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51 Flavors: Regional Resource Configurations and Foreign Multinational Market Entry in the U.S. Biopharmaceutical Industry

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Abstract: Creating a sustainable regional economy requires not only attracting new local ventures, but also foreign multinationals. In this regard, understanding which resources are influential in market entry decisions is crucial given that there are different resource needs between developed (DMNE) and emerging market (EMNE) multinationals. Answering calls for more neo-configurational studies in the literature, our study uses a fuzzy-set qualitative comparative analysis (fsQCA) approach to examine foreign multinational entry decisions in 51 regions of the U.S. We constructed a novel dataset comprised of 3287 foreign firms from 61 countries and territories operating in the biopharmaceutical industry. We find that there are substantial differences in the configuration of resources that attract DMNEs and EMNEs to regions. The resource configurations in our models account for over 80% of the factors influencing DMNE and EMNE market entry location decisions. Some resources played a more important role in these decisions, such as FDI stocks, cluster size, and manufacturing intensity. Our findings show that EMNEs seek out regions with a greater abundance of different resources than DMNEs. This study provides practical implications for firms entering foreign markets as well as for policy makers who want to attract these firms to bolster their regional economic development.

Keywords: MNE; EMNE; market entry; location decisions; resource configurations; fsQCA; regional development

1. Introduction

In response to rising regional economic polarization around the globe, there is renewed interest among scholars and policy makers to advance research that examines what regions can do to enhance their prosperity and attractiveness e.g., [1]. Foreign market entry is largely acknowledged as a driving factor behind regional economic development [2–6] and national competitiveness e.g., [7]. Today's foreign multinationals, from developed (DMNEs) and emerging countries (EMNEs), are increasingly drawn to locate in strategic regions in search of new sources of innovation and knowledge [8–10]. EMNEs, in particular, are often constrained by limited resources at home [11], which may motivate them to establish in regions with a munificence of resource endowments. A good understanding of what combination of regional resource configurations make one region, within a country, more attractive to foreign multinationals than another remains elusive because of the heterogeneity of resources available across regions.

Given the disparities in knowledge and innovation across countries, industries, and regions e.g., [12,13], national and local governments have attempted to emulate the success of high-technology sectors, such as the Silicon Valley model, in the hopes of creating comparable high-growth entrepreneurial ecosystems that propel regional development and prosperity [14,15]. For instance, Brazil, recognizing its overreliance on a commodity-driven economy, invested over $300 million to develop competencies in micro-electronics, bio-fuels, and software in the State of Minas Gerais by building science parks, incubators,

and workforce training programs. Similarly, within the United States, there have been considerable efforts to reinvigorate declining industries (e.g., auto industry in Michigan), develop new industries (e.g., West Virginia's focus on biometrics), and build up growing regions (e.g., Research Triangle Park, North Carolina). To sustain the growth of these regions requires influxes of investment beyond that which domestic companies alone can provide, thus necessitating the need for these regions to attract foreign multinationals.

Much of the extant international business literature has addressed this important topic by using traditional empirical analytic techniques that assume linear or curvilinear relationships [16,17]. As a consequence, the majority of studies that examine why foreign multinationals are attracted to one region over another frequently provide an overly simplistic view of a rather complex foreign location decision. A recent review of the literature suggests that these methodological approaches may be inadequate to move beyond a *gestalt-like* view of regional development [16]. The emergence of the neo-configurational perspective has challenged extant theory and provided more actionable insights [18]. This approach is grounded in the use of fuzzy-set qualitative comparative analysis (fsQCA) [19,20]. While international business scholars have been slow to embrace this methodological approach [16], it is garnering increased attention and has been applied towards the study of a variety of business phenomena. There have been a mere handful of studies that have used this methodology within the context of location decisions. Of these, Pajunen [21] examines the combinations of institutions that attract foreign direct investors from DMNEs and EMNEs at the country level. Chen, Li, and Fan [22] examine configurations of political connections that facilitate EMNE international expansion. Ciravegna, Kuivalainen, Kundu, and Lopez [23] explore the antecedents of early internationalization. Recognizing the dearth of research in this context and the actionable insights that fsQCA can provide to scholars and practitioners interested in market entry and regional economic development, we adopt a configurational perspective.

In this context, we conjecture that foreign multinational location decisions do not ascribe to a one-size fits all approach, but rather are an exercise in finding the right fit between "pieces of a puzzle," whereby different locations are preferred over others because they offer resources that the firm lacks. When the right configurations of resources are identified, firms derive synergistic benefits from locating in a particular region. Our study addresses recent calls from the international business community for configurational approaches to studying business phenomena e.g., [16] and seeks to answer whether DMNEs and EMNEs are attracted to different regions based on the configuration of their resources.

We attempt to advance a better understanding of the different combinations of resources that attract DMNEs and EMNEs to each region within the United States, a key location known for innovative knowledge in biopharma R&D and advanced manufacturing. The U.S. biopharmaceutical industry offers a unique setting to study market entry since there are varying degrees of economic development across all regions within the country (i.e., 50 U.S. states and the District of Columbia). This context, therefore, allows for a more configurational approach, grounded in the neo-configurational perspective, to study foreign location decisions. We construct a dataset of 3287 foreign multinationals from 61 countries and territories in the biopharmaceutical industry that located to the U.S. in 2018. Using fsQCA, we uncovered some interesting findings regarding foreign multinational location decisions. In particular, we find that DMNEs and EMNEs are attracted to different regions based on their resource configurations. Our results elucidate how idiosyncratic regional resources can be configured to attract DMNEs and EMNEs to different regions. Interestingly, while we found some overlap between configurations that attract DMNEs and EMNEs, these configurations were associated with locating in different regions. Furthermore, we find that twice as many EMNE configurations include three or more resources at higher levels than DMNE configurations, which lends support to the idea that EMNEs seek out regions with a greater abundance of different resources than DMNEs.

Our study contributes to the extant international business and regional economic development literature in several ways. First, we answer calls for the application of the neo-configurational perspective to international business research e.g., [16] by applying a novel fsQCA methodological approach to the study of foreign multinational location decisions. This study elucidates how resource conditions collectively influence foreign multinational market entry strategies in the U.S., which allows for the development of new insights that are more representative of the actual complexities of international business decisions. Second, we add to the growing body of literature that recognizes the importance of examining the differences between DMNE and EMNE market entry decisions. The heterogeneity of initial resource endowments and motivations between DMNEs and EMNEs suggests that their strategic location decisions are idiosyncratic and, thus, need to be examined separately. As our results imply, there are significant differences between how regional resources can be configured to attract DMNEs and EMNEs.

2. Theoretical Background

2.1. Resources and Competitive Advantage

The resource-based view (RBV) suggests that firms can create and sustain a competitive advantage by building firm-specific, heterogeneous resources and capabilities and using these to develop superior resource positions [24,25]. In particular, resources that are valuable, rare, inimitable, and non-substitutable are viewed as sources of a firm's sustained competitive advantage [24]. Firms compete by making the best use of their tangible (e.g., equipment, manufacturing plants, and human resources) and intangible (e.g., manufacturing processes and trade secrets) resources based on decisions motivated by reasons of efficiency and competitiveness [26]. Maintaining a competitive advantage, however, can be a challenge, especially for firms in technology-intensive industries.

In the search for idiosyncratic resources, firms may look internally, such as by investing in R&D, or they may seek external opportunities, such as by relocating to resource-rich regions beyond their nation's borders. The search for new and unique resources to sustain a firm's competitive advantage has been a primary motivation behind foreign market entry e.g., [27,28]. Firms enter new markets in locations where they can apply their superior firm-specific capabilities and will choose to expand abroad in search of new resources that their home countries lack [29,30]. Research has also shown that foreign location decisions matter for innovation since there is considerable variation in a nation's resource advantages [29,31]. Thus, gaining access to new resources is a significant motivation for firms to expand globally [32–35].

