

Complementarities In Organizational Design Of Franchising Networks

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ABSTRACT

This study investigates complementarities between components of the organizational design of franchising networks. We examine three components of governance, rarely distinguished as such in previous studies involving franchising: allocation of decision rights, performance measurement and incentives. We also analyze interdependencies between these variables. In particular, interdependencies seem more evident between the incentive system and the allocation of decision rights to franchisees, and between the incentive system and performance measurement. We also provide evidence of the role of three franchisee characteristics in franchising's organizational design: multi-unit ownership, age of the relationship, and geographic distance. Implications for chain management are provided.

Keywords: Franchising; Organizational Architecture; Allocation of Decision Rights; Performance Measurement; Incentive System; Interdependencies; Structural Equations Modeling

INTRODUCTION

Several researchers have discussed the role of complementarities in organizational design (Jensen and Meckling, 1976; Milgrom and Roberts, 1992; Brickley, Smith and Zimmerman, 2003). Following Jensen and Meckling (1976), Brickley, Smith and Zimmerman (1997) suggest that the organizational architecture of the firm consists of three complementary components: performance measurement, incentive compensation or rewards, and allocation of decision rights. With the exception of O'Connor, Deng and Luo (2006) and Widener, Shackell and Demers (2008), little empirical research has explicitly considered all three components simultaneously and examined interdependences between them. Prior empirical research has largely examined each of these three decisions as separately determined aspects of organizational design. We extend the work of O'Connor et al. (2006) and Widener et al. (2008), which examines the joint determination of incentive compensation, performance measurement and delegation by investigating complementarities among the three elements of the firm's organizational architecture in a franchising framework.

Consistent with our hypothesis, we find an overall interdependency among the three components of franchising's organizational design. In particular, interdependencies seem more evident between the incentive system (punishment mechanism) and allocation of decision rights to franchisees (delegation of decision power), and between the incentive system and performance measurement (nonfinancial output measures). We also provide evidence of the role of three franchisee characteristics in franchising's organizational design: multi-unit ownership, age of the relationship, and geographic distance.

The implication of our findings for franchisors is that there are complements and substitutes available in the choice of organizational design components. Our results suggest that in franchising networks, franchisors use fewer punishment mechanisms to offset the loss of control that arises from the allocation of decision rights to franchisees. Further, there is evidence that the relation between monitoring franchisee performance and incentives is complementary in our setting, suggesting that franchisee behavior evaluation (nonfinancial measures) is viewed as a basis for sanctions.

The remainder of the paper is structured as follows. Section 2 reviews and substantiates the theoretical studies that underlie our research hypotheses and the choice of variables. Section 3 describes the sample and explains the research method, and defines our empirical proxies. Section 4 provides a descriptive analysis of the constructs. Section 5 presents our model specification and discusses our empirical results. Section 6 concludes the paper.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

We begin this section by presenting a general hypothesis of interdependencies among the three traditional components of organizational design (Jensen and Meckling, 1976; Milgrom and Roberts, 1992; Brickley et al., 2003), and we define the specific predictions in a franchising framework. Next, we integrate franchisee characteristics to examine incentive effects of these characteristics on the scope of organizational design components.

Allocation of Decisions Rights and Performance Measurement

Organizational architecture theory states that decentralization and performance measurement systems are two complementary choices that managers make simultaneously (Jensen and Meckling, 1992; Milgrom and Roberts, 1992; Brickley et al., 1997). More recent studies have empirically investigated this link (Abernethy, Bouwens and Van Lent, 2004; Moers, 2006; Widener et al., 2008). Most of these studies are based on economic theories showing that the choice of performance measures in incentive contracts should be based on the informativeness (or incremental information content) principle.¹

Several studies dealing with performance evaluation systems distinguish financial and nonfinancial criteria (Ittner and Larcker, 2002). Financial indicators such as costs, profits, and accounting returns have long dominated performance evaluation systems. Johnson and Kaplan (1987) highlight the need to integrate nonfinancial indicators in the performance measurement system. Accordingly, literature suggests that financial performance measures alone are less effective in a long-term business strategy geared towards customer satisfaction (Perera, Harrison and Poole, 1997), quality (Ittner and Larcker, 1998 and 2002), differentiation (Govindarajan and Gupta, 1985) or just-in-time deployment (Fullerton and McWatters, 2002), and monitoring environment uncertainty (Hoque, 2005). In this context, organizations need a multidimensional control system allowing managers to assess changes in their environment and track their progress in achieving corporate goals (Kaplan and Norton, 1996). Thus, a strategy and performance evaluation system should operate in a consistent manner, broadly based on nonfinancial measures.

The franchisee sales effort affects its own financial performance widely and directly. It is primarily controlled by the residual claimant status implying, according to Jensen and Meckling (1992), implicit control (Brickley and Dark, 1987). However, the marketing effort does not exclude problems of moral hazard and information asymmetry regarding the results produced by the franchisee.² The opportunistic behavior becomes more common as autonomy granted to franchisee increases leading franchisors to favor explicit forms of control rather than implicit control based on residual claimant status.³

Notwithstanding, monitoring franchisees' financial performance is quite tricky and insufficient for many reasons. First, the legal and financial independence of franchisees largely limits the franchisor's ability to set objectives for units, especially financial ones. A franchisor may not require a franchisee to achieve a certain sales volume or a certain level of profitability or to limit the costs of its unit to a certain level. Franchisors that did so might be accused of interference. Second, even if the franchise agreement requires the franchisee to communicate certain accounting and financial information to the company, implementing a reporting procedure is fairly delicate and is not well accepted and implemented by franchisees (Lafontaine and Slade, 1998; Quinn, 1999). Third, franchisees were expected to develop the brand reputation, to maintain the high standard of shop fitting, to sell only approved products and to comply with the franchisor's advice. This objective may not be shared by all members because the benefits of this effort are not fully capitalized by franchisees. Therefore, franchisees will essentially allocate their effort to develop their local market at the expense of maintaining the brand reputation, which is, by nature, a public good. Thus, the franchisee may under-invest in brand maintenance, for example, by offering a discount price at the expense of product, service or brand image quality, lowering their investments in new products, local advertising, hiring and training sales

¹ Agency models demonstrate that performance measurement systems should include any (costless) performance measure that provides incremental information to promote congruence between their different objectives (Banker and Datar, 1989; Feltham and Xie, 1994).

² Moral hazard can result either from under declaration (or underscoring) of franchise sales to reduce the amount of royalties, lowering service or product quality, or reducing investments in advertising and promotion.

