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Examining the Determinants of Hotel Chain Expansion through International Franchising

ABSTRACT

This study proposes and tests an agency-based organizational model of internationalization through franchising in the hotel sector. Using data obtained from a Franchisor Questionnaire 2001-2008, we analyzed a panel of 117 observations of 17 U.S.-based hotels. Our analysis reveals that a hotel franchisor's decision to internationalize through franchising is positively related to the percentage of franchises, the ratio of franchised units to the total number of units. The article contributes to the literature by empirically modeling international franchising of hotels, which present unique characteristics among franchising companies, with a high investment capital requirement, maturity in the product life cycle, and a high level of standardization and globalization of operations. The unique characteristics of individual chains and their segment in the industry are particularly important, as revealed by both data analysis and expert opinion.

Key words: Franchising, internationalization, hotel industry, hospitality, Bayesian data analysis

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INTRODUCTION

In the U.S. economy the service sector has undergone tremendous growth in the past several decades, with the hospitality industry one of the major contributors to this fast-paced growth (Ketchen, Combs, and Upson, 2006). Unlike most other service sectors, the hotel industry is generally capital-intensive and its logistics and supply chain can be as complex as those in manufacturing operations (Chen and Dimou, 2005). For hotel companies, this can be a big obstacle to an equity-based expansion model in various markets, particularly in the international market. Thus, it raises the issue of the importance of the internationalization process through franchising as a non-equity-based expansion strategy.

Franchising provides scope for rapid international expansion for hotel companies and has the potential to overcome many of the cultural, linguistic, technical, legal, and employment problems commonly associated with internationalization (Abell, 1990). Hotel chains prefer to use non-equity forms of organization for international expansion and operations mainly due to cost-efficiency concerns. Non-equity-based agreements, such as franchising, are the most common forms of organizational structure for market entry (Contractor and Kundu, 1998) among hotel and motel chains, partly because setting up a hotel requires a large amount of capital. In other words, the hotel and motel industry is capital-intensive, requiring a big financial up-front outlay to establish facilities. Franchising provides an opportunity for hotels to lower the risks and the level of investment to expand. Franchising also allows hotel and motel franchisors to share the costs of expansion with the franchisees, who typically pay the start-up costs, initial fees, and ongoing royalties. In return, the franchisees obtain brand-name recognition, economies of scale, and managerial expertise from the franchisors. Contractor and Kundu (1998) propose that a competitive advantage can be derived by separating knowledge-based expertise from capital ownership. A franchise is a way to transfer tangible and intangible expertise with limited capital risks.

The hotel industry, in particular, is different among other service franchisors, justifying a separate examination. Using chow tests to compare organizational determinants of internationalization, Alon (1999) found that hotels are significantly different from retail and business services franchises' internationalization. Franchising related costs are highest in terms of the required capital investment for hotels. Total investment required by Choice Hotels International ranges from $2.3-14.6 million, InterContinental Hotels Group (IHG) $2-20 million, Motel 6, $1.9-2-3 million, and Hilton 53.4-90.1 million, to give a few examples.[1] In contrast, most other service franchising industries require less than $1 million for start-up costs. The high capital requirement raises the risk of international investment and the needed bonding between franchisee and franchisor inherent in the agency relationship. Hotels have decoupled the ownership of property from the ownership of intellectual assets and have extensively used non-equity modes of entry internationally to defray expansion with minimum risk.

However, internationalization through franchising can be a complex process affected by many forces, particularly organizational factors and market conditions. Although previous research has examined factors contributing to internationalization through franchising as an entry mode in the manufacturing industry (e.g., Baker and Dant, 2008; Gatignon and Anderson, 1988) and among fast food and service franchisors (e.g., Ni and Alon, 2010), this study narrows the

[1] Retrieved from http://worldfranchising.com/industry/Lodging/ (June 2, 2011).

research gap by explaining the internationalization of franchising systems in the hotel industry by both empirically testing a theory-driven model and corroborating the model with in-depth interviews of industry practitioners. In particular, this study attempts to identify and understand the impacts of organizational factors and market-condition variables on the decision of hotel companies to enter international markets through franchising within a framework of agency-based theory.

This study uses Burton and Cross' (1995) definition of international franchising. They define international franchising as "a foreign market entry mode that involves a relationship between the entrant (the franchisor) and a host country entity, in which the former transfers, under contract, a business package (or format), which it developed and owns, to the latter" (p. 36). This definition is suitable because our study does not differentiate between the various modes of international franchising. It focuses on the decision to internationalize through franchising, regardless of the mode of entry. In other words, franchising is a business relationship whereby a franchisor permits a franchisee to use its brand name, product, or business system in a specified and ongoing manner in return for a fee (Felstead, 1993). This method is commonly distinguished from other international market entry modes, such as leasing agreements or management contracts that are not included in the current study.

THEORETICAL BACKGROUND

The internationalization of hotel and motel chains started in the 1950s and 1960s with firms such as Hilton, Sheraton, Holiday Inn, Marriott, and Ramada Inn. Modern-day hotel franchising as an internationalization strategy can be traced back to the 1950s when Holiday Inn established itself as the primary franchisor in the business (Shook and Shook, 1993). In the North American context, hotel companies relied largely on leasing arrangements and management contracts as an internationalization strategy until the 1980s, when franchising was adopted as one of the mainstream means for international expansion. These methods reduced the investment risks associated with the internationalization of highly capital-intensive hotels and, in addition, allowed direct management control in countries with lower levels of management and staff expertise (Cho, 2004).

Franchising systems in the hotel industry are among the most mature of the franchised services, therefore, they are further along the product life cycle. They also face stiffer domestic and global competition and declining profit margins, which together contribute to a greater awareness of the need to think of the world in global terms (Huszagh et al., 1992). In fact, non-equity organizational forms are becoming the norm among franchising systems across the hotel industry (Baker and Dant, 2008; Bradach, 1997; Perrigot, 2006). That is, franchising hotel companies can use franchised outlets and various master and area development agreements at the same time in the same or different markets. In recent years, multi-unit franchising has become a popular method to expand, particularly in international hotel markets (Altinay and Altinay, 2003; Cho, 2005).

A review of the literature indicates that the growth of the hotel franchise sector through international franchising in various international markets is based on the following organizational and market-condition factors: (1) level of domestic saturation, (2) competition in the home market, (3) potential in emerging countries, in particular in Asia and Latin America, (4) regional trade agreements, such as the European Union and the North American Free Trade Agreement, and (5) liberalization of the formerly Communist countries (Johnson and Vanetti, 2005; Kostecka, Benison, and Miller, 1988; Lashley and Morrison, 2000; Tucker and Sundberg, 1988). American hotel companies tend to use franchising as a business strategy to expand their brand (sometimes globally) in order to keeps risks to a minimum (Dunning, Pak and Beldona, 2007).

Using the literature on the competitive theory of the firm, Huszagh et al. (1992) find that time in operation (age), number of units (size), and, to a lesser extent, equity capital and the location of headquarters are significant factors differentiating domestic from international franchisors. Shane (1996) builds on Huszagh et al.'s research to concentrate on the agency costs associated with internationalization. His findings reveal that the price structure of franchises, together with the monitoring capabilities, contribute to internationalization. Eroglu (1992) has developed a conceptual model of internationalization which uses organizational determinants, such as firm size, operating experience, as well as top management's international orientation, tolerance of risk, and perception of competitive advantage.

