Plural Form and Franchisors Performance : Early Empirical Findings From Europe

Frédéric Perdreau, Anne-Laure Le Nadant, Gérard Cliquet

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Abstract: This paper deals with the relationships between plural form and performance in franchising networks in Europe. It is proposed that a franchisor's life cycle stage and human capital assets influence the relationship between plural form and performance. The model has been estimated using panel data on 41 publicly listed European franchising networks in the 1998-2007 period. The proportion of network-franchised units to the total number of its units in its distribution system is used as the indicator of its plural form (franchise proportion). Following an instrumental approach, the network performance is measured at the franchisor level by its industry-adjusted Return on Assets (ROA) and a relative stock market valuation measure of intangible human capital is used. The early results show that the impact of franchise proportion on performance is greater for franchisors with high intangible human capital compared to franchisors with low intangible human capital. Overall, results provide support for the contention that the franchisors' performance is contingent on the 'fit' between governance structure (franchise proportion) and resources (critical human assets). In contrast, strong evidence that the governance/performance relationship is contingent on life cycle stage or franchisor's age is not found. But, our results suggest that franchisor's age could weaken the relationship between franchise proportion and performance. These results might suggest that younger franchisors with high human capital should increase their franchise proportion to enhance their financial performance.

1 Introduction

The plural form, a combination of both franchised and company-owned units

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within a same network, is now widely used within franchising networks (Bradach 1997, 1998; Dant and Kaufmann 2003). Although there is no ideal mix between these two arrangements[†], the simultaneous existence of both forms results in synergies at the network level. This article examines the relationship between plural form and performance using the context of franchising in Europe.

In recent years, many studies on plural form have been published (Bürkle and Posselt 2008; Ehrmann and Spranger 2004; Lafontaine and Shaw 2005). However, 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) or developing relationships between the performance of a franchise chain and the resources provided to outlets and opportunism and knowledge considerations (Barthélemy 2008) or assessing performance through survival analysis (Perrigot 2008; Shane and Foo 1999). 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 franchisor's plural form organization affect its performance? We apply the 'critical' assets view of control of Rajan and Zingales (2000), which states that access to critical assets (franchisor's know-how, business format and brand name but also franchisee's intangible human assets) influences the tendency toward plural form (proportion of franchisee-owned outlets). It is proposed that the impact of plural form on the performance of the network is moderated by the value of intangible human assets and the life cycle stage of the franchisor.

The model is based on panel data from 41 publicly listed European franchising networks in the 1998-2007 period, resulting in 237 observations. The focus is on the European market at a multi-industry-level, contrary to previous studies, which have mainly analyzed the US market in one specific industry. The proportion of a network's franchised units to the total number of its units in its distribution system is used as the indicator of its plural form (franchise proportion). Following an instrumental approach (Jones 1995), the network's performance at the franchisor level is measured by its industry-adjusted Return on Assets (ROA) using a relative stock market valuation measure of human capital intangibles (Pantzalis and Park 2009). It is assumed that franchising has the same legal definition throughout the European countries because selected companies are all business format franchising oriented. In some countries franchising is defined differently (Dant et al. 2008) and thus international studies should be made cautiously in franchising research.

The article is organized as follows: in the next section, plural form networks and

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[†] Even though franchisors can have a desired proportion of franchisees. Lafontaine and Kaufmann (1994) encourages researchers to find an optimal proportion of franchised outlets.

several theories, which propose to assess their financial performance, are defined and the 'critical' assets approach of Rajan and Zingales (2000) is proposed. Hence, the hypotheses were developed using this approach. In the subsequent sections, the data and the model estimation procedure are described, and then the results are presented. The article concludes with a discussion of the study's contributions, its limitations, and opportunities for further research.

2 Literature review

After some consideration of plural forms, several theories are described and their capacity to assess the link between this organizational form and its financial performance is examined using agency theory, resource scarcity theory and optimal risk allocation theory. Then, the approach based on the 'critical' assets view of Rajan and Zingales is presented.