³ Franchisors can closely monitor the financial condition of franchisees through the franchisees' obligation to periodically present their financial statements by providing the company with financial reports and "sales data" (Lafontaine and Slade, 1998; Quinn, 1999).

personnel, and under-providing informational and promotional services (Arruñada, Garicano and Vázquez, 2001). This opportunism directly affects the brand image, even if the unit sales may not be affected, at least in the short term. For this reason, the franchisor is supposed to monitor nonfinancial performance, focusing on key success factors (product quality and customer satisfaction).

Delegation of decision rights to franchisees allows them to perform multiple tasks. To ensure that franchisees act in the best interests of the network, the franchisor must use specific task-related measures instead of one broad aggregated measure when franchisees face multiple tasks. Banker, Potter and Srinivasan (1995) argue that detailed performance evaluations should include quality, material use, labor use, and service measures. Similarly, Baiman and Baldenius (2009) show that nonfinancial measures can signal whether agents (franchisees) act in a cooperative fashion or can put bounds on non-cooperative behavior. This analysis fits perfectly with the organizational architecture theory, which assumes that decentralization can be explained by strategies focused on environment uncertainty, pricing, quality improvement, and customer satisfaction. Nonfinancial criteria are integrated in this decentralization by ensuring consistency between strategy and allocation of decision rights (Brickley et al., 1997). Thus, nonfinancial criteria ultimately dominate when the decision-making function is decentralized. Based on the discussion above, we formulate the following hypothesis:

H1: The evaluation of franchisees' nonfinancial performance depends on the level of the decision making power allocated to them.

Allocation of Decisions Rights and Incentive System

Delegation and incentive systems are a jointly determined organizational design problem (Baiman and Rajan, 1995). Jensen and Meckling (1992) argue that delegation of decisions to the best-informed party may reduce the costs of information gathering and transfer, but it will lead to agency problems, as agents' objectives are typically different from the principal's. This will increase the need to use control to align agents' utility functions with the organization's overall objective. However, lodging decisional power with someone who has better incentives to make good decisions may mitigate the need for costly control. According to Brickley et al. (1997), an effective organizational architecture not only allocates decision-making authority to individuals who hold relevant information, but ensures that decision-makers are subject to appropriate incentive systems to make decisions that create value. In sum, incentives and delegation are complementary (Roberts, 2004).

In the presence of quasi-rents, the prospect of termination promotes compliance. Indeed, franchise contracts do not rely exclusively on monetary incentives to ensure that franchise contracts do not rely exclusively on monetary incentives to ensure that franchisees perform as required; they also rely on the possibility of contract termination. The ability to break the franchise relationship evidently underpins the "self-enforcement" mechanism (Klein, 1980; Klein and Leffler, 1981; Klein and Saft, 1985; Klein, 1995) that allows franchisors to play a quasi-judiciary role in ensuring that franchisees fulfill their obligations. According to Klein (1995), the self-enforcement mechanism of the franchise contract is derived from the combination of three elements: the existence of a flow of quasi-rents, the control exercised by the franchisor on the franchisee and the franchisor's ability to terminate the contract.⁴ The self-enforcement mechanism operates by granting to store owners compensation that exceeds what they could earn outside of the relationship (i.e., economic rents). The threat of relationship termination should then ensure behavior in line with the principal's economic interests because the premium stream would be lost by franchisees upon termination. Thus, in the presence of quasi-rents, the prospect of termination promotes compliance. Given this economic analysis, we would expect that the higher the franchisees' discretion, the greater the incentive provided by the threat of contract termination. Based on the above discussion, we advance the following hypothesis:

H2: The threat of contract termination is related to the decision making power given to franchisees.

⁴ Klein (1995) defines quasi-rents as the additional earnings for a franchisee from its membership in the network; the control exercised by the franchisor on the franchisee; and the franchisor's ability to terminate the contract.

Performance Measurement and Incentive System

According to agency theory, the performance evaluation system and incentive system jointly constitute the control system, the second part of the organizational architecture (Jensen and Meckling, 1992; Brickley et al., 1997). The interaction between the two components is obvious. Indeed, evaluation and reward go hand in hand: each is meaningless without the other. Agency theory suggests that principals must design an incentive-compatible system, which ensures appropriate assessment of agents' results and actions. In other words, the agents' compensation must be based on criteria that truly reflect their efforts in performing the tasks assigned to them, or they would be inclined to behave in an opportunistic manner.

Incentive systems can be more efficient if they include more accurate and precise performance measures (Milgrom and Roberts, 1992). In short, better performance measures should lead to stronger incentives, because relying on more precise measures reduces the costs of incentive risk (Roberts, 2004; Widener et al., 2008). The franchise formula has inherent strongly incentive elements in that a franchisee represents a residual claimant under agency theory (Jensen and Meckling, 1992; Brickley and Dark, 1987). The franchisee's income ultimately depends on the success of its business and thus on its own effort.

Nevertheless, basing the franchisee incentive system on purely financial criteria is irrelevant.⁵ Including qualitative and strategic criteria (sales team dynamism, product quality, and adequacy of matching customer needs) in a franchisee incentive system is essential to motivate franchisees to act in accordance with the wishes of the franchisor, even though this assessment is based mainly on a subjective assessment of the franchisor rather than on a formal measurement system.

Arruñada et al. (2005) suggest that termination is used to deal with serious or repeated non-performance as observed through the outputs, inputs and financial statements of the dealer.⁶ Sales and service targets provide an important determinant of the termination process. Dealers' inputs are directly monitored by manufacturer inspections. Inspectors visit dealerships randomly at their discretion to ensure compliance with input obligations related to the provision of an adequate service level. Accordingly, we expect to find complementarity between incentives based on the threat of contract termination and nonfinancial performance measures, and we expect the structural relation to be positive.

H3: The threat of contract termination depends on the evaluation of franchisee's nonfinancial performance

The Role of Franchisee Specific Incentive Characteristics

Several studies have assumed that the organizational design of franchise networks depends on certain franchisee characteristics (Brickley and Dark, 1987; Dant and Nasr, 1998; Windsperger, 2003; Cochet, Dormann and Ehrmann, 2008). In the present study, we focus on the effects of three franchisee characteristics that have previously been posited to affect agency issues in the dyad: (1) multi-unit ownership, (2) age of the franchisee-franchisor relationship, and (3) geographic distance between the outlet and the company's head office.

Multi-Unit Ownership or Multi-Franchise:

A situation where one franchisee owns, operates and controls more than one outlet (Kaufmann and Dant, 1996). Dant and Nasr, (1998) distinguish between two types of multi-unit franchisees. While some multi-unit franchisees start with a single unit and acquire the rights to operate additional outlets over time, referred to as sequential expansion, others are entitled to run multiple units from the outset, referred to as master franchising.