Fladmoe-Lindquist (1996) build on the aforementioned research to develop a conceptual framework of international franchising based on resource-based and agency theories. He does not test his model since it has a normative or managerial orientation. But Alon and McKee (1999a) tested a model combining resource-based and agency variables in the professional business service industry and found only size to be a significant variable influencing franchisors' decision to internationalize. The number of outlets a franchisor has is among the most common predictors of internationalization. Alon (1999) suggests that the effect of resources and monitoring skills (often measured as the number of outlets) on internationalization is common across industries, but its impact may be industry-specific.

The internationalization of hospitality firms and hotel chains is multi-dimensional. Using a single embedded case study, Altinay (2007) shows that the internationalization of hospitality firms is often based on shareholder pressure, the desire to extend the core competencies of the firm, and demand by international customers. Contractor and Kundu (1998) suggest that reservation systems and hotel brands allow a franchise to thrive in foreign markets because they act as barriers against partner opportunism.

Much of the research on international franchising in the hotel sector focuses on explanations of modal choices. Pine et al. (2000), for example, suggest that cultural distance between the host and the home market of the firm favors a non-equity mode of entry, such as franchising and management contracts. Hotels, particularly high-end hotels, generally prefer non-equity-based modes of expansion, such as management contracts or franchising arrangements. The rationale behind this preference is not only because of the large financial outlays but also because of the inefficient use of land in the latter. In other words, the return on investment from their brand and management expertise is far higher than on land and buildings, and investments in the latter may create a drag on overall performance. However, quality concerns may favor the use of owned properties (Contractor and Kundu, 1998). Although the debate on the exact specification of entry mode is ongoing, our focus here is on the decision of franchise hotels to go global through franchising within the framework of agency-based theory.

Agency Theory and Price Bonding

Agency theory is a dominant paradigm to explain franchising, particularly in the United States (Baker and Dant, 2008). The theory suggests that an agency relationship exists between a franchisor (the principal) and the franchisee (the agent). Since the parties may have divergent goals, agency costs arise along with the risk of opportunism. Principals can reduce agency costs and opportunism through direct observation and monitoring or through a system of aligned incentives (Eisenhardt, 1989; Jensen and Meckling, 1976).

Rubin (1978) applied agency theory to explain franchising relationships. Franchising reduces monitoring needs by aligning the incentives of the agent (franchisee) and the principal (the franchisor) by making the franchisee a residual claimant on revenue. Thus, in the hotel industry franchising is a substitute for direct observation when monitoring costs are high or when distance separates the principal from the agent (Fladmoe-Lindquist and Jacque, 1995; Norton, 1988). However, hotel franchising has its own set of monitoring needs. For example, intangible assets may be appropriated without monitoring, income can be misreported without auditing, and quality can deteriorate in the absence of controls. Monitoring skills are a key to successful franchising, especially if crossing borders, cultures, or marketing environments in which other direct control mechanisms are compromised.

Some agency explanations of the internationalization of franchising systems using agency theory were originally developed by Shane (1996). To minimize agency costs, franchisors charge their international franchisees higher initial fees in relation to royalties, in comparison to what they charge their domestic counterparts. This pricing structure creates high bonding between the franchisor and the international franchisee since the international franchisee has more at stake. The initial fee the franchisee pays constitutes about one-half of the total investment, often representing a major portion of the franchisee's wealth. The cost of termination is higher because the franchisee will lose the initial fee if he/she does not follow the strict format of the franchisor. Therefore, it is hypothesized that

H_1: *The greater the price bonding the hotel franchisor stipulates in its contracts, the more likely it will seek international franchisees.*

Franchisor Geographical Dispersion and Franchisee Monitoring Skills

Opportunistic behavior by franchisees may also be controlled through effective monitoring (Fladmoe-Lindquist, 1996). Hotel franchisors' monitoring skills are in increasing demand as they cross borders. New risks are introduced by the changing environment, different factors for success, and the local socio-economic and political environments. Because monitoring skills are not directly observable, in past research various proxies have been used. Shane (1996) finds that *monitoring*, measured as a multiplicative composite index consisting of the number of franchised units, the percentage of franchised outlets, and the age of the franchise system, is positively related to the internationalization of franchising. Elango (2007) captures monitoring skills through the experiences of franchisors, namely, the percentage of franchised units and the number of years of the franchise. Hotel franchisors that have franchised for a while and have achieved a high degree of franchise ownership in their system are also more likely to possess the monitoring skills required to succeed across heterogeneous locations.

Hotel franchisors with dispersed units are more likely to seek international franchisees since they are used to operating at arm's length in distant locations, which are subject to slightly different conditions. Franchisors with many franchisees in heterogeneous locations across the United States are better poised to take advantage of economies of scale in promotion and monitoring because such locations incorporate differing levels of return and risk (Huszagh et al., 1992).

H_{2a}**:** *The greater the domestic geographical scope of the hotel franchisor, the more likely it will seek international franchisees.*

Does Size Matter? The Scale Effect

Size matters in franchising (Alon, 1999). It is oftentimes measured by the scale of operations or the number of outlets in the system. It is usually assumed that a hotel franchisor must reach a certain size before it can venture abroad. It must demonstrate that it is successful in a variety of local environments before it is ready to be tested in a global environment. Scale infers financial capital, brand-name recognition, managerial and routine-processing know-how, and monitoring skills. It is risky to internationalize prematurely because international franchising systems in the hotel industry often incur huge expenses long before they receive any returns, even if the initial fee is low (Mendelsohn, 1996).

Fladmoe-Lindquist (1996) emphasizes the need for distance, and cultural and host country management skills for successful internationalization. As the franchising hotel grows, it develops additional franchised units, which allow it to acquire resources necessary for overseas expansion. As such, the franchising hotel's scale (measured in terms of the number of domestic outlets) may be decisive. If domestic opportunities are high and the franchisor has not saturated its market, then additional domestic franchises can be built and the opportunity cost of seeking more distant, risky locations may be less attractive. In short, the number of outlets in the hotel franchisor's domestic system should positively influence the franchisor's decision to internationalize. The larger the franchising hotel company, the greater the economies of scale (Huszagh et al., 1992), financial capital, brand-name recognition (Aydin and Kacker, 1990), market power (Huszagh et al., 1992), and market saturation (Shane, 1996). The more outlets there are in the hotel franchisor's system, the more likely it is that the franchisor can lower operating costs per outlet. There are also economies of scale in purchasing, promotion, R&D, monitoring, and quality controls. Some services, such as advertising, product development, and reservations, can be centralized, adding to the cost savings and to consistency in marketing.

Finding international franchisees should also be easier for big hotel franchisors because of brand-name recognition (Aydin and Kacker, 1990). The overseas expansion success of McDonald's was partly a result of its highly recognized brand name. McDonald's has the second most recognized trade mark in the world, following only Coca-Cola (Fullerton et al., 2007). It is also easier for large hotel franchisors to raise capital in foreign markets due to their market power and perceived credibility (Huszagh et al., 1992). In addition, there is a greater possibility that the bigger the franchisor, the more likely it will saturate the domestic market (Shane, 1996). Thus, hotel international franchising can be seen as an avenue for growth due to limited opportunities in the home market. From the above discussion we can postulate the following interrelated hypotheses tied to the ability of franchisors to monitor international franchisees.

