

Should I stay or should I go? Geographic Entrepreneurial Choices in Brazilian Franchising

Eugênio José Silva Bitti, Muriel Fadairo, Cintya Lanchimba, Vivian-Lara Silva

▶ **To cite this version:**

Eugênio José Silva Bitti, Muriel Fadairo, Cintya Lanchimba, Vivian-Lara Silva. Should I stay or should I go? Geographic Entrepreneurial Choices in Brazilian Franchising. Journal of Small Business Management, 2019, 57 (S2), pp. 244-267. halshs-01886971

HAL Id: halshs-01886971
https://shs.hal.science/halshs-01886971

Submitted on 22 Nov 2019

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

*Should I Stay or Should I Go? Geographic Entrepreneurial Choices in Brazilian Franchising**

by Eugênio J. S. Bitti, Muriel Fadairo, Cintya Lanchimba, and Vivian Lara dos Santos Silva

In the broad empirical literature on franchising, performance outcomes of location decisions appear to be a largely forgotten issue. Yet franchising represents a rich context to study the impact of geographic entrepreneurial choices. Addressing this "blank spot" in the literature, we deal with the following question: Is it better for a chain to stay in the same geographic area, or to expand via distant franchised units? Our econometric estimations on new and unique Brazilian panel data show that spatial agglomeration of chain outlets leads to higher performance, suggesting that agglomeration gains outweigh cannibalization and spatial monopoly effects.

"Brazil is seeing a large expansion of franchising opportunities,
beyond the capital and big cities."
Cristina Franco, Chair of the *Brazilian Franchising Association* (Duarte 2014)

Introduction

Location has long been clearly understood to be a major entrepreneurial choice, and a key determinant of firm performance in retailing (Applebaum 1966; Cliquet 1998; Fox,

Eugênio José Silva Bitti, School of Economics, Business Administration and Accounting, Universidade de São Paulo, (FEA/USP), Ribeirão Preto, Brazil.

Muriel Fadairo, Institut de Recherche en Gestion et Economie, Université de Savoie Mont Blanc (IREGE/IAE Savoie Mont Blanc), Annecy, France.

Cintya Lanchimba, Departamento de Economía Cuantitativa, Escuela Politécnica Nacional (EPN), Quito, Ecuador.

Vivian Lara dos Santos Silva, Center for Organization Studies, Group for Study and Research in Strategy and Vertical Coordination, School of Animal Sc. and Food Engineering, Universidade de São Paulo (CORS/GEPEC/FZEA/USP), Pirassununga, Brazil.

Address correspondence to: Muriel Fadairo, Institut de Recherche en Gestion et Economie, Université de Savoie Mont Blanc (IREGE/IAE Savoie Mont Blanc), Annecy, France. E-mail: Muriel.Fadairo@univ-savoie.fr.

The authors contributed equally.

*We gratefully acknowledge the support of the University of São Paulo/Comité Français d'Evaluation de la Coopération Universitaire et Scientifique avec le Brésil Programme (USP-COFECUB 2017-2020) under grant agreement no. Uc Sh 165-17. We thank Editor Marko Grünhagen, and the three anonymous reviewers of the *Journal of Small Business Management*. We are grateful to our respective institutions for providing a supportive environment for the development of our research. Special thanks go to CORS (Center for Organization Studies, Brazil), GEPEC (Group of Studies and Research on Strategy and Vertical Coordination, Brazil), EPN Quito (Escuela Politécnica Nacional, Departamento de Economía Cuantitativa, Ecuador), FRANSTRAT (Estratégias em Franchising – Coordenação e Contrôle, Brazil), and, finally but not least, IREGE (Institut de Recherche en Gestion et Economie, IAE Savoie Mont Blanc, France). Bianca Maria Silva and Hugo Porras provided excellent research assistance. Additional thanks go to the Brazilian Franchising Association (ABF) for valuable help in the construction of our data set. The usual caveats apply.

The authors would like to dedicate this paper to Professor Dominique Fadaïro.

Postreal, and McLaughlin 2007; Jones and Simmons 1987); Streed and Cliquet 2013). However, locational choice has received rather little attention in the franchising literature, as underlined by Ehrmann and Meiseberg (2011). El Akremi, Perrigot, and Piot-Lepetit (2015) emphasize that although performance is the focus of many studies in the franchising field, the performance outcomes of location choices seems to be a forgotten issue. All things considered, discussions on the locational aspects of franchising seem shortsighted, addressing the geographic dimension only insofar as it is a means to evaluate monitoring costs between franchisors and the outlets of franchise chains (e.g., Combs and Ketchen 2003; Norton 1988; Perryman and Combs 2012).

Yet franchising represents a rich context within which to study the impact of geographic entrepreneurial choices. In a franchise chain, the franchisor develops a brand and a business concept, which is then operated by independent outlets—the franchisees. The geographic potential for entrepreneurial opportunities motivates the choice of where to locate new outlets.

Thus, the chain development depends on geographical expansion choices. The spatial exploitation of a viable franchise concept turns on the central following issue: Is it better for a chain to stay in the same geographic area, or to expand somewhere else via franchised units distant from one another? The main goal of our paper is to address this issue. We discuss the location choices of franchise chains in Brazil and provide evidence on performance outcomes. The geographical entrepreneurial choices may encompass internationalization decisions. In this paper, we focus on geographical choices at local/national level.

Our work is related to three empirical research areas: location choices and entrepreneurship, location choices and franchising, and location effects on performance. For each of these, in Appendix 1, we present the focus, representative references, and the main results. As remarked by Combes and Gobillon (2015), the literature on location choices and entrepreneurship is "burgeoning," dealing mainly with the location choices of foreign direct investments, and of new entrepreneurs. In the literature on franchise data, the geographic dimension has mainly been taken into account in line with the ownership issue (franchisee *versus* company-owned retail unit). Some works deal with the link between location choice and the franchise chain's life cycle. Julian and Castrogiovanni (1995) and Ehrmann and Meiseberg (2011) address the relationship between location choice and franchise chain expansion, which is very close to our own focus. While Julian and Castrogiovanni (1995) study the role of franchisor capabilities in geographical expansion, Ehrmann and Meiseberg (2011) analyze site selection in chain expansion and performance outcome at the franchisee level. In this seminal work, the authors address the impact of exogenous location factors *versus* endogenous network characteristics in site selection, while we aim at filling the gap regarding the issue "concentration of outlets *versus* dispersion" as franchisor's entrepreneurial decision. Finally, the background empirical literature provides clear evidence on the noticeable impact of location on retail performance, but also highlights the complexity of this relationship, justifying thus further research.

We build on the extant evidence by addressing the case of a continent-sized country, Brazil, in a very dynamic context for franchising, with rapid expansion of franchise systems. We study the different options open to the franchisor, from which we distinguish several profiles in addition to the performance outcomes.

In line with the few extant empirical works on the geographical dimension of franchised chain expansion (Ehrmann and Meiseberg 2011; Julian and Castrogiovanni 1995), we study the location choice as a strategy of the entrepreneur-franchisor. This sums up a more complex reality, as outlet locations can be franchisee-suggested, and not necessarily chosen by the franchisor. For simplicity, and to focus on the performance issue, we assume that all the bargaining power is on the franchisor side. Thus, the franchise system location choice is understood as a franchisor decision.

There are five reasons for our interest in the Brazilian market. First, as highlighted by Fadairo and Lanchimba 2017), very few studies

deal with franchising in Latin America.[1] Second, Brazil is one of the main emerging economies of the 21st century, forming part of the BRICS alongside Russia, India, China, and South Africa. Our paper thus adds to the developing literature on franchising in emerging countries (e.g., Grünhagen, Dant, and Zhu 2012). One commonality among the BRICS is their physical scale: being effectively continent-sized, this raises issues of spatial inequalities and agglomeration phenomena in economic development (e.g., Cheong and Wu 2014; Lessmann 2014). Third, despite the economic and political crisis affecting this "giant," franchising in Brazil continues to grow. Although in 2016 Brazilian retail sales fell by 6.2% compared to 2015, and the sector ended with a fall of 4.3%, corresponding to the worst result of the historical series beginning in 2001 and marking two consecutive years of losses (Gaier and Moreira 2017), franchising was able to maintain its historical growth trend. Indeed, in the middle of one of the most challenging moments for the Brazilian economy, franchising recorded a growth of 8.3% in 2016 (ABF 2016). Fourth, this growth movement is particularly driven by small and medium-sized local chains[2]—indeed, this is the essence of franchising in Brazil. Finally, franchise chains are present in diverse regions of this huge country, including the most remote and least developed (Appendix 1), although Brazilian Southeast, the richest region in the country, remains the largest hub of franchise chains, with a 70.9% share in 2016 (ABF 2016).

Those five remarks together give us strong evidence that, even more than elsewhere, spatial issues in Brazilian franchising as well as the related market opportunities are a crucial topic for research.

Although retail markets are "highly complex and dynamic" (Larsson and Öner 2014, p. 387), starting from this broad geographic picture we aim to identify the different profiles of locational choices in Brazilian franchising—that is, the different ways to exploit spatial opportunities—and to study the performance outcomes. For example, a new chain may choose to expand by exploiting the potential of this spatially extensive market and avoiding competition with the established big brands; this involves an entrepreneurial strategy based on the dispersion of the chain outlets, positioned in areas where they benefit from a local monopoly. From a survey of the literature, we first highlight relevant theoretical results on location choices and spatial competition in retailing. On this basis, we empirically distinguish "behavior categories" of franchise chains in Brazil, referring to Porter's "strategic groups" (1980), defined as sets of firms in an industry that display similar entrepreneurial profiles, and to Meyer et al.'s "configurations" (1993), relating to groups of firms with a common organizational profile. This concept of behavior categories regarding locational choices allows us to classify, by means of a two-step cluster analysis, the ways the sample chains exploit geographic entrepreneurial opportunities. To this end, we use a unique and recent panel data set containing valuable information on geographical location. The study variables for the empirical analysis are derived from the literature on retailing and location choices. Finally, our econometric estimations relate chain behavior categories in location choices to performance outcomes at the franchisee level. Additional estimates allow us to study the impact of each component of the geographic entrepreneurial choice to performance results.