2.1 Plural form

The concept of plural form was defined by Bradach and Eccles (1989) and studied by Bradach (1997). It is the combination of both franchised and company-owned units within a same network. Although there is no ideal mix, the simultaneous presence of both forms results in synergies at the network level (Bradach 1998). It is therefore widely used, now, within franchising networks in different industries. 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 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 acts as a governance mechanism to improve the alignment between firm- and unit-level incentives. The resource scarcity theory views franchising as a governance mechanism that relaxes the franchisor's 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 gain access to the scarce financial and managerial resources that are initially needed. Following this thesis, firms should first franchise and then repurchase the most profitable units.

These two main theories are complementary because they argue that a firm must attract resources and align incentives. Recently, Bürkle and Posselt (2008) contributed a new theory, taking into account the franchisor's risk considerations[‡]. According to these authors, the costs of risk and controlling franchised units explain the varying proportion of franchisee-owned to total units, and the

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[‡] 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).

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, a novel explanation for the existence of plural form networks based on the governance view of Rajan and Zingales (2000) is presented.

2.2 Agency theory

Agency theory (Fama and Jensen 1983) is one of the major theories used to explain franchising (Mathewson and Winter 1985; Brickley and Dark 1987; Lafontaine 1992). Potential shirking by the agent is a widely discussed problem in franchise literature (Rubin 1978; Brickley and Dark 1987). Salaried managers may not always put forth their best efforts and therefore may exhibit sub-optimal performance. In order to reduce this moral hazard, a non-franchised firm may need to develop 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 insure the success of their franchised units (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 (Lafontaine 1992). 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; Martin 1988).

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 acquire the capital it needs: equity or franchising. A third option is debt, which may not be a possibility in the early stages of a firm's existence due to the high information asymmetry between the franchisor and external suppliers of capital. Selling franchises may therefore be the more cost effective and realistic option (Dant and Kaufmann 2003) despite contrary opinion in the literature (Rubin 1978). Furthermore, franchisees may be able to provide capital to the franchisor at a lower cost than passive investors (Combs and Ketchen 1999). In addition to capital, franchising also provides an efficient way to obtain the managerial expertise needed to help the business grow. 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) even though information from franchisees rarely feed back the franchisor (Bradach 1998): it is one of the reasons why this latter author enhances the role of plural form networks. 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 Risk-based Explanation of Plural form

Bürkle and Posselt (2008) offer a model based on considerations of risk and control costs, which 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. The model of Blair and Kaserman (1982) is developed differently but it leads to conclusions that are congruent with that of Bürkle and Posselt (2008).

2.5 A 'critical' asset view of plural form

Rajan and Zingales (2000) argue that the greatest governance challenge firms face today is that of the demise of traditional sources of authority. Ownership and investments in physical assets were traditionally considered as having great influence on firm performance (Thomas et al. 1990). As firms become increasingly human-capital-intensive and as knowledge-based assets have replaced physical assets, intangible (and inalienable) assets have replaced tangible assets as the firms' main source of value. The enterprise in today's competitive marketplace needs more than ownership of tangible assets to exercise control over critical (valuable) assets[§]. Rajan and Zingales (2001, p. 3) state that: "while ownership legally links an inanimate asset to a firm, complementarities economically link some person or unit that cannot be owned to the critical resource at the core of the firm". Hence, when critical assets are human, the way to exercise authority relies on creating complementary links between a firm and the person or unit that the firm seeks to control. Thus, Rajan and Zingales (2001, p. 3) conclude that: "unlike ownership of unique alienable assets, which can be allocated simply by sale, control over other critical [animate] resources has to be built up through a variety of mechanisms such as internal organization, work rules, and incentive schemes. These mechanisms then induce complementarities between a resource and other resources." This critical assets view of control could be summarized by the following proposition: the more important the intangible

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[§] Critical assets are those that tie assets of the firm or organization together and are, hence, valuable.

human assets are for the generation of the network's residual income, the less ownership is an efficient (and sufficient) governance device.

