Economic Research-Ekonomska Istraživanja

ISSN: 1331-677X (Print) 1848-9664 (Online) Journal homepage: https://www.tandfonline.com/loi/rero20

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To cite this article: Jannett Ayup-Gonzalez, Esther Calderon-Monge & Agustin Carrilero-Castillo (2019) The effects of management and environmental factors on franchise continuity, Economic Research-Ekonomska Istraživanja, 32:1, 982-997, DOI: 10.1080/1331677X.2019.1592008

To link to this article: https://doi.org/10.1080/1331677X.2019.1592008

Published online: 25 Apr 2019.

ECONOMIC RESEARCH-EKONOMSKA ISTRAŽIVANJA
2019, VOL. 32, NO. 1, 982–997
https://doi.org/10.1080/1331677X.2019.1592008

The effects of management and environmental factors on franchise continuity

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ABSTRACT

There is abundant evidence that franchises boost the economies of developed and emerging market economies. In Mexico, for example, despite its limited growth, the franchise system is dynamic. Over the past three decades, the inconsistent continuity of the global franchise business format may also be noted. The aim here is to analyse the factors linked to franchise continuity in the Mexican hospitality sector by applying panel data methodology to a sample of 253 hospitality sector chains between 2002 and 2016. The results showed that franchised outlets, proven and improved know-how, and market factors, under conditions of endogeneity, maintained a positive effect on the continuity of the franchise business format.

ARTICLE HISTORY
Received 14 September 2018
Accepted 22 January 2019

KEYWORDS
Franchise; know-how; signal; G.M.M

JEL CLASSIFICATIONS
M13; M16; M21

1. Introduction

Franchises are of importance both to companies and to the economy of a country, for which reason the study of their continuity is relevant (Acs, Armington, & Zhang, 2007; Bordonaba-Juste, Lucía-Palacios, & Polo-Redondo, 2008; Dobbs et al., 2014; Michael & Combs, 2008; Ng & Keasey, 2010; Winter, Szulanski, Ringov & Jensen, 2012). The continuity of a business can be defined as its capacity to maintain its commercial viability, fulfill its obligations, and improve its operations, as well as other similar activities. Business continuity therefore implies sustainable operations and an assurance of survival. From a contractual perspective, the constant and stable presence of a franchise on the market is a form of continuity. From that perspective, successful franchises depend on both franchisor and franchisee, where both contribute to the same enterprise (Rodríguez-Rad, Rondan-Cataluña, & Macias-Molina, 2017). Although the business growth of franchising is expected to move in a positive direction for market continuity to remain in place, the intensity of the effect will usually differ for the franchisor as much as for the franchisee, due to possible opportunistic behaviours by one

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or the other party. Both the franchisor and the franchisee, however, have an expectation of continuity, generated by the mutual perception of a continuous economic relationship (Benoliel, 2009; Facanha, Resende, Cardoso, & Schröder, 2013).

The expansive nature of a franchise and the international scope of its operations can stimulate the economy of both developed and emerging countries. In addition, according to Kyung and Seoki (2018), franchises have reduced industrial instability. According to a comparative study of Mexico, Argentina, Chile, the U.S.A. and Spain, over 70% of businesses, whether franchises or otherwise, never continued beyond their fourth year of existence. Mexico had the lowest survival rate, with only 10% reaching the fifth year of life; even so, it had higher business creation rates than Argentina, Brazil and most European countries (Moreno, Cuevas, & Michi, 2015). Although there is evidence of a low barrier to entry in the business environment of Mexico, there is also greater difficulty for survival over the medium term (Global Entrepreneurship Monitor, 2017). Moreover, franchises represented 6% of Mexican gross domestic product (G.D.P.) in 2017, and occupied seventh place in a global country ranking of the number of franchise brands with constant growth. Figures that coincide with those of the Mexican Franchise Association (A.M.F., 2018), suggest that the true challenge is franchising continuity, rather than opening, because the franchise will not have sufficient inputs to achieve higher growth both inside and outside the country. As a research topic, therefore, from a professional point of view, the analysis of franchise continuity in Mexico is of great interest. From an academic point of view, this article fills a gap in the existing literature by focusing on franchise chain continuity rather than on franchise chain survival that, as has been mentioned, is understood to take place in a context of uncertainty, further complicating the continuity of the chain. In addition, this analysis considers aspects hitherto unexplored in a dynamic way in the franchise system, such as the management of the know-how and the business concept in a context of economic and political uncertainty.

