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Why Do Firms Use Franchising as an Entrepreneurial Strategy?: A Meta-Analysis

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Franchising is a key tool in the entrepreneur's toolbox. In a franchising relationship, a franchisor sells the right to use its trade name, operating systems, and product specifications to a franchisee. The franchisee is permitted to offer the franchisor's product/service under the franchisor's name within a specified region and time period (Justis & Judd, 1998). Entrepreneurs such as Ray Kroc (McDonald's) and Dave Thomas (Wendy's) have used franchising to manage the growth of huge corporate empires. On the other side of the relationship, franchising creates opportunities for thousands of budding entrepreneurs every year. These franchisees are an important source of innovation and local adaptation for franchisors (Kaufmann & Eroglu, 1998).

Taken together, product and service franchisors represent over 40% of retail sales in the United States (International Franchise Association, 2002). Franchises have collectively captured majority shares of the tax preparation (67% of sales), printing and copying (71%), and specialty food retailing (55%) businesses. Further, franchises play a key role in important industries such as restaurants (46% of sales) and lodging (39% – Michael, 1996a). Franchising was pioneered in the United States, but is expanding rapidly elsewhere (Fladmoe-Lindquist, 1996).

When choosing to franchise, a firm surrenders significant control over new outlets bearing its name and receives only a small percentage of franchised outlets' revenues. Thus, what leads organizations to franchise particular outlets, despite the inherent downsides, has been the subject of considerable empirical research. Unfortunately, little consensus has emerged (Shane, 1998). For example, whereas several studies report that small firms emphasize franchising more than large firms (e.g., Roh, 2001), others report the reverse (e.g., Alon, 2001). Some studies suggest that a lack of capital leads firms to franchise (e.g., Combs & Ketchen, 1999a) while others do not (e.g., Michael, 1996b). The findings surrounding other potential antecedents such as firm age, growth rate, geographic dispersion of outlets, and royalty rates are similarly ambiguous.

One explanation for the lack of consensus is that, while research on franchising has been conducted for over thirty years (e.g., Oxenfeldt & Kelly, 1969), interest intensified dramatically in the 1990s. Indeed, over three-fourths of the studies examined here were published during or after 1990. Thus, as a relatively new endeavor, perhaps consensus should not be expected. A second explanation is that franchising is viewed as important to scholars from several disciplines. It is a growth strategy to management researchers (e.g., Shane, 1996), a distribution channel to marketing researchers (e.g., Dant, Paswan & Kaufman, 1996), a

capital structure issue to finance researchers (e.g., Norton, 1995), and a mode of organizing to economists (e.g., Lafontaine, 1992). Thus, different theoretical perspectives and methodologies exacerbate efforts to reach common understanding (Hirsch, Friedman & Koza, 1990).

In response to the lack of consensus, qualitative reviews have sought to clarify extant empirical findings. Unfortunately, qualitative reviews suffer from two key shortcomings. First, interpretation of literature is affected by authors' biases. For example, Dnes (1996) rejects the notion that firms franchise to access franchisee capital because it conflicts with accepted economic assumptions; Elango and Freid (1997) find the hypothesis well supported. Second, qualitative reviews frequently count the supporting and contrary findings to arrive at conclusions (e.g., Lafontaine & Slade, 1997). Such methods are faulty because they cannot account for differences in results caused by study artifacts such as sampling and measurement error (Hunter & Schmidt, 1990).

Meta-analysis, a technique that empirically combines previous findings to estimate the relationship between variables, avoids these problems (Hunter & Schmidt, 1990). When meta-analysis is applied to seemingly equivocal research streams, variance in results across studies is often revealed to be due to methodological artifacts such as errors in sampling and measurement. Once the effects of such artifacts are accounted for, the effect size (i.e., strength) of a focal relationship can be estimated (Hunter & Schmidt, 1990).

Dant et al. (1996) initiated the use of meta-analysis to address the franchising literature. However, they investigated only one hypothesis and were unable to overcome a lack of effect size reporting in franchising studies. We extend Dant et al's (1996) initial effort by drawing upon two widely used theoretical explanations for franchising – resource scarcity and agency theory – to describe the ten most commonly studied hypotheses about why firms franchise. We test the hypotheses by applying meta-analytic methods to data from 44 original studies. We partially circumvent the lack of effect size reporting that hampered Dant et al. (1996) by supplementing traditional meta-analytic formulae with a vote-count effect size estimation procedure developed by Hedges and Olkin (1985).

Theoretical Background and Hypotheses

Resource Scarcity

In a classic paper that initiated debate about why firms franchise, Oxenfeldt and Kelly (1969) proposed that firms franchise in order to access scarce resources. They argued that firms prefer company ownership to manage growth because firms can expect higher rates of return from company owned outlets. However, the desire to achieve economies of scale pressures firms to expand at a rate beyond what may be possible using only internally generated resources. Thus, young, small, growing firms will use franchising to fuel expansion until they reach the critical mass needed to generate economies of scale. Once economies have been achieved, rapid expansion is no longer necessary and a firm's focus will shift

toward maximizing each outlet's returns. Consequently, new franchising should cease and the firm will try to purchase its most profitable franchised outlets. Ultimately, a successful, mature firm's outlets will be primarily company-owned.

Oxenfeldt and Kelly's theorizing has elicited significant debate. Early evidence pointed toward a reduction in the use of franchising among large firms (Hunt, 1973) and within maturing industries (Caves & Murphy, 1976). However, results showing that the balance between company-owned and franchised outlets does not appear to approach full-ownership over time (e.g., Martin, 1988) and that top managers feel little compulsion to create fully-owned chains (Lafontaine & Kaufmann, 1994) argue against the resource scarcity explanation. Extant equivocality has led some authors to explore alternative conceptualizations using typologies (Carney & Gedajlovic, 1991) and non-linear empirical specification (Shane, 1998).

Studies have generally examined general resource scarcities using three variables: age, system size, and growth rate. Essentially, when firms are young, small, and growing, resource scarcities are presumed to be greatest and the use of franchising extensive. Thus, our study begins with three predictions grounded in Oxenfeldt and Kelly's (1969) depiction of resource scarcity. Specifically:

Hypothesis 1: Firm age is negatively related to the use of franchising.

Hypothesis 2: System size is negatively related to the use of franchising.

