



Centre de Recherche en Économie et Management
Center for Research in Economics and Management

University of Caen

University of Rennes 1



Determinants of E-commerce adoption by franchisors: Insights from the U.S. market

Thierry Pénard

University of Rennes 1, CREM-CNRS, France

Rozenn Perrigot

*Graduate School of Management (IGR-IAE), University of Rennes 1
& ESC Rennes School of Business - CREM-CNRS, France*

January 2012 - WP 2012-06

Working Paper

Determinants of E-commerce adoption by franchisors:

Insights from the U.S. market¹

Rozenn PERRIGOT

Graduate School of Management (IGR-IAE), University of Rennes 1
& ESC Rennes School of Business

Center for Research in Economics and Management (CREM UMR CNRS 6211)

Institute for Business Law, Estate and Torts (CDA-PR UPRES EA 3195)

11 rue Jean Macé - CS70803 - 35708 Rennes Cedex 7 - FRANCE

rozenn.perrigot@univ-rennes1.fr

Thierry PENARD

Department of Economics, University of Rennes 1

Center for Research in Economics and Management (CREM UMR CNRS 6211)

7 place Hoche - 35065 Rennes Cedex - FRANCE

thierry.penard@univ-rennes1.fr

January 2012

Accepted for presentation at the 26th Annual
International Society of Franchising Conference
H. Wayne Huiyenga School of Business and Entrepreneurship
Nova Southeastern University
Fort Lauderdale, Florida, U.S.A.
May 17-19, 2012

¹ The authors would like to thank the *French National Research Agency* (reference: ANR-08-BLAN-0020-01) and the *Human Sciences Institute in Brittany* (reference: ReCoMad) for their support, as well as Kelly PRIOUX for her valuable assistance and Yan SU for the detailed observations of U.S. franchisors' websites during her MAIB research appointment in 2009.

Determinants of E-commerce adoption by franchisors:

Insights from the U.S. market

ABSTRACT

E-commerce has grown tremendously over the past decade. This paper focuses on E-commerce adoption within the franchising sector. We formulate various hypotheses on the factors that influence the adoption of an E-commerce strategy by franchisors, namely the percentage of company-owned stores in the network, network size and age, franchisor resources (franchising fees and franchising royalties), and the allocation of exclusive territories to franchisees. The empirical study relies on a sample of 486 franchise networks in the U.S. market. Our findings suggest that the percentage of company-owned stores and the brand image, as represented by network size, both exert a significant and positive impact on the adoption of an E-commerce strategy, whereas network age and franchising royalties exert a significant and negative impact on the adoption of such a strategy. These findings are discussed with respect to previous research results.

KEYWORDS

E-commerce, franchising, determinants, plural form, brand image, franchisors' resources.

1. INTRODUCTION

The Internet is being increasingly used by customers in order to search for pre-sales information, purchase products, and obtain after-sales services. 72% of all U.S. Internet users (i.e., 140 million individuals) made at least one online purchase in 2010 (eMarketer source). Electronic commerce, or E-commerce, has strongly modified the way firms advertise and sell their products and services. E-commerce presents a challenge for traditional firms, by offering them opportunities yet at the same time certain threats.

A large body of research has investigated the benefits of E-commerce (Zhuang and Lederer, 2003), the success of E-commerce (Delone and McLean, 2004), E-commerce performance at the firm level (Wade and Nevo, 2005/2006) and the impact of E-commerce on channel strategy in retailing (King *et al.*, 2004). The determinants of Internet adoption by firms have also been explored in the literature (Dholakia and Kshetri, 2004; Forman, 2005; Forman *et al.*, 2005; Martin and Pénard, 2005; Molla and Licker, 2005). Many firms, especially retailers, however operate without a website. Only 69% of companies in the European Union had a website in 2008 (Eurostat source²). Moreover, websites are quite heterogeneous in terms of functionalities and contents: some offer limited services with content seldom being updated, while others are characterized by a high degree of technical sophistication and a significant amount of equipment and services.

In this paper, we focus on the E-commerce strategy adopted by franchisors. Through a detailed exploration of U.S. franchisors' websites, we are seeking to explain why some franchisors offer no transactional functionalities while others allow customers to buy online. A focus on E-commerce in the specific case of franchising is particularly relevant for several reasons, among which the following can be cited. First, franchising deserves a specific

² The European survey only covered companies with over 10 employees. For smaller companies, the rate of website adoption is much lower.

attention due to its growth in most industries: retailing and services, and most countries: developed and emerging ones. Second, it is essential for franchisors and franchisees to establish a presence on the Internet in order to build and reinforce their brand name, given that brand name is a key element of franchising, as highlighted in its definition: "*a contractual agreement between two legally independent firms in which one firm, the franchisee, pays the other firm, the franchisor, for the right to sell the franchisor's product and/or the right to use its trademarks and business format in a given location for a specified period of time*" (Blair and Lafontaine, 2005, p. 3). Third, the adoption and implementation of an E-commerce strategy may be a source of conflict within franchise networks. Franchisees, which often benefit from exclusive territories, might consider the creation of a transactional website by the franchisor as unfair competition, in extending the key concept of encroachment (Emerson, 2010; Kalnins, 2004). Similarly, a franchisor could deter franchisees from opening their own websites in an effort to preserve brand uniformity, which proves so important in franchising (Cox and Mason, 2007; Kaufmann and Eroglu, 1998; Perrigot *et al.*, 2011; Streed and Cliquet, 2008).

The issues related to E-commerce adoption in franchising have mainly been addressed through either a marketing approach (e.g., Cedrola and Memmo, 2009; Dixon and Quinn, 2004; Rao and Frazer, 2006; Watson *et al.*, 2002) or a legal approach (e.g., Floriani and Lindsey, 2001; Gotsopoulou, 2000; Plave and Miller, 2001; Terry, 2001). Yet despite this existing stream of literature, more extensive research on E-commerce strategy within franchise networks is needed (Cedrola and Memmo, 2009; Rao and Frazer, 2006). In this paper, we conduct a more complete investigation of the determinants of E-commerce adoption by franchisors by using a sample of 486 U.S. franchise networks. We extensively review all of the factors that can potentially influence the implementation of a transactional website, and more specifically the network's organizational form (i.e., percentage of

company-owned stores), the brand image through network size, network age, franchisor resources (franchising fees and royalties), and the contract clause relative to exclusive territories.

Only 20% of the sampled franchisors have launched a transactional website. Our main findings suggest that the percentage of company-owned stores and the brand name (as measured by network size) exert a significant and positive impact on the adoption of an E-commerce strategy by franchisors, whereas network age and franchising royalties exert a significant and negative impact. We will comment on these results in the paper's discussion section, with references mainly to the literature on plural form, brand image and franchisor resources.

The paper will be organized as follows. The second section will briefly review the literature on E-commerce strategies in the franchising sector and state the various research hypotheses. The third section will describe the research methodology, along with the sample, variables and data analysis methods employed. We will then present and discuss our study results in the fourth and fifth sections, followed by a short concluding section.