In this study, signaling theory and the signal management approach is adopted as a theoretical framework for the analysis (Connelly, Certo, Ireland, & Reutzel, 2011) of the joint and dynamic effects of certain company characteristics. Thus, size, ownership strategy (Kacker, Dant, Emerson & Coughlan, 2016; Michael & Combs, 2008) and market conditions (Alon, Madanoglu, & Shoham, 2017; Brown, 2015; Hoffman, Munemo, & Watson, 2016, p. 107; Lafontaine & Slade, 2014) are all studied in terms of their effect on the market continuity of the franchise business format. The aim is to analyse business and market factors that affect the continuity of the franchise for a term of approximately 10 years, assuming non-termination of the contract by the franchisor and the probable continuity of the franchise business format in the market. The 10-year inflection point was chosen because it is longer than the current average lifetime of a franchise in Mexico, established at five years by the A.M.F., while international research even shows three years of continuity in different contexts (Castrogiovanni, Combs, & Justis, 2006). A number of economic and political cycles with significant effects on companies have taken place in Mexico throughout the period under study, which ran from 2002 until 2016.

A sample of 253 franchises established in Mexico in the hospitality sector during 2002–2016 were selected to achieve the objectives set out above. The results of the

estimation of the model through the generalized method of moments (G.M.M.), which controls for unobservable heterogeneity and endogeneity, revealed that the market continuity of the franchise business format had a greater dependency on the effects of market conditions than on the strategic management of the franchise.

This article is structured into five sections. In the first section, background information will be presented and, in the second section, the conceptual framework and the theoretical foundations, followed by the formulation of the hypotheses. In the third section, the sample that is under study will be described and the model will be developed. A discussion and analysis of the results will then follow in the fourth section, and finally, in the fifth, the conclusions and the limitations of the study will be presented.

2. Theoretical framework: theory of signals and hypotheses

Considering the relationship between the utility of the signals established in the economics literature, Spence (1973) postulated that market behaviour would react to quality signals in the information sent out to participants. Seeking to explain the decision to license or to buy into a franchise by either the franchisor or franchisee, franchise research has employed the theory of signals to focus on the external aspects of the market, market imperfections and the recognition of information asymmetries (Kacker et al., 2016; Sadeh & Kacker, 2018; Shane, Shankar, & Aravindakshan, 2006). Information asymmetries arise from two primary forces: (1) the nature of the information; and, (2) the inability of individuals to evaluate the information that is available, which can be presented opportunistically or involuntarily in a biased manner (Dant & Kaufmann, 2003). This situation presents partially opposing interests, but it shares a goal of achieving benefits for both parties. Individuals make decisions based on the available information in a process in which the presence of information asymmetry (both the quality and the intention of the informative signal) is ignored (Stiglitz, 2002).

Financial signals are usually communicated voluntarily to the market by the franchisors to attract franchisees to their networks. In addition to the contractual aspects, the decision to franchise is influenced by the signals that suggest benefits associated with higher success rates and faster initial growth than independent businesses in the same sector. Two dimensions in which separate divisions of a franchise company interact will help to understand the quality of the signals for both the franchisor and the franchisee in the decision to maintain the franchise: (1) strategic management; and, (2) market factors that intervene in decisions over franchise continuity. The preset financial input from the franchisees was set aside, because they are more of an agency approach than the strategic decisions of the franchise concept, such as the continuity of the franchise.

2.1. The strategic management of the franchise and its continuity in the market

Size refers to the strategy of listing the total number of outlets in the franchise chain as an indicator of network growth. This information can be used as a quality signal (Shane et al., 2006) that justifies the values that a franchisor contributes to the franchisees, and the possibility of opening more outlets with a certain guarantee of

obtaining benefits. Even though a franchisor's managerial decisions and the individual choices of the franchisee may or may not be correct, however, they will always affect the continuity of the franchise business format. Gillis and Castrogiovanni (2012) and Kacker et al. (2016) suggested that variations in network size and performance measures could be used to evaluate the franchisor's strategy, rather than indicators of business continuity. Nevertheless, Madanoglu and Castrogiovanni (2018), and Bordonaba-Juste and Lucia-Palacios (2007) considered that the effect of size as an incentive to remain in the market quickly disappeared. Kosová and Lafontaine (2010) contended that the size of the chain is a signal that brings maturity to both the know-how and the results of franchise continuity. Considering the relationship between size and the continuity of the franchise business format, the first hypothesis is presented:

H1: The continuity of the franchise business format in the market will be positively related to the size of the franchise chain.