Hypothesis 3: Firm growth rate is positively related to the use of franchising.

Much of the debate over Oxenfeldt and Kelly's resource scarcity explanation has centered on capital. Rubin (1978) argued that a capital scarcity explanation for franchising is fallacious because franchisees, who place a substantial investment in a limited number of outlets, will demand a risk premium to compensate them for their undiversified investment. A firm could presumably raise capital at a lower cost through passive investors (stock and debt holders) whose investments would be diversified across the firm's entire chain of outlets. Thus, there is no reason to enlist franchisees as a source of capital (Brickley & Dark, 1987; Norton, 1995).

Other researchers have argued that certain incentives and private knowledge can lead franchisees to be a cost competitive source of capital. First, because franchisees invest their own capital, they have a powerful financial incentive to excel. Company-owned outlets are managed by employees who confront weaker incentives than franchisees because their capital is not at stake (Minkler & Park, 1994). Passive investors may recognize this motivational disparity and demand a risk premium when investing in a firm dominated by company-owned outlets (Lafontaine, 1992). Second, passive investors rely on public information regarding firms' future intentions and abilities (Martin & Justis, 1993). Franchisees, in contrast, have private information regarding their own intentions and abilities, which reduces the cost of franchisee capital (Combs & Ketchen, 1999a). In essence, franchisees can have greater confidence in themselves than passive investors can have in a firm, suggesting that the latter may demand the larger risk premium.

This debate has not received clarity from empirical findings. There is some evidence that franchising increases in response to capital scarcity (Combs & Ketchen 1999a) and that, over time, franchising alleviates existing scarcities (Norton, 1995). However, studies investigating the relationship between the use of franchising and changes in interest rates (a measure of capital scarcity in the economy) do not consistently support the notion that capital scarcity leads to franchising (cf. Martin & Justis, 1993; Minkler & Park, 1994). To develop some clarity, we examine the following hypothesis:

Hypothesis 4: Firms' capital scarcity is positively related to the use of franchising.

Agency Theory

An agency relationship exists in any joint effort in which one party (i.e., the principal) delegates authority to a second (i.e., the agent – Eisenhardt, 1989). Because each is assumed to be self-interested and to possess divergent goals, the principal must expend resources to ensure that the agent acts in the principal's best interest (Jensen & Meckling, 1976). Among the retail and service businesses where franchising is likely to occur, franchisors act as principals, delegating authority to outlet level agents – either employee-managers or franchisees. Franchising reduces the need to monitor outlet managers' effort because franchisees typically make substantial investments in their outlets (Norton, 1988; Rubin, 1978). The anticipated profit stream from these investments depends on franchisees' continued motivation (Klein, 1995).

Despite the monitoring cost advantages of franchising, many firms may not rely on franchising due to perceived opportunism risks (Scott, 1995). Franchisees confront the risk that franchisors may not promote the chain's brand name (Klein & Saft, 1985). In turn, franchisors confront the possibility that franchisees will over emphasize cost reductions, thereby jeopardizing the brand's reputation (Brickley & Dark, 1987). If franchisors perceive a significant opportunism risk, franchise contracts may be offered to few potential franchisees. If franchisees perceive a significant opportunism risk, recruiting franchisees may be difficult. Accordingly, agency-based research can be divided into those antecedent variables that are believed to affect the costs of monitoring and those that are believed to affect potential opportunism risks.

Monitoring costs. Researchers have sought to identify factors that increase monitoring costs under company ownership and thereby encourage franchising. Perhaps the most frequently cited factor is geographic dispersion. As a firm enters geographic markets that are far-removed from headquarters, the cost of monitoring outlet managers increases because the number of necessary monitoring personnel and related travel expenses grow (Carney & Gedailovic, 1991). Dispersion also can lead firms into new, unfamiliar markets where they confront increased difficulty, and costs, in evaluating the quality of local decision-making (Minkler, 1990). Thus, as the chain grows more dispersed, franchising becomes more attractive. Stated formally:

Hypothesis 5: Geographic dispersion is positively related to the use of franchising.

Agent inputs may also affect monitoring costs. When operations require significant local market expertise (e.g., real estate), effective monitors must be able to understand and judge decision quality in addition to observing behavior (Minkler, 1990). Thus, if the need for local market expertise is high, monitoring costs are also high. Under such conditions, offering residual claimant status to local managers through franchising can be advantageous (Bradach, 1997). In contrast, when operations can be largely standardized, agent inputs are restricted to following dictated standards (Combs & Ketchen, 1999a). Because outlet managers' ability to follow standards is relatively easy to observe, standardization facilitates company ownership. According to this agency-based logic:

> *Hypothesis 6:* The importance of local managerial expertise is positively related to the use of franchising.

Opportunism risks. Although franchising contracts include mechanisms designed to reduce the potential for opportunism (Williamson, 1983), situational factors may encourage opportunism by one or both parties and thereby decrease the use of franchising. Accordingly, researchers have examined several variables that may influence the use of franchising by altering perceived opportunism risks. One is franchisor inputs. Franchisors are responsible for improving the product/service mix, policing outlet quality, and promoting the brand (Kaufmann & Stanworth, 1995). When franchisors enhance the outlets' value by performing these activities well, the potential cost of franchisee free-riding increases (Michael, 1998). Realizing that the efforts of the franchisor are sufficient to ensure a steady stream of customers, franchisees might attempt to increase profits by reducing the quality of inputs (e.g., by under staffing – Brickley & Dark, 1987). Because customers seldom can distinguish between franchised and company-owned outlets, a poor experience in one outlet hurts the reputation of the entire chain (Scott, 1995). Thus, agency theory contends that when the value of franchisor inputs is high, franchisors have an incentive to emphasize company ownership (Michael, 1998). Stated formally:

> *Hypothesis 7:* Valuable franchisor inputs are negatively related to the use of franchising.

Some researchers have argued that how franchisors price their franchise offerings also has an important effect on franchisees' perception of opportunism risks (e.g., Sen, 1993). Franchisors generally charge a *franchise fee* and an ongoing *royalty.* The franchise fee is a one-time charge (Justis & Judd, 1998). From the perspective of the franchisee, this fee is a highly specific investment in which returns depend heavily on the franchisor's future efforts (Sen, 1993). If the franchisor fails to support the brand in the franchisee's territory (Klein & Saft, 1985), denies anticipated expansion rights (Bradach, 1997), permits cannibalism by nearby outlets (Hoy, 1994), or unjustly initiates termination proceedings (Klein, 1995), the franchisee could lose anticipated income. Thus, from an agency

perspective, high franchise fees discourage potential franchisees. Stated formally:

Hypothesis 8: Franchise fees are negatively related to the use of franchising.

