

**PERFORMANCE AND RISK AS SIGNALS FOR SETTING UP A
FRANCHISED BUSINESS**

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ABSTRACT

Potential franchisees who wish to start up a business need to seek information signals. The aim of this paper is to analyze the relationship between performance and risk as signals of the quality of the franchise chains and the decision to choose one of them taken by the potential franchisee who wishes to set up a business for the first time via franchising. The results show that performance and risk operated as recognized signals for choosing a franchise chain among those which were operating in Spain during 2002-2008.

Keywords: Business risk, entrepreneurs, franchise, risk tolerance, signaling theory

INTRODUCTION

Currently, entrepreneurship is one of the key mechanisms for generating a country's employment and innovation as well as economic and social development (Kantis et al. 2002). Franchising might be considered a type of entrepreneurship since it contributes both to setting up and developing new business ventures as well as introducing new products and services to expand the market (Torikka, 2009). Although franchising as a type of

entrepreneurship is not widely accepted (Ketchen et al. 2011), the relationship between the two concepts emerged with the appearance of the General Theory of Entrepreneurship (Shane, 2003), and mainly conceptual studies along these lines were subsequently published (Dada et al. 2012).

Shane (2003) contends that entrepreneurship is not exclusively related to the creation of highly creative companies that manufacture new and innovative products or services. Therefore, enterprises can be created through franchises without

any special innovation (Vesper, 1990). Depending on the nature of the entrepreneurial idea of the company created, the latter author grouped entrepreneurs into innovative and imitative firms. Transferring this classification to franchising, franchisors might thus be deemed to be innovative enterprises and franchisees as imitative enterprises. A franchisor's company might be considered innovative since it has created the business concept and its operationalization, and he/she has successfully put it to the test. The franchisee's company could be considered imitative since it is able to successfully replicate the business concept created and proven by the franchisor in new market areas, contributing to the efficient spread of the innovation to emerge from the previously mentioned business concept. The entrepreneurial behavior of the franchisees has also been justified from the resource scarcity theory and agency theory (Dada et al. 2012).

Accepting the entrepreneurial behavior of the franchisees, when individuals decide to set up a business project through a franchise format, they find similar business concepts developed by the franchise systems operating in the market. To choose correctly one of these franchise systems, potential franchisees need information, which they will seek in the signals sent by those franchise systems which wish to be chosen. Therefore, before taking the decision to choose one of them, future franchisees have at their disposal a different quantity of information opposed to that which franchisors possess, causing a problem of opportunism, known as the adverse selection problem of the franchisor.

Economic literature presents the signaling theory as a solution in order to try to reduce

possible information asymmetries between the parties to a relationship when they have access to different quantities of information (Spence, 2002). Although the signaling theory has been used to explain different subjects related to entrepreneurship (Connelly et al. 2011; Dehlen et al. 2012) and to the franchise (Dant and Kaufmann, 2003; Gallini and Lutz, 1992; Dant et al., 2011; Lafontaine, 1993; Michael, 2009), in the specific case of franchisee decisions, the subject of this paper, scarce evidence exists regarding the application of this Theory to the analysis of franchisees' decisions (Combs et al. 2004; Norton, 1995).

Focusing on the franchisee-franchisor relationship, this theory might be deemed a possible strategy employed by potential franchisees to avert the problem of adverse selection and to correctly choose a franchise system (Dant and Kaufmann 2003). Franchisees do so by studying those information signals, which have influenced potential franchisees' decisions to open a business via franchising.

Nevertheless, the process of signaling will function when the receiver knows what information to search for via a signal and the senders correctly manage the signals which they give off (Connelly et al. 2011; Michael, 2009). In the specific case of the potential franchisees who decide to set up a business, these will look for signals given off by the franchisor, which contain the information necessary to correctly select a franchise brand.

Based on the signaling theory, this present paper seeks to analyze the relationship between the decision taken by the franchisees who wish to set up a business for the first time via franchising and those signals which might provide them with

information regarding the quality of the franchise system chosen, such as profitability and risk. The hypotheses formulated are tested by using information gathered in a database of 513 franchise systems, which operated in the Spanish market during the period 2002-2008, distributed in seven sectors. The results obtained in the model estimation using the Generalized Method of Moments (GMM), where unobservable heterogeneity and endogeneity are controlled, show that the risk and profitability of the franchise systems are signals which potential franchisees wishing to set up a business for the first time through franchising take account of while having to choose one franchise system or another from among all those operating in the market at the moment of their decision. Nevertheless, the observability and strength of the signals sent by the franchisor is shown to be the main conclusion for the franchisee-franchisor relationship to be successful.

