FRANCHISING AND TOP MANAGEMENT TEAM (TMT) DECISIONS IN THE US RESTAURANT INDUSTRY

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by

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ABSTRACT

The purpose of this study was to investigate how upper theory accounts for risk-averse strategic decisions. This study chose top management team (TMT) as a proxy for upper echelon. The main attributes of TMT in this research were age, tenure, education, equity ownership, and stock options. The study selected franchising as a representation of a risk-averse strategy, based on the arguments of the resource scarcity theory, agency theory, and risk-sharing theory, and it examined the moderating effect of internationalization between the attributes of the TMT and franchising decisions. Since restaurant industry has the largest contribution of franchising revenues to the US economy more than any other industry, it was chosen as the context of this research. The sample was derived from the Execucomp, Compustat, Annual 10-K database, and other publicly accessible resources (e.g., Linkedin and Business week). The study period was 2000-2013 and 29 restaurant companies were used for data collection. The panel feasible generalized square (FGLS) was used to analyze the data in order to minimize the biases of heteroskedasticity and autocorrelation that could occur due to the use of panel data. The results of this study suggest that age, education, and share ownership were influential attributes to explain overall franchising decision of TMTs. In addition, this study found that there was a significant moderating effect between the attributes of the upper echelon theory (e.g., tenure, education, and share ownership) and the degree of internationalization to explain franchising decisions. This study provided a more comprehensive understanding of the decision making process of franchising in the US restaurant industry based on the upper echelon theory framework.
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Chapter 1

Introduction

Overview

The purpose of this study was to investigate how upper echelon theory explains strategic decision of US restaurant firms. Hambrick and Mason (1984) proposed that the upper echelon theory explains the effect of top managers on the strategic decision of organizations. Franchising is regarded as a unique strategic decision that presents risk-averse characteristics because of unique relationship between franchisor and franchisee; it continues to play a significant role in the globalization efforts of businesses (e.g., level of investment in franchised operations and created value) because international markets, in general, are more uncertain than domestic markets (Mitchell et al., 1992; HongLuan et al., 2013). Hence, the risk in strategic decisions increases with internationalization of businesses, and it is valuable to understand how franchising is implemented in different capacities in both domestic (less risky) and international (riskier) markets. Since upper echelon theory accounts for strategic decision making based on the inherent risk in a strategy, this study anticipated significant differences in franchising decisions based on whether the business operates in the domestic or the international market. Upper echelon theory also asserts that the top management team (TMT) has more accountability than a single CEO because organizational behavior is likely decided by multiple powerful players rather than by a single person (Finkelstein et al., 2009). Therefore, this study hypothesized that the TMT’s characteristics would account for a company’s strategic decisions. This study chose the restaurant industry as the research context because
franchising plays a critical role in the industry’s growth and expansion. Franchising in the restaurant industry has a larger impact on the US economy than other industries (e.g., lodging and automobile) by producing approximately 3.2 million employees. According to the International Franchising Association (2013), the restaurant business sector accounts for 32 percent of franchising output in the US economy through the generation of approximately 210 billion US dollars. Franchising is a popular business strategy in the restaurant industry as compared to other industries, such as the lodging and the automobile industries.