The royalty is a variable charge wherein the franchisor collects a percentage of franchisee revenues for the duration of the relationship. The royalty thus gives franchisors an incentive to invest in activities that enhance franchisees' sales because franchisors directly benefit when franchisees succeed (Sen, 1993). Thus, as long as the royalty rate is not so high that it reduces franchisees' profit margins below an acceptable level (Shane, 1998), franchisees should be willing to accept royalties. Following this argument, it is expected that:

Hypothesis 9: The royalty rate is positively related to the use of franchising.

Monitoring costs and opportunism risks. Outlet size is a potential antecedent that affects both monitoring costs and opportunism risks. Outlet size is closely tied to franchisees' perceived opportunism risks because franchisees' start-up costs are largely brand-specific and thus cannot be redeployed if the franchisor fails to support the franchisee (Klein, 1995). Large outlets require large investments in such specific assets and thus present high risks to franchisees, suggesting that outlet size will increase the difficulty of attracting franchisees.

In addition, monitoring costs encourage company ownership among firms whose outlets are large. The marginal cost of direct observation is lower among large outlets than among small outlets because greater economies of scale in monitoring can be achieved in large outlets (Lafomaine, 1992). Outlet size is thus directly tied to franchisors' economic incentives to own new outlets. Thus, it is expected that:

Hypothesis 10: Outlet size is negatively related to the use of franchising.

Method

We attempted to identify the population of published and unpublished studies investigating correlates of franchising. Studies were gathered initially by searching the *Abstract of Business Information, Dissertation Abstracts*, and the *EconLit* databases. The search began with 1970, the year following the publication of Oxenfeldt and Kelly (1969). The reference sections of the collected studies were then culled for additional studies. Finally, a letter was distributed in 1999 to researchers who had published research investigating correlates to franchising within the previous ten years. The letter asked authors for assistance in locating additional published and unpublished studies. In addition, the letter included a request for bivariate statistics from authors whose studies did not report them. Although the letters did not yield additional studies, one author furnished her correlation table (i.e., Lafontaine, 1992).

Table 1: *Summary of primary studies*

Study	Sample	Theoretical approach	Correlates studied	Bivariate statistics available
Hunt (1973)	Aggregate fast food outlet data 1960-1971 and 1995 fast food chains 1968–1971	Resource scarcity	Age and system size	No
Caves and Murphy (1976)	20 industries, 1968–1971	Resource scarcity	System size	Yes
Goldberg (1983)	25 restaurant firms	Agency	Age, system size, capital scarcity, and franchisor inputs	No
Anderson (1984)	17 industries, 1969 and 1980	Resource scarcity	Age	Yes
Brickley and Dark (1987); Brickley, Dark and Weisbach (1991)[a]	3 samples: 10,524 outlets in 36 firms, 107 and 129 firms	Agency	Geographic dispersion, system size, and outlet size	Yes
Fong (1987)	244 outlets	Agency	Geographic dispersion	Yes
Rankine (1987)	64 restaurant firms	Agency and resource scarcity	System size, capital scarcity, geographic dispersion, and franchisor inputs	Yes
Martin (1988)	949 firms in 16 industries	Risk spreading[b]	Age, capital scarcity, and outlet size	Yes
Kuga (1989)	647 McDonald's outlets	Agency	Age and geographic dispersion	No
Minkler (1990)	154 Taco Bell outlets	Agency (search cost)	Age and geographic dispersion	No
Thomas, O'Hara and Musgrave (1990)	10 industries	Agency	Local managerial expertise and outlet size	No
Carney and Gedajlovic (1991)	128 firms	Agency and resource scarcity	Age, system size, growth rate, geographic dispersion, outlet size, franchise fees, and royalty	Yes
Lafontaine (1992)	548 firms	Agency	Age, system size, growth rate, capital scarcity, geographic dispersion, local expertise, franchisor inputs, franchise fees, royalty, and outlet size	Yes (by author)
Thompson (1992)	18 industries	Agency	Growth rate and outlet size	No
Martin and Justis (1993)	529 firms, 1980–1989	Resource scarcity	Age and capital scarcity	No
Sen (1993)	996 firms	Agency	Franchise fees and royalty rate	No

(Continued)

Table 1: *(Continued)*

Study	*Sample*	*Theoretical approach*	*Correlates studied*	*Bivariate statistics available*
Combs and Castrogiovanni (1994)	*558 firms*	*Agency and resource scarcity*	*Age, system size, growth rate, geographic dispersion, royalty rate, and outlet size*	*Yes*
Lafontaine and Kaufmann (1994)	*122 firms*	*Agency and resource scarcity*	*Age and capital scarcity*	*No*
Minkler and Park (1994)	*19 firms*	*Agency*	*Age, capital scarcity, growth rate, and franchisor inputs*	*No*
Thompson (1994)	*200 firms*	*Agency*	*Age and outlet size*	*No*
Fladmoe-Lindquist and Jacque (1995)	*10,302 outlets in 12 firms*	*Agency*	*Geographic dispersion and franchisor inputs*	*No*
Norton (1995)	*25 firms*	*Resource scarcity*	*Capital scarcity*	*Yes*
Scott (1995)	*681 firms*	*Agency*	*Age, geographic dispersion, franchisor inputs, local managerial expertise, franchise fee, royalty rate, and outlet size*	*No*
Zietlow (1995)	*42 firms*	*Agency and resource scarcity*	*Age, system size, geographic dispersion, franchisor inputs, and outlet size*	*No*
Kaufmann and Dant (1996)	*152 firms*	*Resource scarcity*	*Growth rate*	*No*
Michael (1996b)	*18 industries*	*Agency*	*Franchisee inputs*	*Yes*
Michael (1996b, 2000a, 2002)[a]	*102 restaurant firms*	*Agency*	*Age, growth rate, capital scarcity, geographic dispersion, local managerial expertise, franchisor inputs, and outlet size*	*Yes*
Shane (1996)	*138 firms, 1983–1993*	*Resource scarcity*	*Age, system size, growth rate, outlet size, franchise fee, and royalty*	*Yes*
Ingram and Baum (1997)	*1135 hotel firms, 1896–1985*	*Organizational learning*	*Age and geographic dispersion*	*Yes*
Sen (1997)	*109 restaurant firms, 1986–1990*	*Resource scarcity*	*Growth rate*	*Yes*
Bercovitz (1998)	*2332 outlets in 39 food and retail firms*	*Agency*	*Growth, geographic dispersion, and local managerial expertise*	*No*
Contractor and Kundu (1998)	*110 global hotel firms*	*Agency*	*Size and franchisor inputs*	*Yes*