⁵ As discussed previously, franchisee effort toward sales development affects its financial performance widely and directly. This effort is primarily controlled by the residual claimant status (Jensen and Meckling, 1992). In addition, the financial data of the franchised unit, for example sales volume, could be subject to manipulation by the franchisee.

⁶ According to Arruñada et al. (2005), dealership contracts can set out several nonperformance conditions that lead to termination. In particular, these contracts punish repeated non-fulfillment of sales and service targets with automatic termination. While most brands do not specify the thresholds they use to define these criteria, some brands have informed on the specific nonperformance criteria that lead to automatic termination.

Empirical evidence has shown that multi-unit franchisees are less likely to abuse their autonomy and to behave opportunistically (Dant and Nasr, 1998; Brickley, 1999; Dant and Gundlach, 1999). This is because the interests of multi-unit owners are closely aligned with those of the entire network. Most notably, incentives to free-ride on the common brand name are weakly expressed, even in non-repeat customer industries (Dant and Nasr, 1998). By cheating on quality, multiunit partners would jeopardize their own sales to a greater extent than would their single-unit counterparts. In other words, multi-unit franchisees support and approve the franchisor's policies and strategic choices, replicate work methods and accept new ideas implemented by the franchisor more easily and quickly (Bradach, 1995, 1998). Referring to Dant and Nasr (1998), Cochet et al. (2008) suggest that multi-unit ownership internalizes a large fraction of specific investments in the trade name. Further, due to higher stakes in question, head offices are less likely to terminate or non-renew contracts of multi-unit franchisees than those of single-unit ones. Therefore, multi-unit franchisees should project their channel membership farther into the future than their single-unit counterparts. Consequently, forgoing investments in quality would impair future sales of franchisees owning multiple units considerably (Dant and Nasr, 1998).

Age of the Franchisee-Franchisor Relationship

The time period since a franchisee started operating an outlet. It has been argued that relationship length influences governance practices inside networks (Dant and Nasr, 1998). Franchisees' incentives to behave opportunistically decrease as the future time horizon over which investments in specific assets can be amortized lengthens. Further, potential gains from opportunistic deviations that would accrue in the short-run are more likely to be evened out by gains from cooperation as the discounting period increases (Cochet et al., 2008).

Geographic Distance between the Outlet and the Company's Head Office

The franchisee's (agent's) behavior is imperfectly observable (Fladmoe-Lindquist, 1996), which makes controlling the franchisee difficult and costly for the franchisor (the principal). This control is much more difficult and expensive when the outlet is far from the franchisor. Paradoxically, units close to the franchisor's headquarters and geographically concentrated units are easily controlled by the franchisor while taking advantage of economies of scale (Rubin, 1978; Brickley and Dark, 1987; Martin, 1988; Campbell, Datar and Sandino, 2009). Therefore, distance from the franchisor's monitoring head office could hamper behavior control and encourage the franchisor to find less expensive alternatives. Agency theory assumes that centralization of decision making, as a form of direct control, can be a solution to the problem of imperfect supervision of agents' behavior, particularly for agents far from the principal (Fama and Jensen, 1983). In the same vein, result-based monitoring may be a relevant alternative to behavior-based monitoring, especially with continuing advances in information and communication technologies. However, electronic data transmission is often insufficient to convey information to the franchisor that accurately reflects the franchisee's results (Fladmoe-Lindquist and Jacques 1995), especially because the information systems of franchised units are rarely integrated with those of the head office (Bradach, 1997).

METHODS

Sample and Survey Methods

The Likert-type questionnaire items have been formulated based on measurement scales validated by previous research and adapted to our context. We also confirmed the items in a qualitative-explorative pre-study involving franchisors, experts, and franchisees. These meetings were very helpful to develop and refine our questionnaire to a satisfactory ultimate version in both form and substance. The revised questionnaire was tested with seven franchisees, and then sent to 1,059 franchisees operating in France in 2011. The data were gathered through mail surveys conducted from mid-February 2012 through the end of April of that same year. Forty-two franchisors agreed to participate. Each mailing included the questionnaire, a cover letter describing the purposes of the study and guaranteeing anonymity to participants. We collaborated with the chains' head offices in conducting the survey, yet participation in the study was voluntary. After reminder notices, the survey yielded a participation rate of 9.5% (97/1059). However, seven responses could not be exploited because of incomplete data, which implies a usable response rate of 8.5%. Our final sample consisted of 90 observations (Table 1).

Table 1. Distribution of franchisees in sample by chains and industries

| Industry | Number of chains | Weight of industry | Number of franchisees reached | Number of franchisees respondents | Response rate |
|----------------------------------|------------------|--------------------|-------------------------------|-----------------------------------|---------------|
| Individual and Business Services | 16 | 38% | 322 | 43 | 13% |
| Restaurant | 7 | 17% | 238 | 10 | 4% |
| Housing, furniture-kitchen | 6 | 14% | 123 | 12 | 10% |
| Real estate | 5 | 12% | 135 | 8 | 6% |
| Specialized food retailing | 3 | 7% | 114 | 9 | 8% |
| Specialized non-food retailing | 5 | 12% | 127 | 8 | 6% |
| Total | 42 | 100% | 1059 | 90 | 9% |

Among the 42 brands that agreed to participate in our survey, 28 covered services (real estate, restaurants, and various services to individuals and businesses); they comprise more than 67% of the sample. Fewer than 35% of retailers conduct a specialized trade. This is consistent with the progression of the franchise in the service sector, particularly in local services to individuals and businesses. Indeed, France has seen an increasing expansion in the service sector in recent decades, and the franchise sector is following this trend.

Construct Measurement

In the following sections we provide descriptions of the empirical measures adopted as proxies for the constructs in our structural equations model. The three endogenous components of organizational architecture are measured using latent variables from several multi-item Likert scales (*ADR*, *NFPM* and *TERM*). Exogenous control variables are all measured using ordinal and nominal variables. The survey questions are shown in the Appendix A.

We derive an empirical measure for *ADR* by using the latent construct extracted from four survey questions that are inspired by the questions underlying Nagar's (2002) measure in retail banking and Windsperger's (2004) delegation measure in Austrian franchising networks. Franchisees were asked to rate, on a five-point scale, their own influence relative to their franchisor's influence on making decisions with respect to setting prices, and selecting suppliers and products. The higher the index, the greater the franchisee's decision-making authority. Consequently, the allocation of decision rights varies positively with the degree of decentralization and negatively with the degree of centralization of decision making.