---

[1]A statement that is true both in general and for Brazilian franchising in particular. Exceptions to the Brazilian case could be considered to fall onto two main axes: the contractual mix (a field starting with Azevedo and Silva 2007, 2001) and the internationalization of Brazilian networks (see, for instance, Camargo, Rocha, and Silva 1991). Locational choice nevertheless remains an open avenue to be explored. A single exception in Brazil seems to be Porto Sales (2014), although it is important to point out that, in this case, Porto Sales limited her study to a spatial snapshot of franchising in Latin America, including Brazil, and does not discuss the impact of the location decision on the performance of the franchising chains. The latter is our particular interest in this paper.

[2]According to the ABF definition, small franchising chains consist of 1 to 50 outlets, and medium-sized chains of 50 to 100 units. Of course, the big brands, with more than 100 units, stand out in the market, but a careful analysis of the Brazilian market reveals the dynamism of small chains (Silva and Azevedo, 2010). Our full sample consists of franchising chains operating in Brazil (ABF data). The mean size is 85.41 outlets. The distinction between local and foreign brands is instructive: the average size of foreign chains is 232.85 outlets, while the average size of Brazilian chains is only 78.98 outlets. The market is dominated by local brands (98.8%).

The paper is organized as follows. The next section presents the background literature and the hypotheses, identifying the relevant locational options for multi-outlet chains. The following section describes the data, and provides information on data collection, the study variables, and summary statistics. The cluster analysis and estimations are presented, respectively, in the sections that follow. The last section concludes with final remarks and implications for entrepreneurship and academic studies that go beyond the Brazilian case.

Related Literature and Hypotheses Development

The literature contains several important studies which relate entrepreneurial choices, characterized by the construction of groups of franchise chains (clusters of franchise chains), to performance outcomes: notably Carney and Gedajlovic (1991), Combs and Ketchen (1999), Combs, Ketchen, and Hoover (2004), and Gonzalez-Diaz and Solis-Rodriguez (2017). As Combs and Ketchen (1999) remark, clusters can be derived either inductively or theoretically. We give priority to the second option, where the variables used for the clustering process are related to the background literature and hypotheses deriving therefrom. Given the importance of location as an entrepreneurial choice, a vast literature has developed dealing with consumer spatial behavior and retail location. The aim of this analytical section is not to review this wide research field, but to highlight the theoretical results relevant to distinguishing behavior categories in the location choices of franchised chains in Brazil. These categories will be used, finally, to test the central prediction, according to which:

H0: The location entrepreneurial choice is a key determinant of the chain performance.

In the following, based on the background literature, we discuss the determinants of the location entrepreneurial choice, and why they may impact the chain performance. A first determinant regards the method of allocation of chain outlets in space, corresponding to the fundamental choice "agglomeration *versus* dispersion," that we present hereafter.

"Choosing to Stay"… The Benefits of Agglomeration

Spatial competition, where customer behaviors are influenced by the cost of transportation and the relative locations of buyers and sellers, can give rise to a variety of retail location patterns. Agglomeration of retail outlets is one of the most relevant. Indeed, contrary to the a-spatial competition of standard microeconomics models, spatial competition has monopolistic features leading to agglomeration.

In this analytical context, Hotelling's (1929) pioneering contribution analyzes the way firms choose their location in a strategic environment, and formally demonstrates the benefits of agglomeration. Modeling a duopoly situation where, from fixed locations in a bounded linear market, companies sell identical products, Hotelling shows that the equilibrium corresponds to a situation of agglomeration of outlets. Firms are clustered in the center of the space, guaranteeing themselves a maximum market share. Thus modeled, duopolistic competition leads to price stability and is characterized by the principle of minimum differentiation of location decisions. This theoretical result is consistent with Smithies (1941) and Hartwick and Hartwick (1971).

Relaxing Hotelling's hypotheses in order to study various market types and various location conjectures, further theoretical studies have highlighted the limits of this result (e.g., d'Aspremont, Gabszewick, and Thisse 1979; Brown 1989; Mulligan and Fi 1994; Pitts and Boardman 1998). More particularly, without the hypothesis of demand inelasticity, the cluster of retailers at the midpoint of the market does not display a price–spatial equilibrium, i.e., firms do not cluster together in the manner suggested by Hotelling when demand is elastic. Indeed, clustering with price-elasticity of demand by spatially distributed consumers is not a stable option, as slight variations in pricing decisions can capture the entire market for one seller.

Nevertheless, the principle of minimum differentiation remains unavoidable in the theory of retail location, with an enduring impact on the analysis of agglomeration phenomena of economic activities (Thisse 2011). Specifically, it is firmly associated with the agglomeration of similar outlets, which is relevant when analyzing location entrepreneurial choice within a franchising chain. Moreover, Hotelling's

restrictive hypotheses of product homogeneity and demand inelasticity are appropriate in the case of the intra-brand spatial competition of franchisees. Indeed, within a chain, goods and concepts are standardized, with a price that tends to be uniform for each product whatever the retail outlet and location.[3] This situation limits the issue of price competition and demand elasticity in spatial competition.

An additional argument for the clustering of similar outlets emerges with the introduction in the analysis of uncertainty and risk-reducing behavior (Brown 1989). Retail agglomeration indeed reduces the search costs for imperfectly informed customers through comparative shopping (Ghosh and McLafferty 1987); Chung and Kalnins 2001). More generally, the advantages of proximity, related to various forms of increasing returns as regards production, distribution, and consumption, explain the observed strong tendency for geographical concentration (Fujita and Thisse 2002). Combes and Gobillon (2015) summarize the achievements of the vast empirical literature on agglomeration economies. Agglomeration economies are a specific type of externalities. The latter concept—externalities—relates to interactions between economic agents or entities. From the early work of Marshall (1920), the concept of externalities occupies a major place in the justification of the location of economic activities. Agglomeration economies, more specifically, include any effect that increases the firm's performance when the size of the local economy—or the local network—grows. Combes and Gobillon thus distinguish static and dynamic mechanisms behind agglomeration economies: *sharing effects*, relating to the common use of local indivisible goods and facilities, and to the pooling of risk; *matching effects*, which correspond to improvement of either the quality or the quantity of matches between firms and workers; and *learning effects*, which involve the generation, diffusion, and accumulation of knowledge. Sorenson and Søensen (2001) highlight the importance of knowledge transfer and organizational learning in franchising chains, and underline the performance outcome.

Consistent with this analytical background emphasizing the advantages of agglomeration, we formulate the following hypothesis:

H1: Agglomeration of the chain outlets leads to higher performance.

"Choosing to Go" … The Benefits of Dispersion

As stated by Fujita and Thisse (2002), "the observed spatial configuration of economic activities is the result of a complicated balance of two (opposing types of) forces" (p. 5), some working toward concentration, previously discussed, and the others toward dispersion. This interplay, highlighted by Lösch (1940), remains at the heart of locational phenomena, and can be reinterpreted as a trade-off between the increasing returns associated with agglomeration economies, and mobility costs (Thisse 2011).

The transportation cost paid by distant customers is indeed an important argument for retail dispersion. Studying the relationship between price and clustering, Hamilton, MacLeod, and Thisse (1991) provide an interesting argument for the dispersion of retailers since geographical separation gives retail units greater market power over consumers located in their vicinity. This result is consistent with d'Aspremont, Gabszewick, and Thisse (1979, underscoring that the only stable location in a linear market is at the quartiles, where spatial monopoly allows one retailer to capture the immediate market area, and contradicting Hotelling's conclusion about a median location. It is also consistent with the "nearest center" hypothesis, postulated by classical central place theory (Lösch 1940; Christaller 2009; relevance of this theory has recently been restated by Larsson and Öner 2014), and according to which customers necessarily shop at the closest store. Indeed, despite their secular decline, which has accelerated in recent

[3]Like in the European Union and in the United States, and in accordance with the Brazilian law N° 12.529/2011, on the Brazilian market franchisors are not allowed to fix retail prices (formally). However, as confirmed by the ABF, they usually suggest those prices, influencing thus the franchisees. The idea that prices tend to be uniform within a franchise chain is also supported by the results of Industrial Organization, a research field that studies market dynamics, and more precisely by the oligopoly theory. It is indeed relevant to compare competition within a franchise chain to a market oligopoly. In that case, the most likely situation is a stable oligopoly, where competitors avoid a price war. Equilibrium is thus characterized by uniform prices (e.g., Tirole 2004).

decades, the impact of transport costs on the location of economic activities is still important—although this is a complex issue, as emphasized in the "New Economic Geography" (the seminal reference being Krugman 1991; see also Fujita, Krugman, and Venables 1999; Head and Mayer 2011; Ottaviano and Thisse 2001).

A locational argument based on the minimization of mobility costs for goods, people, and knowledge is meaningful in the case of a continent-sized country like Brazil. Moreover, the existence of agglomeration costs (Combes, Duranton, and Gobillon 2016) provides additional justification for the dispersion of retail locations. In the case of intra-brand competition, as within a franchise chain, the most important agglomeration cost is the risk of cannibalization.

The locational risk of cannibalization relates to spatial competition between geographically proximate retail outlets, where the presence of a new unit captures sales of other outlets. The spatial entrepreneurial choice of franchising chains, turning on the choice of where to locate their retail units, is affected by this cannibalization effect. This intra-chain competition effect may thus influence spatial choices as regards dispersion *versus* agglomeration. Pancras, Sriram, and Kumar (2012) estimate this cannibalization effect and provide evidence for a significant decay in cannibalization with distance. In a context of chain expansion, they measure the net impact of a new store opening on the overall chain performance. This impact results from the joint and contradictory effect of incremental sales *versus* cannibalization. Using econometrics and panel data to estimate the parameters of a demand model that captures spatial competition, they highlight a clear empirical link between cannibalization and distance.

