Plural Form and Firm Performance:

Franchising in Europe

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Abstract: This paper deals with the relationships between plural form and performance in franchised networks in Europe. We propose that a firm's plural form affects performance both independently and jointly with other firm characteristics. The firm's life cycle stage and human capital assets are considered characteristics that influence the relationship between plural form and performance. We estimate the model using panel data on 41 publicly listed European franchising networks in the 1998-2007 period. We use the proportion of a network franchised units to the total number of its units in its distribution system as the indicator of its plural form (franchise proportion). Following an instrumental approach, we measure the network performance at the franchisor level by its industry-adjusted Return on Assets (ROA) and we use a relative stock market valuation measure of human capital intangibles. The results show that the impact of franchise proportion on performance is greater for firms with high human capital value compared with firms with low human capital value. We also find that, for middle-aged firms, franchise proportion has a smaller impact on firm performance than for oldest firms. By combining these results, we show that franchise proportion has a positive impact on performance only for youngest and oldest firms with high human capital value.

Keywords: franchise, agency theory, corporate governance, plural networks, performance, human capital.

1 Introduction

The plural form, which is the combination of both franchised and company-owned units within a same network, is now widely used within franchising networks whatever the industry or country and has been theoretically based (Bradach 1997, 1998; Bradach and Eccles, 1989; Dant and Kaufmann, 2003). Although there is no ideal mix between these two arrangements, the simultaneous presence of both forms nevertheless brings synergies at the network level. In this article, we examine the relationship between plural form and performance using the context of franchising in Europe.

The literature about plural form is impressive considering its relative recent vintage. However, this literature is generally exploratory in nature and limited to one industry (often the fast food industry). There are fewer insights into performance implications of the plural form except using the DEA method in the hotel industry (Botti et al. 2009; Perrigot et al. 2009). As Heide (2003, p. 27) notes, "the specific performance implications of plural systems remain unanswered; …establishing a link between particular governance approaches and outcome variables seems an important research priority". In this article, we examine the following research questions: how does a firm's plural form, considered as a governance device, affect its performance?

Following Srinivasan (2006), we apply contingency theory, which proposes complementary effects of various aspects of a firm's profile and resources on its performance, to relate a firm's plural form to its performance. We propose that a firm's plural form affects its performance both independently and jointly with other firm characteristics. The firm's life cycle stage and value of human capital assets are considered characteristics that influence the effects of its plural form on its performance.

We estimate the model using panel data on 41 publicly listed European franchising networks in the 1998-2007 period, resulting in 237 firm years. We focus on the European market at a multi-industry-level, contrary to previous studies, which have mainly analyzed the US market in one specific industry. We use the proportion of a network's franchised units to the total number of its units in its distribution system as the indicator of its plural form (franchise proportion). Following an instrumental approach (Jones 1995), we measure the network's performance at the franchisor level by its industry-adjusted Return on Assets (ROA) and we use a relative stock market valuation measure of human capital intangibles. We assume that franchising has the same legal definition throughout the selected European companies even though in some countries franchising is defined differently (Dant et al. 2008).

The results show that the impact of franchise proportion on performance is greater for firms with high human capital value compared with firms with low human capital value. We also find that, for middle-aged firms, franchise proportion has a smaller impact on firm performance than for oldest firms. By combining these results, we show that franchise proportion has a positive impact on performance only for youngest and oldest firms with high human capital value.

We organized the article as follows. In the next section, we define plural form and several theories which propose to assess its financial performance and suggest another theory (Rajan and Zingales

2000). Hence, we develop the hypotheses related to this other theory. In the subsequent sections, we describe the data and the model estimation procedure, and then we present the results. The article concludes with a discussion of the study's contributions, its limitations, and opportunities for further research.

2 Literature review

After some considerations about plural forms, several theories are described and assessed through their capacity to assess the link between this organizational form and its financial performance: agency theory, resource scarcity theory, optimal risk allocation theory. Then another theory is proposed introducing intangible assets in order to assess plural form performance related to governance mode.

2.1 An overview of plural form

The concept of plural form has emerged from Bradach's work (1997; 1998). It is the combination of both franchised and company-owned units within a same network. The mix between these two arrangements is considered a key question (Shane 1998). Although there is no absolute ideal mix, the simultaneous presence of both forms nevertheless brings synergies at the network level. It is therefore widely used now within franchising networks whatever the industry. In this article, we define the proportion of network franchisee-owned units to the total number of units in its distribution system as the indicator of its plural form (franchise proportion).

Researchers from various academic areas such as economics, marketing, entrepreneurship, strategic management, etc., have enriched the growing franchising literature (Combs et al. 2004). Their theoretical approaches have mostly been grounded in agency theory and resource scarcity theory. According to agency theory, franchising is as a mechanism to improve the alignment between firm-and unit-level incentives. The resource scarcity theory views franchising as a mechanism to relax financial and managerial constraints during the development stage of the network. Oxenfeldt and Kelly (1968) explained through their concept of ownership redirection that firms franchise in order to get access to the scarce financial and managerial resources that are initially needed. Indeed, firms often first franchise and next repurchase the most profitable units.

These two main theories are not contradictory in the sense that they stress that a firm must attract resources and align incentives. Recently, Bürkle and Posselt (2008) contributed a new theory by taking into account the franchisor's risk considerations[1]. According to the authors, the costs of risk and controlling franchised units explain the varying proportion of franchisee-owned to total units, and the incentive to franchise decreases with an increasing proportion of franchisee-owned to total units, as well as with decreasing costs of control. In this article, we contribute a new explanation for the existence of plural form networks that considers the governance of the new enterprise (Rajan and Zingales 2000). Given the purpose of this paper, it is useful to review these theories and their implications for the franchisor's financial performance.

[1] In finance, the term risk is used to refer to the variability of uncertain outcomes (the chance of the loss of money or of receiving less than was expected).