To measure *NFPM*, respondents were asked to report on a 5-point scale the weight their franchisors assign to a range of possible nonfinancial measures in their performance assessment. This approach is consistent with that of earlier studies (Abernethy et al., 2004). Higher values for *NFPM* suggest that franchisors place more weight on nonfinancial output measures when evaluating franchisee behavior.

Concerning the threat of contract termination, *TERM*, all contracts explicitly assign franchisors the right to terminate the contracts when the franchisee fails to perform certain duties. Meetings conducted with franchisors, franchisees and experts were very helpful to refine the measure of *TERM* while adapting it to the franchise context. Accordingly, franchisees were asked to rate, on a five-point scale, a range of causes that may result in contract termination.⁷

To operationalize *multi-unit ownership (MULTIFSE)*, a nominal no/yes question, coded as a dummy variable (no = 0; yes = 1), was used to classify franchisees interviewed in one of the following two categories: single-unit franchisees and multi-unit franchisees (Dant and Nasr, 1998; Dant and Gundlach, 1999; Cochet et al., 2008). This variable takes the value of 0 if the franchise belongs to the first category and 1 otherwise.

Franchisees were asked to assess the *age of the franchisee-franchisor relationship (AGE)* by indicating the class to which they belong. For this, we have identified five classes "Between 2 and 5 years", "More than 5 to 10 years",

⁷ Arruñada et al. (2001) provide a list of potential causes that can motivate the termination of the dealer-manufacturer relationship in automobile distribution. In particular, repeated breach of sales and service targets, and changes in ownership or the bankruptcy of the dealership is always reasons for automatic termination. Other circumstances such as management changes or disagreements among partners or managers also trigger termination rights in some networks.

“More than 10 to 15 years”, “More than 15-20 years”, and “Over 20 years”. This measure is consistent with Dant and Nasr (1998) and Cochet et al. (2008).

To operationalize *Geographic distance (DISTANCE)*, Brickley and Dark (1987), Minkler (1992) and Cochet et al. (2008) calculated the number of kilometers or miles separating the franchisee from the franchisor headquarters. This approach was not feasible in our case. To do so, we followed the approach of Degryse and Ongena (2005) by using travel time between the franchisee and franchisor’s headquarters. We thus asked respondents to estimate the distance that separates them from the franchisor’s head office by choosing from among five classes: “Less than 10 min”, “Between 10 and 30 min”, “Between 30 and 60 min”, “Between 60 and 120 min”, and “More than 120 min”.

Descriptive Statistics of Constructs

The results of the descriptive analysis are derived initially from an exploratory factor analysis followed by a confirmatory one (Gerbing and Anderson, 1988). The descriptive statistics in the appendix A shows that all of the survey questions include a broad range of possible responses. Untabulated Pairwise correlations between items of each construct are positive and significant (largely in excess of 0.3 for all constructs). Moreover, the Kaiser-Meyer-Olkin (KMO) test of sampling adequacy and Bartlett’s test of sphericity produce satisfactory results (Table 2), thus the information provided by the initial variables can be summarized in a few factors. The factor analyses using Varimax rotation for *ADR*, *NFPM* and *TERM* indicate one-dimensional constructs with acceptable explained variance (more than 50%) and eigenvalue (greater than 1). All items have a quality of representation (or communality) above 0.4 and are well represented on their respective axes (Table 3).

Table 2. KMO and Bartlett's test

| Construct | | ADR | NFPM | TERM |
|--|--------------------|---------|---------|---------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | 0.694 | 0.823 | 0.771 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 102.532 | 264.570 | 161.897 |
| | df | 10 | 6 | 6 |
| | Sig | 0.000 | 0.000 | 0.000 |

Table 3. Exploratory factor analysis

| | Items | Eigen-value | Explained variance | Loading | Communality |
|------|--------|-------------|--------------------|---------|-------------|
| ADR | ADRSUP | 2.519 | 62.978 | 0.820 | 0.672 |
| | ADRPRI | | | 0.808 | 0.652 |
| | ADRPDT | | | 0.803 | 0.644 |
| | ADRINV | | | 0.742 | 0.550 |
| NFPM | MONSAT | 2.796 | 80.592 | 0.898 | 0.807 |
| | MONHOL | | | 0.882 | 0.779 |
| | MONQAL | | | 0.921 | 0.848 |
| | MONCOM | | | 0.889 | 0.790 |
| TERM | TERM1 | 2.277 | 69.910 | 0.848 | 0.719 |
| | TERM 2 | | | 0.816 | 0.666 |
| | TERM 3 | | | 0.885 | 0.784 |
| | TERM4 | | | 0.793 | 0.628 |

The factor analysis, using a Varimax rotation, performed on all items (eleven items), produces a factor structure of three independent components (Table 4). Internal reliability or consistency of the summated scale was assessed by Cronbach’s alpha. The alpha scores, as shown in Table 5, were all well above the lower limit of acceptability, set at 0.60 for newly developed scales (Hair, Anderson, Tatham and Black, 1998).