As underlined by Ehrmann and Meiseberg (2011), who estimate cannibalization effects at the supra-regional level (which strongly decrease franchisee performances), situating new franchised outlets more remotely can be a successful option.

Based on these analytical considerations, the following counter hypothesis is relevant:

H2: Dispersion of the chain outlets leads to higher performance.

Though the choice for agglomeration *versus* dispersion concerns the density of retail outlets, spatial entrepreneurial choices also deal with site selection decisions; in other words, with the choice to locate stores in a specific region or city.

"The Place to Be"… Inequalities across Locations

Moving from the *which* (i.e., the form of retail location) to the *where* (i.e., the location choice), we now go a step further concerning the determinants of the location entrepreneurial choice, addressing the idea of inequalities across locations, i.e., the idea that "some places do better than others" (Thisse 2011, p. 142). This constitutes the main assumption of Chaudhuri, Ghosh, and Spell's (2001) theoretical model on location in franchising.

Though gravity models underline the importance of geographical distance, they also demonstrate that the attractiveness of a retailing location, and therefore the choice to locate in a specific place, is not exclusively related to such distance. These models thus include a variety of other factors in the concept of attraction. Gravity models are derived from the laws of Newtonian physics. In this literature, Reilly (1931), Huff (1964), and Huff and Batsell (1977) have played a pioneering role. Reilly's law of retail gravitation states that consumers trade-off the cost of travel to a retail outlet with the attractiveness of alternative shopping opportunities. More generally, gravitational models allow one to study attractiveness phenomena and spatial interactions, bringing into consideration other attributes, in addition to distance, that are related to the potential of a local or regional area—such as demographic weight, gross domestic product, and socioeconomic characteristics.

These models thus suggest that there are indeed differences in location quality. As emphasized by Ehrmann and Meiseberg (2011), who study site attractiveness for new franchisees and the factors defining "a promising spot" (p. 95), this is true for location theory as a whole (Christensen and Drejer 2005; Craig, Ghosh, and McLafferty 1984; Ghosh and McLafferty 1982, 1987; Jones and Simmons 1990; Kelly, Freeman, and Emlen 1993; Khan 1999; Lee and McCracken 1982; Peterson 2003; Simons 1992; Park and Khan 2006); and it is also the case for the New Economic Geography (Krugman 1991), which underlines

the cumulative phenomena explaining location in a specific place, related to increasing returns and externalities.

Finally, Ehrmann and Meiseberg (2011) and Larsson and Öner (2014) also underline spatial characteristics, such as the economic size of the area, and demand accessibility, as additional determinants of attractiveness, i.e., of store location.

In line with the above-presented analyses, we formulate the following hypothesis:

H3: Chains located in attracting areas—with a high population density and wealth—attain higher performance.

Data Set and Variables. We use recent panel data for the period 2009–2014, regarding 335 franchise chains implanted in the Brazilian market. The sample franchise chains occupy 1,397 Brazilian municipalities, and are present in the 26 Brazilian states. Our unique data set compiles information from three distinct sources: (1) ABF's Official Franchise Guides, (2) websites of franchise chains, and (3) Brazilian Institute of Geography and Statistics (IBGE). In what follows, we present the data collection process and the study variables derived from the analytical framework. We discuss the relevance of the sample, comparing it with the full population. Finally, we provide summary statistics.

Our first source is ABF's Official Franchise Guide. This annual publication provides valuable information on the Brazilian franchise sector. We obtained data for the period 2009–2014. In order to achieve a better understanding of how ABF collected the information used to construct our data set, we performed interviews with executives from this organization: specifically, the president of ABF, his executive director, and his marketing analyst, who is responsible for both collecting and pooling information provided by the franchised chains. Divergent or even fake information could damage the reputation of the chain, or make the search for potential franchisees more difficult. Therefore, there is a strong incentive for franchising chains to offer good quality and updated information.

The websites of the sample franchise chains comprise our second main source of information. The manual capturing of website data was used to perform control checks, and to complete the missing values from the ABF guides. In addition, we used this data source to collect spatial information regarding the zip codes of cities where the franchised chains are established, in addition to the proportion of chain outlets operated in shopping malls. Where the chain websites were incomplete, we used PEGN, which is a Brazilian publication specialized on SMEs.

As our analysis requires localized data, we use a third source of information, the Brazilian Institute of Geography and Statistics (IBGE). We collected information about georeferencing (longitude and latitude) of the municipalities where franchising chains are established, population, and the Human Development Index (HDI). The IBGE information comes from censuses conducted in 1991, 2000, and 2010. Municipalities' HDI data are also available from the United Nations Development Program (UNDP) website for the years 1990, 2000, and 2010.

We pooled the different sources of information, performed crosschecks, and matched the data in order to stabilize the final sample comprising the required information for our empirical analysis. Finally, as not all Brazilian chains are associated with the ABF, we controlled for the bias in our sample as compared to the franchise chain population in Brazil. For each of the 11 sectors distinguished by ABF taxonomy,[4] we tabulated data regarding the total income of the sector, the number of chains, and the number of outlets (company-owned and franchised), in 2014.

Next, we present the variables used in the empirical estimations, and in the cluster analysis employed to determine behavior categories in the spatial entrepreneurial choices of franchising chains in Brazil.

Performance Outcome Variables

The *chain average monthly income per outlet divided by the chain average store area (m2)* is the dependent variable in our econometric models. To construct this variable, we collected the information for the *chain*

[4]Advertising, Informatics & Electronics; Business, Services & Other Retails; Cars; Cleaning; Clothes; Education; Food; Hoteling & Tourism; House & Building; Shoes & Accessories; Sports, Health, Beauty & Leisure.

average monthly income per outlet, and for the *chain average store area (m2)*, available in the ABF Franchising Guide, from 2009 to 2014.

Location Entrepreneurial Choice

The chain *location entrepreneurial choice* is the core explanatory variable in our first set of estimations. We construct this variable with a two-step cluster analysis, using the location variables[5] presented hereafter.

Variables of Interest

Four explanatory variables are directly related to our hypotheses:

Chain geographic dispersion. This variable is based on the geographic location of the chain outlets. First, we surveyed the addresses of all the sample chain outlets in 2011 and 2014. We thus created two specific data sets containing information regarding the Brazilian municipalities where the franchising chains are established. Then we georeferenced the cities where the stores are located, getting their latitude and their longitude. To construct the *chain geographic dispersion* variable, we used the software R, specifically the GEOCODE function of the package GGMAP (these artifacts are available at the Comprehensive R Archive Network [CRAN]). GEOCODE uses Google Maps to georeference the addresses entered in the data set.

On this basis, we constructed geographic clusters for each chain, grouping together stores located in the same area. Each geographic cluster is thus an area of agglomeration of chain outlets. We defined the center for each geographic cluster so that the cumulative distance between the stores and the cluster center is the smallest possible.[6] The distance criterion is the Euclidean distance based on the latitude and the longitude of the cities where each store is located. For example, assuming that a store A is located at the point (x_A, y_A) and a store B is located at the point (x_B, y_B), the Euclidean distance between them is defined as follows: $D(A,B) = \sqrt{((x_A - x_B)^2 + (y_A - y_B)^2)}$. The Euclidean formula applies only to metric geographical coordinate systems. Thus, it underestimates the true distance that would be traveled by a road connecting the two points. This bias is greater at points distant from each other. However, alternative measures of distance, taking into account infrastructures, were not available: the Euclidian distance was the best and most intuitive proxy available.

Our variable, the *chain geographic dispersion*, is measured for each chain as the distance between the outlets within each geographic cluster of the chain, to which we add the distance between the centroïds of the different geographic clusters of the chain, divided by the number of outlets. In summary, then, for each chain:

(1) We performed georeferencing for each city where the outlets are located;
(2) We divided the chain into different geographic clusters based on the outlet locations;
(3) We calculated the distances between cities within each geographic cluster;
(4) We calculated the distances between the centroids of the geographic clusters;
(5) We summed the distances between cities and distances between the centroids;
(6) We divided the total distance by the number of outlets.

Percentage of chain outlets located in shopping malls. Jointly with the outlet addresses, we also captured whether the store is located in some kind of shopping mall. Thus, for each chain in our sample, we are able to define the proportion of outlets located in shopping centers, as a percentage.

Weighted average HDI of the chain location areas. The Human Development Index (HDI) is a socioeconomic indicator developed by the United Nations Development Programme (UNDP) in the early 90s to measure the socioeconomic development of countries and their constituent units (states, provinces, municipalities, etc.). This multidimensional indicator goes beyond purely economic issues, and in addition captures aspects related to public health and education. Moreover, given its synthetic character, the index allows one to establish a ranking and, as a result, permits a

[5]Chain geographic Dispersion, Percentage of chain outlets in shopping malls, Mean HDI of the chain location areas, Chain age, Chain-size, Percentage of company owned-unit, Brand value.

[6]To split the data and to determine the appropriate number of geographic clusters for each chain, we used the "R" package "NbClust" and the "Kmeans" R function.

certain comparability between countries and regions. More precisely, the HDI compiles three indexes relating to distinct socioeconomic dimensions: health of the population, measured in years as the life expectancy at birth; education of the population, measured by mean of years of schooling for adults aged 25 years and more, and expected years of schooling for children of school entering age; income of the population, i.e., the standard of living measured by the gross national income (GNI) per capita. More precisely, the HDI uses the logarithm of income to reflect the diminishing importance of income with increasing GNI. In addition, the GNI per capita is adjusted to the local cost of living to make it comparable across countries and regions, through the methodology known as purchasing power parity. It is expressed in US dollars (index base 100). The HDI is the geometric mean of the three-dimensional indices.

