

# Strategic Groups in the French Franchising Sector

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**Abstract** We provide a picture of the French franchising sector, based on the strategic group approach. We use a recent 4-year panel dataset from the French Federation of Franchising, for the period 2010–2013, and sophisticated statistical and supervised learning models. Five main strategic groups of franchisors are distinguished in the French system, characterized by specific strategies and performance outcomes. We first survey the literature dealing with strategic groups and then conduct a multidimensional statistical analysis (Principal Components Analysis and Ascending Hierarchical Clustering), highlighting three factorial axes and five clusters. We test the stability of network behaviors with a classification model. Finally, we observe and comment on the differences in strategic group performances.

## 1 Introduction

In the economic and strategic management literature, a connection between the terms “franchising” and “strategy” is most often made in the context of the study of franchising as a strategy for network expansion or performance. This fundamental issue has generated a vast literature dealing with “franchising *versus* owning,” in other words with the choice for franchising *versus* vertical integration. As emphasized by Combs et al. (2011), the works which justify franchising as a strategy have

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been developed within two main analytical contexts. Thus, for many authors,<sup>1</sup> franchising, as an organizational strategy, is a way to handle agency costs, such as the costs of monitoring outlets which are geographically distant from the headquarters. This explanation of franchising is a complement to the resource-scarcity view.<sup>2</sup>

However, alternative proposals for the links between franchising and strategy can also be found in the literature. For example, institutional theory highlights the influence of “the isomorphic pressures arising from the environment” (Barthélemy 2011) on decisions. This approach thus suggests that the differences in franchising network strategies result from the institutional environment.

The issue of international expansion is another field in the literature which links the concepts of franchising and strategy. Studying retailers’ expansion in foreign markets in the light of internationalization theories, Picot-Coupey et al. (2014) show that, in the clothing retail sector, franchising is mainly used as an expansion mode rather than an entry mode. These authors suggest that franchising is a way to expand a network in foreign markets once knowledge and competences have been acquired via other entry modes. Jell-Ojobor and Windsperger (2014) develop an analytical model which integrates several theoretical perspectives in order to set out the various modes of international governance which can be perceived in franchising, referring to wholly owned subsidiaries, joint venture franchising, area development franchising, and master franchising. Finally, the literature dealing with the organizational choices of franchised chains emphasizes the interest of plural-form networks, which include a proportion of company-owned outlets. Most of the empirical work on plural forms in franchising has been developed in line with Bradach’s (1998) model (Dant et al. 2008; Cliquet and Pénard 2012). In this seminal work, Bradach (1998) studies US restaurant chains and shows that a mix of franchised and company-owned units, i.e., a plural form, can create synergies and enhanced the overall chain performance. A primary conclusion is that this organizational form helps the networks face strategic challenges. Hence, the distinction between pure franchising and plural-form networks, which can be dominantly franchised or company-owned, reveals three different strategies (Dant and Kaufmann 2003).

As Combs and Ketchen (1999) have argued, these different analytical contexts may be related to the existence of several types of franchise strategies, thus suggesting the adoption of a configurational approach in reference to Meyer et al. (1993). “Configurations” are groups of firms with a common organizational profile. Finally, the relationship between franchising and strategy has generated work on “strategic groups,” similar to Meyer et al.’s configurations and defined, in reference to Porter (1980), as sets of firms in an industry that display similar competitive profiles. Given that this methodological paper is based on the concept of strategic

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<sup>1</sup>Brickley and Dark (1987), Norton (1988), Minkler (1990), Brickley et al. (1991), Barthélemy (2008), Mitsuhashi et al. (2008), Barthélemy (2011), and Combs et al. (2011)

<sup>2</sup>Oxenfeldt and Kelly (1969), Caves and Murphy (1976), Lafontaine and Kaufmann (1994), Carney and Gedajlovic (1991), Combs and Ketchen (1999), Combs et al. (2004), and Castrogiovanni et al. (2006)

groups, we provide a survey of the relevant literature in the following section. Within this review, Combs et al.'s (2004) clustering of franchise networks will be seen to be an important resource. As mentioned by Combs and Ketchen (1999), configurations or strategic groups can be derived either theoretically or inductively. Both approaches are of interest: however, since there is a significant background literature on network strategies, we choose to structure the French franchise networks based on theoretical considerations and less with reference to network strategies (Cliquet 2008; McIntyre and Huszagh 1995).

The aim of this paper is to combine the study of three issues concerning franchising networks: strategy, clusters, and performance. We do this through observing French networks, with reference to the stability of franchising clusters over time. In this exploratory and methodological paper, we first provide a picture of the French franchise system and the related network strategies. To complete the picture and assess the external validity of our classification of network strategies, we address the issue of performance by looking at franchisor operational and financial performance among the different strategic groups. Hence, this paper is an extension of and a contribution to a deeper analysis of strategic group and performance, in two principal respects: First, the study is carried out in the French context, on networks drawn mainly from unlisted franchisors. Secondly, we address the issue of strategic group stability over time. Our results show that the strategy which supports better performance also aims at the minimization of agency costs and seeks to achieve a high franchise rate. The best-performing cluster includes the networks which favor the most complex strategies. The clusters which are most stable in terms of network behavior display average performance. The more unstable clusters display the weakest network performance.

The paper is organized as follows. We survey the literature dealing with strategic groups in Sect. 1. Section 2 presents the dataset and the study variables. We use a 4-year panel dataset from the French Federation of Franchising regarding the period 2010–2013. In Sect. 4 we conduct a multidimensional analysis which distinguishes the relevance of three factorial axes and five clusters. Comments are provided regarding the five corresponding strategies. Section 5 sets out the analysis of performance, and Sect. 6 concludes.