2.2. Regional Economic Development

The phenomenon of globalization and its impact on regional economic development has long been an important topic of extensive research and debate e.g., [3,13]. While the practice of geographically dispersing firm activities in foreign locations has generally resulted in positive outcomes [31,32,34] it has also been negatively linked to an increase in regional economic polarization, e.g., [1]. In this regard, scholars caution that decades of globalization and economic deregulation have exacerbated the disparities in economic development between regions, resulting in the agglomeration of benefits in a relatively small number of regions worldwide [34,36], such as Silicon Valley in California and the route 128 belt outside of Boston, Massachusetts [37]. In response to these trends, national and local governments continue to search for effective policies that can jumpstart and, in due course, create a more level playing field of sustainable regional economic growth across regions [38–40]. Hence, there has been considerable worldwide effort to build-up high-tech industries in underdeveloped regions so that they become more attractive investments to domestic and foreign multinationals e.g., [14,15].

While there are a myriad of approaches and perspectives on how to tackle regional economic development challenges e.g., [1], there are commonly-held initiatives that include, for instance, heavy investment in R&D activities, manufacturing capabilities, workforce

training and skills, incubator/accelerator programs, high-quality and prestigious academic institutions, specialized incentives that are attractive for FDI, and access to early-stage venture capital financing, among others e.g., [41]. Such targeted initiatives are an attempt to close, or minimize, a particular region's resource gap, compared to its neighboring regions, thereby increasing the availability and attractiveness of existing and future vital resources in the region. In this regard, the composition and abundance of a region's resources can be viewed as complex, ever-evolving, and self-sustaining in that they act as a magnet that attracts or repels investment.

Attracting new foreign ventures to a region is initially dependent on having an abundant supply of resources e.g., [42]. Interestingly, research suggests that it is not necessarily the sheer number of resources offered in a region that impact its development per se, but it is rather about strategically matching the profile of a region and its needs with the investment activities of incoming foreign multinationals e.g., [43]. The practical implications, however, of moving beyond a one-size-fits-all market entry approach to the matching of multinationals to the most appropriate regions, based on their resource needs, remains problematic [43]. Put simply, since there is a great deal of heterogeneity of resource configurations available in regions, it obfuscates foreign multinational location decisions. Even when firms operate within the same industry, there are considerable variations among firm motivations for internationalization, size, resource endowments, capabilities, business activities, and knowledge stocks [43,44].

2.3. Location Resources and Differences in DMNE and EMNE Location Decisions

Building on the aforementioned rationale, foreign multinationals tend to be motivated to locate abroad in search of new, idiosyncratic resources [4,45]. The strategy literature highlights the importance of finding strategic fit between these resources and the firm's current and future needs. Configuration theory [46] represents a holistic systems perspective and suggests that firms represent constellations of interrelated resources that, when aligned, allow them to reap synergistic benefits. Conversely, when a strategic mismatch occurs, it can have a negative effect on firm outcomes e.g., [47].

By applying a configurational approach, we acknowledge that foreign multinationals need to locate where they can access unique resources that offer a competitive advantage [24,48]. Since not all locations possess the same resources, or to the same degree, as others, this gives rise to a great deal of heterogeneity in local resource configurations (e.g., venture capital, university research, skilled workforce, etc.). Consequently, each region will vary considerably in its resource endowments such that firms within the region will develop different capabilities and synergies [49].

Foreign multinationals locate their business activities in resource-rich regions abroad to overcome local resource limitations [50,51]. Research has shown that multinationals are attracted to some regions more than others [21,52]. Recent studies have drawn attention to the necessity to examine the differences between DMNE and EMNE location decisions [53]. According to Zaheer and Nachum [54], DMNEs have the distinct advantage of being able to create location capital from generic location resources. This may be a result of a multitude of factors, including the fact that DMNEs tend to have greater initial resource endowments and capabilities than EMNEs [11].

While the majority of studies are focused on DMNE location decisions, there is a dearth of research about where EMNEs locate. Given that nearly two-thirds of the research is focused on DMNEs [53], there has been a growing call in the literature to examine the rapid proliferation of EMNEs locating abroad [55]. In particular, EMNEs, compared to DMNEs, may have a greater need to acquire strategic resources that their home country lacks. For instance, studies have found that EMNEs are more attracted to regions that offer resources, such as knowledge, technological innovations, and skilled talent in science and technology [28]. For these reasons, it is likely that DMNEs and EMNEs will be drawn to different locations based upon the region's resource configurations.

3. Materials and Methods

3.1. Research Context

Since the introduction of Humulin in 1982, a synthesized insulin, the biopharmaceutical industry has seen rapid growth. By 2018, the demand for biopharmaceuticals grew to approximately $248 billion, led by demand for Monoclonal Antibodies (moAb) (33.2% share of the market) for the treatment of infectious diseases, such as Norovirus and Zika Virus [56]. The industry is projected to grow at 10.8% CAGR between 2018–2025 [56]. The potential for biopharmaceuticals to cure diseases, as opposed to treating its symptoms alone, has spurred the growth of the industry [56]. The United States is the global leader in this industry, but other countries outside of the U.S. are also becoming influential players, including Belgium, China, France, Germany, India, Israel, Japan, Switzerland, and the United Kingdom.

The biopharmaceutical industry tends to be tied to locations where firms can access either raw materials or market specificities [57]. The munificence of knowledge, capabilities, resources, and infrastructure associated with the U.S. biopharmaceutical market makes the U.S. an attractive target for foreign investment and, more specifically, for foreign biopharmaceutical firms to locate business operations within the U.S. The global value-chain of the industry employs over 811,000 individuals and indirectly supports over 3.2 million additional jobs in the U.S. [58]. The majority of these jobs offer high-quality employment opportunities in science, technology, engineering, and math (STEM) in all regions in the U.S. Its overall value-add to the U.S. economy accounts for nearly 3.2% of U.S. gross domestic product (GDP) [58].

3.2. Sample

We examine foreign location decisions in the largest global biopharmaceutical market: the United States. The U.S. represents a unique setting for this study as its regional development varies considerably across all regions (i.e., we measure regions at the state level, which includes all 50 U.S. states and the District of Columbia). We constructed a unique dataset comprised of 3287 foreign firms from 61 countries and territories (2604 DMNEs and 683 EMNEs) in 2018 along with their associated U.S. location data. We collected our data primarily from Medtrack. Additional data on U.S. regional economic characteristics was obtained from the U.S. Cluster Mapping Project database, U.S. Census Bureau, Bureau of Economic Analysis, VentureDeal, and the United States Patent and Trademark Office.

3.3. Estimation Method

To develop a better understanding of what attracts foreign multinationals to the U.S., it is important to consider various resource factors that may influence this investment decision. Unlike traditional linear regression approaches that seek to identify the causal effect of individual factors, our interest is in analyzing how the causal conditions collectively contribute to the outcome [20,59,60]. This was the motivation behind employing fuzzy-set qualitative comparative analysis (fsQCA) in this study. fsQCA is a case-oriented methodological approach that allows for systematic and formalized cross-case comparisons [20,61]. Using a "truth table," the fsQCA method analyzes the relationship between an outcome of interest and every possible Boolean combination of predictors and then uses algorithms to eliminate redundant configurations [62]. More specifically, fsQCA examines which combinations of predictors A and B, for example, are most likely to produce an outcome Y (e.g., $Pr(Y | A \cdot B)$, which can range anywhere between 0 (fully exclusive) and 1 (fully inclusive) [62]. Fuzzy sets are then combined into configurations by calculating the inclusion ratio $I_{XY} = \Sigma \min(x_i, y_i) / \Sigma x_i$ where X is the predictor configuration (e.g., $A \cdot B$), Y is the outcome, x_i represents each case's membership in X, and y_i represents each case's membership in Y [62]. As I_{XY} approaches 1, there is increased confidence that the data is consistent with the assumption that X is a subset of Y [62]. We use the fuzzy program in Stata 16 to perform our fsQCA analysis, creating fuzzy sets by rank ordering each variable and then standardizing this ranking to range from 0 to 1. Consistent with prior studies, we

adopt a consistency cutoff of 0.8 at the 5% level (i.e., $I_{XY} > 0.8$) [20,62,63] and collapse the configurations into a final reduction set to account for overlapping configurations.