This study adds to the literature in three important ways: 1) by contributing to signaling theory through its application in a franchise setting; 2) by shedding light on the relationship between the franchisor and the franchisee; and 3) by offering insight in the field of franchise entrepreneurship. First, this study offers new insights into the economic factors that function as signals for franchisees and, therefore, the features or characteristics these signals must have in common to act as such. Second, and given the lack of research on franchisees, this study contributes to a greater understanding of how franchisees make decisions when choosing franchise chains before embarking on a relationship with a franchisor from the chosen chain. Third, in terms of the entrepreneurship literature, this study also makes a contribution from a franchising

perspective by indicating which signals franchisees look for to gather information about the franchise. This knowledge then enables franchisees to set up businesses under a franchise model.

This paper is structured in six sections.

After the previous introduction, in the subsequent section we briefly review the signaling theory, focusing on research related to the decision to franchise on the part of a potential franchisee. The section concludes with the formulation of the hypotheses. The third section describes the sample used in this study, as well as the variables used in the analysis. In section four, the model is specified and estimated. In the fifth part, we discuss the results and, finally, present the study's conclusions, managerial implications, and limitations.

THEORY AND HYPOTHESIS

Franchisees as Entrepreneurs and Their Decision to Set Up a Business

Entrepreneurial initiative includes examining sources of opportunities, discovery processes, evaluation and exploitation of the latter, and the people who discover, evaluate, and exploit them (Shane and Venkataraman, 2000). An entrepreneur will therefore be a person who recognizes an opportunity and takes actions to benefit from it (Kirzner, 1973). Thus, a franchisee has entrepreneurial initiative and can be considered an entrepreneur when: (1) he/she has discovered the opportunity to replicate an already proven business concept, in a new geographical market; (2) he/she has evaluated it together with their franchisor and (3) decides to exploit it by opening a franchised establishment (Kaufmann and Eroglu, 1998). Further, most franchisees originate ideas for their chains by facilitating innovation, since their

proximity to customers gives them an opportunity to discover what consumers need or what can be improved for said customers (Bürkle and Posselt, 2008). Some examples are certain McDonalds' products such as the Big Mac, the Fillet-O-Fish, or the Egg McMuffin, which were products originally conceived by the franchisees of McDonalds (Bradach, 1998; Morrinson and Lashley, 2003; Stanworth et al., 1996). The entrepreneurial behaviour of the franchisees (Dada et al., 2012) means that the franchise chains have the capacity to adapt to the new opportunities and threats that emerge over time in order to ensure their sustainability (Bradach, 1998). This entrepreneurial behavior has its main strength in the knowledge that the franchisees have of the market where they operate or where they are going to operate.

While it is true that a franchisee opening a franchised establishment is not creating a new organization, it is also true that this does not have to be created in order for he/she to have engaged in entrepreneurial initiative (Shane and Venkataraman, 2000), given that this includes an individual's capacity, whether independently or in an organized way, to identify an opportunity, fight for it, and, thus, create a new value or economic success.

The choice of a franchise system by a potential franchisee, who wishes to set up a business via franchising, begins by knowing the franchise systems or brands operating in the market. This knowledge is acquired by compiling and analyzing the information of the brands, which form part of the overall choice in accordance with the selection criteria. With this information transformed into knowledge, the potential franchisee will choose whichever franchise system

possesses sufficient quality to ensure maximum profitability and minimum risk.