## **2 Background Literature on Strategic Groups**

### ***2.1 Strategic Groups and Franchising***

Defined as a statistical technique for classifying observations into similar sets or groups, cluster analysis is a useful tool to examine the relationships between strategy, environment, organization, and performance. Thus, this approach is relevant for analyzing franchise networks and their strategies. For our purposes, the relevant organizational configurations are groups of firms sharing a common profile along conceptually distinct variables (Meyer et al. 1993; Miller and Mintzberg

1983). The analysis of organizational configurations can be conducted under many headings and methodologies, such as organizational typologies (Miles and Snow 1978), taxonomies (Galbraith and Schendel 1983), or strategic groups (Hatten and Schendel 1977; Caves and Porter 1977). A strategic group is a set of firms that use a similar strategy and emphasize similar strategic dimensions, resulting in homogeneous competitive actions within an industry (Caves and Porter 1977; Cool and Schendel 1987; Porter 1980). Our adoption of the concept of a strategic group supposes that industry members can be classified into groups based on certain key characteristics such as strategy and structure (Hatten and Schendel 1977). Firms do not adopt franchising as an organizational form for the same reasons; however, groups of franchise networks share similar characteristics and strategies (Carney and Gedajlovic 1991; Castrogiovanni and Justis 1998). It has been underlined in the literature that the members of a given strategic group ought to exhibit similar performances (Ketchen and Shook 1996; Ketchen et al. 1997).

A brief survey of the literature on strategic groups in franchising shows that analyses differ regarding the issues addressed, the variables used, and the results obtained. Nevertheless, the relevant studies do generally adopt a clustering methodology. Cluster analyses based on a theoretical framework generally adopt the traditional theories of franchising, resource scarcity, or agency (Carney and Gedajlovic 1991; Combs et al. 2004; Ketchen et al. 2006). In other words, in identifying strategic groups, these approaches begin by identifying the firm characteristics that are likely to drive franchisors into distinctive strategic groups, specifically by adopting agency and resource-scarcity explanations for franchising (Combs and Ketchen 2003). However, this doesn't rule out the use of other theoretical frameworks, like Bradach's plural-form perspective, in the interpretation of the strategy implemented by the networks in each cluster.

Two main foci can be distinguished in the literature. The first proposes to build franchise network clusters in order to highlight various possible strategies. The second takes a step further and aims at understanding the differences in performance levels across strategic groups. In the first case, each cluster is characterized by a specific strategy (Hoffman and Preble 1991), or the strategy of a network is explained as the movement from one cluster type to another (Carney and Gedajlovic 1991). In the second case (Combs et al. 2004; Ketchen et al. 2006), a strategic group approach is adopted to examine the differences in performance level across groups as a consequence of the motivations for franchising. Taking this literature into account, we propose to observe the network's movement from one cluster to another via robustness tests and the impact of cluster belonging on network performance.

## ***2.2 Main Results in the Franchise Literature***

Different franchise network typologies are identified in the literature via the number of variables used, the nature of the data (questionnaires, interviews, or systematic data), and the theories chosen to build the axes in the factor analysis. Taking into account the resource-based and agency theories of franchising and the seven

strategic dimensions (chain size, age, chain growth rate, cost of adhesion to the franchise chain, contractual preventions, dispersion of units, and vertical integration), Carney and Gedajlovic (1991) identify five strategic groups in a sample of 128 Canadian franchise networks: “rapid growers,” “expensive-conservatives,” “converters,” “mature,” and “unsuccessful” networks. Reproducing that approach, Castrogiovanni et al. (1995) introduce similar parameters for a sample of 717 franchisors from 28 sectors in the United States. They validate some of Carney and Gedajlovic’s groups (1991): the “rapid growth franchisors,” the “reconverted,” and the partially “mature franchisors.” As an extension of Carney and Gedajlovic’s work (1991), López and Ventura (2001) used a factor analysis on a sample of 228 franchisors operating in Spain in 1996 and identified five strategic groups: “emergent,” “standardized,” “large internationals,” “traditional,” and “unsatisfactory.”

Based on agency theory and resource-scarcity theory and using a sample of 65 restaurant chains, Combs et al. (2004) identify three strategic groups: “agency franchisors,” “agency franchise minimizers,” and “resource-scarce franchisors.” In the first group, characterized by moderate franchising, the franchise is a response to agency problems. In the second, the franchisor has a good brand name reputation and low geographic dispersion. According to Combs et al. (2004), agency theory suggests that company ownership is more attractive, although this view is disputed by Lafontaine (1992). Consistent with this picture, the second group franchises the least. In the third group, the resource-scarce franchisors, the high use of franchising is at least partially driven by resource scarcity. Finally, the authors show empirically that members of these different franchising groups have different levels of performance. However, the focus on only one sector might have distorted the results obtained through this approach (Rondán-Cataluña et al. 2007).

In their analysis of franchise networks in the restaurant sector, Ketchen et al. (2006) take two variables into account: franchisee financial resources (low or high) and franchisee intellectual resources (low or high). Then they identify four groups: “manager-scarce franchisors,” “money-scarce franchisors,” “franchising minimizers,” and “seasoned veterans.” According to Ketchen et al. (2006), two groups would have been predicted by resource-scarcity theory (the “manager-scarce franchisors” and “money-scarce franchisors”) and one by agency theory (the “franchising minimizers”). The seasoned veterans are driven by neither agency concerns nor resource scarcity. Rondán-Cataluña et al. (2007) propose additional strategic variables, not previously used in the literature: “minimum population required,” “total shops in Spain,” “minimum size of the place,” “sector of the company,” and “distribution strategy.” Accordingly, they classify 140 franchisors operating in Spain from 19 different sectors. The results reveal the existence of four types of franchisors: “expensive,” “matures,” “rapid growers,” and “reconverted.”

Finally, Castrogiovanni and Justis (1998) propose an original approach by adapting Mintzberg’s (1979) organizational typology to franchising organizations. On this basis the authors identify three franchising configurations: “entrepreneurial,” “confederation,” and “carbon-copy form.” Having surveyed the extant literature, we focus hereafter on the French case.

### 3 Data Collection and Study Variables

“Choosing the variables along which to group observations is the most fundamental step in the application of cluster analysis, and thus, perhaps the most important” (Ketchen and Shook 1996, p. 443). The choice of the study variables reflects the researcher’s responses to three questions: the method of variable selection (inductive or cognitive), the standardization of variables, and the resolution of problems of multicollinearity among variables (since high correlation among clustering variables could be problematic).