2. LITERATURE REVIEW

2.1. Franchising and E-commerce strategy

Scholars have already investigated the E-commerce strategy of franchisors from a legal perspective (e.g., Floriani and Lindsey, 2001; Plave and Miller, 2001; Terry, 2001) as well as a business perspective (e.g., Cedrola and Memmo, 2009; Dixon and Quinn, 2004; Rao and Frazer, 2006). As regards the business emphasis, Dixon and Quinn (2004) analyzed the Internet strategy of 364 U.K. franchisors and found that "*online ordering and payment are by no means the most popular function inherent in franchisors' presence on the World Wide*

Web" in the U.K. (p. 318). They revealed that over 10% of franchisors websites enabled customers to order but not pay online, and over 15% offered facilities to order and pay via the website. They also highlighted significant variations across industries (e.g., the percentage of franchisors websites with ordering and payment services equaled 44.44% for health and beauty, 36.84% for walk-in retail and 33.33% for printing services³). Other authors have pointed out similar evidence on the adoption of E-commerce strategies in the franchising sector. From their sample of 305 franchisors websites selected from eight different industries and various markets (Australia, Brazil, Canada, Mexico, Spain, the U.K. and the U.S.), Cedrola and Memmo (2009) found that only 10.2% of websites offered functionalities related to online purchases, primarily in the hotel/restaurant sector (24%), specialist food retailing (19.4%) and household articles (12.5%). In Australia, these same figures were derived by Rao and Frazer (2006) when studying a random sample of 202 Australian franchisors. Only 11.4% of franchisors websites allowed customers to buy online. According to these authors, no significant correlation exists either between network size and online sales or between network age and online sales.

Cliquet *et al.* (2010) focused their examination on a sample of 166 U.S. networks present in industries that are "*the most susceptible to direct on-line sales to end users*" (p. 6). They observed that 34% of the websites in their sample were transactional. This high figure, in comparison with previous findings, is probably due to the types of industries selected as well as the exploratory nature of their study. These authors also identified a significant and negative correlation between the percentage of franchised stores within the network and the adoption of an E-commerce strategy. More specifically, their empirical study showed that the percentage of franchised stores was close to 82% for networks with a transactional website, and near 93% for networks without such a website. In addition, the results of their logistic

³ These percentages concern only the sample of franchise networks with a website.

regression model revealed that, beyond the significant and negative influence of the percentage of franchised stores, a significant and positive influence of network internationalization on the adoption of an E-commerce strategy by franchisors was also being exerted.

The present paper is intended to complement these previous findings and offers a broader view of the factors influencing E-commerce adoption. It seeks to test the role of the network's organizational form (i.e., percentage of company-owned stores), brand image through network size, network age, franchisor resources and the granting of exclusive territories in implementing an E-commerce strategy. The following section will be devoted to developing the paper's various research hypotheses.

2.2. The determinants of franchisors' decision to adopt an E-commerce strategy

2.2.1. Percentage of company-owned stores and franchisors' E-commerce strategy

Many of the advantages associated with the plural form have been highlighted in the literature. A major study was conducted by Bradach (1997, 1998). By performing an in-depth exploratory study of U.S. fast food networks, Bradach explained that the plural form enhances a franchisor's ability to meet the four main challenges in network management, i.e., network growth by adding new stores in coping with speed and location quality constraints; maintenance of concept uniformity across stores on behalf of the brand image; local responsiveness to threats and/or opportunities; and system-wide adaptation to accommodate concept changes. He also described several processes emerging in a plural form network that help the franchisor more easily meet these four challenges. Other researchers interested in the plural form phenomenon have relied on various established frameworks to showcase the benefits of plural form in terms of innovation (Bradach, 1997; Cliquet and Nguyen, 2004; Lewin-Solomons, 1999), strategic and managerial flexibility (Cliquet, 2000), efficiency

(Botti *et al.*, 2009; Perrigot *et al.*, 2009), cost, growth, quality and risk (Ehrmann and Spranger, 2004), and franchisors' ability to curb franchisee opportunism and develop an enhanced negotiation capability through direct business involvement (Dant and Kaufmann, 2003).

Yet despite these benefits, implementing a plural form network requires specific managerial talents, e.g., convincing independent franchisees to accept the franchisor's strategic choices and coordinate the supervision of company-owned stores. A plural form network is a dual distribution network with two channels: franchised one and company-owned one. Franchisors operating a plural form network are thus more familiar with the implementation of a multi-channel strategy, hence more capable of setting up and managing a third channel, which may be the Internet. In other words, franchisors operating a plural form network are more likely to adopt an E-commerce strategy.

Other rationales also deserve to be mentioned. Franchisors with a high percentage of company-owned stores are less fearful of reactions from their franchisees regarding E-commerce than are franchisors with a high percentage of franchised stores. E-commerce can indeed be considered as internal and unfair competition by franchisees, in considering the transactional website as a competitor, whereas such is not the case when the stores are company-owned. This point makes reference to the notion of encroachment (Emerson, 2010; Kalnins, 2004; Stassen and Mittelstaedt, 1995; Vincent, 1998; Zeller *et al.*, 1980), which is currently one of the main issues in the field of franchise networks (Emerson, 2010). In the present study, this notion pertains to the case of an offline (franchisees) - online (franchisor website) encroachment.

It can also be argued however that franchised stores benefit from the presence of a website, since greater numbers of customers are searching online for products or services

before conducting their purchases offline (Weltevreden, 2007). In this case, physical stores can leverage the franchisor's website in order to save on the cost of information provision as customers become more aware of the features of the particular products and services. Nonetheless, these positive effects are difficult to measure and the franchisees tend to overestimate the risk of parasitism in an online channel. In organizational terms, it is simpler to require the managers of company-owned stores than franchisees to participate in the delivery process for products purchased online. Products can typically be delivered to customers' homes for an additional fee or to the closest store at no charge. Product returns, in the case of defects or dissatisfaction for instance, are also easier to organize in company-owned stores than in franchised stores. Franchisees may in fact consider these services as extra tasks, time consuming and wasteful, without yielding any added value for them. In short, franchisees might consider such services to lie outside their scope of business. The following hypothesis can then be formulated:

H1: The higher the percentage of company-owned stores in the network, the more likely the franchisor will adopt an E-commerce strategy.

2.2.2. Brand name and franchisors' E-commerce strategy

Brand name is a key element in franchising (e.g., Caves and Murphy, 1976; Mathewson and Winter, 1985; Minkler and Park, 1994; Rubin, 1978). A franchise network with a strong brand name will be able to attract Internet users to their transactional websites and therefore be more likely to adopt an E-commerce strategy. The underlying reasons are mainly twofold.