In our study, we use a localized HDI. The IBGE provides information regarding the HDI for each Brazilian state and municipality. Since its inception in the early 90s, this localized HDI has been recorded three times (1990, 2000, and 2010). In our empirical analysis, we use the index calculated by the UNDP in 2010. More precisely, our study variable is the weighted average HDI of cities where the chain is established. We use as weight the number of stores per town.[7] Thus, this variable represents the mean HDI of the chain location.

Weighted average population of the chain location areas. Approximately every 10 years, the IBGE implements a population census on behalf of the Brazilian government, with the last three censuses conducted in 1991, 2000, and 2010. Out of this period, the IBGE estimates the population per municipality by linearizing the trend indicated by the last two censuses. To calculate the weighted average, we use the IBGE estimates for 2011 regarding the population of the cities where the sample chains were established, using the same procedure as with the HDI.

Control Variables

We include in our empirical analysis the following control variables:

Chain age, i.e., the age of the chain, that is the difference between the year of the first franchised unit[8] and each year in our panel. This variable is related to the influence of timing on location choice. Extant literature defends the idea that this entrepreneurial decision is associated to the life cycle of the chain, in other words to its expansion stage. Indeed, the first firm to locate in a market can capture strategic sites. This first-mover advantage acts thus as a barrier to entry and delays the entry of new competitors by affecting their locational choices (Polo-Redondo, Bordonaba, and Palacios 2011). Distinguishing competitive advantages at several stages of a franchise life, and studying territorial expansion of franchised chains in geographically fragmented markets, Julian and Castrogiovanni (1995) develop the idea that when franchisors attempt to capitalize on the first-mover advantage by preempting the most desirable locations and saturating the market, locations are dispersed. Carney and Gedajlovic (1991) argue that the need for spatial preemption is particularly important when franchisors have innovative retail concepts. Finally, considering the short- and long-run incentives to franchise, and monitoring problems related to geographic dispersion, Martin and Justis (1993) explain the intensive use of franchising in the early growth stages, arguing that growth and preemptive strategies are more important for young franchisors. However, the alternative entrepreneurial choice may also hold some promise. Later entrants may have an advantage since they are better able to react to changing conditions, as shown by Golder and Tellis (1993). For this reason, it is relevant to control for the *age of the chain* as a determinant of the location choice and its performance outcome.

Percentage of company owned-units, related to the proportion of company-owned units in the total of the chain outlets. Some work within the literature on franchising has related the location choice to chain ownership structure. As previously mentioned, the issue of location is taken into account most often within agency theory, along with the related problem of monitoring costs. The literature highlights free-riding behaviors in retail chains, and underlines

[7]… the goal being to focus on the location choice effect and to allow comparisons between the chains, controlling for the chain size effect.

[8]Referring to the first franchised unit ever, not necessarily in the Brazilian market, by which the chain became a franchising chain.

the associated need for the headquarters to monitor the outlets (e.g., Lafontaine and Slade 2001; Lal 1990; Michael 1999). Chain expansion and spatial dispersion increase the agency-monitoring problem (Carney and Gedajlovic 1991). Because they are independent firms, franchisees are more likely to make significant efforts, thus requiring less monitoring. This situation would impact the ownership structure of retail chains, mixing strategically company-owned units and franchised units as part of their location choices (Perryman and Combs 2012). This argument finds empirical support in the econometric work on franchise data. Several studies (e.g., Combs and Ketchen 2003; Lafontaine 1992; Norton 1988) indeed provide evidence that outlets located close to headquarters are more likely to be company owned, while retail units in more distant locations are more likely to be franchised. Therefore, a clear link is established between spatial choices and the ownership structure of franchising chains.

Brand value: ABF yearbooks provide information about a total of thirteen types of support that the associated franchisors offer to their franchisees. They are: legal support, plant and equipment selection, trading point selection, organization and methods, operation project, support for financing leverage, financing project, promotional material, architectonic project, marketing project, advertising and promotion, training, and layout project. For every support, the information is available as a dummy variable. Summing these categorical variables for each chain, we create the brand value variable as an ordered multinomial variable; 0 being the value for the chains with the lowest support of the franchisor to the franchisees, 13 representing the highest support. We obtain a proxy of the brand value, related to the franchisor's effort. This proxy is based on the assumption that the franchisor's involvement in the exploitation of the brand is directly related to the brand value, its promotion, and its protection regarding the potential free-riding of the franchisees. This assumption finds analytical support in the agency literature in terms of bilateral moral-hazard (e.g., the seminal theoretical contribution of Lal 1990) which emphasizes the role of the franchisor in the bilateral franchise relationship.

Chain size: Measured as the number of outlets in the chain.

Sector dummies: We made the choice to use the official ABF classification of the franchising chains in Brazil to construct sector dummies. Detailed statistics regarding the features of the sectors distinguished in our study are available in the Online Appendix.

Foreign: We constructed an additional dummy variable to indicate whether chains operating in Brazil have a Brazilian or a foreign headquarters.

ABF label: The ABF label "certification of excellence" is awarded to distinguish chains achieving a minimum level of satisfaction among its franchisees. This certification is based on a survey of the franchisees, conducted by ABF. The results are published annually in the Franchising Guide. Franchising chains that reach the specified satisfaction ratings are identified using the label. It is important to mention that chains have to pay to be part of the contest. Franchisee satisfaction indexes include the overall chain performance (the franchisor quality in coordinating the whole chain), the brand performance with regard to profitability, and operating performance of the chain (class support to franchisees). We use a dummy variable to indicate the chain situation during the period 2009–2014.

Summary Statistics

Table 1 reports the means, standard deviation, and correlation matrix. Because the presence of a few missing values may bias the estimations, we completed the data with the average values. Descriptive statistics indicate that the variables are quite homogenous in the sample, as shown by the means being higher than the standard deviations. The exceptions are the proportion of *company-owned units*, the *chain geographic dispersion*, and the *performance /m2*, characterized by some degree of heterogeneity.

Behavior Categories in Spatial Entrepreneurial Choices

Methodology

In order to construct the variable *location entrepreneurial choice*, which will be the core explanatory variable in the first set of estimations, we use a two-step cluster analysis.[9] The

[9]The method is implemented in the software SPSS.

Table 1
Summary Statistics and Correlations

	Average	SD	1	2	3	4	5	6	7	8	9	10	11
1. Location entrepreneurial choice	2.43	0.62	1										
2. % of chain outlets in shopping malls	0.42	0.39	0.012	1									
3. Chain age	21.66	15.09	0.000**	−0.039	1								
4. % of Company-owned units	0.21	0.25	0.000	0.089**	−0.016	1							
5. Brand value	10.78	2.36	0.000**	−0.052*	−0.046*	0.000**	1						
6. Mean population of the chain location areas	3.29	2.32	0.033	0.000**	0.006	0.000**	0.024	1					
7. Mean HDI of the chain location areas	0.78	0.01	0.000**	0.000**	−0.050*	0.044*	0.065**	0.000**	1				
8. Performance	84.76	76.79	0.025	0.000**	0.000**	0.000**	0.005	0.000**	0.082**	1			
9. Chain size	85.41	70.15	−0.3282*	−0.1258***	0.3266*	−0.2127	0.0160	−0.0930*	−0.1940**	−0.0761**	1		
10. Chain geographic dispersion	0.40	2.49	−0.2586*	−0.0805**	0.1909**	−0.1000*	−0.0828*	−0.0611*	−0.1144*	−0.0531***	0.7302**	1	
11. Performance /m^2	2.23	2.5	0.0247	0.3233**	−0.0017	−0.0075	−0.0692**	0.1053*	0.0730*	0.0979*	−0.0373	−0.0415	1

SD: Standard Error. $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.
The variable *mean population of the chain location areas* has a higher scale than the others, and is thus divided by 1,000,000.

aim of this statistical multivariate technique is to achieve the maximum intra-group homogeneity and the biggest inter-group heterogeneity. More precisely, the algorithm identifies groups of cases that exhibit similar response patterns. These cases are assigned to the cluster with the nearest center. As mentioned in the method name, the algorithm contains two stages: pre-clustering and hierarchical clustering. The pre-cluster stage groups the chains into several small clusters. The hierarchical cluster stage uses the small clusters as input, and groups them into larger clusters. This method is appropriate to our goal and has several advantages. First, categorical and continuous variables can be included. In addition, the procedure determines the optimal number of clusters given the input variables, comparing the values of a model-choice criterion across different clustering solutions. Finally, the method allows us to control for the quality of the clustering process. As we use a panel data set, we consider each franchised chain for a specific year as a different individual in the other years. This way of proceeding enables us to capture changes in entrepreneurial choice over time.

Data Analysis and Features of the Three Behavior Categories

The clustering process allows us to distinguish three groups of franchising chains in Brazil. On the basis of descriptive statistics for each group, the following comments can be offered to specify the three behavior categories.[10]

The first group, which we label *concentrated beginner franchisors*, contains the youngest chains (15.9 years), with a low geographic dispersion. These chains are established in cities with a moderate population and HDI. The franchisors in this group have all almost immediately established franchised units. These chains are also characterized by a moderate presence in shopping malls. Regarding the contract design, these chains have royalty rates and upfront fees that are on average smaller as compared to the two other groups. We label the second group *concentrated mature franchisors*. This second category consists of older chains (27.1 years), with a moderate geographic dispersion. This group is distinguished by a positive and significant relationship between the HDI and the total number of units. The units are located in cities with a high population. Further, the chains are mainly present in shopping malls. In this group, the presence in shopping malls is positively and significantly related to the royalty rate. The reason for this correlation could be the strong brand name value, compared to the other two groups. The third group is labeled *dispersed mature franchisors*. The chains in this group have a high level of geographic dispersion, and are on average the oldest (29.78 years) in the sample. The age is positively and significantly related to the number of cities where the chain is established. Furthermore, the number of cities where the chain is established is significantly and negatively related to the percentage of company-owned units. This correlation is clearly higher compared to the other two groups. This seems to indicate that the expansion experienced by these chains is strongly driven by franchising, which contradicts Martin and Justis's (1993) analysis previously presented. Indeed, these authors predicted an intensive use of franchising for young franchisors.