Our data were collected from the yearbooks of the French Federation of Franchising. These are panel data for the years 2010–2013. The sample consists of 92 French franchising networks, observed during this 4-year period. We initially had 127 networks in the dataset but had to delete some information to assure the stability of the panel, since some networks entered and others exited the database during the period. Based on the work of Carney and Gedajlovic (1991) and Combs et al. (2004), we distinguish ten study variables.

*Contract Duration (CD)* Economic theory suggests a trade-off between long- and short-term franchise contracts. Long-term contracts are favorable to the franchisee, giving them more time to recover their investment. In addition, long-term contracts protect the franchisee from the franchisors’ potential opportunism, in other words from the hold-up problem. Hence, contract duration is positively linked to franchisees’ investment and the risk of quasi-rent expropriation by the franchisor. On the other side, longer contracts are less flexible and prevent the franchisors adapting to environmental changes. Hence, from a general point of view, long-term contracts are unfavorable to franchisors and favorable to the franchisee (Brickley et al. 2006). As a contractual device, longer contract duration should be associated with a higher risk of franchisee expropriation (i.e., higher investment from the franchisee).

*Up-Front Fees (FEES) and Royalty Rate (RR)* The up-front fees and the royalty rate can be related to the selection of franchisees. Indeed, following Blair and Kaserman (1982) or Sen (1993), the selection of franchisees should be based on high entrance fees and a low royalty rate. Nevertheless, Lafontaine and Shaw (1999) show that there is no inverse relationship or trade-off between these variables at the firm level. The authors explain this result by the relatively small source of revenue represented by franchise fees for the franchisor. Franchisors do not raise their fees as their reputation becomes stronger because fees are only a marginal source of revenue. As a result, up-front fees cannot be considered as a measure of scarcity as regards the financial variable for the franchisor. In the first place, we associate up-front fees with financial obstacles for the franchisees. The royalty rate can be positively correlated with the brand equity and to the quality of the network (Bhattacharyya and Lafontaine 1995). More fundamentally, it is positively linked to the operational costs of the network.

*Total Franchisee Investment (TFI)* In the franchise literature, the level of specific investment by the franchisee is generally proxied by the TFI. Indeed, much of the

investment a franchisee makes is in specific assets, associated with no alternative use and with low salvage value. As emphasized by Brickley et al. (2006, p. 177), “much of the typical investment made by a franchisee is relationship specific. Higher total investment is likely to be positively correlated with the level of relationship-specific investment.” From a more pragmatic point of view, up-front fees represent only a part of the franchisees’ investment. The level of the TFI is indicative of the real level of investment and can be considered as a constraint for the franchisee.

*Minimum Surface Area of an Outlet (MS)* We use this variable as a proxy for the importance of fixed assets (even if it is only interior design) that must be financed. This variable is linked to the type of activities. For product retail activities, the minimum surface area can be quite high, but is smaller in the case of services.

*Outlet Turnover (Estimated Turnover for a Typical Outlet)* This estimate is provided by the franchisor to franchisees to help them assess the potential revenue they can earn from their outlet. This variable should be positively correlated with the investment by the franchisee and could also involve a sectorial or business model effect. In sectors where the margin is higher (service activities), a smaller turnover can generate more income than in product retail. In this manner, this variable should be positively associated with the surface area of the outlet.

*Franchising Rate* Gallini and Lutz (1992) assert that new franchisors offering high-quality franchise opportunities will use company ownership to signal their confidence in the business concept to potential franchisees. More generally this variable gives a measure of the importance of franchising in the strategic development of the network.

*Age* This variable measures years since the inception of the franchisor and can be considered as a measure of experience (Combs et al. 2004).

*Experience Before Franchising* This variable represents the number of years between firm inception and the establishment of first franchise. This variable is more than simply a proxy for the experience accumulated by the franchisor before they decide to franchise; rather, it allows us to distinguish between firms that developed first without franchising and used franchising later to complement their market coverage and networks where franchising is an important strategic variable from the start. In that second case, franchising begins after just a few years of experience. The former conforms to agency theory, whereas the latter looks rather to the competitive advantage link to market share or to first-mover advantage.

*Size* This variable measures the total number of outlets in France. In the franchise literature, this is often used as a control variable or as a variable positively related to agency costs. Some studies (Arruñada et al. 2001; Chaudey and Fadairo 2007) consider that opportunism risks on the franchisee’s side are higher when the network size is larger.

Table 1 presents descriptive data for the full sample.



**Table 1** Descriptive data (full sample)

	Mean	SD	Min	Max
Contract duration	6.64	1.92	3	12
Up-front fees (K Euros)	24.26	12.07	5.00	80.00
Royalty rate	5.15	3.86	0.75	38
Total franchisee investment (K euros)	196.77	190.48	15	1200
Min surface area per outlet (m <sup>2</sup> )	424.27	320.08	11	1640
Outlet turnover (K euros)	489.22	452.69	12.5	2250
Franchising rate	0.72	0.28	0.03	1
Age	23.05	17.11	1.67	122.5
Experience before franchising	6.72	10.56	0	66
Size	123.88	115.50	4	501.5

## 4 Multidimensional Static Analysis

To distinguish strategic groups in the French franchising system, we choose to perform a hierarchical clustering analysis (HCA). Cluster analysis can be defined as follows: “Cluster analysis takes a sample of elements—e.g., organizations—and groups them such that the statistical variance among elements grouped together, is minimized while between-group variance is maximized” (Ketchen and Shook 1996). The proposed HCA allows us to distinguish five clusters.

As a preliminary statistical analysis, we conduct a principal component analysis (PCA), presented in Appendix 1. This PCA highlights the relevance of three factorial axes. The first is related to the ease of payback and the length of the payback period for the franchisees; the second is related to franchising as a means to overcome resource scarcity; the third is related to the servicing and value-added rate of the activities in the network.