This fsQCA methodological approach has been gaining greater acceptance among business scholars, but is still in its infancy. The fsQCA method has been used to examine various business phenomena, including FDI [21], business model configurations [61], CEO and worker compensation [64], corporate social responsibility [65], innovation systems [66], export performance [67], and adaptation [68].

3.4. Model Specification: Outcome
Region

Our interest is on understanding foreign multinational location decisions in a region. The great geographic expanse of the U.S. gives rise to a great heterogeneity of resources within regions across the country. We measure 51 regions in the United States, which are comprised of 50 U.S. states and the District of Columbia (i.e., Washington, DC, USA).

3.5. Model Specification: Conditions

As mentioned above, there are a plethora of factors that influence multinational location decisions. Due to an overreliance on traditional empirical analytic techniques, there are inconsistent findings regarding which factors and/or combination of factors are behind why some foreign multinationals choose to locate in one region versus another [16,17]. Building upon prior studies and by applying a fuzzy-set analysis, we are able to examine the role of regional resources and how they are configured together in meaningful ways to attract foreign investment. Using the fsQCA methodology requires selecting a subset of the most influential factors to increase the interpretability of findings. Hence, we underwent a thorough examination of the theoretical and empirical research in the international business literature regarding foreign multinational location choice to ascertain guidance about the most influential resources of a region that have a positive, negative, and/or minor impact on the likelihood that it will be selected as a host country. To this end, we identified the following eight regional resources as playing the most critical role in attracting foreign multinationals to high-tech regions in the biopharmaceutical industry: a skilled workforce [13,34], proximity to state-of-the art knowledge and other innovative firms [13,69–71], university-industry collaboration opportunities [72–74], a stock of existing FDI [4,28,29], venture capital [75], and strong capabilities in R&D and manufacturing e.g., [41]. The relationships between these resources are illustrated in Figure 1 and provides greater context as to why these resources need to be considered conjointly to explain where biopharmaceutical DMNEs and EMNEs choose to locate in the U.S.

3.5.1. Skilled Workforce

The biopharmaceutical industry is dependent upon its ability employ a highly specialized workforce in terms of knowledge, skills, and capabilities. Studies have shed light on the growing shortage of properly skilled employees available to work in this industry, e.g., [76]. For instance, recent reports estimate that by 2030 the industry may experience a skilled workforce shortage of 85 million employees, which is approximately the size of Germany [77]. Given the necessity and growing scarcity of talent needed in this industry, we include a measure of the biopharmaceutical industry's skilled workforce by state. We measure *Skilled Workforce* as the state's Location Quotient (LQ), which is the ratio of an industry's share of total state employment relative to its share of total national employment [78,79].
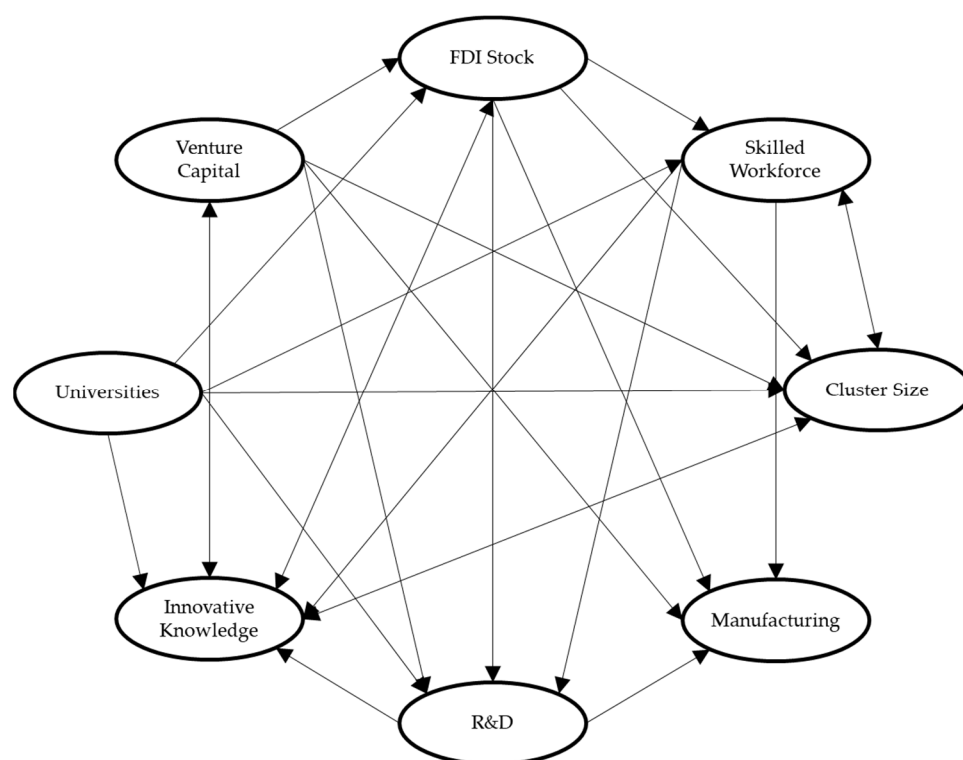
Figure 1. Inter-relationships between regional resources.

3.5.2. Innovative Knowledge

Access to state-of-the art innovative knowledge is paramount to the biopharmaceutical industry. The innovation process requires that the firm be able to recombine various types of knowledge with the intent to create new drugs that can treat important illnesses [80]. Innovation, however, is fraught with risk as less than one percent of drugs in the clinical development stage will be approved by the U.S. Food and Drug Administration for commercialization [81]. Patents have traditionally been used as a proxy for innovation output, e.g., [12], as they represent the codification of new knowledge. We measure *Innovative Knowledge* as the stock of granted biopharmaceutical utility patent within each U.S. state [78,79].

3.5.3. Cluster Size

Biotechnology firms frequently locate in regional clusters to take advantage of opportunities to collaborate with other innovative firms, e.g., [70]. The rapid growth of new ventures in a regional cluster is often a visible indication of its economic development. Research has shown that new ventures enhance the development of innovative products and services, which further stimulates the region's economic wellbeing (e.g., growth of high-quality jobs) [82] and promotes knowledge spillover effects [83]. Research on biotechnology regional clusters has shown that, over time, the size and structure of firms within a region shape and strengthen the cluster. Prior studies have found that clusters within this industry vary widely and that for the useful exchange of knowledge to occur, it must have a relatively large number of firms present [70,84]. In this context, we measure *Cluster Size* as the number of biopharmaceutical establishments (i.e., a single physical location where business operations are conducted) within each U.S. state [78,79].

3.5.4. Universities

Research has shown that universities have had a long-standing role in the scientific discovery process [74]. In knowledge-based economies, universities play an even more critical role in the economic development of their regional communities e.g., [85]. As purveyors of

the cutting-edge, they are a vital source of exploitable knowledge for firms [86] and, in turn, also significantly benefit from these university-industry partnership exchanges [87]. In this regard, a growing body of literature further describes biopharmaceutical innovation as systematic process involving key actors, including universities [88–90]. Prior studies have shown that multinationals are more likely to locate in regions with a higher proportion of top academic research institutions [74,91] in order to access higher quality talent and facilitate university-industry collaborations [72,73]. We measure *Universities* as a count of the number of top national 4-year colleges/universities in each U.S. state as defined by the U.S. News ranking of the best national universities.

