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ARE THE PARENTS TO BLAME? PREDICTING FRANCHISEE FAILURE

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The Small Business Administration (SBA) supports franchising by backing up loans issued by regular lending organizations. However, the SBA does not directly consider firm strategies as part of its lending process. To appreciate how franchisor characteristics influence franchisee failure, we developed a heuristic model using the methodology and power of predictive analytics. We use multi-year data from the World Franchising Council's surveys on franchisors' characteristics and from the SBA on franchisee loan defaults. The data cover 271 diverse US franchise chains that are present in both databases. Our model predicts potential defaults of SBA-backed loans issued to American franchisees and we identify 13 variables that help explain franchisee failure. Our paper contributes to the franchising literature by considering parent firms' characteristics to predict franchisee failure. In addition, we offer guidance for stakeholder groups—lenders, franchisors and franchisees— to minimize the risk of lending and business failure.

1. PREDICTING FAILURE

Understanding the factors that influence borrowers' ability to repay a loan is critical both for lenders and loan guarantors. However, lenders often do not look at information specifically related to firm strategies when evaluating risk. For example, Small Business Administration (SBA) loan officers do not formally evaluate information on franchisor strategies when determining the riskiness of a loan to franchisees. Our study shows that this may be a costly omission.

Using information on such firm characteristics as total investment, earnings claims, advertising fees, growth rates, and franchise experience, franchisees and loan officers can better evaluate the risk of entering into a franchise agreement and of accepting loans. In turn, franchisors can reduce the risk of franchisee failure to pay SBA loans and, by extension, royalties due by following best practices for geographic dispersion, financial assistance and earnings claims.

This paper uses an emerging area of predictive analytics to introduce a model that predicts franchisee failure using information on the franchising strategies employed by the parent franchise firm. The ramifications of the study are substantial for franchisors, franchisees and SBA loan officers who dispense public money to back franchise businesses. Our research is unique in three ways: First, it presents a new paradigm that allows researchers to use historical franchisor data to predict franchisee failure. Second, it introduces a novel and sophisticated, yet easy-to-use, modeling approach that both practitioners and business researchers can apply. Third, this study helps all involved parties (franchisors, franchisees, and lenders) to manage their respective levels of risk.

2. FRANCHISING

Franchising provides a central form of entrepreneurial venture creation and growth (Hoy and Shane 2003). The industry has grown considerably in the recent past both in the U.S. and overseas. While in the U.S., Canada, and parts of Western Europe franchising has reached domestic market saturation, emerging markets remain relatively untapped (Anttonen, Tuunanen and Alon, 2005).

2.1 Franchising Globally

Franchising is a popular international growth strategy through which companies can increase their sales and brand visibility. As the franchise sectors mature in the home market, franchisors who wish to grow must look to international markets (Hoffman and Preble, 2004). Michael, S.C. (2003) argues that individuals across nations choose franchising when wages in their home nation are low, when unemployment is high, when the target nation is culturally distant from the U.S., and when opportunity for product differentiation through national media exists.

While examining the role of franchising in the macroeconomy of developing nations, Michael S.C. (2014), found that franchising leads, rather than follows, economic development. Hoffman and Preble, 2004 found that 40 nations, representing 6 continents, appeared to have a substantial and active franchising industry replete with a trade association of their own. However, in 2014, the World Franchise Council (WFC) had 45 registered national franchise associations thus indicating that there has been international growth and development in the industry. Table 1 illustrates the breakdown by continent.

Insert Table 1 about here

2.2 Franchising in the United States

The United States is arguably a leader in the franchising industry based on the number of U.S. franchises performing well on an international level. The Entrepreneur's 35th Annual Franchise 500® lists the top 10 franchises in the U.S. in 2014 based on factors such as financial strength and stability, growth rate and size of the system, the number of years a company has been in business, the length of time the company has been franchising, startup costs, litigation, percentage of terminations and whether the company provides financing. These franchises include Anytime Fitness, Hampton Hotels, Subway, Supercuts, Jimmy John's Gourmet Sandwiches, 7-Eleven Inc., Servpro, Denny's Inc., Pizza Hut Inc., and Dunkin Donuts. Some of these franchises, for example, Subway, 7-Eleven, Supercuts, and Dunkin Donuts are also world leaders based on Franchise Direct (2014) rankings.