Customers passing in front of a physical store may be enticed to enter and make purchases thanks to attractive window displays with a wide range of products, effective merchandising, promotions, friendly employees, etc. These types of spontaneous or unplanned purchases occur less frequently online. It is a greater challenge to convince

Internet users not only to click on a transactional website, but also to visit the various Web pages and, above all, to order on this website. Sponsored links on search engines, banners or affiliation campaigns can draw traffic to a website, but the brand name awareness and brand image constitute the most efficient means of attracting Internet users to a transactional website and converting visits into sales. Brand name is actually a key reputational resource, whose value is reflected by the trust engendered among customers. It is particularly difficult to assess the quality of products/services on a website, e.g., apparel, cosmetics, furniture, shoes and perfumes. Thus, the "signals" provided by a trusted brand name are a critical decision-making input (Kirmani and Rao, 2000).

In our paper, the franchise network brand name is measured by network size. The substitution of network size when referring to the franchise network brand name has often been practiced in previous research. The brand's presence in numerous locations undeniably leads to higher brand visibility. According to Lafontaine (1992), the value of the brand name increases with the number of stores displaying it, i.e., with the franchise network size. In the same vein, Baucus *et al.* (1993, p. 95) asserted that the "*total number of retail units indicates the visibility of the franchisor's brand name*". Moreover, Michael (2003, p. 62) found that franchisors could gain a first mover advantage by growing faster than their competitors, because "*more sites [...] allow for a broader base of customers to experience the product and shape their preferences*". This author argued that the largest franchise network could alter the customer's perception and outmanoeuvre rival networks in terms of trademark valuation. Barthélemy (2008) also demonstrated that brand name value, as measured on a four-point Likert scale in a questionnaire-based survey, and size were significantly and positively correlated. Given that network size is a good proxy for brand name, we can formulate the following hypothesis:

Hypothesis H2: The larger the franchise network, the more likely the franchisor will adopt an E-commerce strategy.

2.2.3. Network age and franchisors' E-commerce strategy

Network age is an important feature of any franchise network. It offers a measure of the franchisor's experience and know-how, which are highly important intangible assets (Norton, 1988). The competences accumulated over years of experience can help the franchisor implement innovative strategies. In the case of an E-commerce strategy, a more mature franchise network could have greater capabilities in managing investments and introducing Internet-based technologies.

A younger franchise network however has greater flexibility and reveals an adaptive capacity relative to new technologies. Franchisors with recently started businesses are more likely to have integrated E-commerce into their initial business format and set up contractual arrangements with their franchisees. A more mature network is more rigid and locked into operational routines. A transactional website serves as an innovation that forces the franchisor to rethink business methods and processes, in addition to modifying contractual arrangements with both the franchisees and managers of company-owned stores. These changes would be more complicated if the franchising contracts had been designed before the advent of E-commerce, in which case the franchising contract would be incomplete with respect to Internet-related technologies, since an important contingency (i.e., implementation of an E-commerce strategy) had not been specified in the initial contracts.

Contract theory underscores how incompleteness can deter investments in specific assets and reduce contractual efficiency in the future (Al-Naijar, 1995; Hadfield, 1990). As a mature franchise network faces more widespread contractual incompleteness with respect to E-commerce, the franchisor will be more reluctant to invest in a transactional website over

fear of conflict. Even though network age can induce competing effects (i.e., the know-how effect that facilitates E-commerce adoption vs. the incompleteness effect that deters E-commerce investment), the arguments in favor of a negative impact are more convincing. We can therefore formulate the following hypothesis:

Hypothesis H3: A younger franchise network is more likely to adopt an E-commerce strategy.

2.2.4. Franchisors' resources and E-commerce strategy

A franchisor with considerable resources will be more likely to adopt an E-commerce strategy. Implementing such a strategy definitely requires specific investments, which involve: 1) spending money and time on Research and Development (R&D) to handle technical and marketing issues; 2) hiring new managers with specific profiles and backgrounds that match the E-commerce strategy, and more specifically feature a multi-channel strategy; 3) proceeding with external benchmarking; and 4) reinforcing communication and advertising in pursuit of cross-channel optimization (Achabal *et al.*, 2005). In this paper, we have decided to translate the franchisor's resources through the franchising fees and royalties. Woll (1968/1969) considered both these categories as sources of revenues to franchisors and, in fact, they constitute the franchisors' main resources. Franchising fees are paid by franchisees to the franchisor only one time at the beginning of the relationship, whereas franchising royalties are paid by franchisees to the franchisor monthly, in most instances based on a percentage of total store sales. Consequently, these two revenue sources (i.e., franchising fees and franchising royalties) will serve to cover innovation and advertising spending. Moreover, in this particular case, the two sources provide the capital to invest in Internet-related technologies. We can therefore formulate the following hypothesis:

Hypothesis H4a: The higher the franchising fees, the more likely the franchisor will adopt an E-commerce strategy.

Hypothesis H4b: The higher the franchising royalties, the more likely the franchisor will adopt an E-commerce strategy.

2.2.5. Exclusive territories granted to franchisees and franchisors' E-commerce strategy

Network growth is an important challenge for a franchisor (Bradach, 1997, 1998). The opening of new stores enables increasing system-wide sales and franchisors' revenues through franchising fees and royalties. In the case of a specific geographical area, franchisors gain by opening new stores as long as the additional revenues are greater than the revenues lost at existing stores. It must be kept in mind that new stores negatively affect existing store sales within the same geographical area (Nair *et al.*, 2009).

In practice, certain territorial restrictions exist within the franchising sector, and "*often play an important role in agreements between franchisors and franchisees*" (Stern *et al.*, 1976, p. 69). A franchisor may indeed grant territorial exclusivity to its franchisees along with the guarantee that it will not open any other stores under the same brand name, whether franchised or company-owned, within a specific geographical area. According to Cox and Mason (2009, p. 521), practices in franchising are heterogeneous, with three main types of network allocation: 1) "*networks allocated on the basis of exclusive geographical territories*", 2) "*networks allocated on the basis of non-exclusive territories*", and 3) "*networks not involved in either exclusivity or territories*".

A stream of literature has focused on territorial exclusivity as well as with encroachment, which denotes a situation where a franchisor adds new stores close to its franchisees' existing stores, in using the same brand (Azoulay and Shane, 2001; Emerson,

2011; Kalnins, 2004; Stassen and Mittelstaedt, 1995; Vincent, 1998; Zeller *et al.*, 1980). Encroachment is a key issue in franchising. As an illustration, Emerson (2010, p. 193) emphasized that franchisees consider encroachment as the "*number one problem*". He also pointed out that: "*Encroachment has been the domestic franchising problem of the past decade.*" Kalnins (2004) also explained that encroachment has given rise to a number of important debates in franchising, not only among scholars but practitioners as well, especially during franchisees conventions. The opening of a new store near existing ones can lead to the cannibalization of existing store sales, thus potentially creating a source of franchisor-franchisee conflicts (Kalnins, 2004; Stassen and Mittelstaedt, 1995).