2.2 Agency theory

A number of studies have explained the existence of franchising through agency theory (Fama and Jensen 1983; Matheson and Winter 1985; Brickley and Dark 1987; Lafontaine 1992). Potential shirking by the agent is a widely discussed problem in the franchise literature (Rubin 1978; Brickley and Dark 1987). Salaried managers may not always put forth their best efforts and therefore may produce sub-optimal performance. In order to reduce this moral hazard, a non-franchised firm may need to institute a costly monitoring system. Franchising, on the other hand, addresses this problem by providing powerful incentives for the owner-manager of the franchised unit to perform well. For example, owner-managers (i.e., the franchisees) have a direct claim to the residual profits of their units (Knott and McKelvey 1999). Also, because the franchisees have put their own capital at risk, they have a powerful incentive to make their franchised units successful (Brickley and Dark 1987). Because franchising aligns the interests of the two parties (the franchisor and the franchisee), there is less need for monitoring and a greater probability for maximum performance by the franchisee (Bradach 1997). Better performance by the franchisees should translate into improved performance by the franchisor, as the franchisor's performance depends to a large extent on its franchisees' performance. However, agency theory accounts suggest some disadvantages of plural form as well, including potential underinvestment and free riding by franchisees (Bergen et al. 1992).

2.3 Resource scarcity theory

An alternative theory explains franchising as a solution to the capital, managerial and informational constraints faced by expanding firms (Oxenfeldt and Kelly 1968; Caves and Murphy 1976; Norton 1988; Carney and Gedajlovic 1991; Shane 1996). This theory argues that expanding firms use franchising to get access to scarce capital (the franchisee's capital) in a cost effective way. A young expanding firm has two options to secure the capital it needs: sell equity or sell franchises. A third option, selling debt, may not be a possibility in the early stages of a firm's existence as it may lack collateral and a proven track record. Selling franchises may therefore be the more cost effective and realistic option (Dant and Kaufmann 2003). Furthermore, franchisees may be able to provide capital to the franchisor at a lower cost than passive investors can (Combs and Ketchen 1999a). In addition to capital, franchising also provides an efficient way to obtain the managerial expertise needed to grow the business. Because franchisees put a significant amount of their assets and time into their units, they are likely to purchase a franchise only if they are confident in their managerial abilities (Shane 1996). Thus franchising addresses the adverse selection problem of firms hiring managers who may overstate their qualifications to secure employment. Franchising also allows a firm to leverage the local market knowledge of its franchisees as it expands into new geographic areas (Minkler 1990). Low cost capital, motivated managerial expertise, and better local market knowledge are three key resources that should reduce a franchisor's overall risk and have a significant positive impact on a franchisor's performance.

2.4 Franchisor's optimal risk allocation

Bürkle and Posselt (2008) offer a model based on considerations of risk and control costs, that explains the proportion of franchisee-owned outlets in a system. They suggest considering franchising as a

mechanism to reduce the franchisor's risk. Although franchising increases the risk costs for the franchisee, the franchisor's saving of risk costs with each franchisee-owned unit may even be larger. As they show, an increasing proportion of franchisee-owned units creates an increasingly weaker incentive to transfer further units to franchisees, because the savings in (marginal) risk costs constantly decline. If a franchisor chooses the optimal proportion of franchisee-owned units then its overall risk should decrease and its financial performance should increase.

Nevertheless, plural form and finance is not only a matter of financial costs and resources: governance matters. The explanatory framework of franchise networks can be enriched through the Rajan-Zingales (2000) model. We now analyze franchising as the foundation for a financial architecture.

2.5 Governance of the New Enterprise

Rajan and Zingales (2000) argue that the greatest governance challenge firms face today is the demise of traditional sources of authority. Ownership and investments in physical assets were traditionally considered as having great influence on firm performance and for franchise systems as well (Thomas et al. 1990). As firms become increasingly human-capital intensive and as knowledge-based assets such as databases and patents have replaced physical assets, the enterprise in today's competitive marketplace needs more than simply ownership of these new assets to exercise control over employees. The authors argue that the way to rebuild authority lies in creating complementary links between a firm and the person or unit that the firm seeks to control. These links have to cause the person or unit to be better off by voluntarily following the firm's commands. In other words, this complementarity will exist when the unit or firm can create more value together than they can independently.

One form of building complementarities is through firm-specific specialization more than through generalized investments in human capital which are more likely to be imitated and transferred to other firms even though in some circumstances it can influence employee's or partner's commitment (Galunic and Anderson 2000). Owners and managers need to create a situation where employees or units know their rewards will be greater if they make firm-specific investments. The firm does this by giving key employees or units privileged access to the enterprise and its critical resources so that they have power if they specialize. This approach can be applied to franchising networks. Contributions of partners in franchising include a significant intangible or human component, and, consequently, it is difficult, if not impossible, to protect property rights by law. A number of intangible assets and/or knowledge assets are generated and used in franchise networks (Windsperger and Yurdakul 2007). Each of these resources, whether provided by the franchisor, the franchisee or internally generated, shows some characteristics of "animated" assets. Although franchisors appear as the legal owners of the concept or brand, they do not really own these strategic resources. In fact, the value of these resources depends, especially during the start-up and growth stages, on the investment in human capital by franchisees. However, it is important for a franchisor which is the head of the network, to control access to this strategic resource and to ensure its value by attracting and retaining franchisees, particularly those who found this value. Franchisees are also involved in this asset, first, because they contribute to its value as sellers and, second, because they benefit from it as investors in capital, but they do not control the

access.

Franchisors invest only a small part of capital and draw only a part of the rents generated but they must retain control of sources of value. On the contrary, the franchisees, who are residual creditors – of their outlets but also of the network - can claim financial rights, but have no control over valuable assets. Thus, the ownership of capital in these organizations, certainly gives a right on generated rents, but it does not allow to gain control and to value assets at best. As ownership no longer ensures control, the franchisor has to recover control over the valuable assets by other means.