### 4.1 Hierarchical Clustering Analysis

The goal of a cluster analysis is to partition the observations into groups (“clusters”) so that pairwise dissimilarities between those assigned to the same cluster tend to be smaller than those in different clusters (Hastie et al. 2009). In this paper we use HCA to distinguish clusters of franchised networks, and we perform this analysis on the first three PCA factors defined previously. Following Murtagh and Legendre (2014), we apply a dissimilarity measure (Euclidean) and an agglomeration criterion (Ward). The number of clusters applied to our dataset is obtained by testing different numbers of clusters and cross-validating with variables and their relevance. We thus distinguish five clusters corresponding to five different strategies.<sup>3</sup>

<sup>3</sup>Three approaches are mobilized to investigate the validity of the cluster numbers. The first is based on external criteria and consists in displaying the results of the cluster analysis in the



The dendrogram in Fig. 1 presents the results of our hierarchical clustering, provided in a graphical format, being a highly interpretable and complete description of the clustering process. In addition, Table 2 presents descriptive statistics for the five clusters.

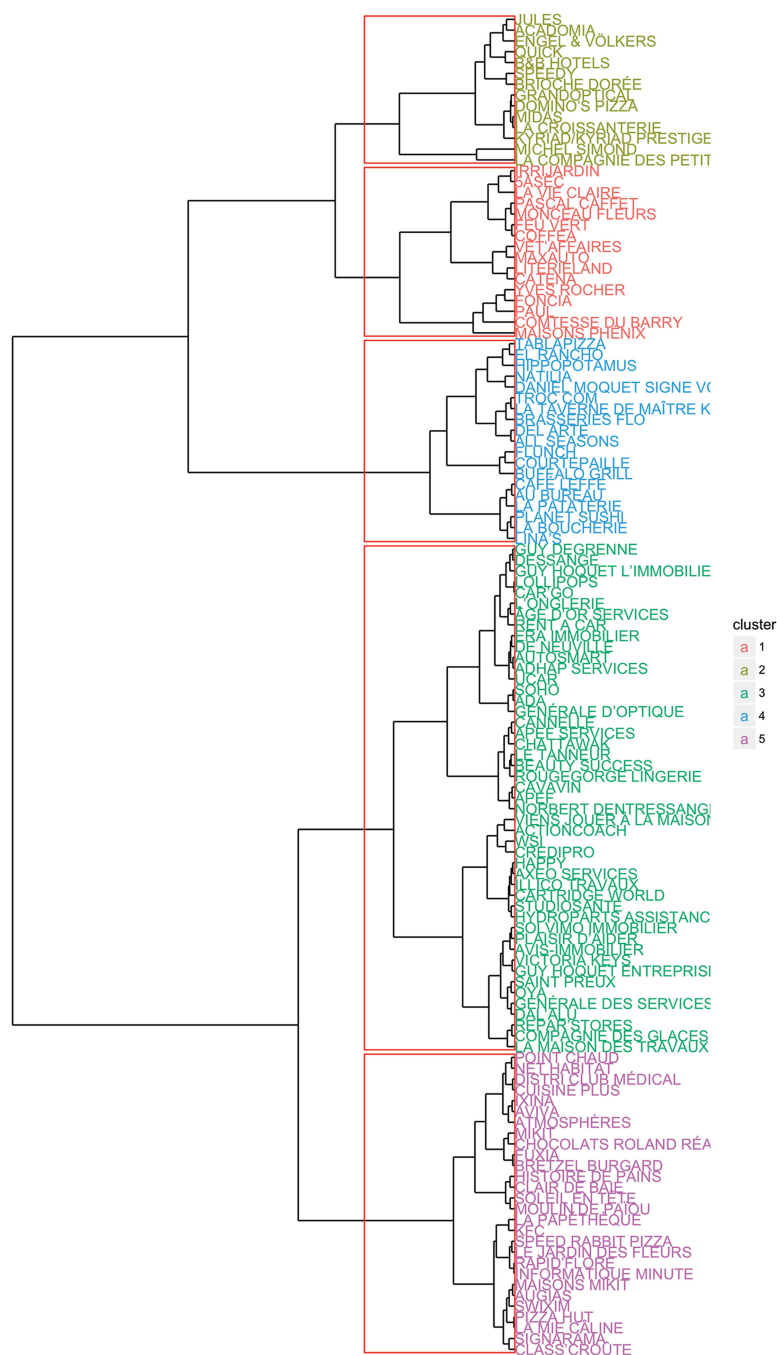
Based on these statistics, the following comments can be made. First, no cluster contains only networks of a unique industry, so there is no perfect cluster/industry matching. Networks in *cluster 1* are the oldest franchisors (51 years old), and on average they had a great deal of experience (more than 20 years) before starting franchising. They are quite big (an average of 177 units) and show the second-lowest franchising rate. They have a low royalty rate (average of 3.99% of turnover) and low franchise fees. The franchise contract is fairly short compared to other clusters. This cluster contains old and big networks, which franchise late and not very much, and does not seek extensive revenues from franchisees (royalty and fees). They do not offer favorable conditions to franchisees (contract duration). This cluster includes networks without resource-scarcity problems, which use franchising to complete market coverage while minimizing agency costs. This picture is close to that of the “Agency costs minimizers” described by Combs et al. (2004) or Ketchen et al. (2006).

*Cluster 2* is characterized by its larger size (216 units in the network in average). The networks in the cluster had a significant experience (around 10 years) before deciding to franchise and are relatively old. Salient features in this group are the high contract duration and royalty rate (almost 11% of turnover), combined with high fees (more than 30,000 euros). Their high size, age, and experience nevertheless rule out any resource-scarcity explanation for these high levels of fees and royalties. Furthermore, these networks do not franchise very much (54% franchising rate). Rather, the high royalty rate may reflect a high level of operational costs. High fees and long contract duration are linked with the selection of franchisees, who will accept a long payback period. In summary, these networks look like the “Agency costs minimizers” of group 1, but the franchisees have to support higher costs from the franchisor, higher fees, and slightly higher initial investment. These costs for franchisee are balanced by a longer contract. These networks could be labeled “Agency costs minimizers with high operating costs.”

*Cluster 3* is the bigger cluster. It contains younger networks with smallest amount of experience before franchising. These networks are highly inclined toward franchising, containing 121 units on average with an average franchising rate of over 80%. This high level of franchising is supported by low investment for the franchisee and a low up-front fee. The contract duration is short, showing a potentially rapid payback period, consistent with a very low turnover and outlet surface area, in accordance with the observation that cluster 3's networks operate in

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factorial plan resulting from the PCA analysis. The second approach is based on internal criteria, using the information obtained from the clustering process. In this second case, we can evaluate how the results of the cluster analysis fit the data. The third approach of clustering validity is based on validity indexes. This method evaluates a clustering structure by comparing it with other clustering schemes, obtained with the same algorithm but producing a different number of clusters.