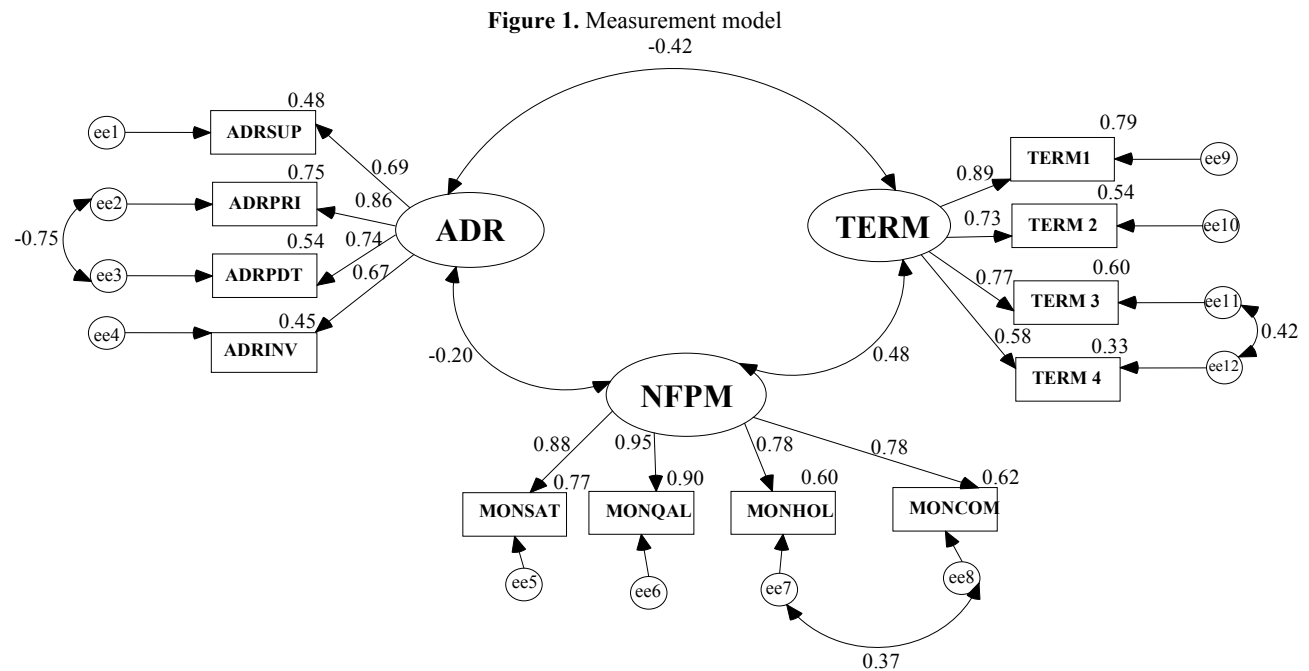
Table 4. Discriminant validity

| | NFPM | TERM | ADR |
|-------------------------------|--------|--------|--------|
| MONSAT | 0.875 | | |
| MONHOL | 0.890 | | |
| MONQAL | 0.887 | | |
| MONCOM | 0.868 | | |
| TERM1 | | 0.745 | |
| TERM2 | | 0.758 | |
| TERM3 | | 0.871 | |
| TERM4 | | 0.837 | |
| ADRSUP | | | 0.845 |
| ADRPRI | | | 0.785 |
| ADRPDT | | | 0.764 |
| ADRINV | | | 0.723 |
| Eigen-value | 3.329 | 2.801 | 2.622 |
| Explained variance | 27.741 | 23.341 | 21.847 |
| Cumulative explained variance | 27.741 | 51.082 | 72.928 |

Table 5. Reliability Test

| Construct | Cranach's alpha |
|-----------|-----------------|
| ADR | 0.798 |
| NFPM | 0.918 |
| TERM | 0.855 |

A second confirmatory factor analysis (CFA) was performed to verify that the multi-item measures used in this study exhibit acceptable measurement characteristics (Gerbing and Anderson, 1992). A global CFA measurement model was estimated. It consisted of three latent variables or constructs and eleven manifest or observed variables (see Figure 1).



Chi-square = 72.178 p = 0.014 ddl = 48 GFI = 0.888 AGFI = 0.818 RMSEA = 0.075
 IFI = 0.960 CFI = 0.959 Chi-square /ddl = 1.504 CAIC = 237.172

In the original CFA model, the evaluation of the model and fit statistics are insufficient to move the analysis forward (Table 6). Although some adjustment indices are above the standards (*GFI*, *AGFI*, *IFI*, *CF*), others are not satisfactory, especially the Root Mean Square Error of Approximation (*RMSEA*), which far exceeds the threshold of 0.8. This led us to re-specify the model by tolerating some correlations between the error terms of items measuring the same construct (Figure 1). We accepted these correlations because the modification indices suggest that they have the highest significant changes and could be justified by theoretical foundations. Thus, the link between *MONHOL* “Monitoring the holding of the point of sale” and *MONCOM* “Monitoring compliance with instructions” could be justified by the affinity of their titles. In fact, the monitoring of compliance with instructions could include monitoring the holding of an outlet. It is then expected that a mistake made for the answer to *MONCOM* logically affects the response to *MONHOL*. Also, the correlation between *ADRPDT* and *ADRPRI* can be explained by the fact that deciding which products or services to market is inextricably linked to setting prices, so that an incorrect answer for one variable may cause an error in the other. Similarly, *TERM3* “False information” and *TERM4* “Non-payment to the franchisor” are plausibly linked because false information provided by the franchisee to the franchisor mainly concerns sales data. Therefore, such franchisee behavior may occur in conjunction with evasion of royalty payment to the franchisor.

Table 6. Adjustment indices of the measurement model

| Indices | Initial model | Respecified model | Highest standards | Lowest standards |
|-----------------------------------|----------------------|----------------------|--|------------------|
| <i>Absolute indices</i> | | | | |
| Chi-square (χ^2) | 101.406 | 72.178 | - | - |
| GFI | 0.844 | 0.888 | > 0.9 | > 0,8 |
| AGFI | 0.762 | 0.818 | > 0.9 | > 0,7 |
| RMSEA | 0.105 | 0.075 | < 0.05 | < 0,08 |
| <i>Incremental indices</i> | | | | |
| IFI | 0.916 | 0.960 | > 0.9 | > 0,9 |
| CFI | 0.914 | 0.959 | > 0.95 | > 0,9 |
| <i>Parsimonious indices</i> | | | | |
| Normed Chi-square (χ^2 /df) | 1.988 | 1.504 | < 2 | < 5 |
| CAIC (CAIC of saturated model) | 249.901 (428.985) | 237.172 (428.985) | As low as possible (< CAIC of the saturated model) | |

It is clear from Table 6 that the re-specified model fits the data better than the original model, regardless of the index. There are three adjustment indices that satisfy the most stringent standards (*IFI*, *CFI* and χ^2 /df), and three indices (*GFI*, *AGFI*, *RMSEA*) far exceed the least stringent standards. The normed Chi-square (χ^2 /df) and the CAIC measure are acceptable for both models while indicating that the re-specified model is the superior one. We decided to retain the measurement model after re-specification, represented as in Figure 1.

ANALYSIS AND RESULTS

Empirical Specification - Structural Equation Model

We use AMOS software to estimate the causal relationships in our structural equation model. SEM provides an efficient technique for examining interdependent relationships such as those that we hypothesize to exist (Hair et al., 1998). SEM is used both to address the question of whether the present data fit the relationships proposed by our theory and to examine the signs and significance of particular coefficient estimates of interest.

With our sample of 90 franchisees, we acknowledge that we have a relatively small sample. We therefore take two critical steps to ensure that our sample size is adequate.⁸ First, we have reduced observable variables of each construct to a single indicator. We have thus followed the approach of Low, Cravens, Grant and Moncrief (2001), which involves replacing the items of each construct by their sum after checking its unidimensionality and reliability.⁹

⁸ However, small samples are not uncommon. Breckler (1990) reviewed 72 SEM studies in psychology, of which 16 (22%) were considered to consist of small samples. In the accounting literature, Nagar (2002) and Abernethy et al. (2004) examined only 100 and 78 firms respectively, while Widener et al. (2008) used a sample of 53 firms.