**Upper echelon theory and strategic decision-making**

Finkelstein and Hambrick (1996) argued that the value and cognition of top managers affect organizational outcomes because the top managers can influence organizational direction. In addition, the value for decision and cognitive base of executives are influential in strategic decision because top managers cannot scan every aspect of a business’ circumstances (Hambrick, 2007). That is, executives interpret the information on business conditions based on their values and cognitive base. However, measuring this value system and cognition is complex. Hence, Hambrick and Mason (1984) suggested that observable attributes such as age, education, tenure, and socioeconomics background could act as robust attributes for strategic decisions because these attributes reflect the value and cognition of top managers. Moreover, upper echelon theory explains strategic decisions based on a strategy’s characteristics (e.g., risk-averse and risk-seeking). According to Brockhaus (1980) and Palich and Ray Bagby (1995),
strategic risk-taking refers to the uncertainty of success in the strategic decision-making process. In addition, strategic risk-taking is related to R&D intensity, advertising intensity, capital expenditure, and debt dependency (Singh, 1986; Wiseman and Gomez-Mejia, 1998). Upper echelon theory specifies the association between characteristics of top managers (e.g., age, tenure, education, share ownership, and stock option) and strategic risk-taking and proposes that share ownership, tenure and the age of top managers are negatively associated with strategic risk-taking, whereas top managers’ education level and their stock options are positively associated with strategic risk-taking (Hambrick and Mason, 1984). A number of studies have investigated the characteristics of strategic risk-taking using upper echelon theory (Baird and Thomas, 1985; March and Shapira, 1987; Miller and Bromiley, 1990). Seo and Sharma (2013) researched the strategic risk-taking behavior of restaurant CEOs in the US, and their study demonstrated that the attributes of top managers account for approximately 50 percent of variability in strategic risk-taking behavior. This suggests the importance of top managers in strategy execution in the restaurant industry and justifies for more detailed investigation.

**Franchising as a risk-averse strategy**

Franchising is a popular strategy that is related to the risk-taking behavior of top managers in the restaurant industry. Hsu et al. (2010) showed the strategic characteristics of franchising as a risk-averse strategy. According to risk-sharing theory, franchising allows franchisors to share their operational risks with franchisees (Combs et al., 2011; Lee et al., 2015). Franchising is regarded as a risk-averse strategy from the perspective of
the franchisors. According to resource scarcity theory, franchising enables franchisors to depend on the resources of the franchisees (Carney and Gedajlovic, 1991; Norton, 1988). Therefore, when top managers use franchising as a business strategy, they are less likely to be distressed by resource constrains (Lafontine, 1992; Roh and Choi, 2010). Since resource constraint is considered as an operational risk from the perspective of managers, franchising is regarded as a risk-averse business strategy. Agency theory contends that franchising can minimize agency problems between franchisors (principal) and franchisees (agent) because of residual claims (Brickley et al., 1991; Lafontine, 1992). Agency problem is regarded as a risky condition by principals because it generates agency cost (Lafontaine and Shaw, 1999; Michael, 2000), and principals strive to minimize agency cost as it destroys business resources (Brickley and Dark, 1987). Given these arguments from resource scarcity theory, agency theory, and risk-sharing theory, this study regarded franchising as a risk-averse strategy rather than a risk-seeking strategy.

**Upper echelon theory and the restaurant industry**

This study chose the restaurant industry as research context because franchising is a widely used business strategy in restaurant businesses. The International Franchising Association (2013) reported that franchising of restaurant businesses produced 210 billion US dollar output in the US economy in 2013. Given its economic value, Laschley and Morrison (2001) asserted that restaurant industry is a focal area for franchising research, and many researchers have conducted research to examine the value of
franchising for restaurant businesses (Srinivasan, 2006; Hsu and Jang, 2009; Koh et al., 2009; Hsu et al., 2010; Hua and Dalbor, 2013). Other significant areas of restaurant research include the examination of the effect of CEO compensation on organizational performance of restaurant firms (Kim and Gu, 2005; Barber et al., 2007; Madanoglu and Karadag, 2008), determinants of CEO compensation (Guillet et al., 2012), and how CEO duality affects the outcome of restaurant businesses (Guillet et al., 2013). Yet, despite the popularity of upper echelon theory, studies have scarcely examined the impact of TMT in the franchising context from the upper echelon theory perspective.