For network performance and survival, it is crucial that the resource provided by the franchisor finds and keeps its "value enlightener", which makes it a strategic resource: a sales force motivated and competent to provide a fast deployment (to capture quasi-rents). The way to rebuild authority lies in creating complementarities between the franchisor and its franchisees. One form of building complementarities is to give franchisees (“animate” assets of the firm) privileged access to the enterprise’s resources (concept, methods, outlets’ results, information, decision rights or, at least, a right to examine strategic decisions…) and to a part of the generated rent. This access is a necessary condition for the investment in human capital by the asset (outlets) and it aims to increase its efficiency. But, once franchisees are efficient and own their customers and customers’ area, they could feel like escaping the network control or renegotiating the share of generated rent. To avoid these problems, the franchisor has to favour firm-specific specialization to rebuild authority of the franchisor over the network. This specialization does not deal with what is provided for in contracts (for instance, definition of customers’ area, covenants against competition, exclusivity agreement, …) but it is rather based on:

- the network information system (for instance, to specialize the outlet with a specific reporting method or a data exchange software could tie this outlet to the network as it cannot use it with other networks);
- the provision of materials, furniture, guarantees on sales or any other system which, if removed, would make the outlet value decrease in case the franchisee wants to disengage from the network.

Like in other organizations, the networks value relies more or less on animate (human) assets and complementarities. We propose that the more these animate assets found the value of the franchising network, the more the network should extend through franchising. Conversely, if the network value relies more on inanimate (accounting recorded) assets, the traditional ownership governance device should be more effective and the network should grow through ownership.

3 Hypotheses

Following Srinivasan (2006), we apply contingency theory, which proposes complementary effects of various aspects of a firm’s profile and resources on its performance, to relate a firm’s plural form to its performance. We propose that a firm’s plural form affects performance both independently and jointly with other firm characteristics. The firm’s life cycle stage and human capital intangibles are considered

characteristics that influence the effects of its plural form on its performance. We propose that under some conditions, defined by these interactions effects, the performance of the network will increase. Under other conditions, the performance will decrease. Because plural form offers both advantages and disadvantages, we hypothesize opposite effects when appropriate.

3.1 Plural form and life cycle stage

Franchising is traditionally presented as a means to overcome the scarcity of franchisor financial and managerial resources in the early stage of the network development (Caves and Murphy 1976). As franchise networks become mature, they get easier access to resources, and the need for franchising should decrease. However, Rubin (1978) criticized the capital scarcity explanation and suggested that franchising is an inefficient means for raising capital, as it would be more efficient for franchisors to create a portfolio of shares of all units, and to sell these to their managers, thereby diversifying risk. Norton (1995) criticized Rubin's argument because the supply of capital by the franchisees causes lower financial transaction costs than relying on external suppliers of capital. Several characteristics such as high growth opportunities, intangible and specific assets and information asymmetry could impact the cost of capital of the franchisor, especially in the early period of franchising.

Moreover, Bürkle and Posselt (2008) argue that, at the beginning of its life cycle, the franchisor lacks sufficient resources and is poorly diversified and therefore strongly risk averse. Initially outsourcing outlets through franchising provides particularly high savings in terms of risk costs for the franchisor. In contrast, networks that have reached an advanced stage of their life cycle tend to be less risk averse, and the risk costs have lesser significance for them. Efforts to save risk costs become commensurately low through the increasing proportion of franchisee-owned units. Consequently, a higher proportion of franchisee-owned units should enhance the franchisor's financial performance in early-stage networks whereas we expect a negative impact of the proportion of franchisee-own units on financial performance for larger networks that have reached an advanced stage of their life cycle.

It is also necessary to notice that the life cycle stage of the network has an influence on the importance of each environment variable or the resources of the network (Shane 1998). Hence, in phase of start-up and growth, the information asymmetry and the growth opportunities are probably more important than for maturity stage. This should lead to an increase in the cost of the financial resources for the franchisor with regard to the franchisee. Franchising would then appear as a cheap way of financing. In these phases, the essential stake for the network is to grow to become a leader by imposing its brand, which is the first challenge according to Bradach (1998). In this context of start-up/growth, franchising thus appears interesting. Hence, in the early stage of the network development, the cost of capital gap between the franchisor and the franchisees is lower so that, ceteris paribus, plural form has no impact on a firm's financial costs and performance. On the contrary, in the later stages of the network development, the cost of capital gap between the franchisor and the franchisees is higher so that on a pure financial costs basis, a high franchise proportion should enhance a firm's financial costs and lower financial performance. Given these opposite effects,

Hypothesis H1a (H1b): In the early (later) stages of the network development, the proportion of franchisee-owned units in a plural form network has a positive (negative) impact on a firm's financial performance.

3.2 Plural Form and Animate Assets

Dealing with plural form and finance is not only a matter of financial costs: governance matters. Based on the model of Rajan and Zingales (2000), franchising networks, which contain a high level of "animate assets" (human capital), need a specific governance system to be efficient. The plural form is such a governance system as it allows the development of trust (Bradach and Eccles 1989) and cooperation, a specific governance implementation, and the emergence of information resources. Hence, franchising in the plural form appears as the foundation of a financial architecture in the sense of Myers (1999).

Following Rajan and Zingales (2000), we considered franchising as a governance tool, which highlighted the importance of human capital as a determinant of governance structure and of the role played by ownership rights (Windsperger and Dant 2006) in this structure. When human capital and intangible assets represent only a small part of the enterprise value, ownership rights allow the shareholders to benefit from a legal security and to control the firm's assets and their value. On the contrary, as it is the case in most franchising networks, when human and intangible capital represents a major part of the firm's resources and value, ownership rights are no longer a sufficient means of control on valuable resources. This analysis leads us to argue that the more human capital is a valuable resource for the network, the more franchising will be an efficient governance form, ownership rights being simply used to share rents and to establish a confidence relationship. If the part of human capital in the network value diminishes, then the « classical » governance system recovers its relevance and the franchisor may find it attractive to own units. This hypothesis has to be qualified as several studies have shown that the service industries are less likely to significantly grow through franchising in order to keep control over the concept (Caves and Murphy 1976; Manolis et al. 1995). Human capital is indeed essential, so is its quality.