⁹ This aggregation procedure changes our model to a simple one that includes only six observable variables (Marsh, Balla and McDonald, 1988). Thus, with a sample size of 90, we have a ratio of 15 observations to one observable variable, which exceeds the guideline of 10:1 (Jöreskog and S

Second, to remedy the identification problem for structural models,¹⁰ we have fixed the variance terms of latent variables to be equal to the variance of the single measure multiplied by the difference between one and the value of Cronbach's Alpha (variance of the single indicator * (1- α)) (Jöreskog and Sörbom, 1989; Hair et al., 1998) (Table 7).

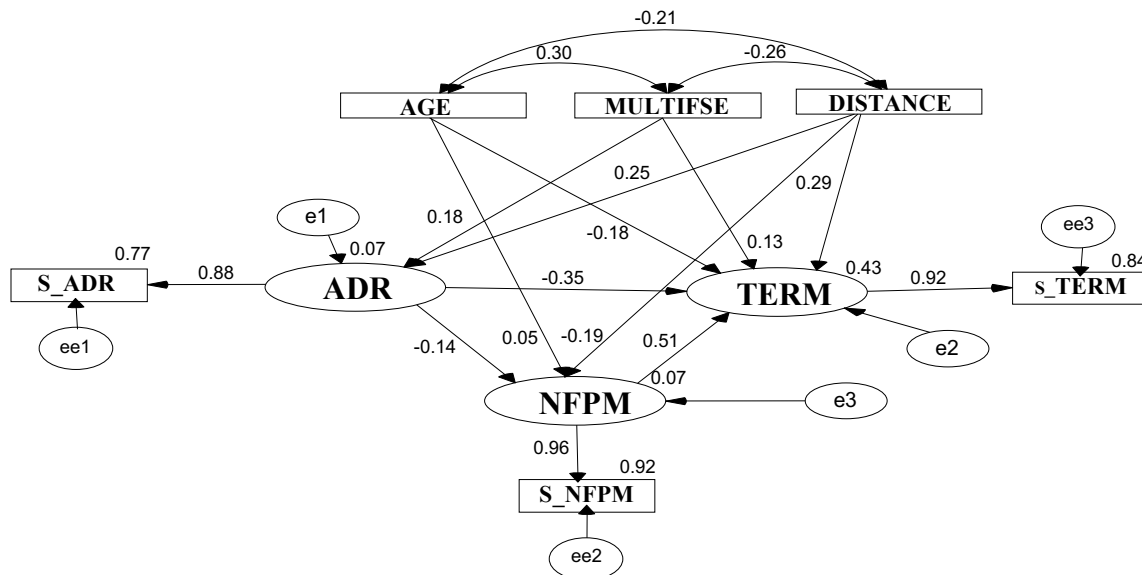
Table 7. Error variances of the indicators

| Indicator | Variance σ^2 | α | Error variance $\theta = \sigma^2 * (1 - \alpha)$ |
|-----------|---------------------|----------|---|
| S_ADR | 10.783 | 0.798 | 2.178 |
| S_NFPM | 20.382 | 0.918 | 1.671 |
| S_TERM | 12.859 | 0.855 | 1.864 |

Further, we have modeled only the significant effects of control variables on the latent variables¹¹ to estimate a parsimonious model. Thus, we reduce the number of parameters that we estimate to 19. With a sample size of 90, we have a ratio of 4.77 observations to one estimated parameter, which is very close to the guideline of 5:1 (Hair et al. 1998). In fact, Tanaka (1987, p. 141) notes, “better than 4:1 subject to parameters ratio is not a particularly small ratio.”

In conclusion, although our absolute sample size is relatively small, we have an acceptable sample size with which to estimate the relatively simple model described, with a ratio of better than ten observations to one observable variable and with a ratio of better than four observations to one estimated parameter (Figure 2).

Figure 2. Structural equation model



Chi-square = 1.158 p = 0.557 ddl = 2 GFI = 0.996 AGFI = 0.955 RMSEA = 0.000

IFI = 1.014 CFI = 1.000 Chi-square /ddl = 0.579 CAIC = 105.655

Our data exhibit univariate normality (Table 8), yet new indicators, obtained after the substitution of items of each construct by their sum, represent a better approximation of the normal distribution. Indeed, the coefficients of symmetry (skewness) and kurtosis of each indicator do not exceed three and eight in absolute value respectively. The Mardia multivariate kurtosis coefficient is more than three but not significant, which is sufficient to meet the assumption of multivariate normality.

örbom, 1982).

¹⁰ This problem is generated by the existence of latent variables with a single indicator.

¹¹ Normally, we have to estimate the effects of each control variable on the three organizational components of franchising design, but for reasons of identification and data fitting we removed the non-significant effects to simplify the model and reduce the number of parameters to be estimated.

Table 8. Assessment of univariate and multivariate normality of observable variables

| Variable | skew | c.r. | kurtosis | c.r. |
|--------------|--------|--------|----------|--------|
| DISTANCE | -1.682 | -6.514 | 1.534 | 2.971 |
| AGE | 0.339 | 1.312 | -0.282 | -0.546 |
| MULTIFSE | 1.978 | 7.661 | 3.109 | 6.021 |
| S_ADR | -0.150 | -0.580 | -1.036 | -2.006 |
| S_TERM | -0.833 | -3.228 | -0.301 | -0.584 |
| S_NFPM | -0.783 | -3.031 | -0.314 | -0.608 |
| Multivariate | | | 3.959 | 1.917 |

The goodness-of-fit indices presented in Table 9 provide evidence of good model fit. All the indices are above the most stringent standards. We note a quite low Chi-square, and the *GFI* and *AGFI* meet the highest standards. Similarly, the *IFI* and *CFI* are sufficiently high, at one. *RMSEA* complies with the most stringent threshold (0.05). Regarding the parsimony of the model, the normed chi-square, being less than two, is consistent with the highest standard. Similarly, the model represents a CAIC index lower than that of the saturated model. In addition, the analysis of the standardized residual covariance matrix shows no residual term that exceeds the threshold of 2.58, which further affirms the good fit of the model.