**Effect of internationalization on strategic decision making**

Internationalization is another noteworthy aspect of the restaurant industry. According to Samadi (2011), the US domestic restaurant business market is saturated; and domestic businesses enter highly competitive conditions. Indeed, National Restaurant Association (2014) reported that a number of domestic restaurants closed in 2013. Therefore, many restaurant companies consider expanding outside the US market (Lee and Ulgado, 1997; Grönroos, 1999; Samiee, 1999). However, a vast body of literature has argued that internationalization is a risky strategic decision because there are numerous uncertainties (e.g., political stability, economic conditions, and cultural differences) (Grauer et al., 1976; Johanson and Vahlne, 1977; Rhee and Cheng, 2002). For instance, Mitchell et al. (1992) demonstrated that a change in an international business portfolio diminishes organizational performance. Sun and Lee (2013) asserted that the internationalization of restaurant businesses is regarded as risk-seeking strategic behavior.
rather than risk-averse strategic behavior. This assertion specifies that the degree of risk-taking by top managers appears in different ways based on whether the TMT operates in the domestic market or the international market. Hence, this study anticipates that the TMT’s strategic decisions are different depending on the market risks. That is, internationalization would affect the association between upper echelon attributes and the franchising decisions of the TMT.

The purpose of study

The purpose of this study was to examine whether upper echelon theory could explain risk-averse decisions of restaurant companies. This study selected franchising as a risk-averse decision because previous studies claimed that franchising lowers strategic risk based on multiple theoretical perspectives (e.g., risk-sharing theory, agency theory, and resource scarcity theory). According to the risk-sharing theory, franchisors share their operational risks with franchisees when they expand their businesses using a franchising system (Rubin, 1978; Hsu et al., 2010; Combs et al., 2011). This suggests that franchising is a risk-averse strategy from the perspective of franchisors.

The main attributes of this study were age, tenure, formal education level, value of share ownership, and value of stock option of TMT members from the perspective of the upper echelon theory. Upper echelon theory contends that older, longer tenured, more shares owned managers are more likely to become defenders who appear to be risk-averse (Miles and Snow, 1978; Hambrick and Mason, 1984). However, studies showed that highly educated top managers owning more stock options are likely to become
prospectors who are willing to take risks in their strategic decisions (Miles and Snow, 1978; Finkelstein et al., 2009). Therefore, this study hypothesized that franchising decisions would be positively associated with age, tenure, and value of share ownership of TMTs because longer tenured and older TMTs would likely become risk-averse (Finkelstein et al., 2009). That is, older, more tenured, and share owning top managers would be more likely to choose franchising as business strategy because they have lower tolerance for resource constraints and agency problems that can be resolved by adopting franchising. Additionally, negative association between the franchising decision and attributes of TMT (e.g., education level and value of stock option) was hypothesized because highly educated managers with stock option were likely to show prospector characteristics in their strategic decision-making (Hambrick, 2007; Finkelstein et al., 2009). Therefore, this study hypothesized that TMT characteristics would determine the franchising decision of restaurant firms through the upper echelon theory. Additionally, this study hypothesized that internationalization would moderate the relationship between characteristics of TMT and franchising decision of restaurants, because prior studies contended that internationalization increases operational risk of restaurant companies (Mitchell et al., 1992; Sanders and Hambrick, 2007; Sun and Lee, 2013).

**Contributions of this study**

This study contributes to the literature by expanding the area of upper echelon theory to risk-averse decisions (franchising was considered as risk-averse behavior). Combs et al. (2004) attempted to account for franchising based on agency theory,
resource scarcity theory, and upper echelon theory. This also motivated Hsu et al. (2010) to examine the determinants of franchising decisions in the US restaurant sector by employing resource scarcity theory and agency theory. Even though Combs et al. (2004) proposed the examination of the association between franchising and upper echelon theories, no prior study has examined the association between upper echelon attributes such as age, tenure, education, value of share ownership, and value of stock options and the franchising decision. Furthermore, the investigation regarding the link between strategic decision-making and the characteristics on top managers is sparse in the restaurant industry context. Although Seo and Sharma (2013) accounted for the strategic risk-taking of top managers in the restaurant industry by employing agency theory as a theoretical foundation, their study did not consider upper echelon theory as a theoretical underpinning. Therefore, it would be valuable to examine whether factors stemming from upper echelon theory could explain franchising decisions of restaurant companies.