If the resources characteristics fit the governance system, then the plural form network may be efficient. The plural form and growth through franchising should perform better when networks value relies heavily on "animate assets". Given these opposite effects, we can infer from an efficiency argument[2] that franchisors with high value of animate assets should rely more on franchise in their development, so that,

Hypothesis H2a: In plural form networks, there is a positive link between the proportion of franchisee-owned units (franchise proportion) and the level of animate (intangible) assets.

[2] The "efficiency argument" states that firms should act in a way that optimises their performance to survive. If this is the case, our hypothesized effect of human capital on the performance-franchise proportion relationship should translate into a positive correlation between franchise proportion and human capital.

Frictions on the goods and services markets may deter market efficiency so that firms do not completely or instantly adapt their franchise proportion to their human capital value. If this is the case, we should observe a relationship between the network's franchise proportion and franchisor's performance. Firms with a high value of animate assets (relative to their industry) should exhibit a better performance (relative to their industry) for high levels of franchise proportion. Conversely, they should exhibit a lower performance for low levels of franchise proportion. Hence, we propose two opposite hypotheses (H2b and H2c) and a third one which is an attenuation of the formers (H2d):

Hypothesis H2b: For plural form networks whose value relies heavily on animate (intangible) assets, there will be a positive link between the proportion of franchisee-owned units (franchise proportion) and the network financial performance.

Hypothesis H2c: For plural form networks whose value relies heavily on inanimate (tangible) assets, there will be a negative link between the proportion of franchisee-owned units (franchise proportion) and the network financial performance.

Hypothesis H2d: The link between the proportion of franchisee-owned units (franchise proportion) and financial performance is greater for firms with a high value of animate assets than for firms with a low value of animate assets.

It should be noticed that hypotheses H1 and H2 are not independent. The enhanced financing costs of franchising as the networks mature developed in hypotheses H1 could moderate the expected effects of hypotheses H2. In this case, the positive effect of the proportion of franchisee-owned units on financial performance in hypothesis H2b will be more effective in the early stages of network growth. The negative effect of the proportion of franchisee-owned units on financial performance in hypothesis H2c will be more effective in the advanced stages of the network life cycle.

4 Method

4.1 Data

Franchising networks are expanding in Europe. The latest figures provided by the European Franchise Federation (2008) show that there are no less than 9,750 franchising networks in Europe.

We estimate the model using panel data on 41 publicly listed European franchising networks in the 1998-2007 period, resulting in 237 firm years (firms x years). We focus on the European market at a multi-industry-level, contrary to previous studies which have mainly analyzed the US market in one specific industry. We obtained our data from various sources, including Worldscope, the firms' annual reports, and several Franchising websites. Some firms entered after 1998 or exited before 2007, reducing the number of firm years. The average number of firm years was 5,78 (minimum = 1 year; maximum= 10 years). Most of firm years data stem from French Franchisors as there are 151 observations from 29 French firms from France. We also have 20 observations from 3 UK firms, 17 observations from 2 German firms, 15 observations from 3 Italian firms, 10 observations from Belgium, 9 from the Netherlands, 8 from Spain, and 7 from Denmark (only one firm concerns these

latter countries). We adopt industry classification schemes of Datastream. Firms in our sample are distributed in 13 industries. Clothing is the first one (67 observations), followed by mass distribution and special retail (37 obs. each), restaurants (31 obs.), do-it-yourself stores (21 obs.), and hotels (10 obs.). All other sectors (medical, real estate, travel, financial services, material, audio and video product, education) have less than 10 observations.

4.2 Measurement scales

We assume that franchising has the same legal definition throughout the selected European countries even though in some of them franchising can be defined differently (Dant et al. 2008). We use the proportion of a network's franchised units to the total number of its units in its distribution system as the indicator of its plural form (franchise proportion). This is a continuous measure bounded between 0 (only owned units) and 1 (only franchised units). Following an instrumental approach (Jones 1995), we measure the network's performance at the franchisor level by its industry-adjusted return on assets. Industry-adjusted return on assets is the return on assets of each company in the sample less the median return on assets of the industry[34].

We use a relative stock market valuation measure of human capital intangibles proposed by Pantzalis and Park (2009). We measure excess value of human capital (EVHC) of firm (or franchisor) i as the natural log of the ratio of firm's market value of common equity (V) per employee (EMP) to the industry's median (m) value of market value of common equity per employee:

$$EVHC_{i,t} = \ln\left[\left(\frac{V}{EMP}\right)_{i,t} \Big/ \left(\frac{V}{EMP}\right)_{m,t}\right]$$

Following Pantzalis and Park (2009), we assume that EVHC reflects the market's assessment of the quality of the human capital employed by the firm. We use EVHC as a continuous variable but we also create a dummy variable (EVHC=1) that takes on the values 1 for high human capital (EVHC above the median) and 0 for low human capital (EVHC below the median).

The life cycle stage has already been used to show the evolution of growth in control and profitability in franchise systems (Anderson 1984). It is also a key concept concerning cooperative relationships between firms (Jap and Anderson 2007) even though one should be aware of eventual dark side in too

[3] Datastream database provides, for each firm, related companies for comparison purposes. These related companies are defined according to their industry. For one firm in our sample (Bang and Olufsen, audio and video product, group code "CNELE" in Datastream), Datastream does not provide related companies in the EU. For this company, we adjust performance and human capital measures with the median of the total sample of related companies.