3.5.5. FDI Stock

The inward stock of foreign direct investment (FDI) in a region can indicate its knowledge in new technologies, e.g., [92]. Research findings have shown that FDI-receiving regions tend to embody certain qualities and attributes, such as regional openness to international investment and scientific know-how, e.g., [92]. As regions grow through inflows from foreign direct investment, studies have shown that there is a positive spillover effect on domestic firms in the region [42]. Regions with a higher flow of FDI tend to become conduits of technological knowledge and other key intangible assets, which serve as a signal of their attractiveness. In this regard, prior studies have shown that foreign multinationals are more likely to locate in regions with greater stocks of FDI [91]. Since foreign multinationals may be prone to locate in regions that receive greater amounts of foreign direct investment, we include *FDI Stock* as measured by the number of jobs created per USD 10,000 of FDI at the state level [78,79].

3.5.6. Venture Capital

Venture capital has been a driving force behind regional economic development. Venture capital is the engine that fuels the growth of high-tech industries [93], such as semiconductors and biopharmaceuticals, as well as emerging technology sectors, such as artificial intelligence [94]. Venture capitalists are sources of working capital. Given the high costs associated with developing biopharmaceuticals, it is advantageous for firms to locate in regions where venture capital is abundant so that they may acquire financing for R&D and manufacturing activities. Thus, because proximity to venture capital may influence foreign multinational location decisions, we include *Venture Capital*, which we measure as the dollar amount of venture capital available per USD 10,000 GDP by state [78,79].

3.5.7. R&D

Biopharmaceutical R&D is the leader among U.S. R&D activities and investments and employs more workers than any other industry (e.g., aerospace, automotive, and semiconductor). In 2018, the industry alone invested over $102 billion into R&D in the U.S. [95]. These activities entail unknown outcomes and risks and require a significant amount of fixed capital (e.g., equipment to run tests, experiments, etc.). In the race to sustain a competitive advantage, establishing foreign R&D operations in the U.S. holds tremendous opportunities for knowledge-seeking firms. Hence, many firms have increasingly benefited from dispersing their R&D activities to such locations that can provide what their home countries lack, e.g., [29,33]. Prior studies have shown that foreign multinationals are more likely to locate in regions with a high R&D expenditure [91]. Since R&D expenditure has been shown to fuel investments in innovation, we include *R&D* as measured by a region's R&D expenditure per capita at the state level.

3.5.8. Manufacturing

Manufacturing, within the bio-pharmaceutical industry, has been identified as being as important as R&D and part of an "elite" group of manufacturing industries driven by cutting edge innovation e.g., [58]. The U.S. biopharmaceutical manufacturing industry is spread across nearly all U.S. states and is responsible for 38% of total employment in the

industry [58]. The manufacturing of a new biopharmaceutical drug provides a pathway between R&D and bringing a new drug to the market, which can cost anywhere between $30–$500 million [96]. The manufacturing of these drugs requires highly sophisticated knowledge in science and engineering in order to use and control high-tech equipment. It can take up to five years to construct a manufacturing facility [96]. Furthermore, operating one of these facilities is extremely costly (e.g., equipment, raw materials, etc.). While within the U.S., the manufacture of biopharmaceuticals tends to be distributed across regions, cost is an important consideration and firms look to regions where high costs can, at least partially, be alleviated. This gives rise to some regions of greater manufacturing intensity than others. We measure *Manufacturing* in terms of manufacturing intensity at the state level, which is the ratio of manufacturing value-added to manufacturing shipments.

4. Results

Tables 1 and 2 illustrate the results of our fsQCA analyses regarding the configurations of regional resources that attract DMNEs and EMNEs. The results are shown as three categories: a black filled circle, an open circle, or empty/blank. Following prior studies, e.g., [61], we denote the presence/high level of a resource condition with a black filled circle and the absence/low level of a resource condition with an open circle. Empty or blank cells represent resources which have "no impact" or, stated differently, the presence of a high or low resource condition is of no relevance to the DMNE's or EMNE's decision to locate in a particular region. The solution consistency (i.e., the percentage of similar causal configurations that result in the same outcome) was greater than 0.8 for all resource configurations, providing strong empirical support for their relevance.

Table 1. Regional Resource Configurations that Attract DMNEs.

Configuration	Skilled Workforce	Innovative Knowledge	Cluster Size	Universities	FDI Stock	Venture Capital	R&D	Manufacturing	Raw Coverage	Unique Coverage	Solution Consistency	Overall Solution Coverage	Overall Solution Consistency	Cases
Configuration 1	●	●	●		○	●	●	○	0.248	0.031	0.967			
Configuration 2		○	○		○		●	○	0.296	0.000	0.934			
Configuration 3			○	●	●	○	○		0.417	0.002	0.978			
Configuration 4		○	○		●		○		0.467	0.024	0.93			
Configuration 5		○			●		○	●	0.356	0.001	0.911			
Configuration 6			●		●	○		●	0.315	0.004	0.917			
Configuration 7				○	○		○		0.478	0.003	0.857			
Configuration 8				○	○			●	0.495	0.004	0.871	0.879	0.812	2604
Configuration 9				○	○	●			0.408	0.000	0.937			
Configuration 10		○			●	○			0.455	0.000	0.952			
Configuration 11			●	○	○				0.430	0.002	0.875			
Configuration 12			●	○				●	0.448	0.003	0.889			
Configuration 13		○		○					0.537	0.020	0.839			
Configuration 14	○				●	●	○		0.308	0.000	0.926			
Configuration 15	○		○	○					0.410	0.003	0.878			

● Presence/high level of a resource condition. ○ Absence/low level of a resource condition.

Table 2. Regional Resource Configurations that Attract EMNEs.

Configuration	Skilled Workforce	Innovative Knowledge	Cluster Size	Universities	FDI Stock	Venture Capital	R&D	Manufacturing	Raw Coverage	Unique Coverage	Solution Consistency	Overall Solution Coverage	Overall Solution Consistency	Cases
Configuration 1	●	●	●		○	●	●	○	0.254	0.022	0.975			
Configuration 2		○	○		○		●	○	0.373	0.013	0.932			
Configuration 3	○		○		●	○	○	○	0.280	0.001	0.937			
Configuration 4	○		●	○	●	●	○		0.259	0.000	0.954			
Configuration 5		○	●	●	●	○		●	0.296	0.000	0.946			
Configuration 6	○	●	●	●	○		○		0.183	0.008	1.000			
Configuration 7	○	○			●	○	○		0.340	0.000	0.947	0.820	0.893	683
Configuration 8		○	○		●		○	○	0.453	0.046	0.920			
Configuration 9	○	○			●	○		●	0.293	0.000	0.939			
Configuration 10	●	○	○	○				○	0.443	0.047	0.972			
Configuration 11	○	○		○				●	0.320	0.011	0.915			
Configuration 12	○	○	●	○				●	0.296	0.014	0.922			
Configuration 13	●			○	○			●	0.327	0.005	0.983			
Configuration 14	●		●	○	○				0.295	0.003	0.979			

● Presence/high level of a resource condition. ○ Absence/low level of a resource condition.

The fsQCA analyses identified 15 regional resource configurations for attracting DMNEs and 14 regional resource configurations for attracting EMNEs. As emphasized by the gray boxes, we identified an overlap among two configurations (i.e., DMNE configuration 1 → EMNE configuration 1; DMNE configuration 2 → EMNE configuration 2). The overlap in resource configurations 1 and 2 shows that, in some cases, the same resource configurations can attract DMNEs and EMNEs.