This approach can be applied to franchising networks. A number of intangible assets and/or knowledge assets, which are more or less critical to the networks value, are generated and used in franchise networks (Windsperger and Yurdakul 2007). The franchisor offers know-how, business format and brand name whereas the franchisee provides local market knowledge and motivated managerial expertise. When these resources are put together in the network, they induce, more or less depending on their critical nature, complementarities. These complementarities can arise from the generation of information and management resources specific to plural form as shown by Bradach (1998). They can also take the form of a first mover advantage, which in turn increases the brand value (Michael 2003).

Moreover, franchising in plural form networks can also be viewed as a governance device, which offers control over critical (human) resources through a variety of mechanisms. Powell (1990) presents network forms of organization as "neither market nor hierarchy". Bradach and Eccles (1989) highlight the importance of trust between authority and price, which leads to plural form organizations. These mechanisms, which are specific to plural form networks, can be seen as a means to built complementarities based on the two mechanisms proposed by Rajan and Zingales: 1- granting access to resources and 2- favouring specialization. One form of building complementarities is to give franchisees ("human" assets of the firm) a privileged access to the enterprise's resources (concept, methods, outlets' results, information, decision rights or, at least, a right to examine strategic decisions, etc.) by transferring residual decision and residual income rights. This access is a necessary condition for the investment in human capital at the outlet level. Simultaneously, the franchisor has to strengthen its authority over the use of the critical network resources. Critical assets are the brand name assets and the human capital assets at the local market. Favouring firm-specific specialization for the franchisee can do this. This specialization does not deal with what is provided for in contracts (for instance, definition of customers' area, covenants against competition, exclusivity agreement, etc.) but it is rather based on:
- the network information system (for instance, specializing the outlet in a specific reporting method or data exchange software could tie this outlet to the network as it cannot use these methods with other networks);
- the socialisation of the networks (Bradach 1998)
- the provision of materials, furniture, guarantees on sales or any other system which, if removed, would make the outlet value decrease in case that the franchisee should want to disengage from the network.

Of course, franchise contracts can differ substantially in their terms, in their informal mechanisms of socialization and in their sharing of control rights between franchisees and franchisors. All franchise contracts do not have the same capacity to secure critical assets. But, beyond these differences, we can consider that franchising in a plural form network will be more efficient than ownership

when human intangible assets are valuable assets in the network.

Our proposition is then straightforward: the more 'critical' human and intangible assets are valuable to the network - that is the more these assets found the value of the network -, the more franchising will be an efficient governance structure for these assets. On the contrary, if human assets (not reported on the balance sheet) represent a small part of the firm's value, ownership should be preferred as an efficient governance structure.

3 Hypotheses
3.1 Plural Form and Critical Assets

Following Rajan and Zingales (2000), it is considered that franchising, as a governance form, consists of a financial and organizational architecture (Windsperger and Dant 2006), which highlights the importance of human capital as a determinant of the governance structure. As argued above, the more valuable the intangible (human) assets are for the performance of the network, the higher the tendency toward franchisee-owned outlets is. Networks with a high value of intangible human assets should perform better with a high proportion of franchisee-owned units. The following hypothesis is derived:

> *Hypothesis H1: The link between the proportion of franchisee-owned units (franchise proportion) and financial performance is greater for franchisors with a high value of intangible human assets than for franchisors with a low value of intangible human assets.*

3.2 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 network development (Caves and Murphy 1976). As franchise networks become mature, they get easier access to resources, and the need for franchising should decrease. In addition, 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 in their life cycle tend to be less risk averse, and the risk costs have less 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. Conversely a negative impact was expected from the proportion of franchisee-owned units on financial performance for larger networks that have reached an advanced stage of their life cycle. The following hypothesis can be formulated:

Hypothesis H2: In the early (advanced) stages of the network development, the proportion of franchisee-owned units has a positive (negative) impact on a franchisor's financial performance.