As previously pointed out, while franchisors possess information about the quality of their franchise system, the potential franchisee does not know it partially or totally, thus creating information asymmetries (Kirmani and Rao 2000). These asymmetries arise when private information exists between the franchisors and their potential franchisees. This affects the decisions of the latter, who do not possess such information and who need it to take their decisions (Stiglitz, 2002). Thus, when potential franchisees do not have the necessary information regarding the quality of a franchise system in order to open a franchised establishment, they can make inferences about the information transmitted through signals sent by the franchisor. Therefore, the first question is posed: how does a potential franchisee resolve the previously mentioned problem of the franchisor's asymmetrical information? One possible solution might be for the potential franchisee to learn about the quality of the franchise system that exists in the market. However, like a buyer who is sensitive to product quality, the franchisee will be unsure about the true quality of the franchise systems that exist in the market. This poses a second question: how does the future franchisee deal with the uncertainty regarding the level of quality of franchise systems operating in the market? One possible answer would be for the franchisee to choose only those signals sent to the market which reveal information about the profitability and risk of the franchise system he/she will choose to set up the business. The profitability and risk of any business venture are usually the first aspects analyzed before the decision to begin the business is taken. Therefore, in the present

paper, we use the following as signals of franchise system quality: the performance of the franchise system as a signal of profitability (Brand and Croonen, 2010; Minguela et al. 2009; Rondan et al. 2010), and the failure rate as a signal of the risk assumed by the franchisee (Hsiao et al. 2012; Michael, 1996).

The Performance and Risk of a Franchise System

Potential franchisees who wish to set up a business via franchising are taking a financial decision. Therefore, measuring the quality of the franchise system is the financial return on their investment or the profitability of the establishment they wish to set up (Michael, 2009). Potential franchisees will look to set up their business using the franchise systems which evidence a greater level of quality in an effort to ensure they recover the investment made. As pointed out, the Signaling Theory considers that high quality enterprises will be more disposed to disclose their information. Thus, informing potential franchisees of the financial return, they will obtain on the turnover attained as a signal of the profitability of the franchise system, which can be valued by those who are deciding to choose a franchise system to open a franchised establishment. The information which the performance signal transmits regarding the turnover of each sales outlet will be understood by the potential franchisees as a signal of the recovery of the investment.

Authors such as Sorenson and Sorensen (2001) and Rajagopal (2007) found a positive and significant relationship between the number of franchised establishments and the turnover of the franchise systems. That is why opening a franchised establishment is not only a decision of the franchisor but also of the

franchisee, who will try to match the quality of the franchise system to his/her needs and, above all, will seek to obtain future financial income and, consequently, a better performance. Thus, the performance on a franchise chain may be a signal of its quality, which encourages a potential franchisee to choose one chain over another. Thus, the following hypothesis is formulated:

H1: The choice of a franchise system by a potential franchisee who sets up a business for the first time in the chosen franchise system is positively related to the performance of the franchise system.

The quality of a franchise system cannot only be interpreted by means of its profitability but also by its risk. Those franchise systems that have less business risk supposedly signal a higher quality (Michael, 2009). In this sense, the services the franchisors offer the franchisees have affected the exit or withdrawal of the latter from their franchise systems. The quality of the services offered by the franchisors is likely to be equal to or more important than the product or service offered (Huang et al., 2007). Thus, the lower the quality of services offered by the franchisor to his franchised establishments already operating, the greater the likelihood of failure. Consequently, the number of franchise system establishments closed will be a signal of negative and observable information, which will be taken into account by potential franchisees wishing to start a franchised establishment. Therefore, the hypothesis formulated is:

H2: The choice of a franchise system by a potential franchisee

who sets up a business for the first time in the chosen franchise system is negatively related to the risk of the franchise system.

METHODOLOGY AND MEASUREMENTS OF THE VARIABLES

The present research seeks to analyze the relationship between the performance and risk of a franchise system as signals of its quality sent to the market by the franchisors and the choice of a franchise system on the part of a potential franchisee wishing to set up a business for the first time via franchising. To achieve this, we describe the sample and the variables to be used to specify the econometric model in this section.

Data and Sample

To accomplish our objective, we use a sample of 513 franchise systems operating in Spain between 2002 and 2008. It is a panel of disaggregated and unbalanced data drawn from information gathered from and analyzed by the Spanish Franchisors Association and the Tormo and Associates consultancy firm. The period was chosen to avoid the influence of the adoption of the Euro in Spain and the start of the current global economic crisis. Following the choice of the initial year, we used simple random sampling from the population of franchises to collect sample data. In the years subsequent to 2002, other franchises were added to the existing ones to ensure the sample was representative of the franchise population in each year.