H_{2b}, H_{2c}: *The bigger (number of outlets) and older the hotel franchisor, the more likely it will seek international franchisees.*

Franchising as a Strategic Model for Expansion

Franchising is an organizational competence that leads to competitive advantage. Franchising companies are able to leverage their know-how and reduce the resource commitment to maximize returns and minimize risks. Ni and Alon (2010) found that fast-food franchisors that used more franchising in their system expansion were more likely to internationalize. More specifically, those who sought international franchisees via multi-unit franchisees, sub-franchisees or area franchises, were more likely to go global.

The expansion of franchisors into emerging and developing markets has also corresponded with the increased use of multi-unit franchising as a way to minimize risk and expand rapidly at the same time. The span of control is also smaller when multiple units report through a master or area franchisee, thus, making it simpler for the franchisor to manage multiple locations around the world, each with its own institutional environment. Various forms of ownership and franchising have been well documented in the franchising and hotel management literature (e.g., Vianelli and Alon, 2007). Garg and Rasheed (2006) suggest that (1) multi-unit franchising is growing in popularity in the international context where geographic and cultural distances exist, and that (2) agency theoretic explanations are especially well suited to explain this growth. Multi-unit franchising is different from single-unit franchising in that the franchisees own, operate, and control more than one unit (Kaufmann and Dant, 1996). There are several permutations of multi-unit franchising: (1) franchisors can allow area development agreements which give the franchisee a defined territory in which they can develop units, (2) franchisors can choose to use sub-franchising contracts (often called master franchising) that allow the franchisee to be both the agent to the franchisor and the principal to others (sub-franchisees), and/or (3) franchisors can allow franchisees to establish additional units in a given territory (consecutive franchising). The use of multi-unit franchising has been shown to contribute to system growth (Kaufmann and Dant, 1996).

Multi-unit franchising reduces agency costs (including shirking, adverse selection, inefficient risk-bearing, free-riding, and quasi-rent appropriations) and promotes internationalization (Garg and Rasheed, 2006). First, shirking is reduced at the sub-system level because multi-unit franchisees detect cheating in their local contexts. They are able to compare same-store sales in a given geographical context and are delegated the monitoring needs of the franchisor. Second, since a multi-unit franchisee, usually in charge of the area in which he/she resides, can collect more relevant local information. Multi-unit franchisees can reduce the cost of adverse selection because of their closeness, both geographic and cultural, to operations, recruiting, screening, training and monitoring. Third, the flow of information is increased because multi-unit franchisees often reside in proximity to sub-franchisees. This geographical proximity contributes to knowledge of local market conditions and allows more and better monitoring so that appropriate and timely adjustments can be applied if necessary. Fourth, inefficient risk bearing is reduced because multi-unit franchisees put a large sum of their assets in the venture, and they are the owners of a more diversified portfolio spreading fixed costs against a greater number of outlets. Fifth, since the brand-name capital is better captured over a greater number of units, the problems associated with free riding are minimized. Lastly, quasi-rent appropriations are reduced because multi-unit franchisees can earn acceptable returns on investment in the chain.

> ***H_3*:** *The greater the proportion of franchising in the hotel franchisor's system, the more likely it will seek international franchisees.*
>
> ***H_4*:** *Hotel companies that use area development or sub-franchisees contracts to expand are more likely to seek international franchisees.*

METHODOLOGY

This study employs Bayesian logistic regression analysis to examine the effect of the four hypotheses. Data were obtained from the Franchisor Questionnaire 2001-2008, *Bond's Franchise Guide*. These data have been used by past researchers (e.g., Lafontaine, 1992). They are comparable to the data collected by *Entrepreneur*, but they are more detailed and extensive. Using 7 independent variables (listed in Table 1) to measure the constructs, we specified and tested an agency theoretic model of international franchising with 117 observations for 17 U.S.-

based hotels chains (i.e., AmericInn, Best Inn, Candlewood, Country Inns, Doubletree, Embassy, Hampton, Hawthorn, Hilton, Hilton Garden, Homewood, Hospitality International, Microtel, Motel 6, Ramada, Red Roof, and Studio 6), where each chain has at least 5 observations. Logistical regression is used because the decision to internationalize is modeled as dichotomous (go/no go). The binary dependent variable IE (international expansion) indicates whether the company is actively seeking franchisees overseas (beyond the United States and Canada). The dependent variable was conceptualized as in previous research on international franchising (Alon and McKee 1999a; Eroglu, 1992; Shane 1996).

Table 1 summarizes the predictive variables and their definition and relationship to the hypotheses. In addition to the independent variables in Table 1, we also use the minimum total investment in million dollars (Invest) to take into account the capital-intensive nature of the industry. Table 2 provides some descriptive statistics of the variables and the Variance Inflation Factors (VIF). No serious multicollinearity issue is revealed with the largest VIF only being 2.934. It should be recognized that one salient feature of the data is the longitudinal nature of the observations. We expect that the responses for the same company are correlated, which suggests a company-specific random effect for each of the 17 companies. A mixed model, sometimes called a hierarchical model, is well suited for analysis of longitudinal data (Pinheiro and Bates, 2000). For example, Lafontaine and Shaw (1999) investigate the pattern of royalty rates using a mixed-effect linear model, with time as the only fixed-effect variable, and a company-specific random component. However, in this study, with a relatively moderate sample size of 117 data points, a traditional mixed-effect model encounters numerical problems. A Bayesian approach can resolve this issue (Carlin and Louis, 2000).

---- Insert Table 1 about here----

---- Insert Table 2 about here----

Let Y_{ij} be the binary response for the ith company's jth observation, $i = 1,...,17$ and 7.

Define $p_{ij} = \Pr(Y_{ij} = 1)$. The basic model is

$$\log[p_{ij} /(1 - p_{ij})] = \alpha_0 + \beta_i + \alpha_1 * X1_{ij} + \alpha_2 * X2_{ij} + ... + \alpha_8 * X7_{ij} ,$$

where $X1,...X7$ denote eight independent variables in Table 1, β_i denote a company-specific effect addressing the correlation between multiple measurements for the same company.

We assign the normal distribution with mean zero and standard deviation σ as a weakly informative prior distribution for the coefficients. The scale parameter σ is fixed at 10 for the intercept α_0. For the other coefficients, we let the common σ be a value between 0.1 and 2.5. With varying σ we are able to see the impact of the prior on the result. For example, we may plot z-score , one of the common used statistics, for any coefficient against σ as in Figure 1 and 2. The sign and magnitude of these z-scores can be interesting to readers, which provides a more complete and dynamic view of the influence of a particular factor than snap shots usually seen in the literature as in Table 3. By default we use a Monte Carlo Markov Chain (MCMC) to obtain posterior distributions for the coefficients in a Bayesian data analysis; however, this approach may not be numerically stable, especially when the number of coefficients is relatively large. Most recently, Gelman et al. (2008) proposed incorporating an approximate EM algorithm into the usual iteratively weighted least squares for fitting a logistic regression. This approach is able to directly estimate the posterior mode (the estimate of the coefficient) and its standard error, while it avoids the heavy MCMC machinery. In this study, we adopt the algorithm used by Gelman et al. (2008).