Dant, Kaufmann and Robicheaux (1998)	125 fast food restaurant firms	Resource scarcity	Capital scarcity and local managerial expertise	Yes
Shane (1998)	average 996 firms, 1991–1994	Agency	Age, system size, capital scarcity, growth rate, geographic dispersion, outlet size, franchise fee, and royalty rate	No
Bercovitz (1999)	75 fast food and retail firms	Agency	Age, system size, geographic dispersion, local managerial expertise, and outlet size	Yes
Combs and Ketchen (1999a, 1999b)[a]	94 restaurant chains, 1989–1995	Resource (capital) scarcity and agency	Age, system size, capital scarcity, geographic dispersion, and franchisor inputs	Yes
Michael (1999, 2000a)	35 restaurant firms and 45 hotel firms	Agency	System size, growth rate, geographic dispersion, and franchisor inputs	Yes
Alon (2001)	361 firms	Resource scarcity and agency	Age, system size, growth rate, royalty, and outlet size	Yes
Roh (2001)	33 restaurant firms	Agency	System size, growth, capital scarcity, and geographic dispersion	No

[a] Sample firms, time period, and measures overlapped substantially; these studies were treated as one.

[b] Hypothesized franchisors shed "high risk" outlets to franchisees. Such outlets are also costly to monitor (Martin, 1988).

In order to be included, a primary investigation had to measure firms' use of franchising and at least one measure of an independent variable described in the ten hypotheses. Forty-four studies were identified that investigated 140 effects. The studies are listed in Table 1.

Meta-Analytic Techniques

Meta-analysis statistically aggregates extant findings from a body of literature. Meta-analysis can establish whether a body of literature has in fact identified a relationship as well as estimate the effect size, or overall magnitude of the relationship. We began by estimating effect sizes using formulae supplied by Hedges and Olkin (1985) and Hunter and Schmidt (1990). We then examined whether the variance in effect size among studies was more than would be expected by chance. If so, it indicates that either: (1) some study artifact, such as the way variables are measured, creates extraneous effect size variance, or (2) there are multiple effects from multiple populations (e.g., the relationship is different for small firms and large firms). We found significant effect size variance for seven of our ten hypotheses, which led to an attempt to explain the variation. In six of the seven cases, we were able to identify a single outlier study or a difference in measurement that explained a significant portion of the variance. Confidence intervals were then drawn around the effect size estimates. Finally, effect size estimates were corrected for measurement error in primary studies to gain insight on how such error impacts estimates in franchising research.

Estimating Effect Sizes

As shown in Table 1, many franchising studies do not report effect size statistics (e.g., correlations, *t*-tests of franchisors vs. non-franchisors). Dant et al. (1996) attempted to deal with this problem by estimating effect sizes from partial correlation (i.e., regression) coefficients. However, partial correlation coefficients reflect the effect of an independent variable on a dependent variable only in the presence of other modeled independent variables; meta-analytic results based on such parameters should be viewed cautiously (see Hunter & Schmidt, 1990, pp. 502-503). This problem is avoided here by deriving a vote count estimate (VCE) for those studies that did not report effect sizes. The VCE was then included in the calculation of the overall effect size estimate for each hypothesis (Hunter & Schmidt, 1990, pp. 474–476).

VCEs were calculated using procedures described by Hedges and Olkin (1985). VCEs are built upon the notion that if the true effect is zero, then in any set of primary studies, 50% of reported relationships can be expected to be positive and 50% negative. As the number of studies reporting results in the hypothesized direction grows relative to the number of primary studies, so does the probability that a relationship is truly non-zero. Indeed, the proportion of studies reporting an effect in the hypothesized direction is the maximum likelihood estimate of the probability that the effect is non-zéro (Hedges & Olkin, 1985). Consequently, an estimate can be found by solving the equation: $p_c(\hat{r}) = U/K$, where $\hat{r}$ is the estimate of the relationship of interest and p_c is a probability function at critical value c

that can be derived from the maximum likelihood estimator U/K. U represents the number of studies reporting effects in the hypothesized direction and K is the total number of studies. Although the probability function (p_c) is complex, interpolation tables offered by Hedges and Olkin (1985, pp. 64–65) are used to derive an estimate of effect size, given sample size and U/K. VCEs assume that all studies in the vote count have the same sample size. When this assumption is violated as it is here, the conservative solution is to use the square mean root (SMR) sample size (Hedges & Olkin, 1985), which is: $n_{SMR} = \left(\sum_{i=1}^{k} \sqrt{n_i} / k\right)^2$, where n_i is the sample size of the ith primary study and k is the total number of primary studies.

The VCE effect size estimate is then treated as a single study in Hunter and Schmidt's meta-analytic formulae, which begin with the sample size weighted mean of the effects reported in primary studies: $\bar{r} = \sum [n_i r_i] / \sum n_i$, where n_i is the sample size and r_i is the effect reported for the ith primary study.

The effect size estimate $\bar{r}$ approximates what would have been achieved if all of the firms sampled in primary studies had been part of a single investigation. In essence, $\bar{r}$ offers dramatically increased accuracy in estimating an effect size relative to an estimate obtained from any one study because the sampling error (i.e., error generated by drawing a sample rather than testing the entire population) present in each study cancels out (i.e., positive and negative sampling error averages to zero as the number of studies increases – Hunter & Schmidt, 1990).