Frazer (2001) established that the largest chains with a longer market presence had higher levels of disruption in the form of disputes or the conversion of outlets. Weaven and Frazer (2007) investigated the growth of chains through the strategy of multi-franchising, assuming greater benefits for the multi-franchise. Kacker et al. (2016), following Gallini and Lutz (1992), concluded that a larger proportion of company-owned outlets achieved higher incomes, greater control of know-how, and a business environment with continuous improvement in procedures developed to optimise operating systems. Therefore, the number of company-owned outlets is a signal that the franchisor sends out to the market, which indicates the quality of its franchise business format and its profitability (Michael, 2009).

It may also be the case that the franchisor takes ownership of those franchised outlet that are more profitable or those that have not been correctly operated by the franchisee. In the latter case, the franchisor wishes to maintain the brand image and therefore decides to repossess it, which positively influences the continuity of the franchise business format. Hence, the franchisor-owned and the franchised outlet complement each other (Hendrikse & Jiang, 2011); the ownership of the outlets of a franchise is a signal transmitted by the franchisor to the market. The second hypothesis corresponds to the ownership strategy of the franchisor and the resulting effect on the continuity of the franchise business format in the market:

H2: The continuity of the franchise business format in the market will be positively related to the number of company-owned outlets of the franchise chain.

Among the alternatives for a business start-up is the possibility of purchasing a franchise brand outlet for its commercial exploitation, which has risk levels associated with uncertainty and growth that are lower than in other businesses. Thus, the franchise chains with the greatest number of franchised outlets send out a signal to potential franchisees, by communicating their strong and competitive franchise business format with good relationships between the franchisor and the franchisee. This assumption was refuted by Dant and Kaufmann (2003). Along those same lines, however, Michael (2009) assumed the acceptance of the franchisor's strategy for growth through a larger number of outlets that would quickly gain a larger share of the market. It has also been shown that entrepreneurs have a tendency to franchise (Dada,

Watson, & Kirby, 2015), thereby strengthening franchising; a situation that prompts the proposal of the third hypothesis:

H3: The continuity of the franchise business format in the market will be positively related to the number of franchised outlets of the franchise chain.

A determining factor in the resources that franchising generates is the solidity of its know-how, due to constant and rapid adaptation to market conditions, which is one of its characteristics. The very small amount of research that does exist, however, has explored the relationship between know-how and the permanence of the franchise in the market place. Imprecise replication of the know-how, inadequate operation and deviations from the standard know-how defined by the franchisor, which have taken time and financial resources to develop, can introduce discontinuities in the franchise chain and can even lead to its repossession (Winter et al., 2012). Therefore, the time that a franchise chain has been operating in the market as a company and therefore within the franchise business format is an indirect and publicly available signal of its value. Thus, franchises build competitive advantages from their very beginnings (Hoffman & Preble, 2004), strengthen them and send out signals to the market for those wishing to franchise.

One aspect of the development of the know-how is the time it takes to develop the franchise activity, which is a signal of investment success (Kacker et al., 2016). Lafontaine and Shaw (2005) also found this factor to be a predictor of continuity. The time that the franchisor had been operating in the business before starting a franchise, the time spent developing products, services, and procedures and documenting the operation in manuals increases the chances of a successful franchise business format. In doing so, the franchisor sends out a quality signal (of a fully developed franchise) before starting the contractual operation; in this way, a franchisor can dedicate its efforts to monitoring and making strategic decisions over market presence and share, adopting behaviours that do not risk investments and brand assets, and sending out a quality signal to the franchisee (Kacker et al., 2016). Therefore, the continuity of the franchise business format in the market is positively related to the number of franchised outlets of the franchise chain.

A longer know-how development time leads to a lower moral risk for the franchisor. A fundamental issue of growth through replication is the extent to which systems, processes and cultures must adapt to varied local environments. Winter et al. (2012) found that deviations from the original know-how increase the risk of outlet failure. Precise replication and the age of the franchise are signals of experience that influence the continuity of the franchise business format in the market. On the basis of those ideas, the following hypothesis is developed:

H4: The continuity of the franchise business format in the market will be positively related to the proven know-how of the franchise.