The International Franchise Association (IFA) postulates that franchising plays an important role in the U.S. economy as a major source of jobs and as a critical engine of economic growth, in every state and in every line of business (IFA 2008). According to a 2008 study published in by PricewaterhouseCoopers (PwC) for the IFA Educational Foundation, more than 900,000 franchised establishments generated over $880 billion in direct economic output (over 4.4 percent of the U.S. private-sector economy). The franchising industry also provided jobs for more than 11 million American workers (just over 8 percent of all U.S. private- sector employment).

Due to the additional economic activities that occur outside of the franchised businesses because of franchising activities, in 2005 the overall economic contribution of franchised businesses was $2.3 trillion (11 percent of the U.S economy), providing more than 20 million

jobs for American workers (over 15 percent of all U.S. private-sector employment). From 2001

to 2005, the franchising industry added nearly 3 million jobs and over $780 billion in economic

output to the U.S. economy. However, in 2010 PwC forecast modest growth in the number of

establishments, employment, and output for business-format franchises, reversing the recession-

induced decline of 2009. As the industry struggled to recover from the recession, franchise

business leaders reported that issues of financing and access to capital would be of greatest

concern in the years ahead, and franchise sales/development would be the second greatest

concern (IFA 2008; IFA 2009; IFA 2010).

3. THE SBA's ROLE IN FINANCING FRANCHISES IN THE UNITED STATES

Franchising offers a major opportunity for entrepreneurial venture creation and growth

(Hoy & Shane, 2003), with the vast majority of participants in the franchise sector classified as

small businesses (Gaulden & Jackson, 2004). These small businesses are funded primarily by

SBA-backed loans, including debt financing, surety bonds, and equity financing, all specifically

designed to meet key financing needs. Conventional commercial loan markets may not offer

small business owners access to the capital needed for growth, although the SBA does not make

direct loans to small businesses. Rather, it sets loan guidelines and SBA partners (lenders,

community development organizations, and micro lending institutions) make the actual loans.

The SBA guarantees that these loans will be almost fully repaid (i.e., 85%) eliminating some of

the risk to lending partners (SBA, 2012).

The SBA primarily uses two programs for franchising-related loans: the 504 program and

the 7(a) program (Wichmann & Kilpatrick, 2002; Glennon & Nigro, 2005). In 2006, these

programs backed more than $1.8 billion of SBA guarantees related to franchising, which is

fueled by the ability and willingness of lenders to provide debt capital to franchisees. However, in today's financial environment, lenders evaluate more than the franchisee's portfolio, analyzing both the franchisor and overall systemic performance (FRANdata, 2011).

Lenders apply various tools to make small business financing decisions, including established relationships and credit scoring—owner credit score or business credit score—or both (Cowan & Cowan, 2006). Lenders also consider equity, experience, the business plan, and loan collateral (Deegan, 2003).

The SBA does not extend financial assistance to businesses when the financial strength of the individual owners, or of the company itself, is sufficient to provide all or part of the financing. Therefore, both the business and the personal financial resources of the owners are reviewed as part of the eligibility criteria. The SBA also reviews the purpose of the business (for-profit or not), whether the business intends to be established in the US or its possessions, the size of the business, the purpose of the loan, the ability to repay on time based on projected operating cash flows, management expertise, commitment and character, all based on a "statement of personal history" and a feasible business plan (Wichmann & Kilpatrick, 2002; Glennon & Nigro, 2005; SBA, 2012). In the case of franchising, even though the SBA evaluates both the parent firm (the franchisor) and the borrower (the franchisee), it is not clear how SBA includes parent firms' business characteristics and strategies when making a lending decision.

4. WHY BUSINESSES TURN TO FRANCHISING

The franchising research literature uses several theoretical arguments to explain franchise resource use and failure. Franchising allows the franchisor to extend scarce resources by seeking franchisees to finance expansion. Franchisors make multiple decisions related to franchisee

qualifications, resources, abilities and communications about their own brand. To manage risk, franchisors prefer to franchise locations that have a lower profit potential and are more distant from their headquarters (Brickley & Dark, 1987). Generally, geographic expansion and sales growth are cited as the main reasons for franchising (Alon, 2006; Julian & Castrogiovanni, 1995).