But, as outlined by Srinivasan (2006), when most high potential markets are covered by a firm's existing distribution system, its expansion may be limited to smaller, remote markets, market-based channels could be more efficient. Hence, the effect of life cycle stage on the franchising/performance relationship in advanced stages is unclear. For advanced life cycle stages, the effect of the proportion of franchisee-owned units on performance could be non-linear: it could reverse, or become curvilinear.

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.

In this study, the focus is on publicly held franchisors in Europe. The initial sample of publicly held franchisors is built on information collected from various organizations (national franchise associations, franchise magazines) via their websites. Whether or not the largest franchisors in Europe (as listed at: http://www.franchiseeurope.com/top500/) were publicly held was also checked. A sample of 80 publicly held franchisors was, thus, obtained. Some of these franchisors were subsidiaries of publicly held firms. When the franchising activity was a marginal activity in the firm, it was not retained in the sample. Although they are listed on a stock exchange in Europe, some networks are non-European and have only a small part of their activities in European markets; they have been deleted from the database as well. Other data limitations, especially concerning the number of outlets, reduce the final sample to 41 franchisors. The model is estimated using panel data on 41 publicly listed European franchising networks in the 1998-2007 period, resulting in 237 firm-year observations (41 firms x the number of years of observation for each firm). The focus is on the European market at a multi-industry-level, contrary to previous studies, which have mainly analyzed the US market in one specific industry. Data was obtained from various sources. Financial and accounting data were obtained from the Worldscope database. The data on the number of units and employees were obtained from the firms' annual reports and several franchising websites. In some cases, franchisors were contacted directly by email and/or by telephone to complete our information. 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 data stem from French franchisors, as there are 151 observations from 29 franchisors in France. There are also 20 observations from three UK franchisors, 17 observations from two German franchisors, 15 observations from three Italian franchisors, 10 observations from Belgium, nine from the Netherlands, eight from Spain, and seven from Denmark (only one firm

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

4.2 Measurement scales

It is assumed 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). The proportion of a network's franchised units to the total number of its units in its distribution system is used 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), the network's performance is measured 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 minus the industry's median return on assets[**].

A relative stock market valuation measure of human capital intangibles proposed by Pantzalis and Park (2009) is used. The excess value of a franchisor's human capital (EVHC) "i" is measured 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:

$$EVHC_{i,t} = \ln \left| \left. \left(\frac{V}{EMP} \right)_{i,t} \middle/ \left(\frac{V}{EMP} \right)_{m,t} \right. \right|$$

Following Pantzalis and Park (2009), it is assumed that EVHC reflects the market's assessment of the quality of the human capital employed by the franchisor. EVHC is used as a continuous variable, but a dummy variable is also used (EVHC=1), which takes on the values 1 for high human capital (EVHC above the median) and 0 for low human capital (EVHC below the median).

[**] Datastream database provides, for each firm, related companies for comparison purposes. These related companies are defined according to their industry. For one franchisor 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, performance and human capital measures are adjusted with the median of the total sample of related companies.

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 an eventual dark side in relationships that are too close (Anderson and Jap 2005). It is proxied here by both categorical and continuous variables based on the franchisor's age (the number of years since its incorporation). Age is an imperfect proxy of life cycle stage but this variable, which is easily available, is often used in franchising literature regarding franchising rate and/or performance (Barthélemy 2008; Lafontaine and Shaw 2005; Perrigot et al. 2009). The franchisor's age was first used to create dummy variables. The first variable, named cycleage1, takes only two values: 0 for franchisors whose age is below the median, 1 for franchisors whose age is above the median. As the impact of the life cycle could be non-linear, a variable called cycleage2 was also created, which takes on three values. Franchisors are, thus, classified into tertiles (thirds). The variable cycleage2 takes on the values 0 for the youngest franchisors in the sample (first tertile), 1 for middle-aged franchisors (second tertile) and 2 for the oldest franchisors (third tertile). Age is also used as a continuous interaction and control variable in the regression analysis.