2.2. Market conditions and the continuity of the franchise business format in the market place

An analysis of signal quality impact reveals control over the effect of the market conditions on individual decisions (Michael, 2009) and, importantly, the decision to

either continue with the original franchise business format or to adapt the know-how within the franchise. Exogenous factors such as the G.D.P. of a country and its competitiveness index take into account the risk and uncertainty that affects the business decisions.

G.D.P. levels signal whether the economy favours investment. In franchising research, Alon et al. (2017), Bordonaba-Juste, Lucía-Palacios, and Polo-Redondo (2009), andHoffman et al. (2016) found that the franchisor, upon perceiving a level of economic growth and high investments in a country, signals less uncertainty in the market. This effect can directly influence the continuity of the franchise business format in the market. The following hypothesis therefore emerges:

> H5: The continuity of the franchise business format in the market will be positively related to the G.D.P. of the country in which it operates.

Likewise, contextual factors such as interbank interest rates, investment levels, political periods that determine public policies, and periods of crisis and commercial growth are all situations that affect the decisions of franchisees and franchisors. A country's competitiveness index (Global Competitiveness Index) integrates three components: (1) technology; (2) public institutions; and (3) the macroeconomic environment. Each one is composed of parameters that reflect the degree of stability of political, legal and social institutions. The influence of macroeconomic policies that generate the potential for national prosperity creates at the microeconomic level the capacity of companies to offer valuable goods and services using efficient methods. This report is aligned with the Business Competitiveness Index (B.C.I.) developed by Michael Porter of Harvard University. Therefore, the hypothesis that emerges in that context is as follows:

> H6: The continuity of the franchise business format in the market will be positively related to the country's competitiveness index.

3. Method

3.1. Sample and data

The information collected in Mexico and then analysed to test the above six hypotheses, to achieve the objective of the study, was obtained from various sources to expand the data. Acording to the Official Franchise Directory (2002–2018) edited by Asociación Mexicana de Franquicia (2018), between 2002 and 2016, there were 751 franchise chains operating in the hospitality sector (food, beverages, hotels and restaurants). The lack of information on certain variables, however, led us to analyse a sample of 253 franchise chains. A period of 15 years was selected to analyse the possible influence of periods of economic growth in relation to government policies over two sexennial periods (2000, 2006 and 2012), as well as periods of economic crisis in Mexico (2001, 2009, 2014), as economic turbulence also affects the life cycle of franchise chains according to Bordonaba-Juste et al. (2008). The study period from 2002 to 2016 spans two political cycles that affected the behaviour of the Mexican economy, with the assumption that they influence the business

performance of franchise chains. The data sample has the following features: (1) a large number of outlets with just over 30% of the Mexican franchisor system (A.M.F., 2017); and (2) greater dominance and preference of entrepreneurs.

According to Gillis and Castrogiovanni, (2012) and Kacker and Wu (2013), a longitudinal study of hospitality franchises in Mexico was developed. The G.M.M. estimation (Arellano & Bover, 1995) was performed following data panel methodology, and was applied to a dynamic model of an unbalanced data panel. This methodology was chosen in order to control unobservable heterogeneity and to correct possible endogeneity between the dependent variable and independent variables (Shane et al., 2006). The dynamics of this method usually produced better estimators of finite samples in individual decision models over time (Pindado & Requejo, 2015). The estimation of the model used the two-step method, consistent with the endogeneity conditions, due to the delayed effects of the franchise signals transmitted to the market. This methodology has been used in research on franchises by Gonzalez-Diaz and Solis-Rodriguez (2012) and Shane et al. (2006).

3.2. Variables

Continuity is the dependent variable. It is the number of consecutive operating years of the franchise from the first year (Combs, Michael, & Castrogiovanni, 2009; Gonzalez-Diaz & Solis-Rodriguez, 2012; Mitsuhashi, Shane, & Sine, 2008; Shane et al., 2006), considering the existence of outlets without distinguishing those that are new, reacquired, renewed, or have had contracts closed or cancelled (Michael & Combs, 2008).