According to Emerson (2010, p. 226), "*another form of non-traditional encroachment does not include physical incursions upon the franchisee's asserted territory*". This deals specifically with Internet encroachment. Fontenot *et al.* (2006, p. 79) recalled that "*several franchisees have taken legal action against those Internet franchisors that encroached upon their territories*". These authors detailed an Internet case of encroachment, i.e., *Emporium Drug Mart of Shreveport v. Drug Emporium Inc.*

In this case of Internet encroachment, the franchisee benefiting from a territorial exclusivity in the franchising contract may consider the franchisor who adopted an E-commerce strategy as a direct competitor in its own territory and, moreover, as the agent responsible for sales and revenue losses. For this reason, we are considering that those franchisors granting their franchisees exclusive territory in the franchising contract will transpose this condition to the Internet, making them less likely to adopt an E-commerce strategy than those not granting exclusive territory. We can thus formulate the following hypothesis:

Hypothesis H5: Franchisors granting exclusive territories to their franchisees will be less likely to adopt an E-commerce strategy than franchisors that do not.

3. RESEARCH METHODOLOGY

3.1. Sample

The empirical study uses data on franchise networks in the U.S., which currently comprises more than 2,200 networks, including 784,802 franchised stores responsible for 7,808,000 jobs and generating USD 739.9 billion in revenue (PricewaterhouseCoopers, 2011). The data stem from the *Entrepreneur Annual Franchise 500* (2009) list of the 500 leading franchise networks operating in the U.S. This source has been used in previous studies on franchising (e.g., Castrogiovanni and Justis, 2002; Combs and Castrogiovanni, 1994; Elango, 2007; Lafontaine, 1992; Lafontaine and Shaw, 1999) and has proven to be reliable. From this list, we identified the websites of each of these 500 networks by means of a *Google* search. Seven networks did not operate with a website, while the websites of seven others were down due to technical problems experienced during the observation period of May-June 2009. The final sample thus included 486 franchise networks.

3.2. Variables

3.2.1. Dependent variable

An in-depth observation of the contents of each of the 486 franchisors websites was conducted in order to both list the available functionalities and characterize the nature of the website (transactional or not). We created a binary variable called "E-commerce adoption" that equaled 1 if the website was transactional, i.e., allowing customers to order and/or pay online (and 0 otherwise). "E-commerce adoption" is the dependent variable in our logistic model. Nearly all franchisors provided details about their products and/or services (96.5%),

yet only one in five franchisors had adopted an E-commerce strategy (i.e., only 20% of the websites were transactional).

3.2.2. Independent variables

The independent variables, i.e., expected to be potential determinants of E-commerce strategy adoption by franchisors, are as follows. The first factor is the worldwide percentage of company-owned stores within the network. We would have preferred to use the percentage of company-owned stores strictly in the U.S. market, but unfortunately such data were not available. We would expect however that the worldwide percentage offers a close approximation of the percentage of company-owned stores within the domestic market since most U.S. franchisors locate only a small percentage of their total stores in foreign markets. Lafontaine and Oxley (2004), who faced this same data constraint, actually found very similar results whenever it was possible to compare domestic and worldwide figures. Perrigot *et al.* (forthcoming) also experienced this issue when exploring the impact of the percentage of company-owned stores on networks' internationalization strategy. In the present study, the percentage of company-owned stores within the global network equals 7.25% on average.

The second factor is network size, which serves as a proxy for the brand image and franchise network reputation. Network size refers to the number of stores in the network worldwide. The mean size of our sampled franchise networks is 938.51 stores throughout the world. The third factor is network age, which measures the level of contractual incompleteness in Internet-related technologies and the difficulty of implementing an E-commerce strategy. In this empirical study, the mean age is 17.53 years. The fourth factor is franchisor resources, which have been proxied by franchising fees and royalties. Franchising fees are paid by franchisees to their franchisor on a one-time basis at the beginning of the relationship. The average franchising fees paid among our sample franchisors equals USD

33,454.96. Franchising royalties are paid by franchisees to their franchisor on a regular basis, typically monthly. The average franchising royalties here are 6.17% of store sales. Account is also made of whether or not franchisors are assigning exclusive territories to their franchisees. 78% of the sampled franchisors have granted an exclusive territory to their franchisees.

3.2.3. Control variables

Other characteristics of the franchise networks, and more specifically the franchising contract duration, the industry (retailing vs. services) and the internationalization strategy, are used as control variables in the logistic regression model. For information, the mean contract duration equals 11.12 years. 65% of all franchisors do business in the service industry, while 56% of the franchise networks are international. We would expect that E-commerce adoption in a retail franchise network creates more conflicts with franchisees than in a service-oriented network. Many services require the customer's in-store presence while the online channel is more complementary than substitutable relative to the offline channel. All these variables are presented in Table 1, along with some basic statistics and correlation values.

Insert Table 1 here

3.3. Data analysis methods

Various descriptive statistical methods were used to highlight the determinants of franchisors' E-commerce strategy adoption, with the choice of methods based on the type of variable (i.e., metric vs. categorical): t-tests and Pearson chi-square tests. A logistic regression model was also run to highlight the specific determinants that, when aggregated, are able to predict the adoption of an E-commerce strategy by franchisors.

4. RESULTS

4.1. Descriptive analyses

According to results of the t-tests and Levene statistics, franchisors adopting an E-commerce strategy possess a significantly higher percentage of company-owned stores (9.85%) than those choosing not to adopt (6.61%) [Sig < 0.10]. Adopting franchisors also run significantly larger networks (1,879.53 stores *vs.* 706.28) [Sig < 0.05] and significantly older networks (19.72 years in business *vs.* 16.99) [Sig < 0.10], in addition to requiring significantly lower franchising royalties (5.49 *vs.* 6.33) [Sig < 0.05]. However, no significant differences were found in terms of franchising fees. According to the results of Chi-square tests, no significant correlation exists between the allocation of exclusive territories and the adoption of an E-commerce strategy (Chi2 = 1.950; Sig = 0.105). As far as control variables are concerned, the results of the t-tests and Levene statistics do not report any significant differences between contract duration of franchisors who adopt an E-commerce strategy and this of franchisors who do not. Moreover, Chi-square test results do not report any significant correlation between industry sector (retailing *vs.* services) or the franchisor's international strategy and the likelihood of adopting an E-commerce strategy.

Insert Tables 2 and 3 here

4.2. Explanatory analyses

Two logistic regression models have been tested (Table 2). The first estimates the impact of control variables on the adoption or non-adoption of an E-commerce strategy by franchisors. The second model allows testing our research hypotheses with all the potential determinants of E-commerce strategy adoption by franchisors.