The control variables are the franchisor'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 presents the correlations matrix of the measures.

Table 1
Descriptive Statistics (N = 237)

Variable	Industry-adjusted ROA	Franchise proportion	Size	Financial leverage	International	Age
Mean	-2.5970	0.5021	12.7364	0.1561	0.6777	42
Median	-1.2900	0.4509	12.4823	0.1302	0.7558	36
Maximum	44.7300	0.9990	17.7471	0.5969	1.0000	109
Minimum	-80.7100	0.0000	8.4879	0.0000	0.0000	3
Std. Dev.	10.8500	0.3236	2.0678	0.1208	0.3112	26.0604

Table 2
Correlation matrix (N = 237)

Variable (t-stat)	1	2	3	4	5	6	7
1. Industry-adjusted ROA	1.0000						
2. Franchise proportion	0.0269 (0,41)	1.0000					
3. EVHC	0.1812** (2.82)	0.3108** (5.01)	1.0000				
4. Age	0.0099 (0.15)	0.0317 (0.49)	-0.0179 (-0.27)	1.0000			
5. Size	0.0544 (0.83)	0.0485 (0,74)	0.1552* (2.41)	0.3780** (6.26)	1.0000		
7. Financial leverage	0.0026 (0,04)	-0.2654** (-4.22)	-0.1585** (-2.46)	0.1565** (2.42)	0.2284** (3.60)	1.0000	
8. International	-0.0105 (-0.16)	-0.2502** (-3.96)	-0.0398 (-0.61)	-0.1976** (-3.09)	-0.3205** (-5.18)	0.0835 (1.29)	1.0000

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

The correlations were within acceptable limits (highest correlation = 0.378 between size and age). Potential threats from multicollinearity were assessed.. The variance inflation factors were lower than 10, suggesting that multicollinearity is not a threat to the validity of the study's findings.

5 Results

We first test the hypotheses considering the impact of franchise proportion on performance using the interaction variables (age and human capital) as dummy variables (Table 3). To check these results, similar models were used, but using continuous variables for age and human capital (Table 4). 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.

Model I includes only franchise proportion and control variables (Table 3). A direct relationship between the proportion of franchised outlets and performance is not hypothesized, but rather a contingent relationship to human capital value and age. The regression coefficient for franchise proportion is not significant. The only significant variable is age, which positively impacts the franchisor's performance.

Table 3
Results for the Model Relating a Franchisor's Plural Form to Its
Performance Using Categorical Interaction Variables

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

Variable	Model I	Model II	Model III
Constant	-56.3451*	-73.5134**	-69.1959**
	(-1.93)	(-2.48)	(-2.34)
Franchise proportion	6.6269	10.2083	7.1139
	(1.03)	(1.38)	(0.95)
AGE	0.8699**	0.9378***	0.7669**
	(2.87)	(3.06)	(2.48)
EVHC	2.2262	0.6220	0.5485
	(1.47)	(0.36)	(0.31)
Franchise proportion x EVHC=1		11.2153**	10.0148**
		(2.32)	(2.15)
Franchise proportion x cycleage1		-10.0670	
		(-1.50)	
Franchise proportion x cycleage2=1			-7.5945
			(-1.10)
Franchise proportion x cycleage2=2			-1.8786
			(-0.23)
Size	1.3138	2.1294	2.3142
	(0.57)	(0.92)	(1.00)
Financial Leverage	-6.767378	-3.8662	-5.3584
	(-0.72)	(-0.41)	(-0.57)
Internationalization	-2.626115	0.2132	1.5215
	(-0.33)	(0.02)	(0.19)
N=	237	237	237
R-squared	0.3901	0.4090	0.4097
Adjusted R-squared	0.2425	0.2582	0.2551
S.E. of regression	9.4435	9.3451	9.3646
Sum squared resid	16944.10	16418.24	16399.03
Log likelihood	-842.2378	-838.5019	-838.3632
F-statistic	2.64	2.71	2.64
Prob(F-statistic)	0.0000	0.0000	0.0000
Akaike info criterion	7.5041	7.4894	7.4967
Schwarz criterion	8.1919	8.2064	8.2284
Hannan-Quinn criter.	7.7813	7.7785	7.7916
Durbin-Watson stat	1.6206	1.7437	1.6698