The independent variables, namely size, company-owned outlets, franchised outlets and proven know-how, were all considered in the dimension of the franchise strategies, while the market variables are *GDP* and Global Competitiveness Index (*GCI*). All of them intervene in the continuity decisions of the franchise. Table 1 describes the measures and previous studies of the variables used to analyse continuity in the Mexican market. The year of observation was taken as the control variable, assuming a moderating effect.

Following the statistical techniques in the literature, these measurements were then estimated with original values or transformed into natural logarithms to improve the normality of the data, resulting in: (1) a parsimony model; (2) joint significance; and (3) passing the robust estimation tests of the G.M.M. method in two steps.

Table 2 shows the descriptive statistics used for the analysis of the model and its variables. The variable values were previously normalised to eliminate possible bias. In addition, Table 2 discriminates between four continuity ranges: (1) 1–5 years; (2) 6–10 years; (3) 11–15 years; and (4) 16 years or more, as franchise continuity periods; the first range represents the survival limit of the Mexican franchise as indicated by the A.M.F. and leading consultants and experts in Mexico; and the second, third and fourth ranges follow the previous statistical range of five years as reported in international studies (Bordonaba-Juste, Lucia-Palacios, & Polo-Redondo, 2011; Facanha et al., 2013; Kosová & Lafontaine, 2010).

Table 1. Variables related to continuity in the franchise.

Variable	Measure	Previous studies
Continuity (*CONT*)	Number of years elapsed since the start of operation of the franchise.	Kacker et al. (2016), Lafontaine and Shaw (1999), Rodríguez-Rad et al. (2017), Solis-Rodriguez and Gonzalez-Diaz (2017).
Size (*S*)	Natural logarithm of total outlets	Gillis and Castrogiovanni (2012), Kacker et al. (2016), Kosová and Lafontaine (2010)
Own outlets (*OE*)	Ratio of total number of company-owned outlets/total number of outlets in the chain.	Kacker et al. (2016), Lorelle (2001).
Franchised outlets (*FE*)	Natural logarithm of the total number of franchised outlets.	Kacker et al. (2016), Lorelle (2001).
Proven concept (*CP*): *CPFDR* and *CPFDO*	Interaction of the years elapsed since the beginning of the franchise format with the number of company-owned outlets controlled by the owner of the franchise or granted to the franchisee.	Dobbs et al. (2014), Kacker et al. (2016), Winter et al. (2012).
Gross domestic product (*GDP*)	Monetary value of the final goods and services produced by Mexico in a given period.	Alon et al. (2017), Dobbs et al. (2014), Kacker et al. (2016), Michael (2014)
Global Competitiveness Index (*GCI*)	Indicator of efficiency of the public sector, macroeconomic environment, infrastructure, efficiency in the market, among others.	Kacker et al. (2016).
Time (d_t) – control variable	Dummy variable that takes the value 1 for a considered period and 0 otherwise.	Dobbs et al. (2014), Shane et al. (2006), Watson and Stanworth (2006)

Source: Authors.

Table 2. Descriptive statistics of the sample.

Continuity	Chain		*S*	*OE*	*FE*	*CPFDR* (*AGE* × *OE*)	*CPFDO* (*AGE* × *FE*)	*GDP*	*GCI*
1–5 years	90	Mean	2.15	0.76	65	0.82	275.99	2014,793	54.48
		SD	1.44	0.35	369	1.42	1,367.90	462,033	4.89
6–10 years	80	Mean	2.58	0.64	72	4.99	613.71	2164,366	57.05
		SD	1.55	0.39	322	3.10	2,520.25	345,436	4.87
11–15 years	53	Mean	2.99	0.75	105	9.67	1,372.00	2,365,163	55.77
		SD	1.61	0.37	289	4.78	3,545.56	343,176	4.11
16+ years	30	Mean	3.79	0.72	1068	19.04	34,186.79	2276,832	55.78
		SD	2.17	0.38	4152	13.46	128,960.00	423,999	4.70
Total	253	Min	0.00	0.00	0	0.00	0.40	1,300,000	47.00
		Max	10.08	1.00	23669	85.00	733,739.00	2,800,000	66.00
		Mean	2.57	0.71	146	3.32	3,236.02	2,171,210	55.71
		SD	1.65	0.37	1192	5.87	3,7194.49	421,083	4.82

Source: Authors.