Table 9. Adjustment indices of the structural model

| Indices | Structural model |
|-----------------------------------|------------------|
| <i>Absolute indices</i> | |
| Chi-square (χ^2) | 1.158 |
| GFI | 0.996 |
| AGFI | 0.955 |
| RMSEA | 0.000 |
| <i>Incremental indices</i> | |
| IFI | 1 |
| CFI | 1 |
| <i>Parsimonious indices</i> | |
| Normed Chi-square (χ^2/df) | 0.579 |
| CAIC | 105.655 |
| (CAIC of saturated model) | (302.490) |

Empirical Results and Implications

In Table 10, we summarize the regression coefficients relating to causality between variables in the empirical model while distinguishing those that were the subject of hypotheses and those inherent to the effects of the control variables.

Table 10. Structural equation results

| Dependent variable | Independent variable | Standard path coefficient | CR | p-value ¹² |
|-------------------------------------|----------------------|---------------------------|--------|-----------------------|
| <i>Hypotheses</i> | | | | |
| NFPM | ADR | -0.137 | -1.111 | 0.266 |
| TERM | ADR | -0.342 | -3.030 | 0.002 |
| TERM | NFPM | 0.503 | 4.869 | 0.000 |
| <i>Effects of control variables</i> | | | | |
| ADR | DISTANCE | 0.251 | 2.095 | 0.036 |
| ADR | MULTIFSE | 0.180 | 1.505 | 0.132 |
| NFPM | AGE | 0.049 | 0.449 | 0.653 |
| NFPM | DISTANCE | -0.192 | -1.701 | 0.089 |
| TERM | AGE | -0.174 | -1.739 | 0.082 |
| TERM | DISTANCE | 0.280 | 2.670 | 0.008 |
| TERM | MULTIFSE | 0.130 | 1.256 | 0.209 |

¹² Reported p-values are based on two tailed calculations for all directional hypotheses.

From our empirical results, we derive that overall, the three components of firms' organizational architecture are interdependent (Figure 2). Thus, we find no significant relation between the delegation of decision rights and nonfinancial performance measurement, but our SEM results provide evidence that these two variables are determinants of contract termination. However, we found only mixed evidence of the effect of franchisee incentive characteristics on the three organizational components.

In our hypothesis H1, we argue that allocation of decision rights is positively associated with the use of nonfinancial performance measurement, but the coefficient of the interaction term was negative ($\beta = -0.137$) and not statistically significant (see Table 10). The data therefore did not support H1. The lack of a direct link between the allocation of decision rights and performance measurement has also marked previous studies such as Widener et al. (2008) and O'Connor et al. (2006).¹³ This result does not match the findings of theories of organizational architecture (Jensen and Meckling, 1992; Milgrom and Roberts, 1992; Brickley et al., 1997), underlying an interdependent relationship between decentralization and the control system. However, it should be noted that this relationship has been empirically validated in the context of intra-organizational relationships (Nagar, 2002; Moers, 2006). As an inter-organizational relationship, the franchisor-franchisee relationship cannot be identical to the employer-employee relationship, usually based on the principle of the hierarchical submission of the employee. This control can thus be experienced by the franchisee as unwanted interference by the franchisor. Similarly, setting specific goals for franchisees can be difficult in the context of a legally and financially autonomous organization. Similarly, evaluating the results achieved may be difficult for the franchisor. Nevertheless, although the franchisor cannot easily set goals for its franchisees, it reserves the right to compare units based on their characteristics and those of their environments. This performance comparison can serve to detect operational anomalies in the franchised units.

However, there is a negative ($\beta = -0.342$) and significant ($p < 0.01$) relationship between decentralization of decision rights and the threat of contract termination. Hence, H2 was well supported by the data. Although this result does not validate complementarity between the allocation of decision rights and the incentive system, as suggested by previous empirical work (Nagar, 2002; O'Connor et al., 2006; Moers 2006; Widener et al., 2008), it nonetheless confirms the interdependent relationship between the two components, according to the postulates of organizational architecture theory (Jensen and Meckling, 1992). This result also corroborates the findings of Arruñada et al. (2001) in automobile distribution networks. They showed a complementary relationship (positive) between the centralization of decision rights and the rights granted to the manufacturer to terminate the contractual relationship. Arruñada et al. (2001) justify their findings by the fact that centralization of decision rights is meaningless in the absence of incentive and dissuasive mechanisms that allow the manufacturer to insist that its dealers comply with its directives. These arguments imply that decentralization does not require substantial use of incentive mechanisms.

It is important to note that in the French context, unilateral termination of the franchise agreement is prohibited in principle. Nevertheless, early termination (before the expiry of the contractual period) may exceptionally result from the option given to the parties to request the legal termination of the agreement.¹⁴ In fact, the franchisor can request early termination of the contract or refuse to renew it in case of non-performance or improper performance of franchisee obligations. However, any failure by the franchisee is insufficient to allow the franchisor to break the agreement. The decision must be motivated by seriousness, as if maintaining the contractual relationship would necessarily entail irreparable harm. This measure seeks to protect the franchisee from the franchisor's arbitrariness. Termination is also authorized by provisions included in franchise agreements. Indeed, this provision specifies causes involving contract termination. It is constraining for the franchisee and reinforces the threat of contract termination.

Our hypothesis H3 stated that contract termination becomes more threatening as the use of nonfinancial performance measures increases. The model displays a positive ($\beta = 0.503$) and significant ($p < 0.001$) coefficient of the interaction term between nonfinancial performance monitoring and contract termination. Hypothesis H3 is therefore strongly supported, in line with previous studies suggesting a complementary relationship between nonfinancial performance evaluation and incentive systems (Ittner, Larcker and Rajan, 1997; Ittner and Larcker, 2002). Indeed, monitoring the compliance of franchisees' performance with the brand concept and guidelines is more feasible for the franchisor than

¹³ Widener et al. (2008) and O'Connor et al. (2006) explain this insight by the fact that there may be other organizational architecture approaches that do not necessarily consider a direct relationship between these two components.

¹⁴ Article 1184 of the French Civil Code.

monitoring financial and accounting performance (Dant and Nasr, 1998). We find evidence that the franchisor is more likely to exercise its termination right under nonfinancial performance assessment.

Results on the effects of control variables show that geographical distance between the franchisee and the franchisor's headquarters positively affects the decentralization of decision rights ($\beta = 0.251$, $p < 0.05$) and the threat of contract termination ($\beta = 0.280$, $p < 0.01$), and negatively affects nonfinancial performance measurement ($\beta = -0.192$, $p < 0.10$).