Referring to Tables 1 and 2, we begin by examining the eight resources. We find that a high level of FDI stock features prominently across six DMNE configurations (i.e., 3–6, 10, and 14) and six EMNE configurations (i.e., 3–5 and 7–9), suggesting that a region's FDI stocks are an important consideration for both DMNE and EMNE location decisions. A large cluster size also featured prominently across four DMNE configurations (i.e., 1, 6, 11, and 12) and six EMNE configurations (i.e., 1, 4–6, 12, and 14), suggesting that it is an even more important consideration for firms coming from less-developed nations, especially since it offers a larger pool of knowledge and human capital. A high level of manufacturing capability was associated with four DMNE configurations (i.e., 5, 6, 8, and 12) and five EMNE configurations (i.e., 5, 8, and 11–13), suggesting that regions with greater manufacturing intensity are attractive for both DMNEs and EMNEs. Compared to DMNEs, having access to a skilled workforce was a more important consideration for EMNEs as it was associated with four configurations (i.e., 1, 10, 13, and 14).

Turning now to the interplay between these different resources, we find that a greater number of EMNE configurations are the combination of higher resource levels, compared to DMNEs. In particular, there are twice as many EMNE configurations (i.e., 1, and 4–6) that include three or more resources at higher levels as DMNE configurations (i.e., 1 and 6). This lends support to the idea that, coming from less-developed nations, EMNEs seek out regions with a greater abundance of different resources that they lack.

Following standard practice, i.e., [20], Tables 1 and 2 also report several measures of solution consistency and coverage. Solution consistency refers to the degree to which cases that demonstrate a given configuration are consistently associated with the outcome of

interest (i.e., measured as the number of cases of a given configuration and the outcome divided by the number of cases with the same configuration but a different outcome) [20]. The overall solution consistency aggregates this measure across all of the identified configurations. Our results show consistency greater than the recommended threshold value of 0.8 [20]. However, since the configurations in Tables 1 and 2 only identify those configurations that meet the 0.8 consistency threshold, there may be other configurations that are associated with foreign multinational market entry strategies.

Tables 1 and 2 also report three measures of coverage: raw coverage, overall solution coverage, and unique coverage. Raw coverage represents the number of cases associated with the outcome of interest and a given configuration divided by the number of cases associated with only the outcome of interest [20]. Overall solution coverage aggregates this measure across all of the identified configurations [20]. The overall solution coverage for DMNE configurations identified in Table 1 was 0.879, which suggests that, at a minimum, these configurations account for 87.9% of the instances of the outcome (i.e., DMNEs locating in U.S. regions). Similarly, the overall solution coverage for EMNE configurations identified in Table 2 was 0.82, which suggests that, at a minimum, these configurations account for 82% of the instances of the outcome (i.e., EMNEs locating in U.S. regions). Therefore, the eight resources that we selected provide a good representation of those that are crucial to attracting foreign multinationals to the U.S. Unique coverage indicates the proportion of cases associated with the outcome of interest that are uniquely covered by a single configuration [20].

5. Discussion

In this study, we answer calls for the application of the neo-configurational perspective to study international business phenomenon e.g., [16]. We applied a novel fsQCA methodological approach to examine foreign multinational location decisions within the United States. The results of the fsQCA analysis demonstrate that resources can be configured in many different ways to attract DMNEs and EMNEs. More regularly than not, there are multiple resource configurations that are associated with attracting foreign multinationals. This is supported by the number of different resource configurations that we identified for DMNEs (15 configurations) and EMNEs (14 configurations).

Some resources stood out as being more common factors in foreign multinational market entry decisions. In particular, FDI stocks featured prominently in DMNE and EMNE location decisions. Locating in regions that are more open to foreign investment reduces the liability of foreignness [97] and facilitates knowledge spillovers. Cluster size was not only an important consideration for DMNEs, but even more so for EMNEs. Coming from less-developed nations, EMNEs appear to seek out larger clusters to benefit from agglomeration, which is consistent with the extant cluster literature e.g., [35,36]. A region's manufacturing intensity was another common factor that DMNEs and EMNEs considered, but EMNEs were also more interested in proximity to a skilled workforce.

There was great variety among the configurations for DMNEs and EMNEs. Only two of the configurations overlapped. However, this overlap does not suggest that these configurations attract DMNEs and EMNEs to the same regions. On the contrary, we find that Configuration 1, for example, attracts DMNEs to California, Massachusetts, and New Jersey while this same configuration will attract EMNEs to these same locations as well as Illinois, New York, Pennsylvania, and North Carolina. In general, we found that there were more EMNE configurations that included the combination of resources at higher levels, compared to DMNEs. This suggests that, given their initial resource endowments, EMNEs may seek out regions with a greater abundance of different resources to make up for those that they lack. Since DMNEs originate in more developed economies and have access to greater resource endowments than EMNEs, they may have more freedom to choose where they locate than EMNEs. By using a configurational approach, our insights provide a better understanding of how regional resources can be configured to attract foreign multinationals than traditional empirical approaches alone could provide.

The results of our study find support in the broader research on foreign multinational location choices that find that resource seeking is a primary motivation behind DMNE and EMNE location decisions [53]. Further, in the context of the biopharmaceutical industry, recent studies find that DMNEs and EMNEs exhibit different location patterns when entering the U.S. market (i.e., developed, growth, transitioning, and nascent regions), which are associated with the search for resources [98–100]. In general, DMNEs tend to have more options when locating outside of well-developed regions [98–100]. However, EMNEs are found to be more likely to locate in resource-rich regions [98–100], which also aligns well with our findings.

Our study makes several contributions to the extant international business and regional economic development literature. First, we answer calls for the application of the neo-configurational perspective to international business research e.g., [16]. We apply the fsQCA methodology to study foreign multinational location decisions. In doing so, this study elucidates how resource conditions collectively influence foreign multinational market entry decisions within all 51 regions in the U.S. Second, we add to the growing body of international business literature that recognizes DMNE and EMNE location decisions as being idiosyncratic and thus as needing to be examined separately. As our results imply, there are significant differences between how regional resources can be configured to attract DMNEs and EMNEs.

5.1. Practical Implications

This study's insights have important implications for policy makers. From a policy perspective, most countries have a strategy geared towards enhancing their regional economies. However, these policies are often focused on attracting local businesses and less on attracting foreign multinationals. Therefore, knowing what levers can be manipulated to attract foreign multinationals to a region is important to foster continued growth. Indeed, for policy makers, this study's findings suggest that local resources can be configured in different ways to attract DMNEs and EMNEs. These findings provide insight into how policy makers may improve configurations of resources to attract foreign multinationals. Our study provides some practical recommendations to that end. For instance, by drawing upon our fsQCA results, we find that Illinois, Iowa, Maine, Minnesota, Missouri, Oregon, Tennessee, and Utah can attract DMNEs to their locations by combining a high level of venture capital with a low level of FDI stock and universities (Configuration 9). This level of specificity is unfounded in prior studies of foreign multinational location decisions because it provides actionable recommendations for policy makers and allows them to make more efficient allocations of their scarce resources. Our fsQCA analysis also lends support to the notion that no single set of policies will be applicable to all regions. Instead, policies need to be targeted to the unique needs of each region. In this way, by adopting configurational approaches to international business location research, policy makers can develop realistic plans to attract foreign high-tech firms, thereby enhancing their region's economic prosperity.

While some regions can go it alone to try and attract foreign multinationals, we advocate for a more concerted approach that includes integration and alignment with federal programs. In this regard, we highlight one federal program that is helping to break down traditional barriers that hinder cooperation and is helping to improve regional development across multiple regions. Federal programs such as the National Institutes of Health (NIH) can play a large role in not only helping to build regional economies, but also improvingf healthcare. The Center for Advancing Point of Care Technologies (CAPCaT) is one example of a NIH-funded program that supports firms developing late-stage technologies from all around the U.S. and abroad. The Center leverages its combined expertise in business, engineering, and clinical knowledge from UMass Medical School and UMass Lowell. As a regional accelerator program, CAPCaT conducts a thorough evaluation and funds the most promising technologies, which results in companies receiving access to key resources, such as R&D funding, manufacturing capabilities, venture capital, industry-university

collaborations, and highly skilled experts. Finalists have raised nearly 2.5 times more money than what was originally awarded, received FDA approval, and commercialized products on the market today.