Robustness of Empirical Outcomes

Data triangulation was then used to enhance the credibility and external validity of the results of the quantitative data analysis. Triangulation is an approach to data analysis that synthesizes data from multiple sources (Creswell, 2009). Triangulation seeks to quickly examine existing data to strengthen interpretations and improve practical implications based on additional available evidence. By examining information collected by different methods, findings can be corroborated across data sources, reducing the impact of potential biases that can exist in a single data set. One approach of triangulation is to combine information from quantitative and qualitative studies by making use of expert judgment (Yin, 2003).

Data triangulation was achieved in this study first by sharing the data analysis results with three industry executives and then by personal interviews to solicit their feedback and insights based on their professional experience. All three informants have vast work experience in the hotel industry and are knowledgeable about internationalization and franchising strategies and practices, both in the hotel industry in general and in the specific companies in which they work in particular. Informant A is Executive Vice President of Global Brands, Hilton Hotels Corporation. Informant B is Vice President of the Ritz Carlton Club, and Informant C is Executive Vice President of Portfolio Management and Administration for CNL Hotels &

Resorts. The interview results from the three informants have been integrated into the final section.

RESULTS

Figure 1 shows the curve of $\hat{\alpha}_k / se(\hat{\alpha}_k), k = 1,2,...,7$ with varying scale parameter σ, which can be used to assess the significance of the contributions from eight predictors. Figure 2 shows the curve of $\hat{\beta}_k / se(\hat{\beta}_k), k = 1,2,...,17$ with varying scale parameter σ, which can be used to assess the significance of 17 company-specific effects. The prior distribution becomes flatter with an increasing σ, i.e., the influence of prior distribution is diminishing. As σ goes to infinity, it converges stably to the classic logistic regression. Table 3 shows the result of the Bayesian logistic regression fit with $\sigma = 1$, which provides an informative snapshot of the relative importance of the variables as shown in Figure 1 and 2. The franchising experience and the percentage of franchised units are important at a 5% significance level. The higher the percentages, the more likely the company will seek international expansion. The number of U.S. operating units and multi-franchising indicator have only a marginal impact, with p-values around 0.10. All other predictors are deemed unimportant.

Regarding the company-specific effects, only the 3 most interesting ones are listed in the Table, as suggested by Figure 2. Taking the other factors into account, Best Inn and Ramada are less enthusiastic about international franchising, whereas Candlewood is keen to invest overseas through franchising.

Comparing our results with a similar study conducted on the fast food restaurant (Ni and Alon, 2010), we find several differences with the results obtained here from the lodging sector.

In the fast food, the price of the franchise fee in relation to the franchise royalties was positive and significant. This is hypothesized because such pricing deters opportunism by raising the costs of a break up. In our sample of hotels, the franchise price to royalty ratio is not a good predictor. This is possibly because the start –up costs are high and, in effect, may serve as a bonding agent by raising the costs of exit. Also in the fast food industry, the use of area franchising and, more so, sub-franchising also contributed to the internationalization of the industry (Ni and Alon, 2010). In the hotel industry, multi-unit franchising does not contribute to internationalization possibly because the number of outlets needed in a region is smaller for hotels than fast food, or, said another way, the given territory per franchisee can be larger. What is consistent between hotels and fast food is that both have a strong positive relationship to franchising percentage. That is, franchisors using franchising domestically are more adapt to using it internationally for expansion. Franchising is a resource-based capability that can lead to global competitiveness and expansion.

DISCUSSION AND CONCLUSIONS

Using the framework of agency theory, the current study proposes and tests an agency-based organizational model of internationalization through franchising in the hotel sector. This study contributes to the extant literature on international franchising by examining empirically the hotel franchising sector. It also tests other agency theoretic hypotheses linking franchising to hotel internationalization. On the practical side, this work highlights franchising factors associated with hotel internationalization through franchising and provides practical guidance as to when to seek international hotel franchising. The results of the data analysis support some of the proposed hypotheses; more importantly, several findings are especially interesting and intriguing. These will be highlighted in the following section.

The study results indicate that franchise experience and the franchise percentage are positively related to a hotel franchisor's decision to internationalize. By and large, this is consistent with previous research which reveals that a lack of franchising experience leads to high organizational uncertainty, making the monitoring of performance both challenging and costly, and thus hampering the internationalization endeavor. This international experience is especially important for hotel companies since franchising in the hotel sector presupposes a heavy investment in sunk costs in the process of developing the franchise package. It is also possible that a hotel company with limited international experience may find it more difficult to attract and select qualified franchisees. This finding was observed and supported by Informant B stated that without an established franchising base, international franchising may present incremental hurdles in comparison to domestic franchising. In contrast, with an established domestic franchise base, the challenges of international franchising may be diluted.

Related to the positive impact of franchise experience, past studies have suggested that hotel franchisors with strong franchising monitoring skills are more likely to seek international franchisees. Informants B and C both pointed out that although franchising can be a strategy for expansion at specific times for hotel companies possessing high monitoring skills, the "high degree of franchising" may be more reflective of the brand strength, the company's strategy, and the hotel operator's needs at the time than the monitoring skills. Often times, franchising is a way to expand the brand in areas where it has not been able to expand on its own. Citing Marriott as an example, Informant B stated that he did not believe that the arm's-length relationship and slightly different locations were the drivers as much as the specific locations of the company's expansion. For example, Marriott's expansion plan has been to establish the brand in gateway cities and then to expand beyond based on market feasibility, be it through franchising or ownership. In Europe, due to its relatively low brand recognition, Marriott has not used franchising as an expansion strategy; instead, it has acquired established international brands to achieve international growth and expansion.

The results reveal that a hotel company's decision to go international is negatively related to size (operationalized as the scale of U.S. operations), although it is not statistically significant with a p-value about 0.10, which contradicts mainstream research findings. Although a positive impact is expected for multi-unit franchising, little support is provided by the data analysis.

In the hotel internationalization process, size is usually regarded as having a positive effect on franchising practices, mainly because large hotel companies have more resources to allocate to the franchising process and a higher resilience to failure should the system fail. Presumably, this may also have an impact on management risk perception in that larger hotel companies will experience less of an impact of financial risk, which is oftentimes reflected by the franchising cost. However, previous research findings on the relationship between firm size and the decision to expand is inconsistent, and sometimes even contradictory (Azevedo and Silva, 2001). It may be the case that it is not the hotel size per se that determines whether to internationalize through franchising, but the characteristics of the particular transaction that will influence the decision. This has to be taken into consideration when different hotel market segments representing different levels of asset specificity expand internationally (Rodriguez, 2002). As a result, hotel companies choose to use differing entry strategies when expanding to international markets.