From this analysis, two main discriminating variables are thus highlighted: *chain geographic dispersion* and *chain age*.

Performance Outcome of Spatial Entrepreneurial Choices

Methodology

Regarding the choice of the econometric models, we first use the panel data to compare the random effects model and the fixed effects model. Both of them address the problem of the unobserved heterogeneity by specifying an error term constant over time for each unit (fixed effects model) or randomly distributed over time for each unit (random effects model).

With short period panels, as with the sample, the random effects model may produce better estimators than the fixed effects model (Heckman 1981). In addition, the random effects model is consistent in the presence of time-invariant variables (Greene 2000). This is not the case for the fixed effects model. Indeed, time-invariant variables can be perfectly collinear with the fixed effects, though most of the contract variables are by nature almost time-invariant.

[10]The descriptive statistics are available upon request.

The Hausman test confirms our intuition, and shows that the random effects model is more appropriate to the data. Additional checks are performed which confirm the preference for the random effects model. We use the Lagrange multiplier test to see if the variance across the franchised chains is zero: this test supports the random effects model since it provides evidence of significant differences across the chains.

Again using the Hausman test, we check for potential problems of endogeneity: the regressors may indeed raise endogeneity problems because they are geographical characteristics concerning where the outlet is located, which derive from the franchisor's own choice. We compare the previous results with an instrumental model including the lagged variable as an instrument. Our results show that there is no problem of endogeneity. In addition, we perform a likelihood-ratio test regarding heteroskedasticity at the panel level. The results confirm that the data in the sample do not have a common disturbance variance, thus providing another support for the random effects model. We also test for autocorrelation. The results show that we do have to deal with this problem.

To correct for heteroscedasticity and autocorrelation, we use the generalized least squares (GLS) method. This method enables us to estimate the unknown parameters of a linear regression model. The GLS is applied when the variances of the observations are unequal (heteroscedasticity problem), and/or when there is a certain degree of correlation between the observations. It is well known that in both cases the ordinary least squares (OLS) method is statistically inefficient, and provides misleading inferences. Finally, we test if all year coefficients are not jointly equal to zero. The results show that the time-fixed effects are needed. The detailed results of the specification tests are available in the Online Appendix.

Estimation Results

Our first estimation results are reported in Table 2, and concern the influence of the variable *location entrepreneurial choice*, constructed with the two-step cluster analysis, on franchised chain performances. Thus, we study the distinct impact of the three behavior categories (concentrated beginner franchisors, concentrated mature franchisors, dispersed mature franchisors) captured by the variable *location entrepreneurial choice* on the *chain average monthly income per outlet / m2*. For each behavior category, we estimate a model without control variables, and one including the control variables, for robustness checks. As the variables *chain size* and *brand value* are used in the cluster analysis, we do not include them as controls in these first estimations (Table 2).

We comment first on the good global significance of the models, as highlighted by the Wald Chi^2 tests. In addition, comparing the estimations of the models with and without control variables, we conclude that our results are robust.

The estimations show that the two control variables have a significant impact on the chain performance. Logically, a positive relationship is highlighted between ABF-labeled chains and performance. Headquarters' nationality (Brazilian versus non-Brazilian) has also an effect on the chain performance.

The negative sign here indicates that chains with Brazilian headquarters are more likely to achieve higher performances, which could be explained by a better knowledge of the market.

However, the main result of this set of estimations is the clear significant influence of the location entrepreneurial choice on the chain performance. This provides evidence for *H0*, according to which the location entrepreneurial choice is a key determinant of the chain performance. Yet, depending on the behavior category, the impact of this choice on the performance can be positive or negative. This invites us to go further in the estimation process to understand the logic behind these differentiated results. As the *location entrepreneurial choice* variable sums up several decisions and features of the franchised chain, we estimate additional models to study the individual impact of these decisions/features. The aim is to press the analysis further, based on complementary results.

In the additional estimations presented in Table 3, the regressors are the variables initially used to construct the *location entrepreneurial choice* variable (which is now removed from the models). For robustness checks, we estimate models with and without year and sector dummies.

Here again, we obtain a good global significance of the estimated models, and the results are robust. Concerning the control variables, the sign regarding the variables *foreign* and *ABF label* is consistent with preceding results. Though *chain size* has no significant influence,

Table 2
Performance Outcome of Spatial Entrepreneurial Choices (1)

	(1)	(2)	(3)	(4)	(5)	(6)
Location entrepreneurial choice						
Cluster 1. Concentrated beginner franchisors	−10.54***	−4.632**				
	(1.617)	(2.101)				
Cluster 2. Concentrated mature franchisors			7.934***	8.493***		
			(1.459)	(1.055)		
Cluster 3. Dispersed mature franchisors					−5.805***	−6.613***
					(1.349)	(1.023)
Foreign		−27.93***		−30.93***		−30.33***
		(3.898)		(3.856)		(3.903)
ABF label		1.635**		3.566***		2.883***
		(0.732)		(0.895)		(0.852)
Sector dummies	*no*	*yes*	*no*	*yes*	*no*	*yes*
Year dummies	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Constant	75.73***	83.77***	67.81***	80.28***	74.55***	87.63***
	(0.814)	(0.919)	(1.204)	(1.138)	(1.229)	(1.194)
N	2010	2010	2010	2010	2010	2010
Wald chi2	187.63***	994.65***	149.28***	1169.12***	133.79***	1072.96***

Standard errors in brackets – $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.
Random effects models for the *Chain average monthly income per outlet / m2*.

chain age, proportion of *company-owned units,* and *brand value* favor the chain performance which stands to reason if interpreted as reputational effects and as effects of experience.

The significant and negative sign of the variable *chain geographic dispersion* indicates that agglomeration favors chain performance. Thus, *H2,* related to the advantages of dispersion, is not supported, while the alternative hypothesis, *H1*, according to which agglomeration of the chain outlets leads to higher performance, finds empirical evidence. This enlightens our previous result regarding the significant negative impact on chain performance to be part of the *concentrated beginner franchisors* category (Table 2), suggesting that the negative sign is related to the young age of those chains.

The estimations presented in Table 3 also show that location in shopping centers significantly and positively impacts chain performance. In the same way, we obtain evidence that location in areas with a high HDI, or a

Table 3
Performance Outcome of Spatial Entrepreneurial Choices (2)

	(7) Performance/m^2	(8) Performance/m^2
Chain geographic dispersion	−2.03**	−9.78**
	(1.08)	(4.02)
Mean HDI of the chain loc. areas	2.404**	0.202**
	(1.270)	(1.011)
Mean pop. of the chain loc. areas	6.40***	5.00***
	(1.14)	(1.34)
% of chain outlets in shop. malls	1.769***	1.045***
	(0.0622)	(0.0861)
Chain age	0.815***	0.349**
	(0.155)	(0.159)
Chain size	0.225	0.215
	(0.184)	(0.158)
ABF label	0.0427**	0.0397**
	(0.0226)	(0.0231)
% of company-owned units	0.193***	0.131**
	(0.0544)	(0.0566)
Foreign	−0.264**	−0.179**
	(0.105)	(0.051)
Brand name	0.883**	0.648**
	(0.430)	(0.312)
Sector dummies	*no*	*yes*
Year dummies	*no*	*yes*
Constant	1.116**	1.370*
	(0.295)	(0.110)
N	2010	2010
	1066.59***	1335.78***

Random effects models for the *Chain average monthly income per outlet / m2* (models 7–8). Standard errors in brackets – $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

high population, increases chain performance. These results provide strong empirical support for *H3*, emphasizing that chains located in attracting areas—with a high population density and wealth—attain higher performance.

In sum, our study suggests that, in the outcomes of location entrepreneurial choices of franchised chains in Brazil, the benefits of agglomeration dominate the locational risks of cannibalization. This result appears at three levels: first, regarding the impact of spatial allocation choices within the Brazilian territory; second, regarding the impact of location in cities with a high population density and wealth; and finally, inside the cities, regarding the impact of establishing in areas with high business intensity such as shopping malls.

Conclusion

Contribution and General Findings

In this paper, we study location choice, one of the most important entrepreneurial decisions in building up franchise chains. Location is paramount, as it defines the access to and attraction of large numbers of customers, thus impacting both on market share and profitability. However, despite the extensive literature in economics and in retailing on location choices, few studies in the franchise literature have been dedicated to this subject. This gap is paradoxical since decisions regarding geographical expansion are essential to the success of franchise chains.

We address the particular context of Brazilian franchising. In recent years, franchising in this continent-sized country has experienced a vertiginous process of expansion, with chains extending to more diverse and remote regions. Though statistics reveal that there is much scope for franchising to expand on the Brazilian continent, little is known about the locational risks—in other words, about how the exploitation of geographic entrepreneurial opportunities impacts on performance outcomes. To deal with this issue, we first survey the relevant literature on location decisions and spatial competition in retailing to identify hypotheses regarding the potential determinants of the chain choices. On this basis, we conduct an empirical analysis on a new, recent, and unique panel data set compiling information from three complementary sources, and containing geographical data. With a two-step cluster analysis, we compile information related to location decisions in Brazilian franchising. We thereby distinguish several typical profiles in the entrepreneurial decision of franchising chains in Brazil. These locational choices are then submitted to econometric estimations in order to derive performance outcomes. Our results emphasize the robust impact of location choice on chain performance, measured at the outlet level, thus having significant implications for entrepreneurship in the case of multi-outlet chains, as well as for academic research.

Implications for Entrepreneurship

The aforementioned remarkable expansion of franchising in Brazil has in a sense occurred "in the dark," especially when considering that small and medium-sized companies—which are the essence of franchising in Brazil—do not have market intelligence centers, unlike large chains. In this context, the entrepreneurial "should I stay or should I go"[11] decision, which should properly be resolved by reference to both empirical and relational data, is often made in a passive way—that is, "I go where they want me to"[12]—and not based on documented strategic analyses in the way one would expect. These human and monetary constraints characterize small and medium multi-outlet chains; for this reason, this issue is not just restricted to the Brazilian context. It is in fact relevant for small and medium franchising chains in general.