The impact of this program has been felt nationwide and is increasingly stimulating the development of less-developed regions. For instance, a recent cohort of finalists included companies located in Angola and Nigeria (emerging market countries) that also had established operations in Missouri, a less-developed region, and California, a more well-developed region. Other finalists located in developed countries, such as Spain, have operations in Texas, a growing region. Unlike traditional regional development programs that require companies to locate in a particular region (e.g., Startup New York), business accelerators such as CAPCaT offer a more flexible and sustainable model to increase regional development and innovation through foreign direct investment.

5.2. Limitations

Our fsQCA analysis highlights the importance of studying foreign market entry strategies by industry. While our results provide interesting insights into how different regional resources can be combined to influence foreign multinational location decisions, the specific empirical setting (i.e., the biopharmaceutical industry) warrants caution for over-generalizing our findings to low-tech industries, in particular. Thus, we suggest that future studies should explore how regional resource configurations may influence the location decisions of foreign multinationals in different high-tech industries, such as aerospace or nanotechnology, and low-tech industries, such as food and beverage. By doing so, research of this kind can help move policy makers beyond generalizing the Silicon Valley model to all industries and contexts. Future studies could also examine each region in greater depth by delving into the metropolitan statistical level (MSA), which may be of special interest for policy makers who want to make the least developed regions within a state more attractive to domestic and foreign investment.

6. Conclusions

Many international business studies that examine why foreign multinationals are attracted to one region over another tend to provide an overly simplistic view of a rather complex strategic market entry decision. This can be attributed to the frequent use of traditional empirical analytic techniques that assume linear or curvilinear relationships. We go beyond many existing studies by exploring foreign multinational location decisions in the U.S. from the neo-configurational perspective, which is grounded in the use of fuzzy-set qualitative comparative analysis. In doing so, we find support for the idea that foreign multinational location decisions are an exercise in finding the right fit between the resources that a region offers and those that the firm lacks. When the right configurations of resources are identified, firms derive synergistic benefits from locating in a particular region. Our study demonstrates that DMNEs and EMNEs are attracted to different regions based on the configuration of their resources. For example, FDI stocks and manufacturing intensity were common factors that featured prominently in both DMNE and EMNE location decisions, while proximity to a skilled workforce was a major consideration for EMNEs. We hope that this study sparks a new conversation about regional development and how regions can increase their attractiveness to foreign multinationals. We also encourage the adoption of non-traditional methodological approaches to study international business topics of great relevance, such as other market entry strategies.

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References

1. Kim, S.; Kim, A. Going viral or growing like an oak tree? Towards sustainable local development through entrepreneurship. *Acad. Manag. J.* **2021**. [CrossRef]
2. Caves, R.E. Causes of direct investment: Foreign firms' shares in Canadian and United Kingdom manufacturing industries. *Rev. Econ. Stat.* **1974**, *56*, 279–293. [CrossRef]
3. Crescenzi, R.; Iammarino, S. Global investments and regional development trajectories: The missing links. *Reg. Stud.* **2017**, *51*, 97–115. [CrossRef]
4. Dunning, J.H.; Lundan, S.M. *Multinational Enterprises and the Global Economy*, 2nd ed.; Edward Elgar Publishing: Cheltenham, UK, 2008.
5. Iammarino, S. FDI and regional development policy. *J. Int. Bus. Policy* **2018**, *1*, 157–183. [CrossRef]
6. Zhao, S.X.; Wong, D.W.; Wong, D.W.; Jiang, Y.P. Ever-transient FDI and ever-polarizing regional development: Revisiting conventional theories of regional development in the context of China, Southeast and South Asia. *Growth Chang.* **2020**, *51*, 338–361. [CrossRef]
7. Dunning, J.H.; Zhang, F. Foreign direct investment and the locational competitiveness of countries. *Transnat. Corp.* **2008**, *17*, 1–134.
8. Cantwell, J.; Iammarino, S. *Multinational Corporations and European Regional Systems of Innovation*; Routledge: London, UK, 2005.
9. Castellani, D.; Pieri, F. R&D offshoring and the productivity growth of European regions. *Res. Policy* **2013**, *42*, 1581–1594.
10. Crescenzi, R.; Gagliardi, L.; Iammarino, S. Foreign multinationals and domestic innovation: Intra-industry effects and firm heterogeneity. *Res. Policy* **2015**, *44*, 596–609. [CrossRef]
11. Peng, M.W. The global strategy of emerging multinationals from China. *Glob. Strateg. J.* **2012**, *2*, 97–107. [CrossRef]
12. Pavitt, K.; Patel, P. Global corporations and national systems of innovation: Who dominates whom? In *Technology, Globalization and Economic Performance*; Archibugi, D., Michie, J., Eds.; Cambridge University Press: Cambridge, UK, 1999; pp. 94–119.
13. Porter, M. *The Competitive Advantage of Nations*; Free Press: New York, NY, USA, 1990.
14. Lerner, J. *Boulevard of Broken Dreams*; Princeton University Press: Princeton, NJ, USA, 2009.
15. Pages, E.R.; Freedman, D.; Von Bargen, P. Entrepreneurship as a state and local economic development policy. In *The Emergence of Entrepreneurship Policy*; Hart, D.M., Ed.; Cambridge University Press: Cambridge, UK, 2003; pp. 240–259.
16. Fainshmidt, S.; Witt, M.A.; Aguilera, R.V.; Verbeke, A. The contributions of qualitative comparative analysis (QCA) to international business research. *J. Int. Bus. Stud.* **2020**, *51*, 455–466. [CrossRef]
17. Meyer, A.D.; Tsui, A.S.; Hinings, C.R. Configurational approaches to organizational analysis. *Acad. Manag. J.* **1993**, *36*, 1175–1195.
18. Misangyi, V.F.; Greckhamer, T.; Furnari, S.; Fiss, P.C.; Crilly, D.; Aguilera, R. Embracing causal complexity: The emergence of a neo-configurational perspective. *J. Manag.* **2017**, *43*, 255–282. [CrossRef]
19. Ragin, C.C. *Fuzzy-Set Social Science*; University of Chicago Press: Chicago, IL, USA, 2000.
20. Ragin, C.C. *Redesigning Social Inquiry: Fuzzy Sets and Beyond*; University of Chicago Press: Chicago, IL, USA, 2008.
21. Pajunen, K. Institutions and inflows of foreign direct investment: A fuzzy-set analysis. *J. Int. Bus. Stud.* **2008**, *39*, 652–669. [CrossRef]
22. Chen, L.; Li, Y.; Fan, D. How do emerging multinationals configure political connections across institutional contexts? *Glob. Strateg. J.* **2018**, *8*, 447–470. [CrossRef]
23. Ciravegna, L.; Kuivalainen, O.; Kundu, S.K.; Lopez, L.E. The antecedents of early internationalization: A configurational perspective. *Int. Bus. Rev.* **2018**, *27*, 1200–1212. [CrossRef]
24. Barney, J.B. Firm resources and sustained competitive advantage. *J. Manag.* **1991**, *17*, 99–120. [CrossRef]
25. Peteraf, M.A. The cornerstones of competitive advantage: A resource-based view. *Strateg. Manag. J.* **1993**, *14*, 179–191. [CrossRef]
26. Capron, L.; Chatain, O. Competitors' resource-oriented strategies: Acting on competitors' resources through interventions in factor markets and political markets. *Acad. Manag. Rev.* **2008**, *33*, 97–121. [CrossRef]