For example, Chen and Dimou (2005) argue that services are usually more basic in budget and mid-scale hotels in comparison to upscale hotels. In this case, the services provided and the required skills from management and staff are limited and can be reduced to standard operating procedures and transferred to a third party via a franchise package. However, for high-end luxury hotels, the provision of service requires highly skilled employees to guarantee the level of service to meet brand expectations. In this process, the transfer of knowledge is more complicated since this type of knowledge cannot easily be translated into standard operating procedures. As argued by Valikangas and Lehtinen (1994), franchising is commonly associated with problems of accountability and control. As a result, it is less suited to services characterized by high degrees of intangibility and of consumer/producer interactions and it is more suited to generic services that evolve around a recognized brand name, a basic standard performance, and a wide network of service units. When it is translated into hotel internationalization, Dev, Erramilli and Agarwal (2002) observe that franchising is more popular in the economy or middle market, whereas management contracts are more popular in the luxury market. They argue that the trend to choose a management contract becomes stronger as the size of the hotel increases and quality competence becomes an important source of competitive advantage. However, when quality is not an important source of competitive advantage, management contracts are less preferred and the use of franchising is more likely as the hotel size increases. As a result, regardless of size, franchising is not a commonly sought after entry mode in upper hotel market segments, compared, for example, with management contracts.

The decision can also be affected due to quality assurance and free-riding control. For example, high control modes of expansion are considered to be less risky with respect to quality depreciation. Furthermore, free riding is more likely to occur when the value of a brand name is high, thus requiring higher degrees of control. Again, regardless of size, if they decide internationalize, higher quality brand hotels will be more likely to choose a highly controlled, highly integrated entry mode rather than a franchising arrangement.

It was noted in the interviews with the three industry informants that in addition to all the factors identified in the model testing that affect a hotel company's likelihood of going international, brand might play an important role in determining what strategies are adopted when internationalizing. Informant A cited Hilton Hotel Corporation's franchising strategies with their economy brand Hampton Inns in international markets as an example. Although the brand (i.e., Hampton Inns) has more than 1,400 hotels and nearly 172,000 rooms under the Hilton brand umbrella, it is largely unknown outside of the United States. Hilton's management decided to arm the economy brand (along with Doubletree and Embassy Suites) with full equity of the Hilton name itself, and renamed the Hampton brand "Hampton by Hilton" outside of the United States. He justified this strategy by commenting that "while all three brands are well known within the United States, the Hilton name – one of the most recognized in the hospitality industry worldwide – is far better known in Canada and Latin America, representing a supreme opportunity for Doubletree, Embassy Suites, and Hampton Inns to be better recognized in those areas by virtue of their Hilton affiliation." As a result, they added "by Hilton" to certain brands that are rapidly expanding into new markets abroad. This strategy was adopted in their merger with Hilton International to enhance the goal of becoming the premier global hotel franchising company. These strategies will afford Hilton a good opportunity to further diversify its income with the internationalization of its highly successful portfolio of brands through franchising and a multi-unit area development agreement.

The three case studies – Ramada, Best Inn and Candlewood -- that departed from the empirical results deserve a closer examination. While Candlewood showed a greater interest in international expansion via franchising, Best Inn and Ramada showed less willingness for such expansion. Ramada, established in 1954, only started to franchise in 1990. It has almost 900 properties, but only about 7.9% of them are international and only in Canada, the closest culturally and geographically to the USA, where the company is based. Ramada's properties concentrate in California, Florida and Texas. By developing a strong US-based strategy, Ramada was able to compete with other chains effectively in the North American market.

Best Inn, on the other hand, has another set of competencies. It specializes in the budget part of the market and has carved niche among ethnic entrepreneurs as franchisees. The low cost strategy developed by the company for American consumers and the franchisee recruitment strategy, suited for American conditions, has discouraged its management from pursuing riskier, more remote locations for expansion. Candlewood, on the other hand, is part of the InterContinental Hotels Group and has the backing of a large conglomerate with massive experiences abroad. IHG also owns Holiday Inn, Crown Plaza and InterContinental Hotels and Resorts, all of which, have strong international assets. Sharing of knowledge and resources has helped propel Candlewood into the international marketplace.

While this study uncovers some of the determining factors of internationalization of hotel franchising, it is not without limitations. The study only focuses on key organizational variables in predicting hotel internationalization through franchising, and does not consider other factors that might create different dynamics in the process of international franchising, such as market-specific characteristics and other situational factors. It is easily conceivable that the franchising process is market-sensitive and as a result market characteristics play an important role in affecting franchising operations. These factors may include, among others, the market segment, the degree of control, either by the hotel industry sector or by government policy, the risks and costs of entry, and similarities of cultural norms and business. In addition, other situational factors potentially will be important in affecting how hotel franchising is carried out in a certain market, such as the maturity and stability of the financial market of the host country, the level of technology infrastructure development in the market, and the overall economic and financial conditions in the target market. Although there is anecdotal evidence in a number of case studies in different markets (e.g., Vianelli and Alon, 2007), there are no systematic studies examining the impact of market-specific dynamics and other situational factors on international hotel franchising. Whereas this line of research draws heavily on two major theoretical underpinnings: transaction cost theory (Williamson, 1985) and agency theory (as adopted in this study), a more holistic approach using a wider theoretical spectrum, such as the eclectic model expounded by Dunning (1981) should be encouraged to integrate both internal and external perspectives to explain hotel internationalization. Efforts in this direction in future research will be both worthwhile and rewarding.

From a theory development perspective, hotel internationalization research generally needs to move from normative descriptions and formulaic assessments to a more in-depth, internalized, and processed-oriented understanding. Although this study ventures into efforts to corroborate model testing results with in-depth industry experts interviews, additional work should be encouraged to discover richer market-specific factors in internationalization that challenge the assumptions that business is business and management is management whenever it occurs and wherever it is practiced (Boddewyn, 1999). Obviously, more internalized qualitative research will avoid the parochialism and determinism observed in quantitative studies. In addition, joint efforts by researchers in different industrial sectors, particularly the service industry, will contribute to more comparative studies that will enhance our understanding of internationalization strategies across industries and will help shape and refine the agenda for future research in hotel internationalization.

REFERENCES

Abell, M. 1990. The International Franchise Option. BFA Waterlow, London.

Alon, I. 1999. The Internationalization of US Franchising Systems. Garland, New York.

Alon, I., Banai, M. 2000. Franchising opportunities and threats in Russia. Journal of International Marketing. 8(3), 104-19.

Alon, I., McKee, D. L. 1999a. The internationalization of professional business service franchises. Journal of Consumer Marketing. 16(1), 74-85.

Alon, I., McKee, D. 1999b. Towards a macro environmental model of international franchising. Multinational Business Review. 7(1), 76-82.

Alon, I., Perrigot, R., Cliquet, G. 2004. The internationalization of French and American franchisors in the hotel sector. Sasin Journal of Management. 10(1), 4-18.

Altinay, L. 2007. The internationalization of hospitality firms: Factors influencing a franchise decision-making process. Journal of Services Marketing. 21(6), 398-409.

Altinay, L., Altinay, M. 2003. How will growth be financed by the international hotel companies? International Journal of Contemporary Hospitality Management. 15(5), 274-82.

Amos, J. H. 1993. Trends and developments in international franchising, in: Sherman, A. J. (ed), The Franchising Handbook. AMACOM, New York, pp. 458-65.