Laschley and Morrison (2001) asserted that the restaurant industry is a central area for franchising research because its franchising output generates more economic value in the US than any other industry. Given the importance of this industry to the US economy, numerous researchers have focused on restaurant businesses to examine the characteristics of franchising (Combs and Castrogiovanni, 1994; Srinivasan, 2006; Castrogiovanni et al., 2006; Madanoglu et al., 2013). However, limited studies have examined the determinants of franchising in the restaurant context by employing the upper echelon theory as a theoretical underpinning. Even though Hsu et al. (2010) showed the determinants of the franchising decision in the restaurant industry, their study did not consider upper echelon theory in the explanation of the franchising decision or as
a theoretical foundation. This indicates that it is essential to expand the scope of franchising research in the context of the restaurant industry.

This study also expands hospitality research to TMTs instead of single CEOs. Studies of restaurant companies examined CEO characteristics, even though upper echelon theory proposes that TMTs are likely to show better accountability than a single CEO (Hambrick, 2007; Finkelstein et al., 2009), because multiple people rather than a single person influence an organization’s direction (Finkelstein and Hambrick, 1996). Given this argument from prior literature, this study not only anticipates better accountability for the franchising decision of restaurant companies but also theoretically expands the research for the restaurant industry to TMTs.

In addition, this study investigates the moderation effect of internationalization on the franchising decision. It is necessary for restaurant companies to investigate international market characteristics as the domestic market for restaurant companies approaches saturation (Samadi, 2011; Sun and Lee, 2013). However, companies are reluctant to operate in international markets because of high uncertainty, and therefore it is critical to be informed about the market to minimize risk (Mitchell et al., 1992; Grönroos, 1999). By providing internationalization information, this study helps restaurant company stakeholders as well as researchers in academia understand the impact of internationalization on the franchising decision.
Limitations of this study

This study used publicly traded restaurant companies in the US stock market. Therefore, the information is limited not only to restaurant companies in the US but also to public companies. In addition, the information of top managers was constrained in this study by the use of archival data rather than implementing a survey. Even though the upper echelon theory recommends observable measures to explain strategic decision of top managers, it would be necessary to consider more diverse information sources (e.g., surveys and interviews). This study only examined franchising as a representation of a risk-averse strategic decision, even though a variety of strategic decisions could be considered as other examples of risk-averse decisions.
Summary

This chapter introduced research and its purpose, theoretical contributions, and a brief illustration of the overall research. The main purpose of this research was to examine how upper echelon theory accounts for risk-averse decisions as few studies have attempted to explain risk-averse strategic decision, that too using upper echelon theory. This study selected franchising as a representative risk-averse strategic decision making and chose the restaurant industry as the research context. This chapter also introduced the moderating effect of internationalization on the relationship between the attributes of upper echelon theory and risk-averse strategic decision making. The next chapter presents the relevant literature and theories of this research and proposes the research hypotheses based upon the empirical evidence from extant studies.
Chapter 2

Literature Review

Introduction

This chapter reviews literature on the upper echelon theory and the franchising decision. First, it presents the upper echelon theory which emphasizes bounded rationality, observable measures, and the accountability of a group rather than a single player. Second, the chapter presents franchising related theories (e.g., the agency theory, the resource scarcity theory, and the risk-sharing theory) that explain why franchising is risk-averse and popular for international expansion decisions. In addition, this section links strategic decision of franchising to the upper echelon perspective using the extant literature.