Because $\bar{r}$ is weighted by sample size, one problem was how to contend with studies performed at different levels of analysis. Our focus is on the firm, but we did not wish to ignore empirical results based on studies where the outlet or industry was the unit of analysis. Although relationships that hold at the outlet level (e.g., between distance of an outlet from headquarters and whether the outlet is franchised – i.e., Brickley & Dark, 1987) should aggregate (as geographic dispersion's effect on franchising) to the firm and ultimately the industry level, some aggregation error is likely. Thus, it was important that these studies not be weighted too heavily. This was not a problem at the industry level where a study of 18 industries (e.g., Michael, 1996a) weights much less than a typical firm-level sample of over 100. We weighted studies at the outlet level according to the number of firms so that, for example, a study of 10,524 outlets in 36 firms (i.e., Brickley & Dark, 1987) would not overwhelm the analysis.

Testing for Homogeneity of Variance

A key question in meta-analysis is whether large effect size variance remains after accounting for study artifacts. This can be tested with: $\chi^2_{K-1} = (T/(1-\bar{r}^2)^2)s^2_{\bar{r}}$, where K is the number of effects, T is the total sample size from primary studies, and $s^2_{\bar{r}}$ is the observed variance of $\bar{r}$. When significant, the chi-square test indicates either that uncorrected study artifact variance remains or there is true variance in the population relationship. In seven of ten cases the chi-square was significant. Thus, an attempt was made to identify the source of unexplained variance by examining the primary studies for potential moderators or outlier studies. This was done by sorting the studies by effect size and looking for common sources of variance at both ends of the effect size range (see Hedges & Olkin, 1985).

Confidence Intervals

As a final step, confidence intervals were calculated to test whether the estimates differed significantly from zero. When the chi-square test was not significant, the effect size variance was considered homogeneous (i.e., one population effect size with no remaining moderators) because all effect size variance is likely due to sampling error variance. Sampling error variance is calculated: $\sigma_e^2 = (1-\bar{r}^2)^2/(\bar{N}-1)$, where $\bar{N} = T/K$. The standard error of sampling error variance: $\sqrt{\sigma_e^2/K}$ was used to create 95% confidence intervals for the homogeneous case. When significant variance remained unaccounted for by study artifacts, a wider confidence interval was calculated based on the standard error of the total effect size variance, i.e., $\sqrt{\sigma_r^2/K}$ (Whitener, 1990).

Correcting Estimates for Measurement Error

Because σ_r^2 and σ_e^2 for $\bar{r}$ are needed to create confidence intervals of appropriate width (Whitener, 1990), $\bar{r}$ is the effect size estimate used for hypothesis testing. However, measurement error systematically reduces effect size estimates in primary studies. Thus, we offer a second estimate, $\bar{r}_c$, which is corrected for some of the effects of measurement error. Measurement error comes in two forms: reliability and validity. Reliability refers to a measure's ability to replicate and it is typically reflected in reliability coefficients (Kerlinger, 1986). Only two studies report such statistics (Combs & Ketchen, 1999a, 1999b). Validity, in contrast, rests in the quality of the relationship between a measure and its underlying construct (Kerlinger, 1986). Although no empirical efforts were made to validate the measures used in franchising research, we attempt to capture the quality of various measures used in the franchising literature using a rating scheme. The authors independently coded the measures used to assess use of franchising and each of the ten constructs as having high, moderate, or low validity. We agreed on 83% of the codes and worked out the remainder though discussion. High, moderate, and low validity measures were recorded as .9, .75, and .6, respectively. Varying these estimates (e.g., .9, .8, .7) did not materially affect the result. The measures used in primary studies and their validity codes are shown in Table 2.

Each effect size estimate was then corrected for measurement error according to: $r_c = r_{xy}/\sqrt{r_{xx}}\sqrt{r_{yy}}$, where r_c is the corrected effect, r_{xy} is the reported effect, r_{xx} and r_{yy} are the validity estimates of the independent and dependent variables, respectively. The corrected effects r_c were then used to calculate the corrected sample size weighted mean estimate $\bar{r}_c$. The corrected estimates $\bar{r}_c$ are offered as additional information. They depict the potential size of effects were measurement error to be substantially reduced.

Results

The first four hypotheses involve resource scarcities and the use of franchising. Hypothesis 1 predicted a negative relationship between firm age and use of franchising. As shown in Table 3, the effect size estimate is $\bar{r}$ = .04, but the 95% con-

Table 2: *Primary study measures and validity codes*

Measure description[a]	*Validity code*[b]	*Example study*
Franchising		
Percent of franchised outlets	*High*	*Alon (2001)*
Dummy variable = 1 if chain franchises	*Low*	*Ingram and Baum (1997)*
Change in percent franchised over time	*High*	*Combs and Ketchen (1999a)*
Ratio of franchised to company-owned outlets	*High*	*Shane (1996)*
Percent of sales from franchised outlets	*Moderate*	*Michael's (1996a, 1996b)*
Dummy variable = 1 if outlet is franchised	*High*	*Brickley and Dark (1987)*
Age		
Years since founding	*High*	*Alon (2001)*
Years since franchising began	*High*	*Bercovitz (1999)*
Years of international experience	*Low*	*Fladmoe-Lindquist and Jacque (1995)*
Size		
Number of outlets	*High*	*Alon (2001)*
Total sales	*Moderate*	*Contractor and Kundu (1998)*
Total assets	*High*	*Rankine (1987)*
Number of company-owned outlets	*Low*	*Shane (1996)*
Growth rate		
Percent change in outlets over a period of time	*High*	*Michael (2000a)*
Dummy = 1 if firm is growing	*Low*	*Sen (1997)*
Percent increase in sales	*Moderate*	*Roh (2001)*
Capital scarcity		
Survey: Has financial resources needed to grow?[c]	*Moderate*	*Dant et al. (1998)*
Book value/market value	*Moderate*	*Rankine (1987)*
Interest expense/earnings	*Moderate*	*Rankine (1987)*
Interest rates in economy at time	*Low*	*Minkler and Park (1994)*
Debt/assets or equity	*Moderate*	*Combs and Ketchen (1999a)*
Dummy = 1 if franchisor offers financial assistance[c]	*Low*	*Lafontaine (1992)*
Cash and marketable securities/total outlets[c]	*Moderate*	*Combs and Ketchen (1999a)*
Price/earnings[c]	*Moderate*	*Combs and Ketchen (1999a)*
Return on assets[c]	*Moderate*	*Combs and Ketchen (1999a)*
Dummy = 1 if public or has a corporate parent[c]	*Low*	*Goldberg (1983)*
Geographic dispersion		
Distance between outlets and headquarters	*High*	*Brickley and Dark (1987)*
Number of states, countries, or regions with outlets	*Moderate*	*Combs and Ketchen (1999b)*
Number of regions where outlets are desired	*Low*	*Alon (2001)*
Outlet distance from interstate highway or city	*Low*	*Brickley and Dark (1987)*
Number of states with outlets/total assets	*Moderate*	*Rankine (1987)*
1/average distance to nearest 3 outlets[c]	*Low*	*Bercovitz (1999)*
Dummy = 1 if franchisor has foreign outlets	*Low*	*Combs and Ketchen (1999a)*
Average # of outlets in county, state, or home city[c]	*Moderate*	*Carney and Gedajlovic (1991)*