Arthur Andersen.1996. International Expansion by U.S. Franchisors. Arthur Andersen LLP in cooperation with the International Franchise Association, Chicago and Washington, DC.

Aydin, N., Kacker, M. 1990. International outlook on US-based franchisors. International Marketing Review. 7(2), 43-53.

Azevedo, P.F., Silva, V. 2001. Contractual Mix Analysis in the Brazilian Franchising. Proceedings of the 5th Annual Meeting of the International Society of New Institutional Economics, Berkeley, pp. 13-5.

Baker, B. L., Dant, R.P. 2008. Stable plural forms in franchise systems: An examination of the evolution of ownership redirection research, in: Hendrikse, G.W.J., Cliquet, G. et al. (eds), Strategy and Governance of Networks: Cooperatives, Franchising and Strategic Alliances. Physica-Verlag, Heidelberg, pp. 87-112.

Boddewyn, J.J. 1999. The domain of international management. Journal of International Management. 5(1), 3-44.

Boddewyn, J. J., Halbrich, B. M., Perry, C. A. 1986. Service multinationals: Conceptualization, measurement and theory. Journal of International Business Studies. 17(3), 41-57.

Bradach, J. L. 1997. Using the plural form in the management of restaurant chains. Administrative Science Quarterly. 42(2), 276-303.

Burton, F. N. Cross, A. R. 1995. Franchising and foreign market entry, in: Paliwoda, S.J., Ryans, J.K. (eds), International Marketing Reader. Routledge, London, pp. 35-48.

Carlin, B. P., Louis, T. A. 2000. Bayes and Empirical Bayes Methods for Data Analysis second ed. Chapman & Hall/CRC, Boca Raton, FL.

Carney, M., Gedajlovic, E. 1991. Vertical integration in franchise systems: Agency theory and resource explanations. Strategic Management Journal. 12(8), 607-29.

Chen, J. J., Dimou, I. 2005. Expansion strategy of international hotel firms. Journal of Business Research. 58(12), 1730-40.

Cho, M. 2004. Factors contributing to middle market hotel franchising in Korea: the franchisee perspective.

Cho, M. 2005. Transaction costs influencing international hotel franchise agreements: The case of the Holiday Inn Seoul. Journal of Vacation Marketing. 11(2), 121-34.

Combs, J.G., Castrogiovanni, G.J. 1994. Franchisor strategy: A proposed model and empirical rest of franchise versus company ownership. Journal of Small Business Management. 32(2). 37-48.

Contractor, F.J., Kundu, S.K. 1998. Modal choice in a world of alliances: Analyzing organizational forms in the international hotel sector. Journal of International Business Studies. 29(2), 325-57.

Creswell, J.W. 2009. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. Sage Publications, London.

Daniels, J. D., Radebaugh, L.H. 1998. International Business: Environments and Operations eighth ed. Addison-Wesley, Reading, MA.

Dev, C.S., Erramilli, M.K., and Agarwal, S. 2002. Brands across borders. The Cornell Hotel and Restaurant Administration Quarterly. 43(6), 91-104.

Dunning, J.H. 1981. International Production and the Multinational Enterprise. Allen & Unwin, London.

Dunning, J.H., Pak, Y.S., Beldona, S. 2007. Foreign ownership strategies of UK and US international franchisors: An exploratory application of Dunning's envelope paradigm. International Business Review. 16(5), 531-48.

Economist, The. 1998. The road from Damascus. August 15, 57.

Eisenhardt, K.M. 1989. Agency theory: An assessment and review. Academy of Management Review. 14(1), 57-74.

Elango, B. 2007. Are franchisors with international operations different from those who are domestic market oriented? Journal of Small Business Management. 45(2), 179-93.

Entrepreneur. 1990-1997. Franchise 500. January.

Eroglu, S. 1992. The internationalization process of franchise systems: A conceptual model. International Marketing Review. 9(5), 19-30.

Erramilli, M.K. 1990. Entry mode choice in service industries. International Marketing Review. 7(5), 50-62.

Falbe, C. M., Dandridge, T.C. 1992. Franchising as a strategic partnership: Issues of cooperation and conflict in a global market. International Small Business Journal. 10(3), 40-52.

Felstead, A. 1993. The Corporate Paradox: Power and Control in the Business Franchise. Routledge, London.

Fladmoe-Lindquist, K. 1996. International franchising: Capabilities and development. Journal of Business Venturing. 11(5), 419-38.

Fladmoe-Lindquist, K., Jacque, L.L. 1995. Control modes in international service operations: The propensity to franchise. Management Science. 41(7), 1238-49.

Flynn, P. 1997. Telephone interview with the executive vice president and senior operating officer of McDonald's Corporation. March 17.

Fullerton, J.A., Kendrick, A., Chan, K., Hamilton, M., Kerr, G. 2007. Attitudes towards American brands and brand America. Place Branding and Public Diplomacy. 3(3), 205-12.

Garg, V.K., Rasheed, A.A. 2006. An explanation of international franchisors' preference for multi-unit franchising. International Journal of Entrepreneurship. 10, 1-20.

Gatignon, H., Anderson, E. 1988. The multinational corporation's degree of control over foreign subsidiaries: An empirical test of a transaction cost explanation. Journal of Law, Economics and Organization. 4(2), 305-36.

Gelman, A., Jakulin, A., Pittau, M. G, Su, Y.-S. 2008. A weakly informative default prior distribution for logistic and other regression models. Annals of Applied Statistics. 2(4), 1360-83.

Hackett, D. W. 1976. The international expansion of U.S. franchise systems: Status and strategies. Journal of International Business Studies. 7(1), 66-75.

Hadjimarcou, J., Barnes, J.W. 1998. Case study: Strategic alliances in international franchising – The entry of Silver Streak Restaurant Corporation into Mexico. Journal of Consumer Marketing. 15(6), 598-607.

Harrigan, K. R. 1985. Vertical integration and corporate strategy. Academy of Management Journal. 28(2), 397-425.

Hill, C.W. L., Hwang, P., Kim, W.C. 1990. An eclectic theory of the choice of international entry mode. Strategic Management Journal. 11(2), 117-28.

Hoffman, R. C., Preble, J.F. 1991. Franchising: Selecting a strategy for rapid growth. Long Range Planning. 24(4), 74-85.

Huszagh, S. M., Huszagh, F. W., McIntyre, F.S. 1992. International franchising in the context of competitive strategy and the theory of the firm. International Marketing Review. 9(5), 5-18.

Jensen, M.C., Meckling, W. H. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics. 3(4), 305-60.

Johnson, C., Vanetti, M. 2005. Locational strategies of international hotel chains. Annals of Tourism Research. 32(4), 1077-99.

Justis R.T., Judd, R. 1986. Master franchising: A new look. Journal of Small Business Management. 24(3), 16-21.

Kaufmann, P. J., Dant, R. P. 1996. Multi-unit franchising: Growth and management issues. Journal of Business Venturing. 11(5), 343-58.

Kedia, B.L., Ackerman D.J., Bush, D. E., Justis, R. T. 1994. Determinants of internalization of franchise operations by US franchisors. International Marketing Review. 11(4), 56-68.