Dependent Variable

As regards the variables used and their measurements, the dependent variable

termed “choice of a franchise system by a franchisee who wishes to set up a business for the first time with a franchise system” is the result of the decision taken by the franchisee who sought information signals to set up a business via franchising among all those operating in Spain during the study period (Ehrmann and Spranger, 2005; Solís and González, 2007). It refers to a latent variable measured by the entrepreneurship rate $TEADO2_{it}$ in each of the sample franchise systems considered in every year of the period studied: that is to say, it was measured by means of the percentage of new franchised establishments opened for the first time in each sample franchise system. With this measurement, only the new franchise decisions taken were considered in each of the franchise chains of the sample and investors were not included.

The dependent variable $TEADO2_{it}$ was calculated as follows:

$$teado2_{it} = \frac{Teado1_{it} \times 100}{efnews_{it}}$$

$$teado1_{it} = \begin{cases} 0, & \text{if } teado_{it} \leq 0 \\ teado_{it}, & \text{if } teado_{it} > 0 \end{cases}$$

The variable $efnews_{it}$ refers to the number of new franchised establishments opened each year. This variable was calculated as follows:

$$efnew_{it} = ef_{it} - ef_{it-1}$$

Ef_{it} is the total number of franchised establishments that have a franchise system at moment t .

If $efnews_{it}$ {

- > 0 franchised establishments have been opened
- < 0 franchised establishments have been closed
- = 0 franchised establishments were neither opened nor

The variable $efnews_{it}$ contains the franchised establishments opened by those who set up a business for the first time and other establishments opened by franchisees who already had other establishments opened and, therefore, can be considered as investors rather than entrepreneurs. As this paper aims to analyze the potential franchisees who decided set up a business for the first time within the franchise system, the franchisees-investors were not considered, and we analyze only franchisees-entrepreneurs. For this, the variable $teado_{it}$ was constructed and refers to the number of new franchised establishments opened by individuals franchising for the first time. Thus, we analyze the franchisees-entrepreneurs or entrepreneurs who chose the franchise as a system to start their businesses. This variable was calculated as follows:

$$teado_{it} = efnews_{it} \times TEA$$

if $teado_{it} <= 0$ it is understood that there has been no entrepreneurial activity, and TEA is the rate of total annual entrepreneurial activity in Spain from 2002 to 2008.

Independent Variables

We have operated with the independent variables using the data available in the information sources previously mentioned and updated annually for each franchise system and year between 2002 and 2008.

The performance rate of the franchise system [$RTODO$] was measured by means of the percentage of profit obtained by the franchisee over the turnover obtained, after discounting the royalty demanded by the franchisor from the future franchisee. This is an observable and credible signal of the franchise system's performance since it is contained in the franchising contract that both parties signed.

$$Rtodo_{it} = (100 - \%royalty_{it})$$

The risk assumed by the franchisee [$RISKDO$] is measured via the failure rate of the franchisor and, specifically, the percentage of franchised establishments closed in each franchise system of the sample under study and for each year of the period considered (Bhattacharyya and Lafontaine, 1995; Michael, 1996, 2009). It is an observable and credible signal of the risk, which potential franchisees assume if they chose that signal to set up a franchise business.

To measure the risk of the franchise systems, the following variable was calculated:

$$Riskdo_{it} = ((efnews * 100 / ef_I_{it}) / 100$$

where the variable $riskdo_{it}$ is the failure rate of the franchisor or the risk rate that the franchisee assumes in a specific period: $efnews_{it}$ contains the franchised establishments opened for each of the franchise systems studied in each period: ef_I_{it} is the number of franchised establishments opened in a franchise system immediately prior to the period considered. When the values of the variable $riskdo_{it}$ are greater or equal to 0, then said values have been transformed into zeros since it was interpreted that no risk rate existed for the

franchisee, given that the franchise systems were opening establishments or maintaining the existing ones without opening or closing outlets. When the values of said variable $riskdo_{it}$ are less than zero, the values obtained have been maintained because they are understood to reflect the failure rate of the franchisor and the risk rate of the franchisee.