27. Lindsay, V.; Rod, M.; Ashill, N. Institutional and resource configurations associated with different SME foreign market entry modes. *Ind. Mark. Manag.* **2017**, *66*, 130–144. [CrossRef]

28. Beamish, P.W.; Chakravarty, D. Using the resource-based view in multinational enterprise research. *J. Manag.* **2021**, *47*, 1861–1877. [CrossRef]

29. Cantwell, J. *Technological Innovation and Multinational Corporations*; Basil Blackwell: Oxford, UK, 1989.

30. Kuemmerle, W. The drivers of foreign direct investment into research and development: An empirical investigation. *J. Int. Bus. Stud.* **1999**, *30*, 1–24. [CrossRef]

31. Porter, M.E.; Stern, S. Location matters. *Sloan Manag. Rev.* **2001**, *42*, 28–36.

32. Alcácer, J. Location choices across the value chain: How activity and capability influence collocation. *Manag. Sci.* **2006**, *52*, 1457–1471. [CrossRef]

33. Lamin, A.; Livanis, G. Agglomeration, catch-up and the liability of foreignness in emerging economies. *J. Int. Bus. Stud.* **2013**, *44*, 579–606. [CrossRef]

34. Porter, M.E. *On Competition*; Harvard Business School Press: Cambridge, MA, USA, 1998.

35. Shaver, J.M.; Flyer, F. Agglomeration economies, firm heterogeneity, and foreign direct investment in the United States. *Strateg. Manag. J.* **2000**, *21*, 1175–1193. [CrossRef]

36. Alcácer, J.; Chung, W. Location strategies for agglomeration economies. *Strateg. Manag. J.* **2014**, *35*, 1749–1761. [CrossRef]

37. Saxenian, A. Regional networks: Industrial adaptation in Silicon Valley and route 128. In *The Sociology of Economic Life*, 3rd ed.; Granovetter, M., Swedberg, R., Eds.; Routledge: New York, NY, USA, 1994; pp. 357–375.

38. Anglin, R.V. *Promoting Sustainable Local and Community Economic Development*; Routledge: New York, NY, USA, 2011.

39. Purvis, M.; Grainger, A. *Exploring Sustainable Development: Geographical Perspectives*; Routledge: New York, NY, USA, 2013.

40. Wu, K.; Wang, Y.; Ye, Y.; Zhang, H.; Huang, G. Relationship between the built environment and the location choice of high-tech firms: Evidence from the Pearl River Delta. *Sustainability* **2019**, *11*, 3689. [CrossRef]

41. National Research Council. Clusters and regional initiatives. In *Rising to the Challenge: US Innovation Policy for the Global Economy*; Wessner, C.W., Wolff, A.W., Eds.; The National Academies Press: Washington, DC, USA, 2012; pp. 431–487.

42. Mair, J.; Marti, I.; Ventresca, M.J. Building inclusive markets in rural Bangladesh: How intermediaries work institutional voids. *Acad. Manag. J.* **2012**, *55*, 819–850. [CrossRef]

43. Hafner, K.A.; Kleinert, J. FDI flows and regional development: Lessons for transition countries. In *Entrepreneurship in Post-Communist Countries*; Ateljević, J., Budak, J., Eds.; Springer: Cham, Switzerland, 2018; pp. 47–59.

44. Chen, M.X.; Moore, M.O. Location decision of heterogeneous multinational firms. *J. Int. Econ.* **2010**, *80*, 188–199. [CrossRef]

45. Dunning, J.H. Location and the multinational enterprise: A neglected factor? *J. Int. Bus. Stud.* **1998**, *29*, 45–66. [CrossRef]

46. Drazin, R.; Van de Ven, A.H. Alternative forms of fit in contingency theory. *Admin. Sci. Q.* **1985**, *30*, 514–539. [CrossRef]

47. Ketchen, D.J., Jr.; Thomas, J.B.; Snow, C.C. Organizational configurations and performance: A comparison of theoretical approaches. *Acad. Manag. J.* **1993**, *36*, 1278–1313. [CrossRef]

48. Grant, R.M. Toward a knowledge-based theory of the firm. *Strateg. Manag. J.* **1996**, *17*, 109–122. [CrossRef]

49. Porter, M.E. Locations, clusters and company strategy. In *The Oxford Handbook of Economic Geography*; Clark, G.L., Feldman, M.P., Gertler, M.S., Eds.; Oxford University Press: Oxford, UK, 2000; pp. 254–274.

50. Ketels, C.H.M. Microeconomic determinants of location competitiveness for MNEs. In *Foreign Direct Investment, Location and Competitiveness*; Dunning, J.H., Gugler, P., Eds.; Elsevier: Oxford, UK, 2008; pp. 111–131.

51. Mudambi, R.; Swift, T. Technological clusters and multinational enterprise R&D strategy. In *The Past, Present and Future of International Business & Management*; Emerald Group Publishing Limited: Bingley, UK, 2010; pp. 461–478.

52. Cantwell, J.A.; Mudambi, R. Physical attraction and the geography of knowledge sourcing in multinational enterprises. *Glob. Strateg. J.* **2011**, *1*, 206–232. [CrossRef]

53. Li, X.; Quan, R.; Stoian, M.C.; Azar, G. Do MNEs from developed and emerging economies differ in their location choice of FDI? A 36-year review. *Int. Bus. Rev.* **2018**, *27*, 1089–1103. [CrossRef]

54. Zaheer, S.; Nachum, L. Sense of place: From location resources to MNE locational capital. *Glob. Strateg. J.* **2011**, *1*, 96–108. [CrossRef]

55. Jindra, B.; Hassan, S.S.; Cantner, U. What does location choice reveal about knowledge-seeking strategies of emerging market multinationals in the EU? *Int. Bus. Rev.* **2016**, *25*, 204–220. [CrossRef]

56. Globe Newswire. Global Biopharmaceuticals Market Overview, 2018–2019 & Forecast to 2025. 2019. Available online: https://www.globenewswire.com/news-release/2019/07/19/1885192/0/en/Global-Biopharmaceuticals-Market-Overview-2018--2019-Forecast-to-2025.html (accessed on 30 July 2021).

57. United Nations. *World Investment Report 2020: International Production beyond the Pandemic*; United Nations Conference on Trade and Development: Geneva, Switzerland, 2020.

58. PhRMA. The Impact of the U.S. Biopharmaceutical Industry: 2017 National and State Estimates. 2019. Available online: https://www.phrma.org/-/media/Project/PhRMA/PhRMA-Org/PhRMA-Org/PDF/D-F/Economic-Impact-US-Biopharmaceutical-Industry-December-2019.pdf (accessed on 30 July 2021).