Ketchen, D.J., Combs, J.G., Upson, J.W. 2006. When does franchising help restaurant chain performance? Cornell Hotel and Restaurant Administrative Quarterly. 47(1), 14-26.

Kogut, B., Singh, H. 1988. The effect of national culture on the choice of entry mode. Journal of International Business Studies. 19(3), 411-32.

Kostecka, A., Benison, J., Miller, D.J. 1969-1988. Franchising in the Economy. US Department of Commerce, Washington DC.

Lafontaine, F. 1992. Agency theory and franchising: Some empirical results. Rand Journal of Economics. 23(2), 263-83.

Lafontaine, F., Shaw, K.L. 1999. The dynamics of franchise contracting: Evidence from panel data. Journal of Political Economy, 107(5), 1041-80.

Lashley, C., Morrison, A. J. 2000. Franchising Hospitality Services. Butterworth-Heinemann, Oxford.

Love, J. F. 1995. McDonald's: Behind the Arches rev. ed. Bantam Books, New York.

McIntyre, F. S., Huszagh, S.M. 1995. Internationalization of franchise systems. Journal of International Marketing. 3(4), 39-56.

Mendelsohn M. 1999. The Guide to Franchising sixth ed. Cassell, London

Mudambi, R. 1998. The role of duration in multinational investment strategies. Journal of International Business Studies. 29(2), 239-61.

Ni, L, Alon, I. 2010. US-Based Fast-Food Restaurants: Factors influencing the International Expansion of Franchise Systems. Journal of Marketing Channels, 17 (4), 339 – 359.

Norton, S.W. 1988. An empirical look at franchising as an organizational form. Journal of Business. 61(2), 197-218.

Perrigot, R. 2006. Services vs retail chains: Are there any differences? Evidence from the French franchising industry. International Journal of Retail & Distribution Management. 34(12), 918-30.

Pine, R., Zhang, H.Q., Qi, P.S. 2000. The challenges and opportunities of franchising in China's hotel industry. International Journal of Contemporary Hospitality Management. 12(5), 300-7.

Pinheiro, J. C., Bates, D. M. 2000. Mixed-effects Models in S and S-Plus. Springer-Verlag, New York.

Rodriguez, A. R. 2002. Determining factors in entry choice for international expansion: The case of the Spanish hotel industry. Tourism Management. 23(6), 597-607.

Root, F. R. 1987. Entry Strategies for International Markets. Lexington Books, Lexington, MA.

Rubin, P.H. 1978. The theory of the firm and the structure of the franchise contract. Journal of Law and Economics. 21(1), 223–33.

Ryans, J. K., Lotz, S., Krampf, R. 1999. Do master franchisors drive global franchising? Marketing Management. 8(2), 33-7.

Shane, S.A. 1996. Why franchise companies expand overseas. Journal of Business Venturing. 11 (2), 73-88.

Shook, C., and Shook, R.L. 1993. The business strategy that changed the world. Englewood Cliff, Prentice-Hall, NJ.

Simon, J. D. 1982. Political risk assessment: Past trends and future prospects. Columbia Journal of World Business. 7(3), 62-70.

Stapenhurst, F. 1992. Political Risk Analysis Around the North Atlantic. MacMillan, London.

Steinberg, C. 1992. International franchising: Signs of the times. World Trade. 5(7), 110-3.

Toncar, M., Alon, I., McKee, D. 1999. Cultural determinants of international franchising: An empirical analysis of Hofstede's cultural dimension, in: Smith, S. (ed), Seventh Annual Cross-Cultural Consumer and Business Studies, Cancun, Mexico.

Tucker, K.A., Sundberg, M. 1988. International Trade in Services. Routledge, London.

Valikangas, L., and Lehtinen, U. 1994. Strategic types of services and international markets. International Journal of Service Industry Management. 5(2), 72-84.

Vianelli, D., Alon, I. 2007. Opportunities and risks of international franchising in the Italian hotel industry. Mercati e Competitività. No. 3, 73-8.

Welch, L. S. 1989. Diffusion of franchise system use in international operations. International Marketing Review. 6(5), 7-19.

Williamson, O. 1985. The Economics Institutions of Capitalism. Free Press, New York.

Yin, R.K. 2003. Case Study Research: Design and Methods. Sage Publications, London.

Table 1: The Hypotheses, Variables, and Definitions

Hypothesis	Variable	Relation	Definition
H1	FRratio	Positive	the ratio of franchising fee over royalty rate ($k/percentage).
H2a	Disper	Positive	the number of US states where the company has a presence.
H2b	Fexp	Positive	the number of years the company has been franchising.
H2c	USscale	Positive	the number of US units.
H3	FranPer	Positive	the percentage of franchised units among total number of units.
H4	Multi	Positive	The indicator 0, 1, or 2 whether area development agreements exists and additional outlets can be added in a given territory

Table 2: Summary Statistics of Variables in Data Analysis

	min	max	mean	Sd	VIF
IE	0.000	1.000	0.692	0.464	--
FRratio	83.300	2500.000	976.057	507.092	2.367
Disper	11.000	50.000	36.598	9.476	2.260
Fexp	3.000	41.000	15.248	8.249	1.795
FranPer	0.054	1.000	0.739	0.328	1.494
USscale	33.000	1382.000	331.624	327.876	2.247
Multi	0.000	2.000	0.744	0.559	1.659
Invest	0.200	33.000	5.901	7.132	2.934

Table 3. Excerpt of Bayesian Logistic Regression Fitting with Standard Normal as the Prior

	Coefficient	**Std. Error**	**z value**	**p-value**
Best Inn	**-2.078**	**0.740**	**-2.807**	**0.005**
Candlewood	**1.411**	**0.775**	**1.822**	**0.069**
Ramada	**-1.287**	**0.806**	**-1.598**	**0.110**
FRratio	**0.000143**	**0.000672**	**0.212**	**0.832**
Disper	**0.000915**	**0.0366**	**0.025**	**0.980**
Fexp	**0.0913**	**0.0435**	**2.100**	**0.0358**
FranPer	**2.404**	**0.969**	**2.482**	**0.0131**
USscale	**-0.00151**	**0.00101**	**-1.490**	**0.136**
Multi	**0.867**	**0.581**	**1.494**	**0.135**
Invest	**0.0298**	**0.0535**	**0.558**	**0.577**

