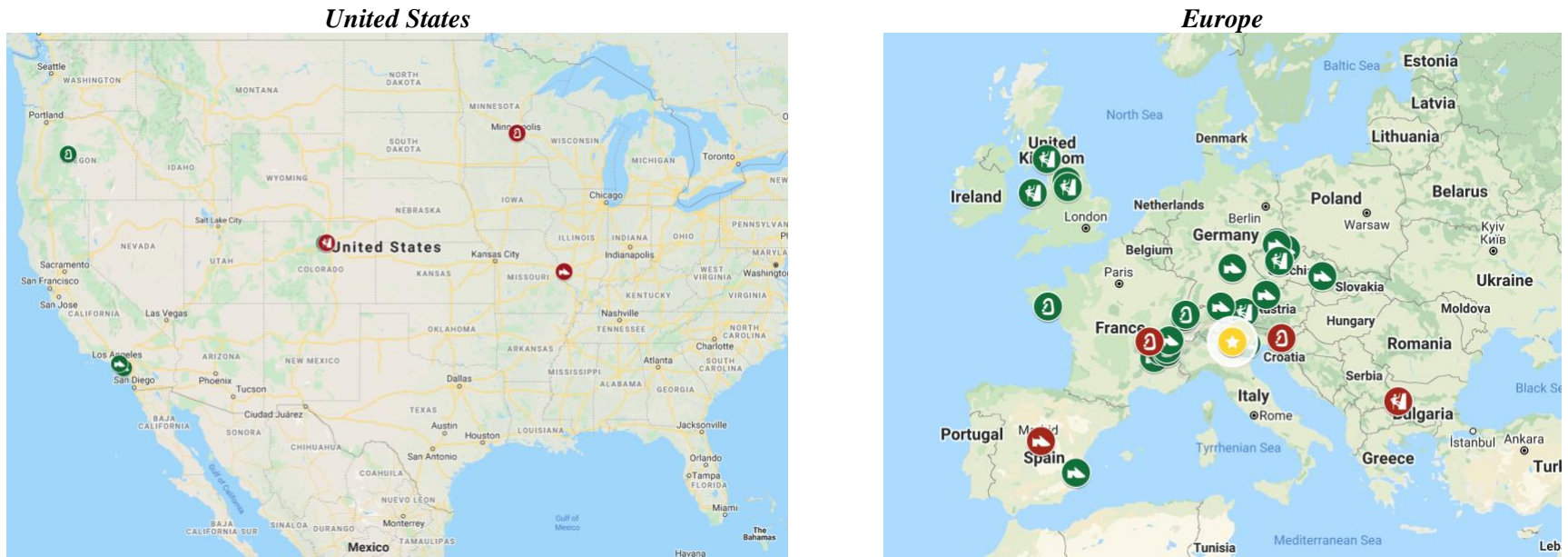


**FIGURE A3**  
**Motivations Localizing the Sport Climbing Firms Away from Arco**










*Note: N=37 firms (industry of 39 firms minus the two firms located in the Arco region).  
 The firms reported more than one motivation each.*

**FIGURE A4**  
**Location of the Main Manufacturers of Climbing Walls, Holds and Shoes**



Click on the link for an interactive Google map with information on the companies and their connection to Arco.  
<https://www.google.com/maps/d/u/0/viewer?mid=1NvtbFsReoVNYIZMjCdpkSs88i5D37EYn&ll=61.49091731991304%2C-88.56448606916678&z=4>

**Legend**

		Link to Arco and/or RockMaster?	
		Yes	No
	Arco		
	Springboard firm for walls (Sint Roc)		
	Springboard firm for shoes (La Sportiva)		
	<b>Walls</b>		
	<b>Holds</b>		
	<b>Shoes</b>		