[4] We also use two other measures of financial performance as dependent variables: industry-adjusted return on equity, computed in a similar way to industry-adjusted ROA, and total shareholder return, computed as the market capitalization growth. Results are not reported in this paper as we find that our results are less significant.

close relationships (Anderson and Jap 2005). It is proxied here by a categorical variable. We use the firm's age (the number of years since its incorporation) to create three categories of firms in our sample. Firms are thus classified into tertiles (thirds). This variable takes on the values 1 for youngest firms in sample (first tertile), 2 for middle-aged firms (second tertile) and 0 for oldest firms (third tertile).

The control variables are the firm's size (natural log of total assets), financial leverage (long-term debt to total assets), and internationalization (number of domestic outlets to total number of outlets). Table 1 contains the descriptive statistics and Table 2 contains the correlations matrix of the measures.

Table 1
Descriptive Statistics (N = 237)

Variable	Industry-adjusted ROA	Franchise proportion	Size	Financial leverage	International
Mean	-2.5970	0.5021	12.7364	0.1561	0.6777
Median	-1.2900	0.4509	12.4823	0.1302	0.7558
Maximum	44.7300	0.9990	17.7471	0.5969	1.0000
Minimum	-80.7100	0.0000	8.4879	0.0000	0.0000
Std. Dev.	10.8500	0.3236	2.0678	0.1208	0.3112

Table 2
Correlations matrix (N = 237)

Variable (t-stat)	1	2	3	4	5	6	7	8
1. Industry-adjusted ROA	1.0000							
2. Franchise proportion	0.0269 (0,4129)	1.0000						
3. Franchise proportion x EVHC=1	0.1315* (2.0332)	0.6355** (12,6186)	1.0000					
4. Franchise proportion x Age =1	0.0511 (0.7846)	0.2852** (4.5615)	0.1726** (2.6862)	1.0000				
5. Franchise proportion x Age=2	-0.0284 (-0.4359)	0.3801** (6,3002)	0.2720** (4.3330)	-0.2176** (-3,4168)	1.0000			
6. Size	0.0544 (0.8354)	0.0485 (0,7443)	0.1718** (2.6732)	-0.2139** (-3.3569)	0.0382 (0.5853)	1.0000		
7. Financial leverage	0.0026 (0,0403)	-0.2654** (-4.2213)	-0.1660** (-2.5812)	-0.1685** (-2.6204)	0.0329 (0,5043)	0.2284** (4,5965)	1.0000	
8. International	-0.0105 (-0.1610)	-0.2502** (-3.9608)	-0.1395** (-2,1599)	0.1623** (2.5207)	-0.0591 (-0.9069)	-0.3205** (-5,1877)	0.0835 (1.2852)	1.0000

*p< .05. **p< .01.

The correlations were within acceptable limits (highest correlation = .6355 between franchise proportion and franchise proportion x EVHC=1). We assessed potential threats from multicollinearity. The variance inflation factors were lower than 10 (maximum = 2.24), suggesting that multicollinearity is not a threat to the validity of the study's findings.

5 Results

We first test the relationship between franchise proportion and human capital (H2a). A simple test for equality of means reveals that franchise proportion is significantly higher for high human capital firms (EVHC=1) than for low human capital firms (mean for (EVHC=0) = 0.4177 vs mean for (EVHC=1) = 0.5916, t-test= -4.28). The result is the same with a test for equality of medians (median franchise proportion for (EVHC=0) = 0.3645 vs (EVHC=1) = 0.5395, Wilcoxon/Mann-Whitney statistic = 4.11). In the first model (Table 3), franchise proportion is the dependent variable and EVHC, used as a continuous variable, is the independent variable. We also include control variables that could influence franchise proportion: franchisor's age, size, financial leverage and internationalisation. The regression includes a cross-section fixed effect as a redundant fixed effect test showed that this specification was the best. Table 3 contains the results of the first model. Although a correlation analysis shows a significant positive correlation between franchise proportion and EVHC (correlation = 0.3108, t= 5.0126), we do not find any positive impact of animate assets on franchise proportion. Results show that only the internationalisation variable coefficient is positive and significant (p= 0.0836), indicating that the less the network is developed abroad the more it franchises. None of the other explanatory variables are significant and the adjusted R-square is very high. This could indicate a potential threat from multicollinearity. But the correlations are within acceptable limits (highest correlation = 0.38 between age and size), and regressors' variance inflation factors are all below 2. These results could be explained by the relative stability during the study period of the dependent variable (franchise proportion) for each franchisor: the cross-section fixed effect (constant) explains most of the explanatory power of the regression. Anyway, results do not corroborate hypothesis H2a.

Table 3
Results for the Model Relating a Firm's Human Capital Value to Its Plural form
(N = 237)

Variable	Constant	EVHC	Age	Size	Financial leverage	Internatio-nalisation
Coefficient (t-stat)	0.1253 (0.3802)	0.0034 (0.2001)	0.0011 (0.3154)	0.0194 (0.7480)	-0.1400 (-1.3294)	0.1572* (1.7394)
R2=0,9117	Adj. R2=0.8909	Log Likelihood 219,19	F-stat 43.83	Prob (F-stat) 0.0000	AIC -1.4616	

The regression includes a cross-section fixed effect; *p<0.1

Table 4 contains the results of the models relating a firm's plural form to its financial performance. Model 1 relates the franchisor's performance (industry-adjusted return on assets) to the network's franchise proportion, and the interaction between franchise proportion and human capital, measured as a categorical variable (EVHC=1).. Model 2 relates the franchisor's performance to the franchise

proportion and the interaction between franchise proportion and age. Model 3 integrates both interaction effects. All the regressions are estimated using a cross-section fixed effect, as a redundant fixed effect test showed that this specification was better than time-effect or no fixed effect.

Table 4
Results for the Model Relating a Firm's Plural Form to Its Performance
(N = 237)

Panel data regressions of industry-adjusted return on Assets on network's franchise proportion, categorical variables regarding human capital and firm age, and control variables. All regressions are estimated including a cross-section fixed effect.