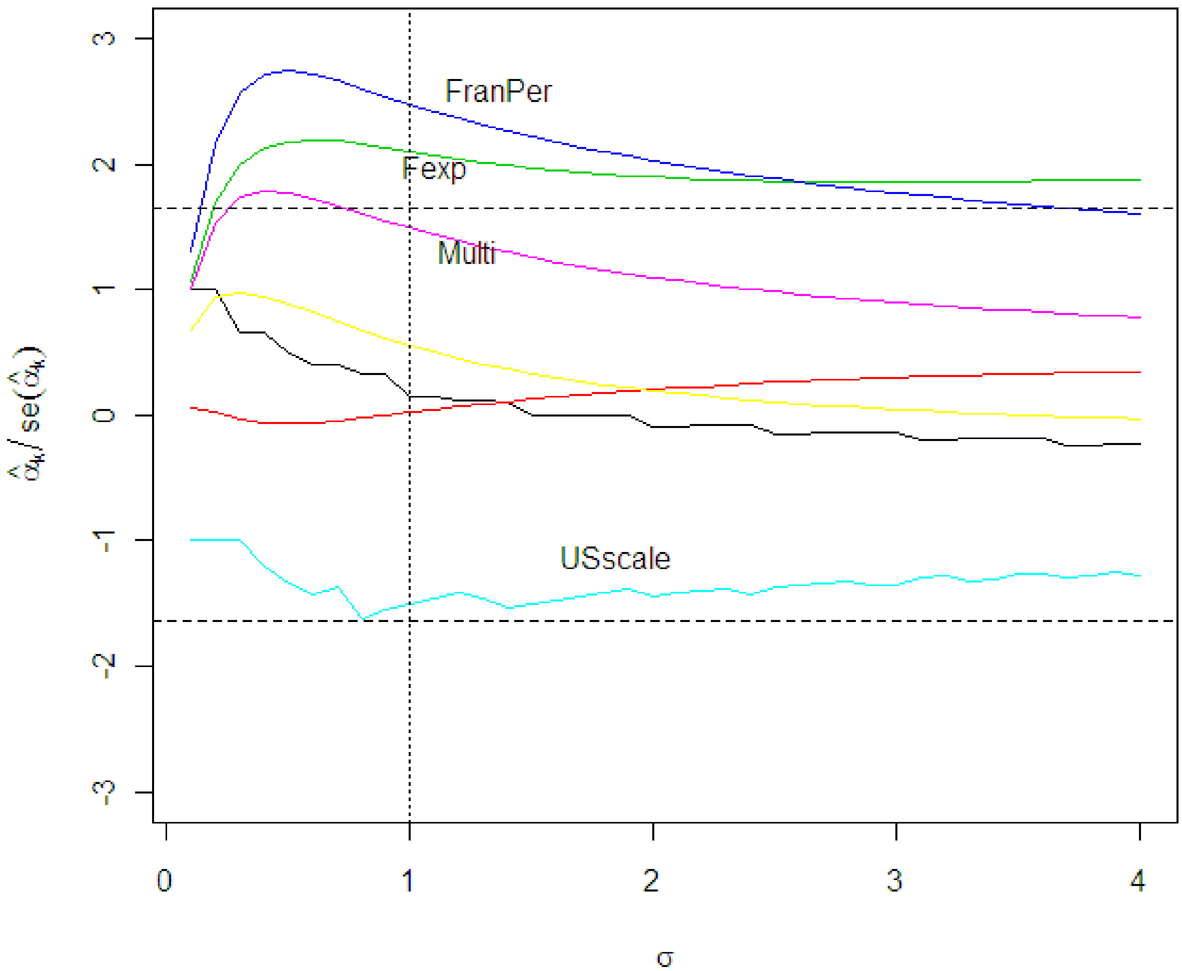

Figure 1. The ratio of $\hat{\alpha}_k, k = 1,2,\ldots,7$ over its standard error with varying prior scale parameter σ, where two horizontal dash lines indicate the 5% and 95% percentile of standard normal, and the vertical line with $\sigma = 1$ corresponds to Table 3.

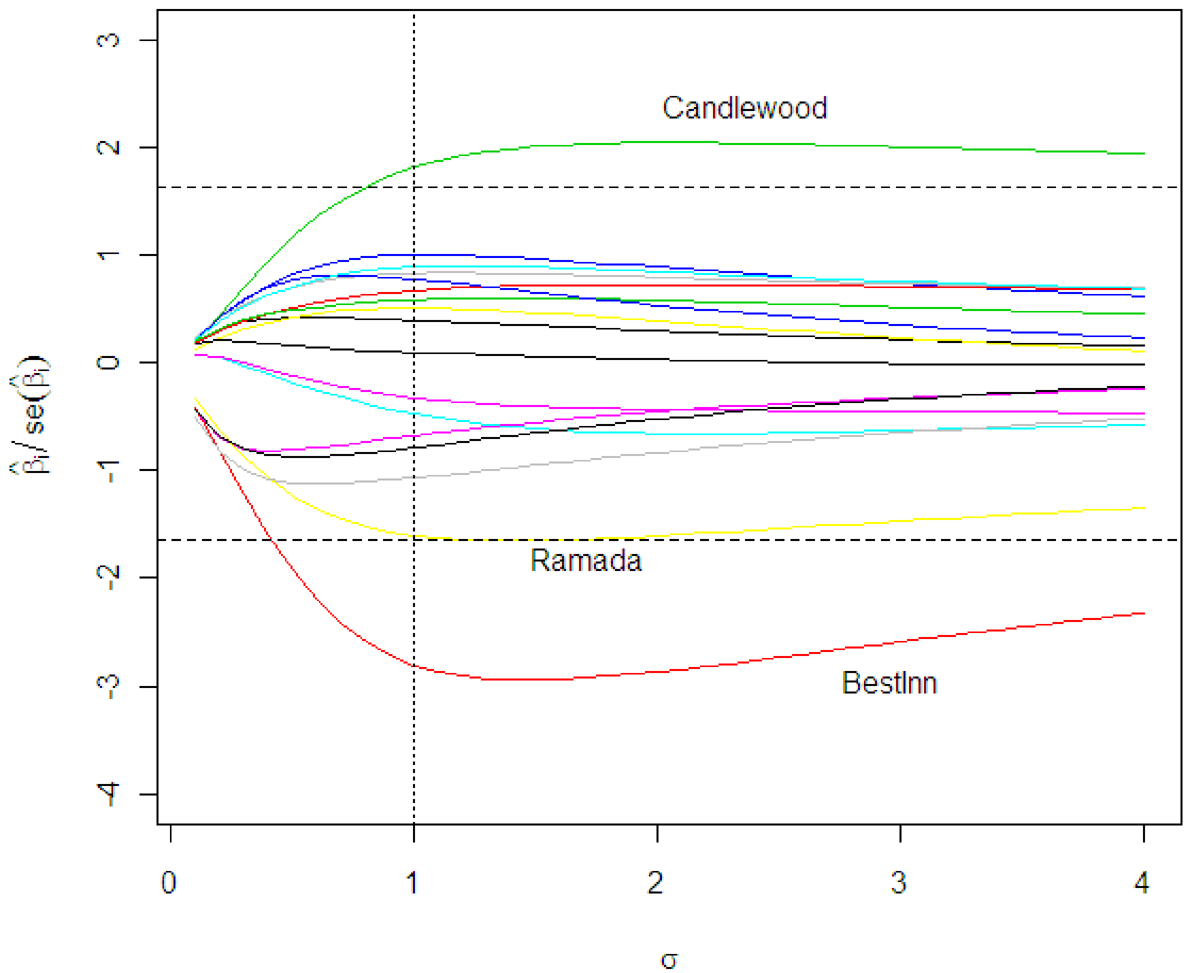

Figure 2. The ratio of $\hat{\beta}_k, k = 1,2,\ldots,17$ over its standard error with varying prior scale parameter σ with two dash lines indicate the 5% and 95% percentile of standard normal, and the vertical line with $\sigma = 1$ corresponds to Table 3.