**Fig. 1** Dendrogram

**Table 2** Summary statistics for the five clusters

	Cluster number (and size)	Mean	Min	Max
Contract duration	Cluster 1 (16)	5.91	5	9
	Cluster 2 (14)	8.57	5	12
	Cluster 3 (47)	5.5	3	7
	Cluster 4 (19)	8.58	5	12
	Cluster 5 (28)	6.67	5	10
Up-front fees	Cluster 1	15.65	5.25	29.5
	Cluster 2	30.23	12.00	80.00
	Cluster 3	18.72	5.00	40.00
	Cluster 4	40.36	24.58	50.00
	Cluster 5	24.43	13.5	40.00
Royalty rate	Cluster 1	3.99	0.75	6.5
	Cluster 2	10.84	4	38
	Cluster 3	4.51	1	10
	Cluster 4	4.39	3	6
	Cluster 5	4.54	1.6	7
Total franchisee investment	Cluster 1	171.23	47.75	445
	Cluster 2	183.46	43	500
	Cluster 3	98.74	15	294.01
	Cluster 4	516.05	115	1200
	Cluster 5	165.94	50	282.5
Min surface area per outlet (m <sup>2</sup> )	Cluster 1	487.62	155	1000
	Cluster 2	306.67	80	496.62
	Cluster 3	203.97	11	645.99
	Cluster 4	916.9	623.75	1225
	Cluster 5	482.36	80	1640
Outlet turnover	Cluster 1	469.14	70	1650
	Cluster 2	684.92	183.33	2000
	Cluster 3	240	12.5	750
	Cluster 4	803.68	58.5	1516.67
	Cluster 5	607.79	20	2250
Franchising rate	Cluster 1	0.55	0.03	1
	Cluster 2	0.54	0.06	1
	Cluster 3	0.82	0.11	1
	Cluster 4	0.66	0.23	1
	Cluster 5	0.77	0.21	1
Age	Cluster 1	51.15	22	122.25
	Cluster 2	27.86	19	35.25
	Cluster 3	14.82	1.67	35
	Cluster 4	24.81	2.5	50.25
	Cluster 5	17.23	3.5	30.25

(continued)

**Table 2** (continued)

	Cluster number (and size)	Mean	Min	Max
Experience before franchising	Cluster 1	20.88	0	66
	Cluster 2	10.18	0	22
	Cluster 3	2.21	0	14
	Cluster 4	7.73	0	27.75
	Cluster 5	3.79	0	19
Size	Cluster 1	176.85	4	472.25
	Cluster 2	215.99	5	482
	Cluster 3	121.55	6	501.5
	Cluster 4	91.13	15.25	312.67
	Cluster 5	73.71	6.33	196.75

services rather than in retail. Features of this group indicate they probably face human capital or management scarcity constraints (younger networks with the smallest amount of experience before franchising). They use franchising to overcome this constraint and possibly to access first-mover or market share advantages. They could be labeled “Resource-constrained franchisors.”

*Cluster 4* shares some features with cluster 3 regarding its strategy. Networks in cluster 4 are slightly older than in cluster 3 and were a little more experienced when they started franchising. They rely on franchising for growth and exhibit an average franchising rate of 66%, which is quite high but lower than in cluster 3. Finally, networks in cluster 4 are smaller, with an average number of 91 (big) outlets per network. Cluster 4 differs from cluster 3 on dimensions relating to franchisee selection and sector or business features. Networks in cluster 4 need outlets with a higher surface area and with higher predicted turnover. They also exhibit higher entrance fees, contract durations, and franchisee investment. These networks consist of big outlets and prospective franchisees face higher constraints in entering the networks. Cluster 4 seems to operate a strict selection on franchisee: with high up-front fees and low royalty rate, these networks need to signal their quality in order to select the best franchisees (Blair and Kaserman 1982; Sen 1993). Franchisors in this cluster might have more difficulty finding prospective franchisees than in cluster 3. The dendrogram shows closer proximity between cluster 4 and clusters 1 and 2 than with cluster 3. Hence, cluster 4 networks rely on franchising to grow, but seemingly not simply to attain rapid first-mover or market coverage advantages. Franchising is central to their strategy, but it imposes certain constraints due to the franchisors’ quality and their desire to select only the best franchisees. Such networks could be labeled “High selecting and positioning networks.”

Finally, *cluster 5* is positioned between clusters 3 and 4 as regards many of the variables, although it is closer to cluster 3 on the dendrogram. Networks in this cluster are close to those of network 4, but their outlets are smaller, and the investment needed to join the network is lower. They are less selective from the franchisee point of view (lower up-front fees and investment), although they may also want to acquire the advantages attached to highly selective networks and not only to minimize agency costs or achieve rapid growth or greater market coverage.

Overall, these networks are relatively young with low experience. It is more difficult to label these networks, since they display a tension between plural-form advantages and rapid growth advantages. “Young and un-stabilized” seems best to match these networks.

Complementary tests show that these clusters display clear and significant differences. Levene’s test shows that only one variable (up-front fee) respects the homoscedasticity condition. For this reason, we cannot conduct an ANOVA analysis.<sup>4</sup> Welch tests demonstrate that the variables show significant differences between clusters, except for the royalty rate.

## ***4.2 Robustness Checks and Stability of the Clusters***

To test the robustness and the stability of network behaviors in each cluster, we develop a predictive model. The aim is to create a classification model which is able to predict whether each network should be classified in one of the five managerial strategies previously highlighted. To construct the model, we use the same aggregated data as in the PCA. However, we introduce our categorical target variable “cluster franchise,” with five modalities (clusters 1–5). Then we evaluate the predictive model using a subsample. A detailed presentation of this process is presented in Appendix 2. Taking this model into account, we introduce a cross-tabulation (confusion matrix) of the test sample. Predicted values show that our classification model has good predictive power.