Variable	**Model I**	**Model II**	**Model III**
Constant	-62.2675** (-2.08)	-44.9062 (-1.53)	-64.6568 (-0.77)
Franchise proportion	4.8872 (0.75)	9.4741 (1.22)	7.1443 (0.93)
Franchise proportion x EVHC=1	9.6939** (2.38)		11.0302*** (2.68)
Franchise proportion x Age=1		-0.9711 (-0.1216)	-0,4978 (-0.06)
Franchise proportion x Age=2		-6.7411 (-1.44)	-8.3380* (-1.80)
Size	4.2959* (1.96)	3.1774 (1.46)	4.3585** (1.99)
Financial Leverage	-11.0282 (-1.20)	-14.6468 (-1.60)	-10.1164 (-1.11)
Internationalisation	2.1259 (0.26)	0.8976 (0.11)	4.1848 (0.5126)
R-squared	0.3768	0.3669	0.3902
Adjusted R-squared	0.2300	0.2137	0.2386
S.E. of regression	9.5207	9.6212	9.4676
Sum squared resid	17313.01	17587.84	16940.92
Log likelihood	-844.79	-846.6565	-842.4146
F-statistic	2.5667	2.3942	2.5735
Prob(F-statistic)	0.0000	0.0000	0.0000
Akaike info criterion	7.5172	7.5414	7.5124
Schwarz criterion	8.1903	8.2292	8.2148
Hannan-Quinn criter.	7.7885	7.8186	7.7955
Durbin-Watson stat	1.6402	1.5562	1.6268

*p<.10; **p<.05; ***p<.01

Results from Model 1 show that, for franchisors with low human capital (EVHC=0), the impact of franchise proportion on performance is positive non significant (coef = 4.89, t= 0.75). H2c is, hence, not verified. For franchisors whose value relies heavily on animate assets (EVHC=1), the impact of franchise proportion is significantly greater (coef= 9.69, t= 2.38), verifying H2d. A Wald test reveals that the impact of franchise proportion for high human capital firms is positive and significant (coef = 14.58, t= 2.04). H2b is thus verified. Actually, results are in line with our expectations, except the sign of franchise proportion coefficient on performance for low human capital firms, which is positive (negative expected) but not significant.

Results from Model 2 show that, for oldest firms in our sample, franchise proportion has a positive but non significant effect on firm performance (coef= 9.47, t= 1.22). This effect is not different either for youngest firms (age=1) or middle-aged firms (age=2). These results are not in line with our expectations as we predicted an opposite effect of franchise proportion for youngest firms compared with oldest firms. They do not show a differentiated effect of franchise proportion on performance depending on the franchisor's age. Results from Model 2 do not corroborate H1a or H1b.[5]

Model 3 takes into account the fact that hypotheses H1 and H2 are not independent and that we have to include the combined effects of age and human capital on the franchise proportion-performance relationship. The franchise proportion has no significant impact on performance for oldest firms with a low human capital (coef= 7.14, t= 0.93). As in Model 1, a high human capital has a positive and significant impact on the relationship between franchise proportion and performance (coef= 11.03, t= 2.67). As in Model 2, the effect of age on the franchise proportion-performance relationship is negative but it is now slightly significant for middle-aged firms (coef= -8.33, t= 1.80). By combining these effects and analyzing the franchise proportion-performance relationship for firms with high human capital through Wald tests, results show a positive and significant effect of franchise proportion on performance for oldest firms (coef= 18.17, t= 2.19) and for youngest firm (coef= 17.67, t= 2.13). The effect of franchise proportion for middle-aged firms with high human capital is still positive, but non significant (coef= 9.84, t= 1.28). Hence, the age variable moderates the impact of human capital on the relationship between franchise proportion and performance. For firms with low human capital, the relationship is positive (for youngest and oldest firms) or negative (for middle-aged firms) but never significant. Hence, the age variable is still playing a moderating role but its effect is not strong enough to lead to a significant effect. These results show a significant impact of a high human capital on the franchise proportion-performance relationship, thus verifying hypotheses H2b and H2d. On the contrary, the observed impacts are not in line with our expectations regarding low human capital firms and regarding the effect of age on the franchise-performance relationship: H2a and H2c are thus not verified.

Table 5 contains a summary of hypotheses and results regarding the impact of franchise proportion on performance (hypotheses H1a, H1b, H2b, H2c, and H2d). Results are in line with our expectations, although not always significant, with regard to the human capital effect on the franchise proportion-performance relationship, but reveals unexpected results concerning the age effect. The effect of franchisor's age on the franchise proportion-performance relationship is weak and, contrary to our expectations, it is more negative for middle-aged firms, not for the oldest ones.

[5] As the sample is mainly composed of French networks, it is useful to notice that, since 1989, a law (the Doubin Act) has been passed to enforce franchisors to run first at least one company-owned unit before franchising other units and the FFF (French Federation of Franchising) recommends to its members to respect the following rule: 2 x 3 or 3 x 2 which means that it is more suitable for a franchisor to show s/he able to run a franchising chain when s/he is still able to run 2 units during 3 years or 3 units during 2 years (deontology Code of the FFF).

Table 5
Hypothesized (*and observed*) impact of Franchise Proportion on Performance

		Life cycle stage of the network		
		Early	Middle-aged	Old
		H1a : + *(positive non significant: H1a not verified)*	Undetermined *(positive non significant)*	H1b : - *(positive non significant: H1b not verified)*
Human Capital Intangibles: High	H2b : + *(positive significant: H2b verified)*	positive *(positive significant)*	positive *(positive non significant)*	undetermined *(positive significant)*
Human Capital Intangibles: Low	H2c : - *(positive non significant: H2c not verified)*	undetermined *(positive non significant)*	negative *(negative non significant in absolute; slightly significant compared to oldest firms)*	negative *(positive non significant)*
Difference High-Low	H2d : + *(positive significant: H2d verified*	Positive *(positive significant)*	Positive *(positive significant)*	Positive *(positive significant)*

Formatiert: Portugiesisch (Portugal)

Formatiert: Portugiesisch (Portugal)

6 Discussion and conclusion

Despite the growing importance of plural form networks in practice, there are few insights into their financial performance implications. In this article, we explore the relationship between plural form and financial performance. We conclude with a discussion of the theoretical contributions, managerial implications, and limitations and opportunities for further research.