Agency theory, sometimes referred to as "principal agent theory," refers to situations where one party (the principal) delegates work to another (the agent). In our case, the principal is the franchisor and the agent the employee manager or the franchisee. Agency theory assumes that each party is self-interested and has independent goals, thus prompting the principal to dedicate resources to ensure that the agent acts in the principal's best interest (Eisenhardt, 1989; Jensen & Meckling, 1976).

Agency theory focuses on resolving two possible problems in agency relationships. First, the principal's and agent's desires or goals may conflict or it may be difficult or expensive for the principal to verify what the agent is actually doing and whether it is in the best interests of the principal. Second, risk-sharing may arise when the principal and agent have different attitudes toward risk and prefer different actions because of that. Agency theory posits that firms franchise because they are unable to monitor managers of company-owned outlets efficiently (Combs & Ketchen, 2003). When managerial monitoring costs increase franchisors are more inclined to rely on franchising because franchisees should be self-motivated by their desire for outlet profits (Carney & Gedajlovic, 1991; Shane, 1996).

Resource scarcity theory argues that firms franchise in order to access scarce resources, especially capital and managerial resources, to expand rapidly (Combs & Ketchen, 1999). Small young firms may find it difficult to raise capital through traditional financial markets such as

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public stock offerings or existing operations, and they may consequently face obstacles in developing the requisite managerial talent (Martin, 1988; Shane, 1996). Rapid expansion may be the easiest method to build economies of scale for purchasing and advertising necessary to compete effectively against more established firms (Carney & Gedajlovic, 1991; Combs & Castrogiovanni, 1994; Polo-Redondo, Bordonaba-Juste & Palacios, 2011). Resource scarcity theory suggests that firms initially franchise because they lack financial resources (capital scarcity), managerial resources (knowledge-based), and organization capabilities for expansion (Alon, 2006). This theory maintains that once economies of scale are realized, the firm's focus shifts toward maximizing profits through firm ownership, called "ownership redirection" (Oxenfeldt & Kelly, 1969). Resource scarcity explains growth through franchising increases in the early years of a firm's operation while agency theory explains the use of franchising in the later years of a firm's life cycle (Castrogiovanni, Combs, & Justis, 2006).

Signaling theory, based on economic contract theory, also examines franchising (Gallini & Lutz, 1992; Dant & Kaufmann, 2003), focusing on the externalities of market imperfections and knowledge asymmetries to explain organizational choice. Entrepreneurs who are keen to attain the incentive advantages of franchising face an asymmetric information problem because franchisors face difficulties in signaling the quality of their concept to prospective franchisees. Struggling franchisors also have an incentive to misrepresent their quality in an attempt to sell more outlets to franchisees (Dant & Kaufmann, 2003). Such misrepresentations and false claims can create adverse selection problems for the users of that information, leading to moral hazard problems when the information varies across individual transactions or outlets due to external reasons (Akerlof, 1970; Eisenhardt, 1985; Holmstrom, 1979). The many lawsuits that often surround franchising agreements are a testament to conflicts over misrepresentation. Policy

makers in numerous states and countries have thus taken an active role to legislate franchisee relationships to address various issues such as termination and registration.

To counter the effects of information asymmetries, firms use signaling devices such as warranties, pricing, and advertising and promotion to signal product quality. For example, franchisors can powerfully and credibly signal their own confidence in the profit potential of their concept, its viability and robustness of their systems by operating a critical mass of company-owned outlets sure of the meaning here (Gallini & Lutz, 1992). Signaling theory predicts that franchise systems will move toward a greater reliance on franchised outlets as systems mature (Dant & Kaufmann, 2003).

A number of researchers have tried to reconcile the differences between agency and resource scarcity theories through a comprehensive model of causal connections from each paradigm (Alon, 2001; Carney & Gedajlovic, 1991; Combs & Castrogiovanni, 1994; Combs & Ketchen, 2003). Corresponding variables comparing the three theories are summarized in Table 2.