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

Models II and III include the interaction (categorical) variables. They relate the franchisor's performance to the franchise proportion and the interactions between franchise proportion and intangible human capital and between franchise proportion and age. Results show that, for franchisors whose value relies heavily on intangible human assets (EVHC=1), the impact of franchise proportion is significantly greater. Hence, the franchise proportion effect on performance depends on the value of franchisors' human capital, verifying H1. On the contrary, results do not show any differential effect of the franchise proportion on performance depending on the life cycle stage. Results do not corroborate H2. Using Wald tests, the effect of franchise proportion on performance depending on the human capital and stage in the life cycle can be estimated. Results show that, whatever the model (II or III), franchise proportion has a positive impact on performance (at 5% level) for youngest franchisors with high human capital. But, this impact is no longer significant as franchisors mature[††]. Finally, for franchisors with a low human capital value, results do not show any significant effect of franchise proportion on performance.

These first results are completed, by testing models with continuous measures of contingent variables (Table 4). Models IV and V are estimated on the same sample as previous models. What strikes at first glance in comparison to previous results is the positive direct effect of franchise proportion on performance. Barthélemy (2008) found a similar result on transversal data. Other results are in line with previous ones. The interaction between franchise proportion and human capital is positive, supporting H1. Moreover, a test for redundancy of the interaction of human capital and franchise proportion variables shows that this variable significantly improves the regression. Hence, the effect of franchise proportion on performance is moderated by the franchisor's human capital. The effect of the interaction between franchise proportion and age is negative but insignificant, or weakly significant. In model IV we include these interactions directly (franchise proportion*age), and it is not significant. Different specifications are then tested to take into account that this interaction effect may not be linear as noted above. Only specifications that include square or cubic form of age show (weakly) significant results. Model V, which presents the results with age squared as interaction variable, improves the quality of the regression in comparison with model IV marginally. It seems that the older the franchisor is, the more franchise proportion impacts negatively performance. But the significance of the coefficient is quite weak to confidently support H2. It is difficult to conclude that age is a contingent variable in the franchise proportion/performance relationship, results clearly show, like in other models, that age has a direct positive effect on the

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[††]This variable is still slightly (at 10% level) positive in Model III but only for the oldest franchisors, not for the middle-aged franchisors.

industry-adjusted performance. This result could be explained by a "survivor bias", weaker franchisors disappear so that older franchisors are those that outperform their counterparts- and may not reflect causality.

Overall, our early and exploratory results support hypothesis H1 and provide support for the contention that the performance of franchise chains is contingent on the 'fit' between governance structure (franchise proportion) and resources (critical human assets). However, strong evidence that the governance/performance relationship is contingent on life cycle stage or franchisor's age was not found.