Table 2 is also presented with the purpose of analysing the nature of the normalised variables, so as to eliminate possible bias and to show the differences in the continuity variable following the observation of continuity by quartiles, to better highlight the differences considering contextual changes. The two macroeconomic variables, *GDP* and *GCI*, maintained a certain stability across the aforementioned quartiles of continuity. The size of the franchises is growing, but in the opposite direction and contrary to the theory (Gallini & Lutz, 1992).

Variable correlations were examined with the Spearman test given the nature of the variables. The correlations presented in Table 3 indicate sufficient correlation between the independent variables to proceed to the explanatory regression.

Table 3. Correlations between the explanatory variables.

Variable	*S*	*OE*	*FE*	*CPFDR* (*AGE* × OE)	*CPFDO* (*AGE* × FE)	*GDP*	*GCI*
S	1						
OE	−0.4125*	1					
	0.000						
FE	0.8311*	−0.7512*	1				
	0.000	0.000					
CPFDR (*AGE* × *OE*)	−0.008	0.5561*	−0.4566*	1			
	0.694	0.000	0.000				
CPFDO (*AGE* × *FE*)	0.7793*	−0.5757*	0.9371*	−0.1426*	1		
	0.000	0.000	0.000	0.000			
GDP	−0.1791*	0.5603*	−0.029	0.2741*	0.040	1	
	0.000	0.000	0.289	0.000	0.183		
GCI	−0.0841*	−0.0131	−0.0799*	0.0575*	−0.006	0.4684*	1
	0.000	0.552	0.004	0.000	0.838	0.000	

Source: Authors.

3.3. Empirical model: specification and estimation

3.3.1. Specification of the model

The linear regression model designed to estimate the relationship between the continuity of the franchise business format and the signals from the franchisor is

$$CONT_{it} = \alpha_n + \alpha_1[CONT_{it}-1] + \alpha_2[S_{it}] + \alpha_3[OE_{it}] + \alpha_4[FE_{it}] + \alpha_5[CPFDOR_{it}] + \alpha_6[CPFDO_{it}] + \alpha_7[GDP_{it}] + \alpha_8[GCI_{it}] + \eta_i + d_t + v_{it} \quad (1)$$

where i refers to the particular franchise chain, $[\eta_i]$ is the term that represents the unobservable heterogeneity (or individual effect); $[d_t]$ is the term that measures the specific effect of time via the corresponding time dummies; and $[v_{it}]$ is the random effect variable. The linear model of Equation (1) is a dynamic model, because one period lagged dependent variable (*CONT_1*) was included as an explanatory variable. This explanatory variable was included, because the decision of the franchisor to continue in a given year could be affected by the conditions in the previous year.

The G.M.M. estimator in two steps, designed for data sets with many panels and few periods, was used. This estimator assumes that there is no autocorrelation in idiosyncratic errors and requires the initial condition that the effects at the panel level will not correlate with the first difference of the first dependent variable observation.

3.3.2. Estimation of the empirical model

Model estimation is accomplished through panel data methodology, specifically, the G.M.M. estimator in two steps. This methodology solves two previously mentioned econometric problems: unobservable heterogeneity and endogeneity. Unobservable heterogeneity predicts the effect of unobservable attributes of the franchisor, such as managerial talent and risk aversion when correlated with the explanatory variables, presuming that its effect on the dependent variable would bias the results. The instrumental variables were applied and the Hausman test was used to corroborate their validity, in order to control for possible problems of endogeneity. If the test rejects the exogeneity of the variables, then the solution will be an estimation method with instrumental variables, understood as the lagged explanatory variables.

Table 4. Estimations of the proposed model.

Variable	I	II	III	IV
CONT_1	923*** (.000)	.780*** (.000)	.814*** (.000)	.779 *** (.000)
LnS	−.000 (.405)	−.000** (.001)	−.000 (.291)	−.000** (.001)
OE	−.103 (.451)	−.055 (.809)	−.397 (.291)	−0.59 (.796)
LnFE	.064*** (.000)	.066*** (.000)	.052** (.010)	.066*** (.000)
CP (*AGE* × *LnFE*)	.022 (.130)	.004 (.488)	.045** (.002)	.009 (.468)
CP (*AGE* × *OE*)	−.000 (.165)	.000 (.401)	.000 (.545)	.000 (.406)
GDP			6.44×10^{-8}*(.049)	7.79×10^{-8} (1.88)
GCI			.003** (.004)	.003** (.036)
Time variables		Eliminated 12/14		Eliminated 3/14
*Z*1	.000	.000	.000	.000
*Z*2		.000		.000
m_1 (*p*-value)	.000	.000	.000	.000
m_2 (*p*-value)	.669	.593	.874	.589
Hansen (*p*-value)	.340	.002	.155	.001
Observations	1821	1821	1821	1821
Franchise chains	253	253	253	253

Notes: *p <.05; **p <.001; ***p > .0001; Proven concept (CP) observed in the two extensions (owned and franchised outlets).
Source: Authors.