Insert Table 2 about here

5. HOW FRANCHISING STRATEGIES PREDICT FRANCHISEE FAILURE

5.1 Data and methodology

In this study, loan defaults are used as a proxy for franchisee failure. In order to develop a predictive model of franchisee failure, we extracted information from three different datasets: (1) Cross-sectional data from the World Franchise Council's 2008 survey, (2) Longitudinal data from the World Franchising Council's 2005-2008 surveys to calculate the rates of change over the three-year period, and (3) Longitudinal data collected by SBA from 2000 to 2008 on franchisors with ten or more SBA-backed loans issued to their franchisees. We then integrated

the three datasets to get a view of a franchisor's characteristics in 2008, its growth rate over the past 3 years, and its average financial metrics over an eight-year period for its franchisees. Our integration process led to a set of 271 diverse U.S. franchisors operating between 2000 and 2008 for which we had both the franchise parameters and SBA data on the behavior of financial loans to franchisees (66 variables). A high level description of our final dataset used for modeling and analysis is provided in Table 3.

Insert Table 3 here

Our modeling approach was based on a data mining technique called Structural Risk Minimization (Hastie, Tibshirani, & Friedman, 2001) implemented in a software application developed by KXEN that allows for the extraction of accurate, yet reliable, models, in the presence of massive noisy data. KXEN is an American software company, based in San Francisco, CA, that specializes in predictive analytics software.

5.2 Results

The best model of the failure rate of SBA-backed loans extracted from KXEN analysis is a predictive model with 13 variables. Figure 1 displays the performance of the model on the validation dataset, a dataset not used for modeling purposes, but reserved solely to assess the "closeness" of the predicted failure rate derived from the model to the actual failure rate. Ideally, one looks for a model whose predictions match the observed values exactly. This ideal situation is captured by the diagonal straight line. Figure 1 shows how well our model hugs the ideal diagonal line. The shaded area is the confidence band around the prediction line. Together, the model with these 13 variables explains 50.7% of the total variability seen in the failure rate of

our modeling dataset. The ability of that model to generalize itself on a pristine dataset is captured as a reliability index, KI, of 80.9% (KXEN).

Insert Figure 1 here

Table 4 provides a measure of the relative contribution of each one of the 13 variables to the predictive model. It also identifies which theory each variable contributes to, based on inputs from Table 2.

Insert Table 4 here

The top four contributing variables include average total investment, industry type, number of company-owned outlets, and importance of experience in the specific industry.

The relationships among the variables and franchisee failure were often non-linear. For example, the association between the failure rate and the average total investment changes at $200,000. When the total investment is $200,000 or more, the failure rate is lower the greater the investment. However, up to $200,000, the higher the investment, the more likely the venture is to fail, perhaps due to a larger relative financial burden on small franchisees.

Industry type is a categorization done as part of the analysis itself. This categorization, shown in Table 3, is the second most important variable in our model.

- Group 1: Automotive, computer products and services, home décor and design, pet-related products and services, printing, retail food, and sports and recreation. This is the riskiest group.

- Group 2: Baked goods, beauty-related products, building and construction, child-related, clothing and accessories, education-related, fast food restaurants, frozen desserts, health and fitness, real estate, sit-down restaurants, retail stores, and general services.

- Group 3: Business-related services, lodging, and maintenance services. This is the lowest risk group.

The relationship between failure rate and percent of owned outlets appears also to be non-linear. Failure rate is at its highest with very low percentage of owned outlets and steadily goes down till percent of owned outlets reaches about 9%, and then increases back for percentages between 9% and 15% to finally stabilizes after 15%.

Regarding the importance placed by franchisors on franchisee's experience in the specific industry they are entering, the higher the importance level, the lower the expected failure rate. As to the impact of some of the other variables, the models points toward:

- A lack of earnings claims correlates with a higher failure rate.

- A high growth rate of the total outlets correlates with a low failure rate.

- A longer franchise experience (time in operation since the first franchise) tends to be correlated with lower failure rates whereas shorter experience (fewer than 12 years) correlates with higher failure.

6. HOW PRACTITIONERS CAN APPLY THE PREDICTIVE MODEL

This study presents empirical evidence on the use of historical franchisor variables to predict franchisee failure, especially SBA-backed loan defaults. Three stakeholder groups of franchising practitioners can benefit from the findings: SBA loan officers responsible for

franchising, franchisors and franchisees. The section below offers suggestions and guidance for all three stakeholder groups.

6.1 Suggestions for lenders

Lenders use certain tools to evaluate a borrower's creditworthiness, including the five Cs of credit:

1) Character - signifying the borrower's integrity and reputation,

2) Capacity - encompassing the ability to repay and evidence of a sufficient cash flow to service the obligation,

3) Capital - the borrower's net worth,

4) Conditions – of the borrower and the overall economy, such as interest rates and the amount of principal requested, and,

5) Collateral - including the borrower's assets used to secure the debt.