Table 3 presents, for each network in the test set, the number of cases where the predicted cluster is equal to the actual cluster in the diagonal. The classification errors are around the diagonal. The error rate is low: 7 errors for 29 observations, i.e., 24%.

The model is used for each of the 4 years in our dataset, i.e., we predict the cluster classification of each network for each year. Then we look at the stability of the predicted cluster between 2 consecutive years for each network (see Table 4). On the high end of Table 4, we see great stability of clusters between 2010 and 2011. All the networks classified in cluster 1 in 2010 are classified in the same cluster the year after. Overall, the results show a high level of stability of the clusters regarding strategies 1 and 2. Clusters 3 and 4 are also quite stable and show only few switches with cluster 5. Finally, cluster 5 is the least stable and exhibits some switches with clusters 1, 3, and 4. Networks of cluster 5 are more transitory, perhaps due to their youth and their un-stabilized strategy.

The results confirm the overall stability of the network behaviors and show that for 75% of the cases, the prediction is good. The results also support our initial interpretations for the five identified clusters. Consistent with prior studies showing that contract provisions are stable over the time (Lafontaine and Shaw 1999), most

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<sup>4</sup>We conducted these tests since they are very common in this type of study. Significantly, they allow us to reject the hypothesis of the equality of all the variables (even the royalty rate) between the clusters.

**Table 3** Confusion matrix of the test sample

	Prediction				
Reference	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Cluster 1	2	1	0	1	0
Cluster 2	0	2	0	0	0
Cluster 3	2	0	11	0	3
Cluster 4	0	0	0	3	0
Cluster 5	0	0	0	0	4

Note: The test sample includes only one third of the networks, i.e., 29 observations

**Table 4** Stability of the predicted cluster over time

	Prediction	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Predicted cluster 2010	Predicted cluster 2011					
	Cluster 1	10				
	Cluster 2		5			1
	Cluster 3			26		1
	Cluster 4				10	2
	Cluster 5	1	1	1		12
Predicted cluster 2011	Predicted cluster 2012					
	Cluster 1	8		1		
	Cluster 2	1	5			
	Cluster 3	1		23		4
	Cluster 4				9	
	Cluster 5	1			4	9
Predicted cluster 2012	Predicted cluster 2013					
	Cluster 1	10	1			
	Cluster 2		4			
	Cluster 3			23		1
	Cluster 4				8	3
	Cluster 5			1		11

of the clusters form cohesive and stable groups: established networks using franchising as an efficient, but only supplementary, development tool (*Agency costs minimizers*, clusters 1 and 2); networks using franchising as a primary lever to grow which also show great stability (*Resource-constrained franchisors*, cluster 3); and networks relying on franchising for their development but which seem to be searching for more than growth or agency costs benefits alone (*High selecting and positioning networks*, cluster 4). Only cluster 5, initially labeled *Young and un-stabilized*, is unstable. Belonging to this group does not offer a secure position for the relevant networks. This result is not surprising, as it was difficult to identify clear features for franchising networks in this group. It is worth noting that switches from this group are most frequent within cluster 4. We can interpret this as a sign that strategies based on plural-form advantages (cluster 4) are more difficult to reach. Switches from group 5 to other groups are more random.

The results show the stability of the network behaviors within each cluster and thus the quality of our clustering. Some networks have either a strategy that is fixed for a long time (clusters 1 and 2) or a simple and clear strategy (cluster 3) and thus have no incentive to change. A network changes its behavior only if it tries to adapt the strategy recognized as the best (cluster 4) or because it has not identified it yet (cluster 5).

## 5 Strategic Groups and Performance Outcomes

In the literature on franchise clusters, a number of authors show interest in cluster characterizations based on network performance.<sup>5</sup> Indeed, as remarked by Dant and Gundlach (1999), “external validation requires that the groups differ along variables other than those used in the clustering algorithm.” In addition, Combs et al. (2004) underline that “examination of performance differences across groups provides a test of external validity.” In line with this previous research, we make our strategic classification of the French franchising networks more precise by introducing various franchisor performance indicators.

Taking into account the availability of accounting data to estimate performance, the sample is reduced from 92 to 79 networks. As the number of observations in each cluster is low and as there may be some outliers, we observe the medians by cluster rather than the means. For the same reason, we choose to perform nonparametric (rank) tests. We introduce three measures of performance at the franchisor’s level, two being operational measures (turnover growth and gross operating margin) and one being more financial (return on assets, ROA). Turnover growth is an average yearly variable. Operating margin (earning before interests and taxes/turnover) and ROA (earning before interests and taxes/stockholder’s equity plus financial debt) are annual ratios. Consistent with our study period (2010–2013), we average these three yearly variables in the period 2010–2013.

The results in Table 5 highlight some differences among clusters, especially regarding the turnover growth and the gross operating margin. The HCA previously introduced reveals that clusters 1 and 2 are quite similar, even if franchisors in cluster 2 exhibit higher growth compared to cluster 1. Franchisors in cluster 2 also exhibit higher gross operating margin than in cluster 1, consistent with potentially higher operating costs borne by the franchisors in cluster 2. The difference between these franchisors is less clear regarding the ROA. Franchisors in cluster 4 differ from the others with higher turnover growth and gross operating margin. However, these performances do not result in a superior ROA. Finally, we observe that the franchisors’ turnover growth in cluster 3 is limited, even if networks in this cluster have a growth strategy in terms of number of franchised units. This observation

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<sup>5</sup>Dant and Gundlach (1999), Combs et al. (2004), and Gonzalez-Diaz and Solis-Rodriguez (2015)



**Table 5** Cluster-based descriptive statistics for the franchisor performances

Clusters	Turnover growth (%)		Gross operating margin (%)		Return on assets (ROA) (%)	
	Median	Mean (N)	Median	Mean (N)	Median	Mean (N)
1	0.84	2.26 (10)	2.55	−2.35 (10)	8.83	10.37 (10)
2	5.43	3.42 (6)	6.23	29.99 (7)	12.8	42.76 (7)
3	2.27	2.06 (25)	2.68	5.37 (25)	6.57	2.55 (25)
4	29.09	185.57 (12)	14.12	12.29 (14)	7.5	17.43 (14)
5	2.38	9.80 (13)	1.82	−0.53 (13)	9.11	−88.80 (13)