6.1 Theoretical Contributions

First, by relating plural form to financial performance, this article addresses the call for research on the performance implications of plural governance in general and plural form in particular (Heide 2003). The findings indicate that the impact of franchise proportion on performance is greater for firms with high human capital value compared with firms with low human capital value. We also find that, for middle-aged firms, the impact of franchise proportion is significantly smaller than for oldest firms, leading to a negative (non significant) impact of franchise proportion on performance for these firms. By combining these results, we show that franchise proportion has a positive impact on performance for youngest and oldest firms with high human capital value. These results might suggest that youngest and oldest networks with high human capital should increase their franchise proportion to enhance their financial performance. For youngest firms, the results are in line with our analysis. For oldest firms, it could be that over time, most high potential markets are covered by a firm's existing distribution

system so that its expansion may be limited to smaller, remote markets, which are more efficiently served by market-based channels (Lafontaine and Shaw 2005). These results hold only for firms with high human capital value since we find no significant relationship between franchise proportion and performance for firms with low human capital. Results also indicate that middle-aged firms, whatever their human capital value, should avoid growing through franchising as it could lower their financial performance.

Second, as far as we know, it is the first substantial and empirical study of the plural form on a non-Anglo-Saxon market. Indeed, most of the previous papers dealing with franchising are focusing on Anglo-Saxon countries and, as far as the plural form is concerned, they mainly dealt with the USA. Here, the empirical study concerns the European franchising market and compare various industries, mainly in the retailing sector and the services sector.

6.2 Managerial Implications

The study's findings are relevant and useful for practitioners: the franchisors and the franchisees when they have respectively to choose to develop and to join a franchising network. From the franchisors' point of view, it seems that younger and older firms with high human capital value can improve their performance by increasing their franchise proportion. This is not the case for other franchisors, and in particular for middle-aged networks. Assuming that this franchisor's performance impact is not due to a wealth transfer between franchisees and franchisors, it could help franchisees to choose their network. Franchise stakeholders will be able to take into account the various advantages of plural form within their process of choice: the choice of the organizational form by the franchisor and the choice of the network form by the franchisees which consider the franchise proportion as an important issue (Lafontaine 1992). These results reinforce the existence of synergies provided by the coexistence of franchising and company ownership within the same network, and also highlight some of its limits.

6.3 Limitations and Opportunities for Further Research

The study's sample (N=41), though close to the total population of listed franchising networks in Europe, is small. This is detrimental to the significance of the results and it raises questions about the generalizability of the study's findings. Further research on performance in plural form networks with larger sample sizes would represent useful extensions, but some insights may improve quality of the results.

One of the explanatory variables in this study is the firm's life cycle stage, as (roughly) measured by three categories based on firm's age classified in tertiles. Research extensions using alternative life cycle stage measures, including sales growth, would both complement and extend the study's findings.

In this study, plural form in franchising is viewed as a governance device dissociating ownership and decision rights, which is more efficient than full ownership when human capital is high in the networks. Actually, this may not be always the case: it may exist some ways to reconcile ownership and decision rights in the network, even if the network exhibits an apparent high franchise proportion.

Multi-franchising (ownership of multi-outlets in the network by one or more franchisees) can be such an organizational form, as it confers more power to the franchisee with regard to the franchisor (Kaufmann and Dant 1996), and can, hence, reconcile decision and ownership rights. We should control for variables (like multi-franchising) that can alter our results. But they are not publicly available information (at least for a large part of our sample regarding multi-franchising), and including such control variables requires new data collection methods.

Finally, our empirical tests rely on regressions with interaction effects between franchise proportion and life cycle stage or human capital value. Other empirical methodologies would extend the study's results. Srinivasan (2006) uses latent class regression that classifies the sample's observations into classes and estimates regression models within each class. This methodology could be used on our sample, using human capital and life cycle stage as variables to constitute the latent classes.

REFERENCES

Anderson E. (1984) The Growth and Performance of Franchise Systems: Company versus Franchisee Ownership, *Journal of Economics and Business*, 36, 421-431.

Anderson E., Jap S. D. (2005) The Dark Side of Close Relationships, *Sloan Management Review*, 46(3), 75-82.

Bergen M., Dutta S., and Walker O.C.Jr (1992) Agency Relationships in Marketing: A Review of the Implications and Applications of Agency and Related Theories, *Journal of Marketing*, 56 (July), 1-24.

Botti L., Briec W., Cliquet G. (2009) Plural forms versus franchise and company-owned systems: A DEA approach of hotel chain performance, *Omega*, 37, 566-578.

Bradach J. L. (1997) Using the Plural Form in the Management of Retail Chains, *Administrative Science Quarterly*, 42, 276-303.

Bradach J. L. (1998) *Franchise Organizations*, Harvard Business School Press, Boston, Massachusetts.

Bradach J. L., Eccles R. G. (1989) Price, Authority and Trust: From Ideal Types to Plural Forms, *Annual Review of Sociology*, 15, 97-118.

Brickley J. A., Dark F. H. (1987) The Choice of Organizational Form: The Case of Franchising, *Journal of Financial Economics*, 18, 401-20.

Bürkle T. and Posselt T. (2008) Franchising as a plural system: A risk-based explanation, *Journal of Retailing*, 84 (1), 39-47.

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

Caves R. E., Murphy W. F. (1976) Franchising: Firms, Markets and Intangible Assets, *Southern Economic Journal*, 42, 572-86.