The global model is considered to be satisfactory according to values of the Nagelkerke R^2 and the Hosmer and Lemeshow test. Moreover, 84.3% of franchisors are correctly classified. The results of this logistic regression model indicate five findings. First, there is a significant and positive relationship between the percentage of company-owned stores within the network and the adoption of a E-commerce strategy (Coef = 0.018; St. Error = 0.008; Sig = 0.030). In other words, the greater the percentage of company-owned stores in the network, the more likely the franchisor will adopt an E-commerce strategy. Research hypothesis *H1* is thus confirmed.

Second, there is a significant and slightly positive relationship between network size and E-commerce strategy adoption (Coef = 0.000; St. Error = 0.000; Sig = 0.004). Put otherwise, the larger the franchise network, the slightly more likely the franchisor will adopt an E-commerce strategy. Research hypothesis *H2* is thus confirmed.

Third, there is a significant and negative relationship between network age and E-commerce strategy adoption (Coef = - 0.026; St. Error = 0.014; Sig = 0.067), i.e., the older the franchise network, the less likely the franchisor will adopt an E-commerce strategy. Research hypothesis *H3* is thus confirmed.

Fourth, no significant relationship exists between franchising fees and E-commerce strategy adoption, meaning that research hypothesis *H4a* is not confirmed. Nonetheless, a significant though negative relationship has been found between franchising royalties and E-commerce strategy adoption (Coef = - 0.176; St. Error = 0.087; Sig = 0.043). In other words, the higher the level of franchising royalties, the less likely the franchisor will adopt an E-commerce strategy. Research hypothesis *H4b* is thus refuted.

Fifth, no significant relationship has been identified between the allocation of exclusive territories and E-commerce strategy adoption, meaning that research hypothesis *H5* is not confirmed.

As far as control variables are concerned, contract duration, industry (retailing vs. services) and network internationalization have no impact on franchisors' E-commerce strategy.

Insert Table 4 here

5. DISCUSSION

5.1. Research contributions

The present research contributes to the literature on franchising and E-commerce in several ways. For a number of years, franchising topics have been increasingly explored by researchers from a range of perspectives, including: law, management, marketing, strategy, and entrepreneurship (Combs *et al.*, 2004; Combs *et al.*, 2011). Nonetheless, further research is needed to better understand franchisor strategies (Ketchen *et al.*, 2011). In this paper, we examine one particular franchisor strategy, namely the multi-channel strategy that combines physical stores with online store through Internet. Our objective has been to identify the factors that influence E-commerce adoption by franchisors.

We begin by focusing on the interdependence of two strategic decisions: the network's organizational form, as reflected by the percentage of company-owned stores in the network, and the adoption of an E-commerce strategy (in conjunction with the physical channel). A significant and positive relationship could thus be highlighted. Our findings suggest that these two strategies may be complementary through a more global multi-channel strategy, as already determined by Cliquet *et al.* (2010).

An E-commerce strategy can in fact be used to strengthen or preserve a competitive advantage. Franchisors (as well as their franchisees) need to realize that if they do not adopt an E-commerce strategy, then their competitors (whether franchised or not) or pure players will adopt such a strategy and eventually poach their customers. Our results show that the more readily franchisors rely on company ownership, the less likely they are to adopt an E-commerce strategy. Franchisors will thus be more capable of instituting an E-commerce strategy if franchisees have more limited power or decision rights within the network, as compared to managers of company-owned stores. This negative correlation underscores the tensions and fears that an online channel may raise within a network composed of many franchisees. However, if the strategy is introduced and managed by relying on communication and transparency, with franchisees involvement, this can lead to a competitive advantage for both the franchisor and its franchisees.

Two procedures for involving franchisees in the E-commerce strategy will now be briefly mentioned. The first consists of identifying, in collaboration with franchisees, a franchisee incentive scheme based on sales transacted through the franchisor's website. The major difficulty inherent in this approach is to identify an efficient, yet simple, scheme acceptable to all parties. The second procedure entails centralizing orders on the franchisor's website and then forwarding the orders received to the nearest franchisee. Such an approach now appears to be increasingly adopted by franchisors. It offers the advantages of being consensual and financially profitable to franchisees while allowing the franchisor greater latitude in overseeing its E-commerce strategy. The level of confidence inspired throughout the network will then generate a greater propensity on the part of franchisees to cooperate and moreover will minimize internal conflicts. This finding corroborates the literature dealing with plural form, as well as all synergies highlighted by various authors (e.g., Bradach, 1997, 1998; Ehrmann and Springer, 2004).

Second, many authors have emphasized the importance of brand image in the franchising context (e.g., Caves and Murphy, 1976; Mathewson and Winter, 1985; Minkler and Park, 1994; Rubin, 1978). Relative to multi-channel strategy, it will be stated here as well that brand image, as proxied by network size, is of great interest when adopting an E-commerce strategy. It is one of the preconditions for attracting Internet users to the website, not only to increase traffic, but also to generate online purchases. This process is thus more complicated for smaller networks, with a weaker brand image, to adopt an E-commerce strategy. Such a result is consistent with the research of Rao and Frazer (2006), who could not detect any significant impacts of network size on E-commerce strategy adoption decisions.

Third, regarding franchisors' resources required to adopt an E-commerce strategy, the empirical study results are somewhat surprising. Franchising fees do not exert any significant impact on franchisor propensity to adopt an E-commerce strategy, whereas franchising royalties would exert a negative impact. This outcome suggests that the resources stemming from franchising fees and royalties do not contribute positively to explaining the adoption of an E-commerce strategy and moreover are probably excluded when setting up and managing the transactional websites. One track for further exploration regarding franchising royalties would be the following. If franchising royalties are high and if franchisees receive substantial assistance by field consultants and training during continuous sessions, then perhaps the franchisor would not feel the need to adopt an E-commerce strategy owing to its strong relationships with franchisees and relatively high revenues generated through franchising royalties. Besides, if franchising royalties were high, franchisor revenues would be highly dependent upon them, making franchisors averse to creating any potential additional source of conflict that could lead to payment interruptions, such as adoption of an E-commerce strategy. Additional research on these relationships is thus needed.

Lastly, the allocation of exclusive territories to franchisees does not exert any impact on franchisor decision to adopt an E-commerce strategy, which means that the issue raised with physical encroachment is not necessarily translated into the Internet environment, as opposed to what might be expected. Further investigation herein is also encouraged.

5.2. Managerial implications

E-commerce is a popular topic for franchising practitioners, as often mentioned in the trade press (Rogers *et al.*, 2007; Simmons, 2006; Slominski, 2010; Weise, 2010). Before focusing on the benefits for the franchisor and its franchisees and on the issues this raises within the franchise network, it is important to highlight the determinants of an E-commerce strategy, for two main reasons. On the one hand, for franchisors hesitating whether or not to adopt an E-commerce strategy, the findings of this empirical study help draw the profile of franchisors having already adopted such a strategy. As a complement to the benchmarking analysis, these results allow a hesitating franchisor to examine the characteristics of franchisors practicing E-commerce and then compare its own characteristics with those of the practicing franchisors before making the decision. On the other hand, for potential franchisees in the process of selecting a network to join, the results of this study may prove worthwhile. Some potential franchisees may indeed be concerned over the introduction of an E-commerce strategy by the franchisor they choose, should the potential franchisor still not have developed an E-commerce strategy. Thanks to these findings, potential franchisees are able to compare the characteristics of the franchisor they wish to join with those of franchisors already operating with an E-commerce strategy.