**Table 6** Tests of differences in performance among the five clusters

	Turnover growth (%)	Gross operating margin (%)	ROA (%)
Kruskal-Wallis eq. of populations rank test prob (Chi2)	0.018** (11.90)	0.064* (8.90)	0.513 (3.27)
	Kruskal-Wallis: prob (Chi2)	Kruskal-Wallis: prob (Chi2)	Kruskal-Wallis: prob (Chi2)
Cluster 1 vs. cluster 2	0.704 (0.14)	0.157 (2.00)	0.354 (0.86)
Cluster 1 vs. cluster 3	0.827 (0.05)	0.688 (0.16)	0.635 (0.23)
Cluster 1 vs. cluster 4	0.0122** (6.28)	0.012** (6.34)	0.482 (0.49)
Cluster 1 vs. cluster 5	0.264 (1.25)	0.852 (0.035)	0.852 (0.04)
Cluster 2 vs. cluster 3	0.484 (0.49)	0.227 (1.46)	0.194 (1.69)
Cluster 2 vs. cluster 4	0.075* (3.17)	0.412 (0.67)	0.88 (0.02)
Cluster 2 vs. cluster 5	0.66 (0.19)	0.322 (0.98)	0.663 (0.19)
Cluster 3 vs. cluster 4	0.0021*** (9.50)	0.015** (5.91)	0.101 (2.69)
Cluster 3 vs. cluster 5	0.171 (1.875)	0.963 (0.002)	0.656 (0.20)
Cluster 4 vs. cluster 5	0.034** (4.27)	0.052* (3.77)	0.382 (0.76)

\*, \*\*, \*\*\*: significant at 10%, 5%, 1%

reveals that a growth strategy at the network level does not systematically involve a growth in franchisors' revenue.

Some differences can be observed regarding the franchisors' performances among clusters. Table 6 shows that these differences are not always significant. The first line of this table provides the results of the Kruskal-Wallis tests for the differences among all the clusters. These results reveal that the differences are significant at the 5% level only regarding the turnover growth. The test also shows differences that are almost significant as regards the gross operating margin.

However, the results regarding the ROA are not significant. To explain these differences, we conduct pairwise Kruskal-Wallis tests, comparing clusters by pairs. Only cluster 4 stands out according to these tests. In this cluster, franchisors have significantly higher turnover growth than franchisors in clusters 1, 2, 3, and 5. The franchisors in cluster 4 also have a higher gross operating margin compared to clusters 1 and 3. The difference is close to significance with cluster 5.

Overall, our results suggest that the strategy followed by franchisors influences operational performances but does not significantly influence financial performances. In particular, in cluster 4 the strategy induces a higher performance for the franchisors, and franchising seems to be a key variable for network growth. These networks are selective in their choice of franchisees and are simultaneously closer to agency-minimizer networks according to the HCA results. This strategy of agency costs minimizing has been highlighted by Lafontaine (1992) as the main explanation for franchising. Indeed, comparing several theoretical frameworks, this author provides empirical evidence that the agency view—and more precisely the two-sided moral hazard model—is the most appropriate one to explain franchising. Hence, their strategy is quite complex compared to other networks which favor either growth (cluster 3) or the minimizing of agency costs (clusters 1 and 2). Networks in cluster 4 combine these two strategic approaches. Consistent with a high selecting and positioning strategy, these networks may have high intangible and human assets that could explain their strategy and performance (Perdreau et al. 2015).

Networks promoting a pure growth strategy (cluster 3) do not display higher performance. This is also the case for networks choosing a pure agency-costs-minimizing strategy (clusters 1 and 2). Our results differ from the two propositions put forward by Combs et al. (2004), who consider first that “strategic groups whose member firms use franchising in the face of resource scarcities will outperform strategic groups that do not” and second that “strategic groups whose member firms align their use of franchising with agency costs will outperform strategic groups that do not” (op. cit. p. 883). Our results demonstrate that the strategic groups which outperform others combine these advantages, and even go beyond them.

## 6 Conclusion and Directions for Further Research

This empirical paper provides a characterization of network strategies in the French case and offers some directions for future research. First, three dimensions (or axes) are highlighted in the mapping of the network similarities. Based on these three dimensions, hierarchical clustering analysis allows us to distinguish five clusters. The first two use franchising in a moderate way and quite late on in their network development. Franchising hence appears as an (agency-related) efficient tool that completes the network strategy. In the third cluster, franchising is at the heart of enterprise strategy from the beginning. These networks exhibit significant growth and use franchising early in their development, probably to overcome (managerial

and potentially financial) resource scarcity. The fourth cluster also makes an important use of franchising, but not as early as cluster 3 in network development. Furthermore, networks in this cluster impose higher constraints on their franchisee selection and show proximity with the first two clusters. It seems that this more complex use of franchising refers to plural-form network strategies, where advantages from franchising go beyond efficient network development or rapid growth. Finally, the last cluster is more difficult to characterize because it seems to lie between the plural-form networks of cluster 4 and the (initially) resource-scarce networks of cluster 3. These results are in line with previous ones regarding the interpretation of strategic clusters and complement them for the case of France.

Further, we develop a predictive model that offers a useful and efficient way to automatically classify franchised networks into the five managerial strategies detected. The construction of a predictive model enables us to test the quality of the preceding clustering and the stability of network behaviors in each cluster. However, when we look at the stability of this classification year to year, we nevertheless observe that networks from cluster 5 can more frequently change cluster. As such, this cluster can appear as partially transitory.

Last, we can conclude that the franchisor strategy in an identified cluster impacts its performance, in particular operational performance. Better-performing networks present more complex strategies, combining minimizing agency costs and resource-scarcity motivations, suggesting that these two theoretical approaches are more complementary than competitive explanations for franchisor's behaviors, strategies, and performances. This is as suggested by Combs et al. (2004), "[our] finding that agency conditions and resource scarcities point in the same direction among resource scarce franchisors suggests that these theories may furnish complementary rather than competitive explanations in some situations."