An individual effect was introduced, to avoid this bias in the estimated coefficients, which will be eliminated by taking the first differences when the model is estimated. In addition, the effects of the macroeconomic variables are included with this approach, which might affect decisions related to the continuity of the franchise business format taken by the franchisors to be included in the model through time dummy variables. These three aspects tend to be neglected in investigations on franchise decisions, and require a rigorous analysis to ensure a complete understanding.

Four estimations of the same model are shown in Table 4. Estimations I and III refer to Equation (1), taking into account only the previously mentioned individual effect, $[\eta_i]$, and the random effect, $[\nu_{it}]$. Estimations II, and IV are the G.M.M. estimation of Equation (1) taking into account the individual effect, $[\eta_i]$, the random effect, $[\nu_{it}]$, and the time effect by means of the time dummies, $[d_t]$. The following procedure starts with the estimation of all the franchise management variables – estimations I and II – and then with the estimation adding market variables – estimations III and IV.

Finally, we checked the possibility of mis-specification in the model, by applying the Hansen *J*-statistic of over-identification of restrictions. This statistic tests the validity of all the instruments in use, given that it indicates the absence of any 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 was a first-order serial correlation (see m_1), it was caused by the transformation in first differences of the model and, was therefore not due to a misspecified model. Thirdly, the overall significance of both the coefficients and the time variables were verified by the Wald test, Z_1 and Z_2.

4. Analyses and discussion of results

The empirical analyses began by examining the correlations and the normality of the data for a robust estimation. Subsequently, the estimation of the franchise continuity

model was determined by the effect of the franchisor signals and non-controllable factors, to decide whether to continue with the franchise business format. Table 4 lists the results obtained for each estimation, showing that most of the instruments were valid. It can be seen that there is hardly any second-order serial correlation between the residuals obtained from the first differences (see m_2). Table 4 reflects the results of the Wald tests: Z_1 allowed us to verify the overall significance of the coefficients that were obtained, and Z_2 confirmed the overall significance of the time variables.

The decision model of the franchisor to continue with this franchise business format in the operating chains in Mexico from 2002 to 2016 evidences an effect of endogeneity, as observed in the study by Shane et al. (2006); in our case, the lag effect in Mexico was in the previous year.

According to the management signals approach, hypotheses H1 and H2 were rejected in all estimations. One possible scenario in which size will not explain the continuity of a franchise chain is where the unbalanced growth of outlets can cause the repurchase of the franchised outlets by the franchisor, due to lack of profitability and/or closure. Buybacks would impact negatively on brand image and put the continuity of the franchise chain at risk. If the chain buys the franchised outlets back, an imbalance between the number of their company-owned outlets and the number of franchised outlets will increase the costs of the chain and place it at risk.

Hypothesis H3 was corroborated in all the estimations, and H4 was only corroborated in estimation III, in the absence of macroeconomic factors, contained in the time dummy variables. The opening of franchised outlets maintained the continuity of the franchise chains. This result is strengthened by the positive relationship between the maturity of the proven know-how and the continuity of the chain from the perspective of the franchisee, measured by CPFDO. In other words, with respect to the ownership strategy of the franchisor, the signal related to the franchised outlets was consistent with maintaining the continuity of the original know-how or the original know-how with minor adaptations. Finally, the G.D.P. was expected to have a positive effect on the maintenance of the franchisor brand in the market – hypothesis H5 was corroborated in estimate III – because economic growth was favoured by maintaining the continuity of the operating franchise chains in the market. The finding of the *GCI* with a significant effect on estimates III and IV corroborated H6. This result indicated that, as with a favorable economic environment, a stable political, legal and social environment also favoured the continuity of the franchise chains in the market.