5.3. Limitations and tracks for future research

This research has some limitations. First, the empirical study has been based on observations drawn from franchisors' websites. This approach only provides a snapshot of the Internet

strategy of U.S. franchisors in 2009. Online sales have increased tremendously since this observation period. A longitudinal approach spanning several years would be instructive, in an effort to better understand the evolution in franchisors' E-commerce strategies along with the concomitant strategies of their competitors (whether franchised or not).

Furthermore, our research has been limited to only the American market, much the same as a considerable body of previous research. Dant (2008) and Dant *et al.* (2008) mentioned the importance of studying franchising issues in other markets outside the U.S., in pointing out the current predominant mono-cultural view towards franchising research. The exploration of E-commerce strategies in other countries with different extent of plural forms could be beneficial. Some researchers have begun adopting multi-country perspectives in their studies of franchising issues (Azevedo and Silva, 2007; Dant *et al.*, 2008; Dunning *et al.*, 2007; Perrigot *et al.*, forthcoming). Such previous comparisons have highlighted significant differences in the strategies developed by U.S. and French franchisors. In particular, Dant *et al.* (2008) indicated that U.S. franchisors rely much more heavily on franchising (percentage of company-owned stores = 9.45%) than their French counterparts (36.17%). It would thus be interesting to examine their respective E-commerce strategies along with a number of potential differences.

Other variables could also be added to the logistic regression model. These would mainly be related to the franchisor and its management team. A questionnaire-based approach would be relevant to better understand the E-commerce strategy of franchisors, its drivers and consequences on franchisor/franchisee relationships. This approach would allow collecting additional data on the costs and performance associated with the given strategy, as well as on other kinds of multi-channel strategies (e.g., M-commerce, social networks).

Lastly, further research could examine the E-commerce strategy of both the franchisor and its franchisees. According to a recent regulatory text published by the *European Commission*, franchisees are allowed to set up and manage their own website for purposes of both communication and sales. Issues relative to brand uniformity (e.g., in terms of image, marketing, price) and internal conflicts (franchisor/franchisee and franchisee/franchisee) would thus be expected to increase, as recently highlighted in the European context by Perrigot *et al.* (2011).

6. CONCLUSION

In this paper, we have exposed the relatively low rate of E-commerce strategy adoption by U.S. franchisors (only 20% of sampled franchisors) along with some of the determinants of franchisor adoption of such strategies, relative to the importance of the network's organizational form, its brand image through its size, age, and franchisor resources. Since Internet use is constantly expanding, further research on E-commerce in the franchising sector is needed in order to assess its utility, benefits for franchisors and franchisees, and issues raised within franchise networks.

REFERENCES

- Achabal, D. D., Kalyanam, K., Chu, J. and Bladgett, M. *Cross-channel optimization*. IBM Institute for Business Value/IBM Global Services: Somers, NY, 2005, 15p.
- Al-Najjar, N. Incomplete contracts and the governance of complex contractual relationships. *American Economic Review*, 85 (1995), 432-436.
- Azevedo, P. F. and Silva, V. L. S. Governance inseparability in franchising: Multi-case study in France and Brazil, In Cliquet, G., Tuunanen, M., Hendrikse, G. and Windsperger, J.

- (eds), *Economics and Management of Networks. Franchising, Strategic Alliances, and Cooperatives*, Heidelberg: Physica-Verlag, 2007, pp. 97-115.
- Azoulay, P. and Shane, S. Entrepreneurs, Contracts, and the Failure of Young Firms. *Management Science*, 47, 3 (2001), 337-358.
- Barthélemy, J. Opportunism, knowledge, and the performance of franchise chains. *Strategic Management Journal*, 29, 13 (2008), 1451-1463.
- Baucus, D. A., Baucus, M. S. and Human, S. E. Choosing a franchise: how base fees and royalties relate to the value of the franchise. *Journal of Small Business Management*, 31, 2 (1993), 91-104.
- Blair, R. and Lafontaine, F. *The Economics of Franchising*. Cambridge: Cambridge University Press, 2005.
- Botti, L., Briec, W. and Cliquet, G. Plural forms versus franchise and company-owned systems: A DEA approach of hotel chain performance. *Omega*, 37, 3 (2009), 566-578.
- Bradach, J. L. Using the plural form in the management of restaurant chains. *Administrative Science Quarterly*, 42, 2 (1997), 276-303.
- Bradach, J. L. *Franchise Organizations*. Boston: Harvard Business School Press, 1998.
- Castrogiovanni, G. J. and Justis, R. T. Strategic and Contextual Influences on Firm Growth: An Empirical Study of Franchisors. *Journal of Small Business Management*, 40 (2002), 98-108.
- Caves, R. E. and Murphy, W. F. Franchising: Firms, markets, and intangible assets. *Southern Economic Journal*, 42 (1976), 572-586.

- Cedrola, E. and Memmo, S. Internet for Franchising: Current Use and Areas for Improvement – Results from an Empirical Research. *Journal of Euromarketing*, 18 (2009), 5-21.
- Cliquet, G. and Nguyen, M. N. Innovation management within the plural form network, In Windsperger, J., Cliquet, G., Hendrikse, G. and Tuunanen, M. (eds), *Economics and Management of Franchising Networks*, Heidelberg: Physica-Verlag, 2004, pp. 109-125.
- Cliquet, G. Plural forms in store networks: A model for store network management. *International Review of Retail, Distribution and Consumer Research*, 10, 4 (2000), 369-387.
- Cliquet, G., Kaufmann, P. J. and Achabal, D. Implementing multi-channel strategies: Issues and opportunities for franchise system websites. *Proceedings of the 24th International Society of Franchising Conference*, Sydney, Australia, June 2010.
- Combs, J. G. and Castrogiovanni, G. J. Franchisor Strategy: A Proposed Model and Empirical Test of Franchise Versus Company Ownership. *Journal of Small Business Management*, 31, 2 (1994), 37-48.
- Combs, J. G., Ketchen, D. J., Shook, C. L. and Short, J. C. Antecedents and Consequences of Franchising: Past Accomplishments and Future Challenges. *Journal of Management*, 37, 1 (2011), 99-126.
- Combs, J. G., Michael, S. C. and Castrogiovanni, G. J. Franchising: A Review and Avenues to Greater Theoretical Diversity. *Journal of Management*, 30, 6 (2004), 907-931.