Table 4
Results for the Model Relating a Franchisor's Plural Form to Its
Performance Using Continuous Interaction Variables

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

Variable	Model IV	Model V
Constant	-59.1311**	-59.4497**
	(-2.06)	(-2.08)
Franchise proportion	29.3677**	22.2505***
	(2.44)	(2.70)
AGE	1.2738***	1.3561***
	(3.69)	(3.83)
EVHC	-3.9829	-3.7265
	(-1.52)	(-1.45)
Franchise proportion x EVHC	11.8912***	11.3579***
	(2.88)	(2.86)
Franchise proportion x age	-0.4642	
	(-1.61)	
Franchise proportion x age^2		-0.0054*
		(-1.90)
Size	-0.0166	-0.2596
	(-0.0072)	(-0.11)
Financial Leverage	-6.6732	-6.91
	(-0.73)	(-0.75)
Internationalization	-3.3123	-2.9990
	(-0.42)	(-0.38)
N=	237	237
R-squared	0.4171	0.4202
Adjusted R-squared	0.2682	0.2722
S.E. of regression	9.2816	9.2564
Sum squared resid	16195.70	16107.89
Log likelihood	-836.88	-836.24
F-statistic	2.80	2.84
Prob(F-statistic)	0.0000	0.0000
Akaike info criterion	7.4758	7.4704
Schwarz criterion	8.1928	8.1874
Hannan-Quinn criter.	7.7648	7.7594
Durbin-Watson stat	1.74	1.75

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

6 Discussion and conclusion

Despite the growing importance of plural form networks in practice, there are few insights into their financial performance implications. This article explores the relationship between plural form and financial performance, and concludes 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 (Heide 2003) with a focus on plural form networks (Bradach 1997). The findings indicate that the impact of franchise proportion on performance is greater for franchisors with high human capital value compared to franchisors with low human capital value. Overall, early results provide support for the contention that the performance of franchise chains is contingent on the 'fit' between governance structure (franchise proportion) and resources (critical human assets). In contrast, strong evidence that the governance/performance relationship is contingent on life cycle stage or franchisor's age is not found. But, our results suggest that franchisor's age could weaken the relationship between franchise proportion and performance. These results might suggest that younger franchisors with high human capital should increase their franchise proportion to enhance their financial performance.

Second, as far as currently known, this 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 focus on Anglo-Saxon countries and, as far as the plural form networks are concerned, they mainly deal with the USA. Here, the empirical study concerns the European franchising market and compares various industries, mainly in the retail and services sectors.

6.2 Managerial Implications

The study's findings can be of interest for practitioners: when the franchisors and the franchisees, have respectively to choose to develop and to join a franchising network. From the franchisors' point of view, it seems that young franchisors with high human capital value can improve their performance by increasing their franchise proportion. This is not the case for other franchisors, especially as they mature. 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 choice process: the choice of the organizational form by the franchisor and the choice of the network form by the franchisees which consider the franchise proportion 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 franchisor's life cycle stage, as (roughly) measured by age and categories based on franchisor's age. Research extensions using alternative life cycle stage measures, including sales growth, would both complement and extend the study's findings. Moreover, arguments from resource and risk-based theories lead to a prediction that franchise proportion will have decreasing (or negative) impacts on performance, as the franchisor matures. Weak evidence is found to support this idea. Hence, in the models using dummy variables, the positive impact of franchise proportion on performance for the franchisors with a high human capital value becomes less significant as the franchisor gets older. In the models using continuous variables, some weak evidence is found regarding a negative impact of age on the franchise proportion/performance relationship.

The critical nature of human capital may vary over time, according to franchisor's age or life cycle stage. The impact of human capital on the franchise proportion/performance relationship may thus vary over time. Although this idea was not developed in this study, a three-way interaction among human capital value, franchise proportion, and age on chain performance (see Barthélemy 2008 with other variables) could be helpful to address this issue. More broadly, the "time-varying" power of existing theories to explain the benefits of franchising in various life cycle phases of the franchisor is an issue to explore.

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 always be the case: there may be 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 multiple 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. Control for variables, such as multi-franchising should be taken into account as they can alter the results. But, this is 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, which organizes the sample's observations into classes and estimates regression models within each class. This methodology could be used on the sample, using human capital and life cycle stage as variables to constitute the latent classes.

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