With this in mind, our study highlights some useful aspects to help franchise chains in their decision regarding geographic entrepreneurial choices. First, we provide strong evidence that in the Brazilian context, geographic expansion choices by multi-unit chains are not neutral in terms of performance, taking into account the average monthly income per outlet and per store area. This result emphasizes the relevance of four determinants of location entrepreneurial choice in franchising, which emerge from the background literature: the choice for agglomeration of chain outlets *versus* dispersion in space; the choice for a specific region or city, related to the socioeconomic features of the

[11] As the English punk rock band The Clash sung in the early 1980s.

[12] "Me" representing different contextual hazards.

area; the choice for a preemption strategy to get a first-mover advantage, related to the chain age; and the ownership structure of the chain.

Despite the opportunities presented by such a huge country, we show that agglomeration leads to higher performance in Brazilian franchising. For the franchisors, agglomeration refers to the choice to "stay" instead of trying to reach distant places; that is, to implant franchised outlets in the same geographic area. In a context characterized by "a large expansion of franchising opportunities, beyond the capital and big cities" (Duarte 2014), this is a surprising result.

This also means that franchisees should not fear the locational risks related to cannibalization effects, associated with the spatial intra-brand competition. We obtain evidence suggesting that the positive effect of agglomeration—for example, related to brand reputation—surpasses the negative cannibalization effects of agglomeration, and the positive spatial monopoly effects of dispersion.

Nevertheless, even though, based on our results, we defend the idea that agglomeration provides higher performance, this has to be nuanced by a recognition that this is not the case everywhere. Space is not neutral, and we observe a positive impact of high population and high development index on performance outcomes at the franchisee level. As a related managerial implication, franchisors should focus their chain development on big agglomerations, despite the large size of the country, and not prioritize less crowded places.

Limitations and further research. This study is not without limitations, themselves opening routes for further research.

First, our conclusions in terms of performance outcomes only hold for revenues; we did not take into account the profit implications. Second, though the results are robust to sector dummies, more in-depth analyses could highlight contrasting decisions, depending on the industry. In addition, we emphasize the value of agglomeration (the choice to "stay"), but the right entrepreneurial choice certainly differs at different stages of the chain age. A more detailed analysis of the timing of the decision may be fruitful. Our empirical work ignores the potential impact of exclusive territories clauses in franchise contracts. This information is not available at the moment via ABF, as franchising chains are reluctant to provide it. Regarding this constraint, a qualitative analysis focusing on a selected number of chains agreeing to cooperate with the researchers could deal with this issue and complement our results on secondary data. As previously mentioned, the Euclidian distance used to construct the geographic dispersion variable was the best and most intuitive measure available; yet this measure overlooks the impact of infrastructures. Finally, further research could develop international comparisons (for instance with other BRICS) to see if our main results regarding the geographic entrepreneurial choices of franchised chains hold in different institutional contexts and transportation infrastructures.[13]

References

ABF—Números do setor_Desempenho do Franchising em 2016 (2016). Associação Brasileira de Franchising. Available at: https://www.abf.com.br/numeros-do-franchising/ (accessed May 16, 2017).

Addario, S. L. D., and D. Vuri (2010). "Entrepreneurship and Market Size: The Case of Young College Graduates in Italy," *Labour Economics* 17(5), 848–858.

Applebaum, W. (1966). "Methods for Determining Store Trade Areas, Market Penetration, and Potential Sales," *Journal of Marketing Research* 3(2), 127–141.

Arauzo-Carod, J.-M., and E. Viladecans-Marsal (2009). "Industrial Location at the Intrametropolitan Level: The Role of Agglomeration Economies," *Regional Studies* 43(4), 545–558.

Azevedo, P. F., and V. L. Silva (2001). "Contractual Mix Analysis in the Brazilian Franchising," in 5th Annual Conference of the International Society for New Institutional Economics, 2001, Berkeley, CA.

Azevedo, P. F., and V. L. Silva (2007). "Governance Inseparability in Franchising: Evidences from Case-Studies in France and Brazil," in *Economics and Management of Networks: Franchising, Strategic Alliances, and Cooperatives*, 1st ed. Eds. G. Cliquet, G. Hendrikse, M. Tuunanen, and J. Windsperger. Herdelberg: Physica/Springer.

[13]It is, for instance, noticeable that there are no trains in Brazil, which may clearly affect the location choices.

Barrios, S., H. Görg, and E. Strobl (2006). "Multinationals' Location Choice, Agglomeration Economies, and Public Incentives," *International Regional Science Review* 29(1), 81–107.

Brown, S. (1989). "Retail Location Theory: The Legacy of Harold Hotelling," *Journal of Retailing* 65(4), 450–470.

Camargo, M.-A. A. P., T. V. Rocha, and S. C. E. Silva (2016). "Marketing Strategies in the Internationalization Process of Brazilian Franchises," *Revista Brasileira de Gestão de Negócios* 18, 570–592.

Carney, M., and E. Gedajlovic (1991). "Vertical Integration in Franchise Systems: Agency Theory and Resource Explanations," *Strategic Management Journal* 12(8), 607–629.

Chaudhuri, A., P. Ghosh, and C. Spell (2001). "A Location Based Theory of Franchising," *Journal of Business and Economic Studies* 7(1), 54–67.

Cheong, T. S., and Y. Wu (2014). "The Impacts of Structural Transformation and Industrial Upgrading on Regional Inequality in China," *China Economic Review* 31, 339–350.

Christaller, W. (2009). Die zentralen Orte in Süddeutschland: Eine ökonomisch-geographische Untersuchung über die Gesetzmäßigkeit der Verbreitung und Entwicklung der Siedlungen mit städtischen Funktionen Taschenbuch. Berlin: Springer Verlag.

Christensen, J., and I. Drejer (2005). "The Strategic Importance of Location: Location Decisions and the Effects of Firm Location on Innovation and Knowledge Acquisition," *European Planning Studies* 13(6), 807–14.

Chung, W., and A. Kalnins (2001). "Agglomeration Effects and Performance: A Test of the Texas Lodging Industry," *Strategic Management Journal* 22(10), 969–988.

Cliquet, G. (1998). "Integration and Territory Coverage of the Hypermarket Industry in France: A Relative Entropy Measure." *International Review of Retail, Distribution and Consumer Research* 8(2), 205–224.

Combes, P.-P., G. Duranton, and L. Gobillon (2016). "The Costs of Agglomeration: House and Land Prices in French Cities," CEPR Discussion Paper Series No. 9240.

Combes, P.-P., and L. Gobillon (2015). "The Empirics of Agglomeration Economies," in *Handbook of Urban and Regional Economics*. Eds. G. Duranton, V. Henderson, and W. Strange. Amsterdam: Elsevier-North Holland, 247–348.

Combs, J. G., and D. J. Ketchen (1999). "Can Capital Scarcity Help Agency Theory Explain Franchising? Revisiting the Capital Scarcity Hypothesis," *Academy of Management Journal* 42(2), 196–207.

Combs, James G., and D. J. Ketchen (2003). "Why Do Firms Use Franchising as an Entrepreneurial Strategy? A Metaanalysis," *Journal of Management* 29(3), 443–365.

Combs, J. G., D. Ketchen, and V. Hoover (2004). "A Strategic Groups Approach to the Franchising-Performance Relationship," *Journal of Business Venturing* 19(6), 877–897.

Craig, C. S., A. Ghosh, and S. McLafferty (1984). "Models of the Retail Location Process: A Review," *Journal of Retailing* 60(1), 5–36.

Crozet, M., T. Mayer, and J.-L. Mucchielli (2004). "How Do Firms Agglomerate? A Study of FDI in France," *Regional Science and Urban Economics* 34(1), 27–54.

d'Aspremont, C., C. Gabszewicz, and J.-F. Thisse (1979). "On Hotelling's Stability in Competition," *Econometrica* 47(5), 1145–1150.

Delgado, M., M. E. Porter, and S. Stern (2010). "Clusters and Entrepreneurship," *Journal of Economic Geography* 10(4), 495–518.

Devereux, M. P., R. Griffith, and H. Simpson (2007). "Firm Location Decisions, Regional Grants and Agglomeration Externalities," *Journal of Public Economics* 91(3–4), 413–435.

Duarte, J (2014). "Empresas Migram para o Interior," *Diário do Comércio*, Available at: https://www.diariodocomercio.com.br/noticia.php?tit=empresas_migram_para_o_interior&id=136411&fb_comment_id=718992148142546_720734231301671#f1586d183a88834 (accessed May 18, 2017).

Ehrmann, T., and B. Meiseberg (2011). "Inner Strength Against Competitive Forces: Successful Site Selection for Franchise Network Expansion," in *New Developments in the Theory of Networks*. Eds. M. Tuunanen, J. Windsperger, G. Cliquet, and G. W. J. Berlin-Heidelberg: Springer-Verlag Berlin Heidelberg, 93–116.

ElAkremi, A., R. Perrigot, and I. Piot-Lepetit (2015). "Examining the Drivers for Franchised Chains Performance through the Lens of the Dynamic Capabilities Approach," *Journal of Small Business Management* 53(1), 145–165.

Fadairo, M., and C. Lanchimba (2017). "Franchising in Latin America," in *Handbook of Research on Franchising*. Eds. F. Hoy, R. Perrigot, and A. Terry. Northampton, MA: Edward Elgar, 482–515.

Figueiredo, O., P. Guimaraes, and D. Woodward (2002). "Home-field Advantage: Location Decisions of Portuguese Entrepreneurs," *Journal of Urban Economics* 52(2), 341–361.