- Cox, J. and Mason, C. Standardisation versus Adaptation: Geographical Pressures to Deviate from Franchise Formats. *Service Industries Journal*, 27, 8 (2007), 1053-1072.
- Dant, R. P. A futuristic research agenda for the field of franchising. *Journal of Small Business Management*, 46, 1 (2008), 91-98.
- Dant, R. P. and Kaufmann, P. J. Structural and strategic dynamics in franchising. *Journal of Retailing*, 79, 2 (2003), 63-75.
- Dant, R. P., Perrigot, R. and Cliquet, G. A cross-cultural comparison of the plural forms in franchise networks: USA, France, and Brazil. *Journal of Small Business Management*, 46, 2 (2008), 286-311.
- DeLone W. H. and McLean E. R. Measuring e-Commerce Success: Applying the DeLone &McLean Information Systems Success Model. *International Journal of Electronic Commerce*, 9, 1 (2004), 31-47.
- Dholakia, R. R. and Kshetri, N. Factors impacting the adoption of the Internet among SMEs. *Small Business Economics*, 23 (2004), 311-322.
- Dixon, H. and Quinn, B. Franchising and the Internet: an exploratory study of franchisor Web sites. *Internet Research*, 14, 4 (2004), 311-322.
- Dunning, J. H., Pak, Y. S. and Beldona, S. Foreign ownership strategies of UK and US international franchisors: An exploratory application of Dunning's envelope paradigm. *International Business Review*, 16, 5 (2007), 531-548.
- Ehrmann, T. and Spranger, G. Successful franchising using the plural form, Economics and Management of Franchising Networks, In Windsperger J., Cliquet G., Hendrikse G. et Tuunanen M. (eds.), Heidelberg: Physica-Verlag, 2004, pp. 89-108.

- Elango, B. Are Franchisors with International Operations Different from Those Who Are Domestic Market Oriented?. *Journal of Small Business Management*, 45, 2 (2007), 179-193.
- Emerson, R. W. Franchise Encroachment. *American Business Law Journal*, 47, 2 (2010), 191-290.
- Entrepreneur Annual Franchise 500, 2009 Franchise 500, <http://www.entrepreneur.com/franchises/franchise500/index.html>, Accessed on 2009.
- European Franchise Federation (2011), <http://www.eff-franchise.com/spip.php?rubrique9>.
- Floriani, B. and Lindsey, M. K. The continuing impact of the Internet on international franchising. *International Journal of Franchising and Distribution Law*, 3, 3 (2001), 175-237.
- Fontenot, G., Keaty, A., and Srivastava, R. Selling on the Internet into the Franchisee's Territory: Is It Breach of Contract, Bad Faith, or Fair Competition? *Journal of Marketing Channels*, 13, 3 (2006), 79-83.
- Forman, C. The Corporate Digital Divide: Determinants of Internet Adoption. *Management Science*, 51, 4 (2005), 641-654.
- Forman, C., Goldfarb, A. and Greenstein, S., How did location affect adoption of the commercial Internet? Global village vs. urban leadership. *Journal of Urban Economics*, 58, 3 (2005), 389-420.
- Gotsopoulou, N. Legal issues on international franchising and electronic commerce. *Business Law Review*, 21, 12 (2000), 288-290.

Hadfield, G. K. Problematic Relations: Franchising and the Law of Incomplete Contracts.

Stanford Law Review, 42 (1990), 927-991.

Kalnins, A. An empirical analysis of territorial encroachment within franchised and

company-owned branded chains. *Marketing Science*, 23 (2004), 476-489.

Kaufmann, P. J. and Eroglu, S. Standardization and adaptation in business format

franchising. *Journal of Business Venturing*, 14 (1998), 69-85.

Ketchen, D., Short, J. and Combs, J. *Tales of Garcón: Volume 1—The franchise players*.

Irvington, NY: Flat World Knowledge, 2011.

King, R. C., Sen, R. and Xia, M. Impact of Web-based e-Commerce on Channel Strategy in

Retailing. *International Journal of Electronic Commerce*, 8, 3 (2004), 103-130.

Kirmani, A. and Rao, A. R. No Pain, No Gain: A Critical Review of the Literature on

Signaling Unobservable Product Quality. *Journal of Marketing*, 64, 2 (2000), 66-79.

Lafontaine, F. Agency theory and franchising: Some empirical results. *Rand Journal of*

Economics, 23, 2 (1992), 263-283.

Lafontaine, F. and Oxley, J. E. International Franchising Practices in Mexico: Do Franchisors

Customize Their Contracts? *Journal of Economics & Management Strategy*, 13, 1

(2004), 95-123.

Lafontaine, F. and Shaw, K. L. The dynamics of franchise contracting: Evidence from panel

data. *Journal of Political Economy*, 107, 5 (1999), 1041-1080.

- Lewin-Solomons, S. *Innovation and authority in franchise systems: An empirical explanation of the plural form*. Working Papers, Faculty of Economics, University of Cambridge, Cambridge, 1999.
- Martin, L. and Pénard, T. Investing in a Website: a Top Dog or a Resource-based Strategy? *Communication & Strategies*, 59 (2005), 77-98.
- Mathewson, G. F. and Winter, R. A. The economics of franchise contracts. *Journal of Law and Economics*, 28 (1985), 503-526.
- Michael, S. C. First mover advantage through franchising. *Journal of Business Venturing*, 18, 1 (2003), 61-80.
- Minkler, A. P. and Park, T. A. Asset specificity and vertical integration in franchising. *Review of Industrial Organization*, 9 (1994), 409-423.
- Molla, A. and Licker, P. S. Perceived E-Readiness Factors in E-Commerce Adoption: An Empirical Investigation in a Developing Country. *International Journal of Electronic Commerce*, 10, 1 (2005), 83-110.
- Nair, S. K., Tikoo, S. and Liu, S. Valuing Exclusivity from Encroachment in Franchising. *Journal of Retailing*, 85, 2 (2009), 206-210.
- Norton, S. W. Franchising, Brand Name Capital, and the Entrepreneurial Capacity Problem. *Strategic Management Journal*, 9 (1988), 103-114.
- Perrigot, R., Basset, G., Briand-Meledo, D. and Cliquet, G. Franchisees' Transactional Websites and Concept Uniformity: A New Challenge for Franchisors. *Proceedings of the 5th International Conference on Economics and Management of Networks (EMNet)*, Limassol, Cyprus, December 2011.