The five Cs of credit are no panacea for today's credit challenges, but they do provide a handy checklist for evaluating a borrower's ability and willingness to pay.[1] The SBA and its lending partners use this checklist to evaluate franchisee creditworthiness.

This study proposes a **6th C: Company (franchisor firm)**, based on a predictive model relating franchisor characteristics to loan behavior and establishing a scoring process for the franchisors. Once established, this scoring can easily be used as a 6th C. Developing the 6th C involves data mining techniques, such as the one employed in this study. Lenders, however, should be cautious, and ensure regular information updates. Using the 6th C of credit adds another dimension for evaluating franchisee loan credibility, ultimately helping to reduce SBA-backed loan defaults and saving public money.

6.2 Guidance for franchisors and prospective franchisees

Franchisees who want to minimize the chances of loan default should choose a franchisor whose key characteristics and strategies help reduce franchisee failure. For instance, franchisors who claim earnings are signaling the credibility of their operations by virtue of less risky investment opportunities. Simple linear relationships should not be assumed. This is because, established franchisors are not necessarily less risky firms since a fast-growing franchise system may be taxing its abilities to transform. Franchisees who do best have either a lot of industry experience or very little, while those with only some experience are most likely to default. Franchisees with little experience may be more successful because they may be following franchisor's directions about how to operate their business. On the other hand, franchisees who are seasoned industry veterans may have a better understanding of not only what it takes for a business to be successful but also are more likely to know how to do it.

Franchisors can help their franchisee business prospects and lower the likelihood of failure if they are open and transparent about their earnings, franchisee earnings, and failure cases. Franchisors with either a very inexpensive or very expensive concept seem to have fewer defaulting franchisees. Concepts requiring over $500,000 are as likely to succeed as those under $50,000, facts that franchisors can use to signal recruits.

7. FUTURE RESEARCH

Our findings have some limitations. Data used in this study contain financial metrics on franchisors with 10 or more loans backed by the SBA. Thus, the findings are limited to more experienced franchisors. A similar modeling approach might detect differences between younger and older franchise systems. Data reporting, which is voluntary and does not cover all SBA-

backed loans to franchisees, is conducted by the banks that actually make the loans. The SBA does not enforce reporting the loan status. Since the lenders are not obliged to provide this information to the SBA, they may be reluctant to report excessive failures and charge-off rates that are not good for business.

Opportunities exist to expand the analysis to countries other than the US to see if the same failure factors apply. Our data may however not be typical in other countries and therefore generalizability outside the US is still unknown.

Although our study makes a unique contribution to loan failure research by evaluating the use of multiple historical franchisor variables to predict the potential default (failure) rate of franchisees, our variables are not exhaustive. Future research could entail assessing managerial level-data, for example, to enhance the predictive model.

Our model paves the way for other applications of predictive analytics pertaining to firm performance. For example, a similar model can be used in international business research related to geographic expansion. Predicting other financial measures such as sales, asset growth, and profitability is another potentially fruitful avenue for future research.

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Figure 1.Predicted Failure Rate of SBA-backed Loans versus Actual Failure Rate
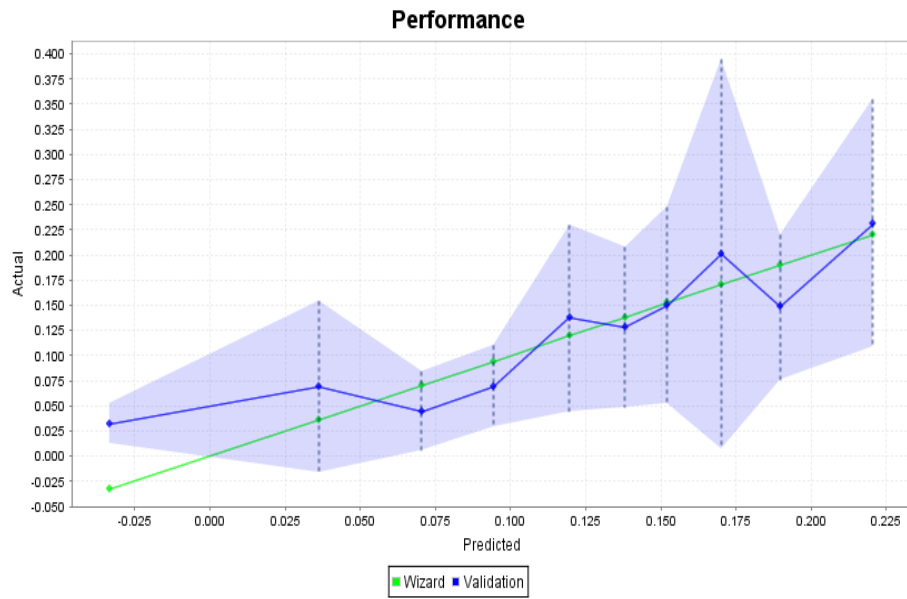
Table 1. Country members of the World Franchise Council – by Continent