Indeed, distance of franchisees from the franchisor's head office, understood as an indicator of control costs, may present a real barrier to the franchisor's monitoring of the franchisee's nonfinancial performance. This monitoring requires direct supervision, which is more expensive when the franchisee is far from the franchisor (Brickley and Dark, 1987; Martin, 1988; Norton, 1988; Brickley et al., 1991; Agrawal and Lal, 1995). To reduce these control costs, the franchisor may limit the inspection frequency (Agrawal and Lal, 1995). It can consequently give its franchisees more responsibility by granting them more decision-making power (Fama and Jensen, 1983). Hence, the involvement of distant franchisees in the strategic and commercial choices of the network could be explained by their superiority in terms of local knowledge of demand, market conditions, competition and customer characteristics (Caves and Murphy, 1976; Brickley and Dark, 1987; Norton, 1988; Minkler, 1992). The transmission of this knowledge to a franchisor that is geographically distant from these markets is costly in terms of time and money (Windsperger, 2003 and 2004).

Moreover, the significance of the positive relationship between geographic distance and the threat of contract termination seems, at first glance, inconsistent with the previous result whereby distance is negatively related to the use of nonfinancial performance evaluation. Thus, there is no apparent logic in using contract termination for distant franchisees. However, this finding can be justified by considering that this threat, as perceived by the franchisees, can substitute for direct supervision. Given the difficulties related to implementation of very elaborate compliance control for distant franchisees, the franchisor can raise the threat of contract termination to deter deviant behavior in franchisees.

Concerning the age of the franchise relationship, the results showed no significant effect of this variable on the franchisee's performance evaluation, and a negative ($\beta = -0.174$) and statistically significant ($p < 0.10$) effect on contract termination. This result can be explained by the fact that the older the franchisee-franchisor relationship, the more expert and effective the franchisee is at operating its unit. Therefore, termination or non-renewal of its contract may pose a threat to the brand's reputation, competition, growth and sustainability. Indeed, the eviction of an effective franchisee may act as a negative signal to current and potential partners (Gallini and Lutz, 1992). Furthermore, the evicted franchisee, with an accurate knowledge of the key success factors and weaknesses of its former network, becomes a potential competitor for this network.¹⁵ Lastly, breaking the contractual relationship with an old franchisee could lower the network's revenues by wasting potential royalties, and ultimately impair its profitability. However, this threat should be put into perspective, in that the probability that the network is affected remains low because the number of franchisees concerned by this contract termination is much reduced. Finally, we did not note any significant coefficients of the effect of multi-unit ownership, on allocation of decisions rights or on contract termination. We find, however, that the coefficient of multi-unit ownership on *ADR* is positive ($\beta = 0.180$) and marginally significant ($p < 0.15$).

CONCLUSION

Although the theoretical literature has recognized interdependencies, along with the structural nature of complementarities and substitutes between the various components of organizational design (Roberts, 2004), little empirical research has explicitly considered the interdependence of all three components, with the exception of O'Connor et al. (2006) and Widener et al. (2008). Our study is a pioneer in the application of organizational architecture theory on an inter-organizational form, namely the franchise. It allowed us to identify three components

¹⁵ The franchisee continues running its business in the same area as an independent trader either by developing its own concept, or by joining a competitor's network. The franchisee can thus continue to benefit from the knowledge acquired from its former franchisor and divert some of its customers who are more attached to the franchisee than to the network's brand name.

of governance, rarely distinguished as such in previous studies involving franchising, and to specify interdependencies between them.

The results of this research are mixed and not fully consistent with the advances of the organizational theory of architecture. Nevertheless, we have demonstrated, at least generally, the existence of dependent relationships between different components of a franchising governance system. In particular, we found no direct causal link between the allocation of decision rights and performance evaluation systems. However, we observed that contract termination is negatively associated with the allocation of decisions rights and positively related to performance measurement. Overall, our research shows that the governance of franchise networks reposes on the juxtaposition of various control devices that should be considered as a part of a holistic system. We thus provide franchisees and franchisors with evidence of the ability of the franchise to balance control, autonomy and incentives. These three governance devices coexist and interact in franchisor-franchisee relationships. The allocation of decisions rights to franchisees may result in their greater involvement in the franchise relationship and consequently in increasing their weight in the network (by operating additional units, maintaining longer relationships with the franchisor, holding a strategic geographic location, etc.). Such a position may mitigate the threat of contract termination. However, the implementation of a non-financial evaluation of franchisee performance is constraining for franchisees because contract termination depends largely on the implementation of the franchisor concept and compliance with the franchisor's guidelines.

Further, the data partly confirmed our thesis that franchisee incentive characteristics, such as geographic distance, multi-unit ownership and the age of the franchise relationship, reduce or intensify the need for decentralization and control mechanisms. Thus, in the design and implementation of a network governance system, the franchisor must take into account the characteristics of its partners: a nearby franchisee versus a distant franchisee; single unit franchisee versus multi-unit franchisee; and a novice franchisee recently integrated in the network versus an old franchisee fully familiar with the franchisor concept. These differences explain the wide variety of franchisees' responses to the same type of control. Thus, monitoring levers should be used differently according to the needs of each franchisee. Taking these dimensions into account does not burden the governance system but rather highlights the franchisor's adaptability towards its partners and enhances the quality of the franchisor-franchisee relationship.

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Appendix A. Measures of variables

| Construct | Code | Description of measures |
|---|-------------|--|
| <i>Allocation of decision rights</i> | ADR | To what extent do you participate in the following decision making? (1 = no extent to 5 = to a very large extent) (1) Product and/or service decision (2) Selecting suppliers (3) Resale price decision |
| <i>Nonfinancial performance measurement</i> | NFPM | In order to assess your performance, to what extent does your franchisor rely on the following indicators? (1 = no extent to 5 = to a very large extent) (1) Customer satisfaction (2) Outlet holding (3) Delivery quality (4) Compliance with instructions |
| <i>Contract termination</i> | TERM | To what extent do you feel threatened by the non-renewal or the termination of your contract in the following situations? (1 = no extent to 5 = to a very large extent) (1) Failure to comply with brand concept (2) Refusal of franchisor monitoring (3) False information ¹⁶ (4) Non-payment to the franchisor |
| <i>Geographic Distance</i> | DISTANCE | How long does it take you to cover the distance between your outlet and the franchisor's head office? (1) Less than 10 min (2) Between 10 and 30 min (3) Between 30 and 60 min (4) Between 60 and 120 min (5) More than 120 min |
| <i>Age of the relationship</i> | AGE | How long have you been part of your current network? (1) Between 2 and 5 years (2) More than 5 to 10 years (3) More than 10 to 15 years (4) More than 15-20 (5) Over 20 years" |
| <i>Multi-unit ownership</i> | MULTIFSE | Do you own more than one franchise outlet? (No = 0; Yes = 1) |

¹⁶ Provision of false information to franchisor.

NOTES