Control Variables

Finally, the time and sector were controlled with dummy variables drawing on previous research (Shane et al. 2006), which suggested the importance of controlling these variables in order to explain potential franchisees' choice of franchise system. To distribute the effects of time, the years of the observations were controlled with a series of seven dummy variables for each of

the years considered, taking 2002 as the base year. Likewise, the effects of the sector were measured by seven dummy variables for the seven sectors considered and in which each franchise system of the panel is grouped, and 0 otherwise, giving a main matrix whose principal diagonal is formed by the unit.

EMPIRICAL MODEL SPECIFICATION AND ESTIMATION

Having described the variables and their measurements, certain descriptive statistics are calculated to analyze the nature of the model's variables. It can be seen in Table 1 that no bias exists. The bi-variable correlations are also shown for the dependent and independent variables.

Table 1: Descriptive Statistics of the Sample

Variable	Mean	S.D.	Min.	Max.	TEADO2	RTODO	RISKDO
TEADO2	0.028	0.031	0	0.078	1		
RTODO	0.958	0.062	0.01	1	0.224	1	
RISKDO	-0.047	0.143	-1	0	0.000	0.207	1

The correlations shown are not strong enough for there to be a problem of multicollinearity. Nevertheless, the correlation between *RTODO* and *RISKDO* is 0.207 ($p < 1$), such that the variance inflation factor (VIF) of these two variables (1.01 and 1.08, respectively) was applied, indicating there is no threat of multicollinearity since they are below the suggested value of 10 (Kennedy, 1998).

Specification of the Model

In line with the objective previously outlined, the hypotheses already posited and the description of the variables, the linear regression model, which we seek to estimate, is specified in order to examine the relationship between the signals, which

provide information concerning franchise system risk and profitability during the period 2002-2008 and the choice of franchise system by the potential franchisee in the period mentioned:

$$TEADO2_{it} = \alpha_n + \alpha_1 [RTODO_{it}] + \alpha_2 [RISKDO_{it}] + \eta_i + d_t + s_i + v_{it}(1)$$

where *i* is the franchise system and *t* is the year; *[TEADO2]* is the rate of entrepreneurship in a franchise system in a specific year: that is to say, the percentages of new franchised establishments opened for the first time by an individual; *[RTODO]* is the franchisees' performance,

if they chose a specific franchise system; [*RISKDO*] is the risk the franchisees assume if choosing any of the sample franchise systems; [η_i] is the term reflecting the unobservable heterogeneity or individual effect; [d_t] is the term measuring the specific effect of time through the corresponding dummy time variables by which the effects of macroeconomic variables can be controlled in the choice of a franchise system; [s_i] is the term measuring the effect of the sector by means of the corresponding dummy variables and [v_{it}] is the random effect.

The previously proposed model was estimated using panel data methodology. This methodology was chosen in order: (1) to control unobservable heterogeneity; (2) to correct possible endogeneity between the dependent variable and independent variables (Shane et al. 2006); and (3) to include the effects of the macroeconomic variables which might have affected a franchisee's choice of franchise system. These aspects have scarcely been considered in the research carried out into franchising decisions, and therefore, a rigorous analysis is required to have a sound understanding of said decisions.

The unobservable attributes of franchisees, such as their tendency to take risks or their entrepreneurial vocation, will have a different effect on the choice, which the various franchisees make regarding one franchise system or another. The effect will be such that if any of these attributes were correlated with the quality signals of a franchise, their impact on the choice of franchise system might bias the results obtained (Lafontaine and Shaw, 1999). In order to avoid this bias in the estimated coefficients of the model, caused by the correlations between the unobserved

characteristics of a future franchisee and the signals used to choose a franchise system, unobservable heterogeneity was controlled by modeling it as an individual effect.

The second aspect taken into account when choosing the panel data methodology is the problem of endogeneity. This problem arises when the variable "choice of a franchise system by the franchisee candidate" could explain some of the independent variables considered in the model (Shane et al., 2006). To avoid this possible problem, performance and risk have been considered as endogenous variables and the difference GMM estimator has been applied when estimating the model (Arellano and Bond 1991). This is an instrumental variables method, which employs the lags of the variables, which serve as instruments in order to correct possible endogeneity, as well as eliminating the unobservable heterogeneity.