(Continued)

Percent of outlets in 3 most concentrated states[c]	*Moderate*	*Michael (1996b)*

Table 2: *(Continued)*

Measure description[a]	*Validity code*[b]	*Example study*
Local managerial expertise		
Survey: Does the franchisor have local market? Knowledge needed to expand without franchising[c]	*Moderate*	*Dant et al. (1998)*
1 — the percent of average franchisee inputs restricted by the franchisor (i.e., franchisee purchasing discretion)	*Low*	*Bercovitz (1999)*
Dummy variable = 1 if experience required	*Low*	*Michael (2000b)*
Employees/outlet	*Low*	*Michael (1996a)*
Labor cost/sales	*Low*	*Michael (1996a)*
Outlet capital investment/number of employees[c]	*Low*	*Scott (1995)*
Valuable franchisor inputs		
Advertising spending as a percent of sales	*Moderate*	*Bercovitz (1998)*
Consumer reports quality rating	*Moderate*	*Michael (2000a, 2000b)*
Survey, average of (1) ability to control quality, (2) presence of reservation system and brand importance, and (3) investments in training	*Moderate*	*Dant et al. (1998)*
Weeks of franchisee training	*Moderate*	*Lafontaine (1992)*
Value of outlet-level assets specific to the chain	*Moderate*	*Michael (1996b)*
Survey, average of (1) asset specificity of outlet assets, (2) brand name, and (3) chain's specific knowledge	*Moderate*	*Combs and Ketchen (1999a, 1999b)*
Dummy = 1 if franchisor can legally require legally require franchisees to purchase inputs from franchisors	*Low*	*Goldberg (1983)*
Advertising expenditures in industry (1995)	*Low*	*Fladmoe-Lindquist and Jacque*
Franchise fees		
Dollars	*High*	*Shane (1998)*
Royalty		
Percent of franchisee sales	*High*	*Michael (2000a, 2000b)*
Percent of franchisee sales submitted for advertising	*Low*	*Shane (1996)*
Outlet size		
Average outlet start-up costs	*High*	*Alon (2001)*
Average outlet sales	*High*	*Caves and Murphy (1976)*

[a] *The number of measures used to examine a construct may be more than the number of effects used in the meta-analysis because multiple measures of a construct in a single study were averaged.*

[b] *The following rules of thumb were used to guide coding: (1) Highly = .90, such measures have operational definitions that are very closely linked to their construct definition. The primary source of error is likely to be recording errors by data providers or researchers, (2) Modest = .75, where there is an obvious link between the measures used and the construct of interest, but the correspondence is clearly not 1 to 1, and (3) Low = .60 is reserved for proxy variables that are expected by the primary researchers to be related to the construct of interest, but only in the statistically significant sense.*

[c] *Signs reversed for meta-analysis.*

Table 3: *Results*

Hypothesis	Predicted direction	Number of effects	Total sample size	$\bar{r}$	$\bar{r}_c$	X^2	95% confidence interval
Resource scarcity							
H1: Age	Negative	12	3401	.04	.05	38.4***	–.02:.10
Without studies that use UFOC data	Negative	10	3224	.03	.03	24.1**	–.02:.08
H2: System size	Negative	13	3425	.32	.39	228***	.20:.45
Without Ingram and Baum (1997)	Negative	12	2290	.20	.24	86.4***	.10:.30
H3: Growth	Positive	10	2119	–.02	–.02	24.0**	–.09:.04
H4: Capital scarcity	Positive	8	1195	–.06	–.08	18.6**	–.15:.02
Direct measures of capital scarcity	Positive	7	534	.05	.06	6.4	–.04:.13
Offers of financial assistance	Negative	3	1646	–.08	–.12	6.8*	–.15:–.01
Agency theory: Monitoring costs							
H5: Geographic dispersion	Positive	14	3651	.24	.32	64.5***	.18:.31
Without Ingram and Baum (1997)	Positive	13	2516	.19	.24	34.2***	.12:.25
H6: Local managerial expertise	Positive	6	1549	.00	–.01	23.5***	–.10:.09
Without experience required	Positive	4	899	.09	.13	0.3	.03:.15
Only experience required	Positive	2	650	–.13	–.18	4.3*	–.25:–.02
Agency theory: Opportunism risks							
H7: Valuable franchisor inputs	Negative	7	994	–.18	–.22	3.7	–.24:–.12
H8: Franchisee fee	Negative	4	1698	.00	.00	2.5	–.05:.05
H9: Royalty rate	Positive	6	2617	–.07	–.08	7.8	–.10:–.03
Monitoring and Opportunism							
H10: Outlet size	Negative	11	2272	–.09	–.11	23.0**	–.15:–.03
Without Alon (2001)	Negative	10	1911	–.12	–.14	14.2	–.16:–.08

Number of effect size estimates includes one estimate for every study that reported bivariate information plus one VCE calculated from the studies that did not. The only exception is local managerial expertise where only one study did not report bivariate statistics.

$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

fidence interval includes zero ($p < .05$). The χ^2 statistic is significant ($\chi^2 = 38.36$; $p < .001$), indicating that moderators likely exist. A search for potential moderators revealed that the two studies using data from Uniform Franchise Offering Circulars (UFOCs) reported significantly higher effect sizes (i.e., $\gamma = .32 > \gamma = .03$; $p < .05$). Although significant variance remains even after removing these studies, effect size variance was reduced by 36%. The γ for the remaining studies is even closer to zero ($\gamma = .03$; $p > .05$). Hypothesis 1 is not supported.