59. Fiss, P.C. A set-theoretic approach to organizational configurations. *Acad. Manag. Rev.* **2007**, *32*, 1180–1198. [CrossRef]

60. Fiss, P.C. Building better causal theories: A fuzzy set approach to typologies in organization research. *Acad. Manag. J.* **2011**, *54*, 393–420. [CrossRef]

61. Aversa, P.; Furnari, S.; Haefliger, S. Business model configurations and performance: A qualitative comparative analysis in Formula One racing, 2005–2013. *Ind. Corp. Chang.* **2015**, *24*, 655–676. [CrossRef]
62. Longest, K.C.; Vaisey, S. Fuzzy: A program for performing qualitative comparative analyses (QCA) in Stata. *Stata J.* **2008**, *8*, 79–104. [CrossRef]
63. Rihoux, B.; Ragin, C.C. *Configurational Comparative Methods: Qualitative Comparative Analysis (QCA) and Related Techniques*; Sage Publications: Thousand Oaks, CA, USA, 2009.
64. Greckhamer, T. CEO compensation in relation to worker compensation across countries: The configurational impact of country-level institutions. *Strateg. Manag. J.* **2016**, *37*, 793–815. [CrossRef]
65. Halme, M.; Rintamäki, J.; Knudsen, J.S.; Lankoski, L.; Kuisma, M. When is there a sustainability case for CSR? Pathways to environmental and social performance improvements. *Bus. Soc.* **2020**, *59*, 1181–1227. [CrossRef]
66. Meuer, J.; Rupietta, C.; Backes-Gellner, U. Layers of co-existing innovation systems. *Res. Policy* **2015**, *44*, 888–910. [CrossRef]
67. Schneider, M.R.; Schulze-Bentrop, C.; Paunescu, M. Mapping the institutional capital of high-tech firms: A fuzzy-set analysis of capitalist variety and export performance. *J. Int. Bus. Stud.* **2010**, *41*, 246–266. [CrossRef]
68. Vergne, J.-P.; Depeyre, C. How do firms adapt? A fuzzy-set analysis of the role of cognition and capabilities in us defense firms' responses to 9/11. *Acad. Manag. J.* **2016**, *59*, 1653–1680. [CrossRef]
69. Aharonson, B.S.; Baum, J.A.C.; Plunket, A. Inventive and uninventive clusters: The case of Canadian biotechnology. *Res. Policy* **2008**, *37*, 1108–1131. [CrossRef]
70. Casper, S. How do technology clusters emerge and become sustainable?: Social network formation and inter-firm mobility within the San Diego biotechnology cluster. *Res. Policy* **2007**, *36*, 438–455. [CrossRef]
71. Turkina, E.; Van Assche, A. Global connectedness and local innovation in industrial clusters. *J. Int. Bus. Stud.* **2018**, *49*, 706–728. [CrossRef]
72. Giuliani, E.; Arza, V. What drives the formation of 'valuable' university–industry linkages?: Insights from the wine industry. *Res. Policy* **2009**, *38*, 906–921. [CrossRef]
73. Laursen, K.; Reichstein, T.; Salter, A. Exploring the effect of geographical proximity and university quality on university–industry collaboration in the United Kingdom. *Reg. Stud.* **2011**, *45*, 507–523. [CrossRef]
74. Libaers, D.; Dunlap, D. *The World Scientific Reference on Innovation, Volume 1: University Technology Transfer and Academic EntrePreneurship*; World Scientific Publishers: Singapore, 2018.
75. Kolympiris, C.; Kalaitzandonakes, N.; Miller, D. Spatial collocation and venture capital in the US biotechnology industry. *Res. Policy* **2011**, *40*, 1188–1199. [CrossRef]
76. Goldsack, J.C.; Zanetti, C.A. Defining and developing the workforce needed for success in the digital era of medicine. *Digit. Biomark.* **2020**, *4*, 136–142. [CrossRef]
77. Franzino, M.; Guarino, A.; Binvel, Y.; Laouchez, J.-M. The $8.5 Trillion Talent Shortage. Available online: https://www.kornferry.com/insights/this-week-in-leadership/talent-crunch-future-of-work (accessed on 30 July 2021).
78. Delgado, M.; Porter, M.E.; Stern, S. Clusters and entrepreneurship. *J. Econ. Geog.* **2010**, *10*, 495–518. [CrossRef]
79. Delgado, M.; Porter, M.E.; Stern, S. Clusters, convergence, and economic performance. *Res. Policy* **2014**, *43*, 1785–1799. [CrossRef]
80. Madhavan, R.; Grover, R. From embedded knowledge to embodied knowledge: New product development as knowledge management. *J. Mark.* **1998**, *62*, 1–12. [CrossRef]
81. Giovannetti, G.T.; Morrison, S.W. *Convergence: The Biotechnology Industry Report*; Ernst & Young: Palo Alto, CA, USA, 2000.
82. Glaeser, E.L.; Kerr, S.P.; Kerr, W.R. Entrepreneurship and urban growth: An empirical assessment with historical mines. *Rev. Econ. Stat.* **2015**, *97*, 498–520. [CrossRef]
83. Acs, Z.J.; Audretsch, D.B.; Lehmann, E.E. The knowledge spillover theory of entrepreneurship. *Small Bus. Econ.* **2013**, *41*, 757–774. [CrossRef]
84. Casper, S.; Murray, F. Careers and clusters: Analyzing the career network dynamic of biotechnology clusters. *J. Eng. Tech. Manag.* **2005**, *22*, 51–74. [CrossRef]
85. Casper, S. The spill-over theory reversed: The impact of regional economies on the commercialization of university science. *Res. Policy* **2013**, *42*, 1313–1324. [CrossRef]
86. Henderson, R.; Cockburn, I. Measuring competence? Exploring firm effects in pharmaceutical research. *Strateg. Manag. J.* **1994**, *15*, 63–84. [CrossRef]
87. Cockburn, I.; Henderson, R. Public–private interaction in pharmaceutical research. *Proc. Nat. Acad. Sci. USA* **1996**, *93*, 12725–12730. [CrossRef] [PubMed]
88. Calza, F.; Ferretti, M.; Panetti, E.; Parmentola, A. Moving drug discoveries beyond the valley of death: The role of innovation ecosystems. *Eur. J. Innov. Manag.* **2020**. [CrossRef]
89. Gilding, M.; Brennecke, J.; Bunton, V.; Lusher, D.; Molloy, P.L.; Codoreanu, A. Network failure: Biotechnology firms, clusters and collaborations far from the world superclusters. *Res. Policy* **2020**, *49*, 103902. [CrossRef]
90. Owen-Smith, J.; Powell, W.W. Knowledge networks as channels and conduits: The effects of spillovers in the Boston biotechnology community. *Org. Sci.* **2004**, *15*, 5–21. [CrossRef]
91. Siedschlag, I.; Smith, D.; Turcu, C.; Zhang, X. What determines the location choice of R&D activities by multinational firms? *Res. Policy* **2013**, *42*, 1420–1430.

92. Bodman, P.; Le, T. Assessing the roles that absorptive capacity and economic distance play in the foreign direct investment-productivity growth nexus. *Appl. Econ.* **2013**, *45*, 1027–1039. [CrossRef]
93. Ahlstrom, D.; Bruton, G.D. Venture capital in emerging economies: Networks and institutional change. *Entrep. Theory Pract.* **2006**, *30*, 299–320. [CrossRef]
94. Santos, R.S.; Qin, L. Risk capital and emerging technologies: Innovation and investment patterns based on artificial intelligence patent data analysis. *J. Risk Financ. Manag.* **2019**, *12*, 189. [CrossRef]
95. PhRMA. Research & Development. Available online: https://www.phrma.org/en/Advocacy/Research-Development (accessed on 30 July 2021).
96. Otto, R.; Santagostino, A.; Schrade, U. Rapid Growth in Biopharma: Challenges and Opportunities. 2014. Available online: https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/rapid-growth-in-biopharma (accessed on 30 July 2021).
97. Zaheer, S. Overcoming the liability of foreignness. *Acad. Manag. J.* **1995**, *38*, 341–363.
98. Dunlap, D.R.; Santos, R.S. Storming the beachhead: An examination of developed and emerging market multinational strategic location decisions in the US. *J. Risk Financ. Manag.* **2021**, *14*, 325. [CrossRef]
99. Dunlap, D.R.; Santos, R. Storming the beachhead of a dominant cluster: Foreign bio-pharmaceutical collocation patterns. *Acad. Manag. Proc.* **2019**, *1*, 18071. [CrossRef]
100. Dunlap, D.R.; Santos, R. Moths to the flame: Examining foreign collocation patterns in the bio-pharmaceutical industry. *Acad. Manag. Proc.* **2020**, *1*, 17261. [CrossRef]