This characterization of the French system based on the clustering methodology offers interesting directions for further research. First, while here we have worked on a 4-year panel dataset, it would be interesting to test the stability of our statistical model on a longer period. With a sample available in two distant periods, it might be possible to identify potential strategic paths between clusters and to study the impacts of these paths in terms of network performances. In addition, complementary performance indicators could be taken into account for further analysis and robustness tests.

## **Appendix 1: Principal Component Analysis**

Table 7 presents the explained variance of the resulting factor analysis. Usually, the number of factors is given by the number of eigenvalues higher than 1. Although the number of eigenvalues that are higher than 1 is 4, we make the choice to keep only three of them, considering the gap between the third and the fourth eigenvalue. In other words, since the amount of variation explained drops after the third

**Table 7** Explained variance of resulting factor analysis

Component	Eigenvalues	% of total variance	Cumulative proportion (%)
C1	2.191	22	22
C2	1.704	17	39
C3	1.342	13	52
C4	1.107	11	63
C5	0.877	9	72
C6	0.691	7	79
C7	0.681	7	86
C8	0.557	6	92
C9	0.444	4	96
C10	0.401	4	100

**Table 8** Correlation between the principal components and the variables

	Component			
	F1	F2	F3	F4
Contract duration	−0.608	−0.144	−0.299	0.109
Up-front fees	−0.496	−0.480	−0.440	0.148
Royalty rate	−0.043	0.0430	−0.544	0.628
Min surface area	−0.582	−0.277	0.4380	−0.16
Outlet turnover	−0.439	−0.078	0.6057	0.334
Total franchisee investment	−0.684	−0.386	−0.008	−0.15
Franchising rate	0.455	−0.434	−0.089	−0.09
Age	−0.419	0.7031	−0.064	−0.15
Experience before franchising	−0.411	0.5540	−0.342	−0.39
Size	−0.133	0.4779	0.2735	0.564

principal component, we keep the three first components which explain more than 52% of the total variance.

To detect clusters, we use three factors in the PCA analysis, we overcome the potential correlation between variables using these factors, and the resulting PCA factors are uncorrelated. The analysis of factor correlations presented in Table 8 highlights three main factorial axes. The first is related to the financial obstacles for the franchisees. It associates higher financial barriers for the franchisees (higher entrance fees and initial investment, high surface area and estimated turnover) with a lower franchise rate (and vice versa). Higher financial barriers to franchising for franchisees are associated with a longer contract term. Hence, this factor also relates to the length of the payback period for the franchisee. This axis can be labeled “(financial) easiness and quickness of payback period for the franchisee.”

The second factor associates high age, high experience before franchising, large size, and low entrance fees and financial investment for franchisees with a low rate of franchising. Hence, this axis opposes two types of networks. The first group consists of networks that are well endowed with human and managerial capital

(high age, experience, and size) and also with financial capital (large size and low investment and entrance fees from the franchisees). These networks do not make much use of franchising. On the other end, this axis presents networks with a low endowment of human and managerial capital (low age, experience, and size) and requiring substantial financial resources from their franchisees (high initial investment and entrance fees). These networks have a high franchising rate. Thus, this axis can be labeled “franchising as a means to overcome resources scarcity.”

The third relevant factorial axis is more about the value-added rate of the activity and may encompass the sectorial affiliation of the network. On one extremity are highlighted networks with large outlets and a high predicted turnover, in addition to a low royalty rate, entrance fees, and experience before franchising the first unit. This picture is consistent with low value-added activities. On the other extremity are networks with higher royalty rates, entrance fees, and experience before franchising. The typical outlet as described by the franchisor is smaller. This picture is consistent with networks having higher value-added activities. This factorial axis is related to the value added and the complexity of network activities. Thus, it is relevant to assume that this axis integrates sectorial effects (e.g., services vs. retail) as it refers to the size (turnover and surface area) of the outlets. We label this factorial axis “value-added rate.”

## Appendix 2: Predictive Modeling

First, we split the data into training (2/3), to evaluate the model, and test set (1/3). The test set, i.e., the part of data never used in the training process, will be only used to validate the model.

We apply random sampling using stratified random methods (Kruskal and Mosteller 2004) and obtain a balanced training set and test set taking into account the cluster distributions in the original sample (Table 9). Then we normalize the variables since they have heterogeneous measures.

We use ten repeats of tenfold cross-validation (Picard and Cook 1984). This method aims at providing a nonbiased estimation of model errors. The results from the folds are averaged to produce a single estimation of accuracy. Accuracy is calculated for each model and represents the proportion of the total number of correct predictions. The confusion matrix shows (Table 10) the number of correct

**Table 9** % of stratified random sample

	Data (%)	Train (%)	Test (%)
Cluster 1	12.9	12.6	13.8
Cluster 2	11.3	11.6	10.3
Cluster 3	37.9	37.9	37.9
Cluster 4	15.3	15.8	13.8
Cluster 5	22.6	22.1	24.1

**Table 10** Theoretical confusion matrix and accuracy formula

Cluster	Model prediction				
	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Cluster 1	<b>a</b>	b	c	d	e
Cluster 2	f	<b>g</b>	h	i	j
Cluster 3	k	l	<b>m</b>	n	o
Cluster 4	p	q	r	<b>s</b>	t
Cluster 5	u	v	w	x	<b>y</b>

Accuracy = (a + g + m + s + y)/(a + b + c + d + e + f + g + h + i + j + k + l + m + n + o + p + q + r + s + u + v + w + x + y)

**Table 11** Model evaluation

Accuracy	Min.	1st qu.	Median	Mean	3rd qu.	Max.
Support vector machines	0.700	0.875	0.905	0.915	1.000	1.000
Random forest	0.400	0.721	0.800	0.815	0.892	1.000
Logistic regression	0.625	0.800	0.889	0.871	0.902	1.000
Conditional inference tree	0.200	0.500	0.600	0.611	0.707	0.909

and incorrect predictions made by the classification model, compared to the actual outcomes in the data. In our case the matrix is 5 × 5, where 5 is the number of target values (clusters). The following table displays a 5 × 5 confusion matrix for five clusters. So we estimate the rate error using ten repeats of tenfold cross-validation.

Table 11 compares the results of four classification models (support vector machines, random forest, logistic regression, and conditional inference tree). The best model is support vector machine, with more than 90% of correct predictions.

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