Hypothesis 2 predicted that system size would be negatively related to the use of franchising. Contrary to expectations, γ for system size was positive and significant ($\gamma = .32$; $p < .05$). Even after removing an outlier study that investigated the entire population of hotel chains ($n = 1135$) between 1896 and 1985 (i.e., Ingram & Baum, 1997) the effect was positive and significant ($\gamma = .20$; $p < .05$). Although removing this study reduced effect size variance by 34%, significant variation remains ($\chi^2 = 86.4$; $p < .001$), indicating undetected moderators likely exist. Overall, Hypothesis 2 is not supported. Hypothesis 3 predicted that growth would be positively related to the use of franchising. The estimate is $\gamma = -.02$, but the 95% confidence interval includes zero ($p > .05$). Thus, Hypothesis 3 was not supported. Although significant variance remains unexplained ($\chi^2 = 24$; $p < .01$), no moderators were apparent.

Hypothesis 4 predicted that capital scarcity would be positively related to the use of franchising. The χ^2 for capital scarcity is in the opposite direction of the hypothesis, but not significantly different from zero ($\gamma = -.06$; $p > .05$). The x^2 justified a moderator search ($\chi^2 = 24$; $p < .01$), which revealed that studies that used franchisor offers to assist franchisees with financing (dummy variable) as a measure of capital abundance (reverse coded) were generally in the opposite direction of direct measures of capital scarcity (i.e., debt or liquidity measures). Separating these measures showed that direct measures of capital scarcity were in the predicted direction, but not significant ($\gamma = .05$; $p > .05$), whereas the franchisor assistance dummy variables were significantly in the opposite direction of the hypotheses ($\gamma = -.08$; $p < .05$). Thus, no support was found for Hypothesis 4. Overall, no support was found for resource scarcity.

Hypotheses 5–10 were grounded in agency theory. Hypothesis 5, which anticipated a positive relationship between geographic dispersion and the use of franchising, was supported ($\gamma = .24$; $p < .05$). The effect estimate remained significant even after Ingram and Baum (1997) was removed ($\gamma = .19$; $p < .05$), though significant unexplained variance remains ($\chi^2 = 34.2$; $p < .001$). Hypothesis 6 predicted that local managerial expertise would relate positively to the use of franchising; the prediction was not supported initially ($\gamma = .00$; $p > .05$). However, a moderator search suggested by the chi-square test ($\chi^2 = 23.5$; $p < .001$) showed that studies measuring local managerial expertise with a dummy variable depicting whether the franchisor insisted that franchisees had industry experience found effects that were in the opposite direction of other studies. Separating these showed that the relationship was positive as predicted ($\gamma = .09$; $p < .05$), except when measured as franchisor requirements for franchisee experience ($\gamma = -.13$; $p < .05$). Overall, the evidence related to Hypothesis 6 was mixed.

Hypotheses 7–9 reflected franchisor and franchisee opportunism risks. Hypothesis 7 predicted that valuable franchisor inputs would be negatively

related to the use of franchising. The r was negative and significant (r = –.18; p < .05) and no moderators appear likely (χ^2 = 3.7; p > .05). Thus, Hypothesis 7 was supported. Hypothesis 8 predicted that franchise fees would be negatively related to the use of franchising. No support was found for this prediction (r = .00; p > .05) and no moderators are likely (χ^2 = 2.5; p > .05). Hypothesis 9 predicted a positive relationship between royalty rate and the use of franchising. While significant, r was in the opposite direction of the hypothesis (r = –.07; p < .05). Again, no moderators appear to be operating (χ^2 = 7.8; p > .05). Thus, Hypothesis 9 was not supported. Overall, only one of the three opportunism-based agency hypotheses was supported.

On the basis of both monitoring costs and opportunism risks, Hypothesis 10 predicted a negative relationship between outlet size and the use of franchising. This hypothesis was supported (r = –.09; p < .05). The relationship is even stronger when unexplained variance was largely eliminated (i.e., χ^2 = 14.2; p > .05) by removing an outlier study (i.e., Alon, 2001; r = –.12; p < .05).

Discussion

The results of this meta-analysis help to resolve many past ambiguities surrounding the question of why firms franchise. We draw three central conclusions from our findings. First, extant literature has demonstrated no empirical support for the long-hypothesized relationship between resource scarcity and franchising. Second, franchising behavior is largely consistent with the predictions of agency theory, though the theory's explanatory power as reflected in effect size estimates is low. Third, use of proxy variables with low construct validity has contributed extensively to contradictory findings. While our study takes an essential step forward by sifting through potential franchising correlates to identify those that are significant, it also highlights the need for stronger designs in future research.

Implications of the Resource Scarcity Findings

Perhaps because Oxenfeldt and Kelly (1969) offered one of the first explanations for franchising, some of the resource scarcity variables implied by their analysis – age, system size, and growth rate – have received the most attention. Based on our results, there appears to be little support for the notion that resource scarcity as measured by age, system size, and growth rate are related to firms' use of franchising. The pattern of corrected effect size estimates (i.e., r_c = .03, .24, and –.02 for age, system size, and growth, respectively) coupled with the strong support for agency described below suggests a different interpretation. As expected by agency theory, firms use franchising to minimize monitoring costs as they expand into new and distant markets. The franchisees then expand their operations in tandem with the firm (Kaufmann & Dant, 1998) so that, as the firm expands, new franchisees are added and existing franchisees expand and penetrate their territories. The result is that as firms mature (i.e., age and grow in size), the overall percentage of franchising has increased. Inquiry that tracks the pattern of franchising as firms evolve over time is needed to verify this interpretation.

Resource scarcity also was not supported when capital scarcity was singled out for investigation. One reason this hypothesis had attracted attention was because it is consistent with practitioners' beliefs about why they use franchising (Dant, 1995; Thomas, 1991). Perhaps capital scarcity plays a role in entrepreneurs' decision to initiate franchising, but not to grow through franchising once the initial base has been established. Another possibility is that capital scarcity motivates franchising primarily during periods of tight credit, which was generally not the case during the 1980s and 1990s when most of our samples were drawn. Nevertheless, there is little evidence to support the resource scarcity explanation. Capital scarcity may still be found to be important in the very early stages of expansion or during economic downturns. At this point, however, using resource scarcity to draw normative implications for managers should be avoided.