Cliquet G. (2000a) Plural Form Networks and Retail Life Cycle: An Exploratory Investigation of Hotel Franchised/Company-Owned Systems in France, *Journal of Business and Entrepreneurship*, 12 (2), 75-98.

Cliquet G. (2000b) Plural Forms in Store Networks: a Model for Store Network Management, *The International Review of Retail, Distribution and Consumer Research*, 10, 4, 369-387.

Combs, J. G. and Ketchen, D. J. 1999a Can Capital Scarcity Help Agency Theory Explain Franchising? Revisiting the Capital Scarcity Hypothesis, *Academic Management Journal*, 42, 196-207.

Combs, J. G. and Ketchen, D. J. 1999b Explaining Interfirm Cooperation and Performance: Toward a Reconciliation of Predictions from the Resource-Based View and Organizational Economics, *Strategic Management Journal*, 20, 867-888.

Combs J. G., Michael S. C., Castrogiovanni G. J. (2004) Franchising: A Review and Avenues to Greater Theoretical Diversity, *Journal of Management*, 30, 6, 907-931.

Curran J., Stanworth J. (1983) Franchising in the Modern Economy - Towards a Theoretical Understanding, *International Small Business Journal*, 2, 2, 8-26.

Dant R. P., Kaufmann P. J. (2003) Structural and Strategic Dynamics in Franchising, *Journal of Retailing*, 79, 63-75.

Dant R. P., Perrigot R., Cliquet G. (2008) A Cross-Cultural Comparison of the Plural Forms in Franchise Networks: USA, France, and Brazil, *Journal of Small Business Management*, 46 (2), 286-311.

European Franchise Federation (2008) *The European Franchise Federation's Newsletter*, September, (accessed May, 14, 2009), [available at http://www.eff-franchise.com/spip.php?rubrique3].

Fama E., Jensen M. (1983) Separation of Ownership and Control, *Journal of Law and Economics*, 26, 301-325.

Galunic D. C., Anderson E. (2000) From Security to Mobility: generalized Investments in Human Capital and Agent Commitment, *Organization Science*, 11(1), 1-20.

Heide J.B. (2003) Plural Governance in Industrial Purchasing, *Journal of Marketing*, 67 (October), 18-29.

Jap S. D., Anderson E. (2007) Testing a Life-Cycle Theory of Cooperative Interorganizational Relationships: Movement Across Stages of Performance, *Management Science*, 53(2), 260-275.

Jones T.M. (1995) Instrumental Stakeholder Theory, a Synthesis of Ethics and Economics: A Survey, *Academy of Management Review*, 20, 2, 404-437.

Jones C., Hesterly W. S., Borgatti S. P. (1997) A general theory of network governance: Exchange conditions and social mechanisms, *Academy of Management Journal*, 22, 4, 911-45.

Kaufmann P. J., Dant R. P. (1996) Multi-Unit Franchising: Growth and Management Issues, *Journal of Business Venturing*, 11, 343-58.

Knott A.M., McKelvey B. (1999) Nirvana efficiency: a comparative test of residual claims and routines, *Journal of Economic Behavior and Organization*, 38, 365-383

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

Lafontaine F., K.L. Shaw (2005) Targeting Managerial Control: Evidence from Franchising, *RAND Journal of Economics*, The RAND Corporation, vol. 36(1), 131-150.

Manolis C., Dahlstrom R., Nygaard A. (1995) A Preliminary Investigation of Ownership Conversions in Franchised Distribution Systems, *Journal of Applied Business Research*, 11, 2, 1-8.

Mathewson G. F., Winter R. A. (1985) The Economics of Franchise Contracts, *Journal of Law and Economics*, 28, 503-26.

Myers S. C. (1999) Financial Architecture, *European Financial Management*, vol. 5, n°2, 133-141.

Norton, S. (1988) An Empirical Look at Franchising as an Organizational Form, *Journal of Business*, 61(2), 197-218.

Norton S. W. (1995) Franchising, Brand Name Capital, and the Entrepreneurial Capacity Problem, *Strategic Management Journal*, 9, 105-114.

Oxenfeldt, A. R., Kelly, A. O. (1968) Will Successful Systems Ultimately Become Wholly-Owned Chains?, *Journal of Retailing*, 44 (49), 69-83.

Pantzalis C., Park J.C. (2009) Equity market valuation of human capital and stock returns, *Journal of Banking & Finance*, Volume 33, Issue 9, September, 1610-1623.

Perrigot, R., Cliquet, G., Piot-Lepetit, I. (2009) Plural form chain and efficiency: Insights from the French hotel chains and the DEA methodology, *European Management Journal*, 27, 268-280.

Rajan R. G., Zingales L. (2000) The governance of the new enterprise, In: X. Vives (ed.), *Corporate Governance: Theoretical and Empirical Perspectives*, Cambridge.

Rubin P. H. (1978) The Theory of the Firm and the Structure of the Franchise Contract, *Journal of Law and Economics*, 21, 222-233.

Shane S. A. (1998) Explaining the distribution of franchised and company-owned outlets in franchise systems, *Journal of Management*, 24, 6, 717-39.

Srinivasan R. (2006) Dual Distribution and Intangible Firm Value: Franchising in Restaurant Chains, *Journal of Marketing*, Vol. 70, (July), 120-135.

Thomas W. L., O'Hara M. J., Musgrave F. W. (1990) The effects of ownership and investment upon the performance of franchise systems, *The American Economist*, 34, 1, 54-61.

Windsperger J., Dant R.P. (2006) Contractibility and the Ownership Redirection in Franchising: A Property Rights View, *Journal of Retailing*, Volume 82, Issue 3, 259-272.

Windsperger J., Yurdakul A. (2007) The Governance Structure of Franchising Firms: A Property Rights Approach, In: G. Cliquet et al. (eds.), *Economics and Management of Networks. Franchising, Strategic Alliances, and Cooperatives*, Heidelberg.