Continent	(Country) Members of the World Franchise Council
Europe	19
Asia	13
South America	4
North America	4
Africa	3
Oceania/Australia	2
Grand Total	**45**

Table 2. Theories and corresponding variables

Theory	Variables
Agency theory	Number of franchised outlets, number of company-owned outlets, size of corporate staff, average equity investment, average total investment, royalty fees, average franchise fees, state of earnings claims, advertising fees, number of states in the U.S. and total outlets.
Resource scarcity theory	Average equity investment, number of franchised outlets, royalty fees, number of company-owned outlets, average franchise fees, growth rate of total outlets, franchise experience, size of corporate staff, percentage of projected outlets over the total, average total investment, number of states in the U.S., and total outlets.
Signaling theory	State of earnings claims, advertising fees, growth rate of total outlets, number of company-owned outlets and franchise experience.

Table 3. Sample description

INDUSTRY	Type	Number of franchisors	Mean (Failure rate)	Std Dev (Failure rate)
Lodging	Group 3	9	0.015	0.033
Business-Related	Group 3	5	0.036	0.035
Clothing & Accessories	Group 2	2	0.069	0.098
Maintenance Services	Group 3	11	0.073	0.081
Child-Related	Group 2	13	0.089	0.108
Health & Fitness	Group 2	6	0.091	0.098
Restaurants (Sit-Down)	Group 2	15	0.093	0.120
Real Estate	Group 2	7	0.100	0.117
Services-General	Group 2	15	0.101	0.095
Building & Construction	Group 2	5	0.103	0.116
Frozen Desserts	Group 2	14	0.104	0.082
Education-Related	Group 2	2	0.110	0.033
Baked Goods	Group 2	9	0.129	0.098
Retail Stores	Group 2	24	0.135	0.120
Decorating & Home Design	Group 1	5	0.135	0.091
Computer Products and Services	Group 1	3	0.138	0.088
Fast Food Restaurants	Group 2	75	0.144	0.135
Personnel Services	Group 1	1	0.158	NA
Pet-Related Products/Services	Group 1	3	0.171	0.053
Retail Food	Group 1	8	0.179	0.131
Beauty-Related	Group 2	9	0.184	0.184
Automotive	Group 1	16	0.193	0.166
Printing	Group 1	7	0.210	0.136
Sports & Recreation	Group 1	6	0.293	0.142
Party-Related Goods/Services	Group 1	1	0.318	NA
Total		**271**		

Note: The raw data from which SBA calculated mean failure rate for each franchisor was provided, on a voluntary basis, by the actual lenders organizations to the franchisees. SBA aggregated the data provided to them only for franchisors with 10 or more SBA-backed up loans to franchisees.

Table 4. Relative Importance of Variables and Theories to Predicting Failure Rate

Variable	Measure of contribution to model	Agency Theory	Resource scarcity	Signaling theory
Average total investment	0.116	X	X	
Industry type	0.103	-	-	-
Number of owned outlets	0.102	X	X	
Importance of specific industry experience	0.097		X	X
Financial assistance	0.078			X
Total outlets growth rate 2005-2008	0.078		X	X
Time in operation since first franchise	0.076		X	
Passive ownership	0.073			X
Number of states in US	0.066	X	X	
Terms of contract	0.065			X
Earning claims state	0.056	X		X
Royalty percentage	0.050	X	X	
Percent distribution overseas	0.040	X		