Implications of the Agency Theory Findings

As expected, geographic dispersion and outlet size were positively related to franchising. Excluding studies that measure local managerial expertise with a dummy variable, such expertise also increases franchising. Taken together, these findings suggest that monitoring costs impact the franchise decision. This may be one reason observers note substantial variance in the use franchising among different types of businesses (Michael, 1996a). For example, professional service firms such as real estate may require much more informed decision-making by locally knowledgeable managers than do other services such as restaurants and auto repair. A key implication is that managers need to closely assess the role of "local knowledge" before making franchising decisions. An important question for future research concerns how developments in information technology affect monitoring costs. Perhaps up-to-the-minute sales and inventory tracking reduces the importance of local knowledge and thus also the need for franchising.

In a franchise contract, each party may have opportunities to exploit the other (Williamson, 1983). Franchisors confront the risk that franchisees may jeopardize the firm's brand by reducing input quality (Michael, 2000a) and franchisees face the possibility that franchisors will not support the brand as promised (Klein & Saft, 1985). Thus, variables that increase or decrease the balance of opportunism risks should also affect the use of franchising. The significant results associated with franchisor inputs and outlet size indicate that opportunism does in fact influence whether or not firms franchise. A key franchisor input is brand name reputation, which has been found to be an important source of competitive advantage in other settings (e.g., Deephouse, 2000). Michael's (2000a) results show that franchising reduces quality. Thus, franchising in the presence of significant opportunism risks may have important performance implications.

However, the hypotheses for fees and royalty rates were not supported. One likely explanation is that these variables are poor proxies for opportunism risks. Royalties and, to a lesser extent, fees are ways that franchisors earn returns from their investments in system and brand building (Sen. 1993). Consequently, it may be better to view fees and royalties as a reflection of the value of the franchise contract, not the risk of opportunism. If so, high fees and royalties imply valuable inputs that franchisors wish to protect from franchisee free-riding by limit-

ing franchising. Indeed, the implied negative relationship between royalties and franchising was found here. Thus, failure to support Hypotheses 8 and 9 may not reflect weakness in agency theory as much as poor measurement.

If fees and royalties are poor proxies for opportunism risks, then theory stating that opportunism plays a role in franchising is supported. Firms with valuable inputs appear to avoid franchising because it could jeopardize quality (Michael, 2000a). Similarly, large outlets expose franchisees to substantial risk if the franchisor should behave opportunistically, thereby reducing franchising. It appears that both parties consider the risk of potential opportunism by the other before initiating franchise contracts.

The Cost of Low Construct Validity

Given the enhanced statistical power offered by meta-analyses, the effects identified here are generally small (cf. Cohen, 1977). One important avenue toward improved explanatory power is through better measurement practices. Behind sampling error, measurement error is often the next biggest source of error in primary research and it systematically lowers the size of identified effects (Hunter & Schmidt, 1990). As shown in Table 3, our relatively simple coding scheme for construct validity increased r (to r_c) by an average magnitude of .03, or 24%. Thus, reducing measurement error can have a substantial effect on the explanatory power of future inquiry.

In several cases, poor measurement complicated interpretation of our results. First, as discussed above, the pricing of franchise contracts (i.e., fees and royalties) is probably influenced more by the value of the franchisor's system and brand and less by the need to avoid opportunism. Second, our findings for Hypothesis 6 were moderated by how franchisee inputs were measured. The two studies that measured local franchisee expertise using a dummy variable reported negative effects while the rest of the literature suggested the opposite. Finally, four studies measured capital scarcity with a dummy variable indicating whether the franchisor helped franchisees with financing. According to data reported by Entrepreneur (1999) magazine, 62% of the franchisors that offer financial assistance do not provide funds to help franchisees build outlets but instead only help by financing franchise fees or by locating third party financing. Even capital scarce franchisors may be able to offer these forms of assistance. Thus, offers of financial assistance may simply reflect firms' desire to grow through franchising (Shane, 1998). In all of these cases, interpretation of the literature was made more difficult by the use of dubious proxy variables.

Suggestions for Future Research

The most obvious implication of our findings is that researchers must pay more attention to construct validity. The long-standing practice of using readily available archival data has led some to use proxies that are not closely tied to underlying constructs. One possible responses is increased emphasis on gathering primary data. Methods such as surveys (e.g., Lafontaine & Kaufmann, 1994), expert panels (e.g., Combs & Ketchen, 1999a, 1999b), and case studies (e.g., Bradach, 1997) are time-

consuming. However, the resultant reduction in measurement error should help researchers better estimate effects when such effects exist (Hunter & Schmidt, 1990).

A second suggestion is that theoretical explanations for franchising need to move beyond resource scarcity and agency theory. Although agency theory offers a partial explanation for franchising, substantial variance remains unexplained. Shane and Foo (1999) took an important step toward complementing existing theory. Drawing on institutional theory, they found that media certification and being founded in a state requiring franchisor registration can confer legitimacy and enhance survival for new franchisors. Perhaps, in addition to survival, institutional forces affect the choice between franchising and company ownership. Some firms may seek, for example, to enhance their performance by mimicking the emphasis on franchising exhibited by their more successful peers.

A third suggestion for future inquiry is to examine variation among franchisees. Agency theory cannot explain the use of large multi-unit franchisees (Kaufmann & Dant, 1996). These large franchisees use employee-managers in their outlets just as the franchisor would if the outlets were company-owned. However, such franchisees do provide substantial growth capital (Kaufmann & Dant, 1996). Thus, one reason results may be so difficult to untangle is because franchisors may use different types of franchisees to solve different problems.

A final suggestion is that studies move beyond the current focus on individual effects to examine potential interactions. One potentially fruitful avenue would be to examine how firms deal with tradeoffs among the franchising correlates investigated here. For example, how should a firm grow if it is geographically disperse, which encourages franchising, but its outlets are large, which encourages company ownership? Although effect size estimates offer some evidence as to which antecedent is stronger, investigations aimed at developing knowledge about how firms resolve contradictory pressures would be very useful.

Conclusion

Although franchising is a key competitive weapon for entrepreneurs, past inquiry into why some firms choose franchising over company ownership has left many questions unanswered. Our results take an important step toward resolving many apparent contradictions. Looking to the future, we hope that subsequent studies will build on the conclusions reached here to test new hypotheses grounded in fresh theoretical perspectives and using robust measures. If so, a future meta-analysis will offer improved effect size estimates and furnish new insights to guide entrepreneurs' decisions.

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