Estimation of the Empirical Model

This section presents the GMM estimation results of the linear model of the equation (See, Table 2). Although not reflected in the model of equation (1) previously expressed, it is a dynamic linear model since it takes into account the one period lagged dependent variable [*LI.TEADO2*] as the explanatory variable, since the choices made by potential franchisees in one year are likely to be influenced by the choices made in the previous year (See, Table 2).

The estimations presented are the result of applying three criteria: (1) the criteria of Arellano and Bond (1991) of choosing all lags when dealing with small samples – Model Ia and Ib; (2) Hansen's J Test relating to the model specification - a Test equal to 1 indicates that the model is well specified: that is to say, that the instruments or lags were well chosen – Model IIa and

IIb; (3) a mixed criteria where we combine the greater number of significant parameters, the absence of second-order serial correlation - m2 - and Hansen's J Test

greater than 0.10, which is the limit for accepting that the instruments are well chosen – Model IIIa and IIIb.

Table 2: Estimations of the Proposed Model

Variable	Ia	Ib	IIa	IIb	IIIa	IIIb
L1. TEADO2	-0.159** (0.011)	-0.103 (0.144)	-0.119 (0.354)	-0.311 (0.034)	-0.195** (0.006)	-0.140 (0.048)
RTODO	0.072*** (0.000)	0.084*** (0.000)	0.057 (0.755)	0.063 (0.605)	0.065*** (0.000)	0.084*** (0.000)
RISKDO	-0.117*** (0.000)	-0.141*** (0.000)	-0.137*** (0.000)	-0.148*** (0.000)	-0.124*** (0.000)	-0.142*** (0.000)
Year2004	-----	-0.012*** (0.000)	-----	-0.008*** (0.003)	-----	-0.012*** (0.000)
Year2005	-----	0.014 (0.493)	-----	-0.003 (0.485)	-----	-0.001 (0.649)
Year2006	-----	0.166*** (0.000)	-----	0.158*** (0.000)	-----	0.017*** (0.000)
Year2007	-----	0.001 (0.786)	-----	0.003 (0.479)	-----	-0.0002 (0.954)
Year2008	-----	-0.004** (0.031)	-----	-0.005** (0.014)	-----	-0.005** (0.004)
Z_1	191.90 (3) (0.000)	137.96 (3) (0.000)	55.97(3) (0.000)	50.69 (3) (0.000)	117.84 (3) (0.000)	205.82 (3) (0.000)
Z_2	-----	87.20 (5) (0.000)	-----	68.21 (5) (0.000)	-----	94.95 (5) (0.000)
m_1	0.002	0.001	0.022	0.020	0.007	0.001
m_2	0.257	0.898	0.284	0.136	0.168	0.718
Hansen	0.031	0.701	0.028	0.978	0.003	0.746
Observations	2552	2552	2552	2552	2552	2552
Franchise systems	513	513	513	513	513	513

Six estimations of the same model are shown in Table 2. Estimations Ia, IIa, and IIIa refer to the model of equation (1) taking into account only the individual effect already mentioned $[\eta_i]$ and the random effect $[v_{it}]$. Estimations Ib, IIb, and IIIb are the GMM estimation of the model of equation (1) taking into account the individual effect $[\eta_i]$, the random effect $[v_{it}]$, and the time effect by means of the time

dummies $[d_t]$. A further three estimations were performed taking into account the individual effect $[\eta_i]$, the random effect $[v_{it}]$, the time effect using the time dummies $[d_t]$, and the sectorial effect using the dummies relating to the sector $[s_i]$. The sector dummy variables were eliminated due to multicollinearity and, therefore, the estimations that included them were not reflected.

Finally, we first verified the possibility that the proposed model might be misspecification, to check for which Hansen J-statistic of over-identification of restrictions was used. This statistic tests the validity of the instruments used, given that it indicates the absence of correlation between the instruments and the error term ($p=1$). Secondly, the m_2 statistic developed by Arellano and Bond, 1991, was used to verify the absence of second-order serial correlation among the residuals obtained in first-differences. It can be seen that although there is first-order serial correlation [See, m_1], this is caused by the transformation in first-differences of the model and, consequently, does not represent a specification problem of the model. Thirdly, the overall significance of the coefficients obtained and of the time variables were verified by the Wald Tests: Z_1 and Z_2