5. Conclusions, implications and limitations

The theory of signals from a management perspective has provided a unique, practical and empirically verifiable approach to the problems of the decision to maintain the franchise in the market in imperfect information conditions. In this study, some of the franchisor signals have been studied that explain its decision to continue with the franchise business format. In accordance with the recommendation of Connelly et al. (2011, p. 2), this analysis of the franchise has been conducted with data from 253 operational franchise chains in the hospitality sector between 2002 and 2016. We

have adopted the signals of franchise quality used in management research by Stiglitz (2002), as mechanisms to reduce the moral risk of individual decision-making when information asymmetries exist in the market.

This study has exposed the perceived quality of signals of the underlying and unobservable capacity of the franchise and the market. For the franchisor, the continuity of their franchise brand is of interest, which covers everything related to the value of the know-how and the appropriate income through the company-owned and franchised outlets. The main findings are in the sense of having identified the quality signals that most reliably predicted the continuity of the franchise business format. The franchised outlets and proven know-how of the chain turned out to be both credible and verifiable quality signals for the franchisor, and they affected the continuity of the franchise chains. In terms of the business environment, economic growth, and political, legal and social stability were also credible and relevant signals for the franchisor when deciding to continue with the franchise chain. This fact highlights the potential interest of this research, in so far as aspects are considered that have only rarely been dynamically explored in the area of franchising.

The relevance of the present research is the in-depth examination of the signals that indicate links to the underlying quality and its adjustments over time, which legitimately represents a valid and reliable signal in itself. For franchisors, the intention of an informative signal is usually to attract potential franchisees to their chain, or to keep the franchisees that the franchisor already has, in the market. Quality refers to the unobservable capacity of the organisation to obtain future benefits (Ross, 1973). If the signal is of quality – observable, credible and reliable – the assumption is that the company has been legitimately managed and would survive (Connelly et al., 2011). The results of this research have shown that the proportion of franchised outlets in Mexico, and the original know-how or improvement with minor adaptations over time, through the franchised outlets, are trustworthy quality signals that have maintained the continuity of the franchise chains in that country. One conclusion is therefore that the Mexican franchise system, rather than having to grow, should consolidate, as recently expressed in the media by experts, referring to a lack of professionalism and discontinuous support as reasons for the closure of outlets. Regarding the market dimension, both G.D.P. and the Global Competitiveness Index are credible predictors of franchise brand continuity. The consolidation of the franchise for franchisors of Mexican brands is essential to achieve a franchise brand with global reach. In this sense, the effect of an uncertain market and the Global Competitiveness Index complicates the survival of outlets and the continuity of the franchise business format.

The managerial implications for the maintenance of the franchise business format are that the franchisor is advised to sign contracts with ad hoc franchisees on the basis of their business profiles, granting the franchise licenses with a degree of rigour without necessarily taking the franchisee–franchisor's first choice into account. In addition, it is desirable that the franchisees receive continuous support until they have exceeded five years of life, in view of the experience of the franchisor and the adaptation of the franchisee to the macroeconomic context in Mexico.

Regarding the limitations of this study, a central methodological limitation is the parsimonious model that was adopted. The results may be less clear than they would otherwise be, due to the omission of some variables of interest and the absence of other measures for the chosen variables. Some variables related to the franchise contract could have been included such as the royalties, which can also influence the continuity of the chain by contributing to the regulation of opportunistic behaviours. Another aspect that could have been considered is the use of other management variables to control the closure rate of outlets and to compare it with the rate at which new outlets are opened in a context where a large number of new franchise chains are opened. In addition to the above, it is worth reiterating that the analyses were performed in Mexico, a country in which the franchisor system is influenced in various different ways by uncertain economic periods, political processes and unstable government policies.

Finally, future research could also analyse the behaviour of the franchise when the signals or the quality signals of the franchise that could predict its continuity over time are less reliable. It would also be interesting to identify how and when it is recommended to generate those signals, given the few referenced works in the literature in that area. Future research could study the impact of the signals on the franchisor and franchisee, and develop a typology based on concepts of organisational signals. One aspect that has not been addressed is an attempt to understand the effects of false signaling and the costs of adjusting and penalizing the market for franchisor and franchisee. In this way, as research based on the management of signals evolves, the development of complex, in-depth studies will further enrich franchise knowledge.

Disclosure statement

No potential conflicts of interest were reported by the authors.

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