Fox, E. J., S. Postrel, and A. McLaughlin (2007). "The Impact of Retail Location on Retailer Revenues: An Empirical Investigation," unpublished manuscript, Dallas, TX: Edwin L. Cox School of Business, Southern Methodist University.

Fujita, M., P. Krugman, and A. Venables (1999). *The Spatial Economy: Cities, Regions and International Trade*. Cambridge, MA: MIT Press.

Fujita, M., and J. F. Thisse (2002). *Economics of Agglomeration. Cities, Industrial Location, and Regional Growth*. Cambridge: Cambridge University Press.

Gaier, R. V., and C. Moreira (2017). "Vendas No Varejo Têm Perdas Recordes em 2016 Diante da Recessão Econômica," Reuters Brasil, Available at: https://br.reuters.com/article/topNews/idBRKBN15T1HR (accessed May 16, 2017).

Ghosh, A., and S. McLafferty (1982). *"Locating Stores in. Uncertain Environments: A Scenario Planning Approach*," *Journal of Retailing*, 58 (14), 5–22.

Ghosh, A., and S. L. McLafferty (1987). *Location Strategies for Retail and Service Firms.* Lanham, MD: Lexington Books.

Glaeser, E. L., and W. R. Kerr (2009). "Local Industrial Conditions and Entrepreneurship: How Much of the Spatial Distribution Can We Explain?" *Journal of Economics and Management Strategy* 18(3), 623–663.

Glaeser, E. L., W. R. Kerr, and G. A. M. Ponzetto (2010). "Clusters of Entrepreneurship," *Journal of Urban Economics* 67(1), 150–168.

Glaeser, E. L., S. Rosenthal, and W. Strange (2010). "Urban Economics and Entrepreneurship," *Journal of Urban Economics* 67(1), 1–14.

Golder, P. N., and G. J. Tellis (1993). "Pioneer Advantage: Marketing Logic or Marketing Legend?" *Journal of Marketing Research* 30(2), 158–170.

Gonzalez-Diaz, M., and V. Solis-Rodriguez (2017). "Differences in Contract Design between Successful and Less Successful Franchises," *European Journal of Law and Economics* 44(3), 483–502. doi: https://doi.org/10.1007/s10657-015-9497-9.

Greene, W. H. (2000). *Econometric Analysis*, 3rd ed. Upper Saddle River, NJ: Prentice-Hall International.

Grünhagen, M., R. P. Dant, and M. Zhu (2012). "Emerging Consumer Perspectives on American Franchise Offerings: Variety Seeking Behavior in China," *Journal of Small Business Management* 50(4), 596–620.

Hamilton, J. H., W. B. MacLeod, and J. F. Thisse (1991). "Spatial Competition and the Core," *Quarterly Journal of Economics* 106, 925–937.

Harada, N. (2005). "Potential Entrepreneurship in Japan," *Small Business Economics* 25, 293–304.

Hartwick, J. M., and P. G. Hartwick (1971). "Duopoly in Space," *Canadian Journal of Economics* 4(4), 485–505.

Head, K., and T. Mayer (2004). "Market Potential and the Location of Japanese Investment in the European Union," *Review of Economics and Statistics* 86(4), 959–972.

Head, Keith, and T. Mayer (2011). "Gravity, Market Potential and Development," *Journal of Economic Geography* 11(2), 281–294.

Head, K., J. C. Ries, and D. L. Swenson (1999). "Attracting Foreign Manufacturing: Investment Promotion and Agglomeration," *Regional Science and Urban Economics* 29(2), 197–218.

Heckman, J. J. (1981). "The Incidental Parameters Problem and the Problem of Initial Conditions in Estimating a Discrete Time-Discrete Data Stochastic Process," in *Structural Analysis of Discrete Data with Econometric Applications*. Cambridge, MA: MIT Press, 179–195.

Hilber, C. A. L., and I. Voicu (2010). "Agglomeration Economies and the Location of Foreign Direct Investment: Empirical Evidence from Romania," *Regional Studies* 44(3), 355–371.

Hotelling, H. (1929). "Stability in Competition," *Economic Journal* 39(153), 41–57.

Huff, D. (1964). "Defining and Estimating a Trading Area," *Journal of Marketing* 28(3), 34–38.

Huff, D., and R. Batsell (1977). "Delimiting the Areal Extent of a Market Area," *Journal of Marketing Research* 14(4), 581–585.

IBGE—Instituto Brasileiro de Geografia e Estatísticas (2017). Estimativas Populacionais para ops Municípios e para as Unidades da Federação Brasileira. Available at: https://

ww2.ibge.gov.br/home/estatistica/populacao/estimativa2016/default.shtm (accessed March 1, 2016).

Jones, K., and J. Simmons (1987). *Location, Location, Location: Analysing the Retail Environment*. London: Methuen.

Jones, K., and J. Simmons (1990). *The Retail Environement*. London: Routeledge.

Julian, S. D., and G. J. Castrogiovanni (1995). "Franchisor Geographic Expansion," *Journal of Small Business Management* 33(2), 1–11.

Kelly, J. P., D. C. Freeman, and J. M. Emlen. (1993). "Competitive Impact Model for Site Selection: The Impact of Competition, Sales Generators, and Own Store Cannibalization," *International Review of Retail, Distribution and Consumer Research* 3(3), 237–59.

Khan, M. A. (1999). *Restaurant Franchising*, 2nd ed. New York: John Wiley & Sons Inc.

Krugman, P. (1991). "Increasing Returns and Economic Geography," *Journal of Political Economy* 99(3), 483–499.

Kumar, V., and K. Karande (2000). "The Effect of Retail Store Environment on Retailer Performance," *Journal of Business Research* 49(2), 167–181.

Lafontaine, F. (1992). "Agency Theory and Franchising Some Empirical Results," *Rand Journal of Economics* 23(2), 263–283.

Lafontaine, F., and M. Slade (2001). *Incentive Contracting and the Franchise Decision, Advances in Business Application of Game Theory*. Dordrecht, the Netherlands: Kluwer Academic Press.

Lal, R. (1990). "Improving Channel Coordination through Franchising," *Marketing Science* 9(4), 299–318.

Larsson, J. P., and Ö. Öner (2014). "Location and Co-Location in Retail: A Probabilistic Approach Using Geo-Coded Data for Metropolitan Retail Markets," *The Annals of Regional Science* 52(2), 385–408.

Lee, Y., and M. McCracken (1982). "Spatial Adjustment of Retail Activity: A Spatial Analysis of Supermarkets in Metropolitan Denver 1960–1980," *Regional Science Perspectives* 12(2), 62–75.

Lessmann, C. (2014). "Spatial Inequality and Development; Is There an Inverted-U Relationship?" *Journal of Development Economics* 106, 35–51.

Lösch, A. (1940). *The Economics of Location*. New Haven, CT: Yale University Press.

Marshall, A. (1920). *Principles of Economics*. London: Macmillan and Co., Ltd.

Martin, R. E., and R. T. Justis (1993). "Franchising, Liquidity Constraints and Entry," *Applied Economics* 25(9), 1269–77.

Meyer, A. D., A. S. Tsui, and C. R. Hinings (1993). "Configurational Approaches to Organizational Analysis," *Academy of Management Journal* 36(6), 1175–1195.

Michael, S. C. (1999). "The Elasticity of Franchising," *Small Business Economics* 12(4), 313–320.

Mulligan, G. F., and T. J. Fi (1994). "Price and Location Conjectures in Medium- and Long-Run Spatial Competition Models," *Regional Science*, May, 34(2), 179–98.

Norton, S. W. (1988). "Franchising, Brand Name Capital, and the Entrepreneurial Capacity Problem," *Strategic Management Journal* 9(1), 105–114.

Ottaviano, G. I. P., and J. F. Thisse (2001). "On Economic Geography in Economic Theory: Increasing Returns and Pecuniary Externalities," *Journal of Economic Geography* 1, 153–179.

Pancras, J., S. Sriram, and V. Kumar (2012). "Empirical Investigation of Retail Expansion and Cannibalization in a Dynamic Environment," *Management Science* 58(11), 2001–2012.

Park, K., and M. Khan (2006). "An Exploratory Study to Identify the Site Selection Factors for U.S. Franchise Restaurants," *Journal of Food Service Business Research* 8(1), 97–114.

Perryman, A. A., and J. G. Combs (2012). "Who Should Own It? An Agency-Based Explanation for Multi-Outlet Ownership and Colocation in Plural Form Franchising," *Strategic Management Journal* 33(4), 368–386.

Peterson, K. (2003). "Enterprise-Wide Analytical Solutions for Distribution Planning," *Database Marketing & Customer Strategy Management* 11(1), 13–25.

Pitts, T. C., and J. P. Boardman (1998). "Clustering and Dispersion of Duopolists in a Linear Market," *Geographical Analysis* 30(1), 35–44.

Polo-Redondo, Y., V. Bordonaba-Juste, and L. L. Palacios (2011). "Determinants of Firm Size in the Franchise Distribution System: Empirical Evidence from the Spanish Market," *European Journal of Marketing* 45 (1), 170–190.

Porter, M. E. (1980). *Competitive Strategy*. New York: Free Press.

Porto Sales, A.-L (2014). Situação Espacial De Franquias na América do Sul: Morfologia e Centralidade Urbanas em Cidades Médias da

Argentina, Brasil e Chile. Tese (doutorado) - Universidade Estadual Paulista, Faculdade de Ciências e Tecnologia. Available at: xx-aaahttp://hdl.handle.net/11449/122231xxbbb (accessed May 20, 2017).

Reilly, W. (1931). *The Law of Retail Gravitation*. New York: Putnam.

Sato, Y., T. Tabuchi, and K. Yamamoto (2012). "Market Size and Entrepreneurship," *Journal of Economic Geography* 12(6), 1139–1166.

Silva, V. L., and P. F. Azevedo (2012). *Teoria e Prática do Franchising: Estratégia e Organização de Redes de Franquias*. São Paulo: Atlas.