DISCUSSION OF THE RESULTS

In Table 2, we see the estimations with the lags which provide the best results when applying the three previously cited criteria. Estimations I (a) and (b) include all the lags of the dependent variable and the independent variables. Estimations II (a) and (b) take into account the 1st, 2nd, 3rd, 4th, and 5th lags of the dependent variable and the 1st, 2nd, and 3rd of the performance and risk variables. Finally, estimations III (a) and (b), taking into account the third criterion applied, include the 1st, 2nd, 3rd, 4th, and 5th lags of the dependent variable and all the lags of the independent variables. The results show that the instruments employed are only valid in estimations, which incorporate the time variables (See, Hansen Test): that is to say, in estimations I (b), II (b), and III (b). In these estimations, it can be said that the lags

of the variables as instruments have been well chosen.

As regards the m_2 statistic which indicates the second-order serial correlation in the model, Table 2 shows there is no problem of second-order serial correlation in the model estimated with different lags. Finally, Table 2 reflects the results of the Wald Tests: z_1 allows us to verify the overall significance of the coefficients obtained and z_2 indicates that overall significance of the time variables exists.

With respect to the significance of the coefficients, it can be observed that the coefficient of the variable “risk taken on by the franchisee” [*RISKDO*] is significant in the estimations of the model with the different lags included, thus supporting Hypothesis H2. The performance variable [*RTODO*] is significant in the estimations of model I (a) and (b) and III (a) and (b), supporting Hypothesis H1 for these cases. As regards the time variables, Table 2 shows that the coefficients for the years 2004, 2006, and 2008 are significant. Years 2002 and 2003 were eliminated due to collinearity.

An overall assessment of the estimations of the model with the various combinations of lags, taking the three criteria into account, would lead us to choose the III (B) estimation of the model which takes account the 1st, 2nd, 3rd, 4th, and 5th lags of the dependent variable and all the lags of the independent variables. The reasons for this choice are: (1) it addresses the estimation with the greater number of significant variables of a model; (2) the model is well specified since the lags used as instruments are well chosen and (3), moreover, no second-order serial correlation exists.

To close this section, it can be said that: (1) the time variables that include the macroeconomic effects in the model improve the validity of the instruments, the adjustment of the model, and also slightly improve the coefficient of the variables; (2) the results obtained support the indirect relationship between the risk of the franchise system and the number of franchised establishments opened for the first time by an entrepreneur or potential franchisee in each of the years considered. Therefore, Hypothesis H2 is supported; and (3) the results support the direct relationship between the performance of the franchise system and the number of franchised establishments opened for the first time by an entrepreneur or potential franchisee in each of the years considered, thus supporting Hypothesis H1.

CONCLUSIONS, IMPLICATIONS, AND LIMITATIONS

Research into franchisees who prefer franchising for setting up a business rather than as an investment is very scarce. This paper has sought to provide further insights on this topic by analyzing the relationship between the performance and risk of a franchise system as signals of quality sent to the market by the franchisor and the choice of a franchise system by franchisees-entrepreneurs in a sample of 513 franchise systems operating in Spain between 2002 and 2008. After controlling the unobservable heterogeneity and endogeneity of the variables, the results first lead to the conclusion that the possible macroeconomic effects cannot be obviated in the entrepreneurial decisions applied to the franchises. The risk of the franchise systems studied relates more to macroeconomic factors than to features linked to the quality of the franchise

systems or to the franchisee's personal traits. It should be remembered that the latter have been controlled using the methodology applied.

Secondly, the performance and risk of the franchise systems perceived as signals have affected the choice of one of those carried out by the franchisees that opened one of their establishments for the first time. Nevertheless, it is necessary but insufficient for the franchisors to send those signals, which potential franchisees seek, given that correctly handling their content is required for the signal to convey clarity to franchisees deciding to franchise the establishment of a franchise system for the first time.

Accordingly, the risk of the franchise systems, which operated in Spain between 2002 and 2008, functioned as a signal to gauge their quality in franchisees that set up a business by opening an establishment for the first time in the franchise system chosen but did not solve the problem of the adverse selection of the franchisor who gathers information mainly from this signal of quality. This is true until the signal of risk of a franchise system transmits, via its content, why the establishments close since it is not the same if this is due to factors related to the quality of the franchise system or to macroeconomic factors. Therefore, the risk of the franchise system, as it has been measured, is not a clear signal for potential franchisees, given that the cause may vary and potential franchisees might not be aware of them merely through the signal, which may give rise to possible opportunistic behavior by the franchisor. Franchisors of top quality franchise systems need to correctly manage the content of this signal, so their potential franchisees can distinguish between franchisors that close

for macroeconomic factors and franchisors that close due to the lack of quality of their franchise systems.