- Perrigot R., López-Fernández, B. and Eroglu, S. Intangible resources and plural form as drivers of franchise internationalization: Examination within a two-country perspective. *Journal of Small Business Management*, (forthcoming).
- Perrigot, R., Cliquet, G. and Piot-Lepetit, I. Plural form chain and efficiency: Insights from the French hotel chains and the DEA methodology. *European Management Journal*, 27, 4 (2009), 268-280.
- Plave, L. J. and Miller, M. International Franchising and e-commerce: adapting franchise systems to the global electronic marketplace. *International Journal of Franchising and Distribution Law*, 3, 4 (2001), 259-313.
- PricewaterhouseCoopers, Franchise Business Economic Outlook: 2011, <http://www.franchise.org/uploadedFiles/Franchise%20Business%20Outlook%20Report%202011%20final.pdf>, Accessed on 2011.
- Rao, S. and Frazer, L. Australian franchisor websites; moving towards network behaviour. *Journal of Theoretical and Applied Electronic Commerce Research*, 1, 1 (2006), 56-64.
- Rogers, J., Bennett, C. and Grewal, S. E-Commerce for Successful Franchisors. *Franchising World*, 39, 8 (2007), 23-24.
- Rubin, P. H. The theory of the firm and the structure of the franchise contract. *Journal of Law and Economics*, 21 (1978), 223-233.
- Simmons, F. F. Electronic Disclosure: Navigating the Confluence of Law and Technology. *Franchising World*, 38, 7 (2006), 31-33.

- Slominski, M. Technology: How Franchises Can Drive the Bottom Line. *Franchising World*, 42, 4 (2010), 80-81.
- Stassen, R. E. and Mittelstaedt, R. A. Territory encroachment in maturing franchise systems. *Journal of Marketing Channels*, 4, 1/2 (1995), 27-34.
- Stern, L. W., Agodo, O., and Firat, F. A. Territorial Restrictions in Distribution: A Case Analysis. *Journal of Marketing*, 40 (1976), 69-75.
- Streed, O. and Cliquet, G. Concept Uniformity: Control Versus Freedom in Business Franchising, In Strategy and Governance of Networks, Cooperatives, Franchising, and Strategic Alliances Series, G. Hendrikse, M Tuunanen, J. Windsperger et G. Cliquet (eds.), *Economics and Management of Networks. Franchising, Strategic Alliances, and Cooperatives*, Heidelberg: Physica-Verlag, Springer, 2008, pp. 205-220.
- Terry, A. Franchising, the Internet and the Emerging Issue of Encroachment. *Singapore: Law Gazette*, (July 2001), 24.
- Vincent, W. S. Encroachment: Legal restrictions on retail franchise expansion. *Journal of Business Venturing*, 13 (1998), 29-41.
- Wade, M. R. and Nevo, S. Development and Validation of a Perceptual Instrument to Measure E-Commerce Performance. *International Journal of Electronic Commerce*, 10, 2 (2005/2006), 123-146.
- Watson, A., Kirby, D. A. and Egan, J. Franchising, retailing and the development of e-commerce. *International Journal of Retail and Distribution Management*, 30, 5 (2002), 228-237.

Weise, T. Selling Franchises Online: Demystifying the Process. *Franchising World*, 42, 10 (2010), 11-13.

Weltevreden, J. Substitution or complementarity? How the Internet changes city centre shopping. *Journal of Retailing and Consumer Services*, 14, 3 (2007), 192-207.

Woll, M. Sources of Revenue to the Franchisor and their Strategic Implications. *Journal of Retailing*, 44, 4 (1968/1969), 14-20.

Zeller, R. E., Achabal, D. D. and Brown, L. A. Market penetration and locational conflict in franchise systems. *Decision Sciences*, 80 (1980), 58-80.

Zhuang Y. and Lederer, A. L. An Instrument for Measuring the Business Benefits of E-Commerce Retailing. *International Journal of Electronic Commerce*, 7, 3 (2003), 65-99.

Variable	Description of the variable	N	Min	Max	Mean	Standard deviation	PCO	SIZ	AGE	FEE	ROY	CON
E-Commerce	Adoption of an E-commerce strategy?	486	0	1	0.20	0.399						
PCO	Percentage of company-owned stores in the network worldwide (%)	486	0.00	92.13	7.25	15.19	1					
SIZ	Network size worldwide (number of stores)	485	10	33,818	938.51	3,141.548	0.014	1				
AGE	Network age (years)	486	0	83	17.53	13.304	0.012	0.367***	1			
FEE	Franchising fees (USD)	473	0	502,300	33,454.96	32,872.456	0.128***	- 0.035	- 0.045	1		
ROY	Franchising royalties (%)	404	0	32	6.167	3.089	- 0.088*	0.062	- 0.048	- 0.040	1	
EXC	Exclusive territory assignment (NO = 0; YES = 1)	486	0	1	0.78	0.413						
CON	Franchising contract duration (years)	433	0	35	11.12	5.348	0.110**	0.085*	0.258***	0.092*	- 0.145***	1
IND	Industry (Retailing = 0; Services = 1)	486	0	1	0.65	0.478						
INT	Presence of franchised stores outside the US market (NO = 0; YES = 1)	486	0	1	0.56	0.497						

Table 1: Description of the franchise networks, and corresponding correlation values

*Legend: Pearson correlation; *: Significant at 10%, **: Significant at 5%, ***: Significant at 1%*

Variable	Non-Adoption of an E-commerce strategy	Adoption of an E-commerce strategy
PCO*	6.61 (14.60) N = 390	9.85 (17.23) N=96
SIZ**	706.28 (2,443.16) N = 389	1,879.53 (4,978.66) N = 96
AGE*	16.99 (13.16) N = 390	19.72 (13.72) N = 96
FEE	33,738.70 (35,209.82) N = 386	32,196.03 (19,462.78) N = 87
ROY**	6.33 (3.25) N = 327	5.49 (2.18) N = 77
CON	11 (5.29) N = 346	11.59 (5.57) N = 87

Table 2: Adoption or not of an E-commerce strategy (t-tests)

Legend: Standard deviation values are indicated in brackets.

: Significant at the 0.10 level, **: Significant at the 0.05 level, *: Significant at the 0.01 level*

Variable	Pearson chi-square value (sig)
EXC	1.950 (0.105)
IND	0.812 (0.218)
INT	0.707 (0.234)

Table 3: Relationship between categorical variable and adoption of an E-commerce strategy

	Model 1 Control Variables			Model 2 Global model		
	A	S.E.	Sig	A	S.E.	Sig
PCO				0.018	0.008	0.030
SIZ				0.000	0.000	0.004
AGE				- 0.026	0.014	0.067
FEE				0.000	0.000	0.873
ROY				- 0.176	0.087	0.043
EXC				- 0.103	0.398	0.795
CON	0.017	0.022	0.449	- 0.002	0.031	0.958
IND	0.143	0.259	0.582	- 0.028	0.317	0.930
INT	0.181	0.246	0.464	- 0.053	0.308	0.863
Constant	-1.768	0.330	0.000	- 0.264	0.824	0.749
Nagelkerke R ²	0.6%			10.3%		
Hosmer and Lemeshow test	13.044 (0.042)			5.513 (0.702)		
Correctly classified	79.9%			84.3%		
Chi-Square	1.691 (0.639)			22.650 (0.007)		
Sample	433			350		

Table 4: Results of the Logistic Regressions Models for predicting E-commerce adoption likelihood
Legend: *: Significant at the 0.10 level, **: Significant at the 0.05 level, ***: Significant at the 0.01 level