Simons, R. A. (1992). "Site Attributes in Retail Leasing: An Analysis of a Fast-Food Restaurant Market," *The Appraisal Journal* 60(4), 521–531.

Smithies, A. (1941). "Optimum Location in Spatial Competition," *Journal of Political Economy* 49, 423–439.

Sorenson, O, and J. B. Søensen (2001). "Finding the Right Mix: Franchising, Organizational Learning, and Chain Performance," *Strategic Management Journal* 22(6/7), Special Issue: Strategic Entrepreneurship: Entrepreneurial Strategies for Wealth Creation (Jun.–Jul), 713–724.

Spies, J. (2010). "Network and Border Effects: Where Do Foreign Multinationals Locate in Germany?" *Regional Science and Urban Economics* 40(1), 20–32.

Streed, O., and G. Cliquet (2013). "International Market Entry Expansion of Retail Networks: Determinants of Market Entry Failures," in *Network Governance: Alliances, Cooperatives and Franchise Chains*. Eds. T. Ehrmann, J. Windsperger, G. Cliquet, and W. J. Berlin-Heidelberg: Springer-Verlag Berlin Heidelberg, 87–106.

Thisse, J.-F. (2011). "Geographical Economics: A Historical Perspective," *Louvain Economic Review* 2(77), 141–168.

Tirole, J. (1988). *The Theory of Industrial Organization*. Cambridge, MA: MIT Press.

Turhan, G., M. Akalın, and C. Zehir (2013). "Literature Review on Selection Criteria of Store Location Based on Performance Measures," *Procedia - Social and Behavioral Sciences* 99(6), 391–402.

UNDP—United Nations Development Programme (2017). Brasil Ranking IDHM Municípios 201. Available at: https://www.br.undp.org/content/brazil/pt/home/idh0/rankings/idhm-municipios-2010.html (accessed March 15, 2017).

Windsperger, J. (2004). "Centralization of Franchising Networks: Evidence from the Austrian Franchise Sector," *Journal of Business Research* 57(12), 1361–1369.

Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's web site.

Appendix 1

Table A1
Extant Evidence from the Background Econometrical Literature

Research Area	Focus and Related References	Main Results
Location Choices and Entrepreneurship	1. Location choices* of foreign direct investments – FDI (Barrios, Görg, and Strobl 2006; Crozet, Mayer, and Mucchielli 2004; Devereux, Griffith, and Simpson 2007; Head and Mayer 2004; Head, Ries, and Swenson 1999; Hilber and Voicu 2010; Spies 2010) 2. Location choices and new entrepreneurs (Arauzo-Carod and Viladecans-Marsal 2009; Addario and Vuri 2010; Delgado et al. 2010; Figueiredo et al. 2002; Glaeser and Kerr 2009; Glaeser et al. 2010; Glaeser et al. 2010; Harada 2005; Sato et al. 2012)	1. The following have a positive role on location choices for FDI: market size, market potential, size of the local economy, local total income, local manufacturing employment, past foreign FDI, specialization of local industry. 2. No robust impact of urbanization on firm creation. The local level of activity favors entrepreneurship. Firm creation increases with own-industry previous entries. A larger market size increases the willingness to become an entrepreneur.
Geographic Dimension of Franchising	1. Location choice and chain ownership – franchisees vs. company-owned units (Carney and Gedajlovic 1991; Combs and Ketchen 2003; Lafontaine 1992; Norton 1988; Perryman and Combs 2012) 2. Location choice and chain life cycle (Martin and Justis 1993; Polo-Redondo, Bordonaba, and Palacios 2011) 3. Location choice and chain expansion (Ehrmann and Meiseberg 2011; Julian and Castrogiovanni 1995)	1. Increasing propensity to franchise with the chain geographic dispersion to reduce monitoring costs, while company-owned outlets tend to be closely located to headquarters. 2. Franchisor's choice for spatial preemption leads to spatial dispersion. Innovative retail concept leads to franchisor's choice for spatial preemption. Propensity for growth and spatial preemption at the early stages of the franchise chain. 3. Two competing views of chain expansion: "unconstrained" vs. "constrained" by the franchisor's capabilities. The franchisor's capabilities influence the chain geographic expansion. The success of site selection for new franchisees is more influenced by the inner strength of network structure than by market criteria. Site attractiveness to position new franchisees is related to the quality of local interactions.

(Continued)

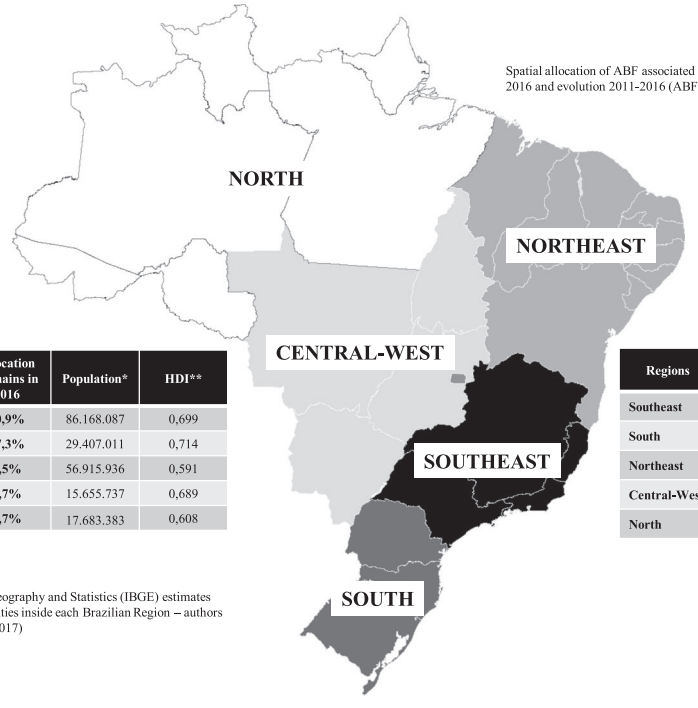
Table A1
Continued

Research Area	Focus and Related References	Main Results
Location Effects on Performance	1. Impact of agglomeration gains for consumers on hotel performances (Chung and Kalnins (2001)) 2. Impact of proximity to consumers and proximity to other stores on retailer revenue (Fox, Postreal, and McLaughlin 2007). 3. Impact of retail store environment on its performance (Kumar and Karande 2000). 4. Locational factors influencing store performance (Turhan, Akalın, and Zehir 2013). 5. Impact of location on franchisee performance (Ehrmann and Meiseberg 2011).	1. The presence of competitors can be beneficial. Important impact of location choice on performance. Agglomeration gains are more effective in rural markets and for dissimilar establishments (hotel industry), i.e., small and independent hotels experience higher revenues per room from the presence of chains heightening local demand. 2. Significant time travel effects of consumers on retailer revenue. Noticeable agglomeration effects which vary in sign and magnitude depending on the retailer and on the nearby stores. Agglomeration effects are often asymmetric (A benefits from the proximity with B while B suffers this proximity). 3. Impact of socioeconomic characteristics of the trade area on retail store performance (sales and productivity). 4. Selection criteria necessary to evaluate potential store locations are as follows: population structure, economic factors, competition, saturation level, store characteristics, magnet. Various measures used to evaluate store performance: store sales, market share, retail patronage, store traffic, store profits. 5. Embeddedness in regional clusters, offering privileged access to resources like know-how and information, enhances franchisee performance. The location of many franchisees in the supranational area reduces their performance. The quality of local interactions defines the location quality with a positive impact on franchisee performance.

*Relating to our focus, we only take into account the extant literature on location choices *within a country* (i.e., between states or regions).

Appendix 2

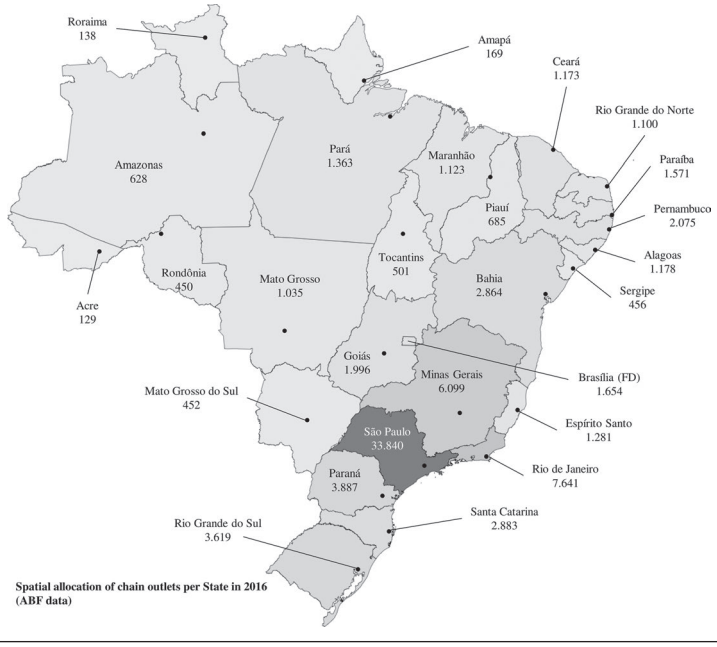
Figure A1
Spatial Allocation of Franchising In Brazil



Regions	Allocation of chains in 2016	Population*	HDI**
Southeast	**70,9%**	86.168.087	0,699
South	**17,3%**	29.407.011	0,714
Northeast	**7,5%**	56.915.936	0,591
Central-West	**3,7%**	15.655.737	0,689
North	**0,7%**	17.683.383	0,608

Regions	Growth 2011/2016
Southeast	**25,7%**
South	**37,7%**
Northeast	**64,0%**
Central-West	**37,2%**
North	**54,8%**

* Brazilian Institute of Geography and Statistics (IBGE) estimates
** Average of municipalities inside each Brazilian Region – authors generated from UNPD (2017)



Spatial allocation of chain outlets per State in 2016 (ABF data)

Authors generated from ABF (2016), IBGE (2017), and UNDP (2017) data