The performance that franchisees obtain in relative terms from each of the franchise systems considered is also an information signal for choosing a franchise system, in which they will set up a business as a franchisee. Unlike risk, performance acts as a true signal of quality for franchisees, regardless of the effects of those macroeconomic factors of the country which may affect them, such as economic growth or interest rates if they had to finance the business through a loan. Performance acts as a clear signal for potential franchisees.

Implications and Limitations

The paper has the following implications for theory and practice. This work poses new applications of signaling theory to those fields of franchising that are currently being researched, as well as continuing to identify signals which adjust their content to the signaled reality, forming a portfolio of signals which are available so that future franchisees choose the correct franchising chain with which to set up a business. Among the applications are: 1) for the franchisees, it would be interesting to analyze which private information signals have more influence in their decision to choose one or another franchising brand, such as those which have been considered in this paper, like the number of establishments closed or public information signals. . Knowing the signals that operate as such in a franchise, it would be interesting 2) for the franchisors to identify the correct moment to signal (given the cost involved in producing a signal) the quality of their franchise chains and their competition and, finally, it would be

interesting 3) for those franchises to know the signals which the consumers of franchise products employ when deciding to choose one brand or another and to establish a comparison with the signals considered by the franchisees of the chosen brand.

One field of application is the survival of the franchise chains and, more specifically, of their franchisee establishments. An analysis of the causes could lead us to identifying information signals not taken into account in the choice of the franchise chain or the errors in the signals chosen to select it. The identification of information signals that also influence the taking of decisions regarding the different types of management - company-owned vs. franchised units, single-unit vs. multi-unit franchisees, area developers, master franchisees, passive ownership arrangements – within the franchise, may lead us to better explaining their existence.

A further contribution is the application of data panel methodology to a dynamic linear model estimated by using the General Method of Moments (GMM). This makes it possible to use the best instruments of the variables, which are endogenous, to eliminate the influence of franchisees' personal factors, so as to avoid possible correlations with the signals under study and to take into account the macroeconomic effects in the decisions of franchisees wishing to set up a business for the first time. The results obtained support the idea that the effects of the macroeconomic variable cannot be obviated when analyzing franchisees' decisions.

The strengths of panel data methodology allow new applications in research into franchising. We suggest some of them for

identifying the information signals, which best work for the making of decisions by the franchisors and the franchisees in a period of economic growth and economic crisis in a country and, in the field of entrepreneurship applied to franchising, for identifying those information signals which enable an entrepreneur, whether a franchiser or a franchisee, to discover a business opportunity.

As regards practical implications, our paper offers some for potential franchisees and others for the franchisors of franchise systems of a quality higher than the market average that franchisees seek. For future franchisees with an entrepreneurial spirit that do not wish to open an independent business or to be investors, they need to know how to correctly choose the signals which can provide them with information in order not to make a mistake in the chosen franchise system, at least in the early years of operation. Franchisors of top quality franchise systems not only need to know the signals that potential franchisees are seeking, but also to manage their content correctly so that those franchisees seeking franchise systems, in a market where high and low quality franchise systems are involved, can differentiate them because they send clear signals.

The study has the following limitations: among the limitations of the paper, which we will attempt to rectify in future research, is the absence of a random sample and deficiencies in the measurement of the variables. The panel data methodology needs to have the same franchise systems in each of the years of the period under study. Therefore, to resolve this problem, what we have done is to assume a random sample in the cross section dimension. Currently, this problem is not very important if we follow

the example of other fields of research, such as government and cooperative finance, which frequently employ all the enterprises for which the necessary information is available. Measurement of the variables is another limitation. Measurements of franchise system performance and risk will be replaced by others in order to gauge whether the same results are obtained. Further, it would be advisable to incorporate new signals into the model so that franchisors have a range of signals that they can correctly manage and which franchisees can clearly distinguish.

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