Upper Echelon Theory

Bounded rationality

The upper echelon refers to people in higher social strata (Bertrand and Schoar, 2003; Finkelstein et al., 2009). In the context of businesses, individuals in top management positions, such as CEOs and top management teams (TMTs) are regarded as those in the upper echelon in company level. Hambrick and Mason (1984) proposed upper echelon theory that claims outcomes of an organization are the reflection of powerful individuals in the organization. Bounded rationality is the core underlying
motivation of upper echelon theory. According to Simon (1972), people’s rationality for integrating all information around them is imperfect. This theory is also the underlying motivation of the behavioral economics argument. Whereas traditional economics assume that people are always rational in their decision-making, behavioral economics assume that people can become irrational depending on their situation (Kahneman and Tversky, 1979; Simon, 1991; Gigerenzer and Selten, 2002; Kahneman, 2003). The behavioral economics viewpoint indicates that managers are not always rational in their decision-making; this phenomenon is also connected with upper echelon theory. According to the upper echelon theory, the value and cognitive base of individuals affect their decision-making. That is, the decision of top managers does not always maximize TMTs’ benefits and utilities because each top executive has his or her own cognitive base and values. Hambrick and Mason (1984) illustrated that the cognitive base is defined as knowledge of future events, alternatives, and consequences, whereas value is defined as something to be emphasized and considered more in decision-making. Moreover, the cognitive abilities of top executives are constrained to assimilate everything in their environment (Simon, 1972; March, 1978; Arthur, 1994; Finkelstein and Hambrick, 1996). This limited capability for integrating information results in a limited field of vision, selective perception, and an individual interpretation of processed information (Hambrick, 2005; Finkelstein et al., 2009). This limitation influences managerial perception that is regarded as the direction to evaluate, examine, and estimate the information for the application to business outcomes (Anderson and Paine, 1975; Henriques and Sadorsky, 1999; Quigley and Hambrick, 2014). Figure 1 illustrates the framework of upper echelon theory.
Importance of observable measure

The cognitive base and values of top managers are difficult to measure, which is regarded as a limitation of the Stewardship theory. Stewardship theory describes the role of managers’ values and cognition in explaining business outcomes (Weiner and Mahoney, 1981). Thus, Hambrick and Mason (1984) suggested demographic indicators as alternatives, as these reflect people’s cognitive base and values, and are easily observable. Given the arguments of Hambrick and Mason (1984), numerous studies have demonstrated that demographic indicators play a significant role in explaining strategic choices and outcomes. For instance, Wiersema and Bantel (1992), Hambrick et al. (1996), and Barkema and Shvyrkov (2007) showed that a TMT’s tenure, age, and education significantly affected the strategic changes by firms. Zhang and Rajapopalan (2010) also
employed demographic factors using 768 US publicly traded firms to account for strategic decisions and organizational performance.

**Effect of top management team (TMT)**

An important contribution of the upper echelon theory was to emphasize the characteristics of the TMT rather than single CEO’s characteristics. According to Hambrick and Mason (1984), the TMT is likely to show better accountability for organizational outcomes (e.g., strategic decision and financial performance). This situation occurs because the organizational direction is decided by multiple players rather than by a single player (Finkelstein and Hambrick, 1996). Given the TMT’s importance in the explanation of organizational outcomes, numerous scholars have examined the effect of the TMT on organizational outcomes. For example, Hambrick et al. (1996) demonstrated the effect of the TMT on organizational performance and strategic execution using the airlines. Barkema and Shvyrov (2007) investigated the effect of the TMT’s diversity on foreign expansion using Dutch firms. More recently, Nadolska and Barkema (2013) showed that the TMTs play a significant role in the success and frequency of acquisitions. The evidence from previous studies illustrated the importance of TMTs in the explanation of strategic business behavior.

**Upper echelon and strategic decision making**

Strategic risk-taking refers to the degree of uncertainty when businesses choose and implement certain strategies (Baird and Thomas, 1985, Naveen, 2006, Hagendorff
Strategic risk-taking contains a variety of business administration aspects. First, strategic risk-taking is related to capital expenditure and debt financing. Capital expenditure is a component that represents the funds used to acquire physical assets (e.g., building and equipment) (McConnell and Muscarella, 1985; Chen and Steiner, 1999; Coles et al., 2006). Since capital expenditure is an activity for deferring resource usage into the future for a greater return, businesses take risks with their capital expenditures. Debt financing is another aspect of strategic risk-taking because it increases debt costs, leading to resource dissipation in a firm (Merton, 1974; Sengupta, 1998). Mergers and acquisitions is also a strategic risk-taking activity. Wernerfelt (1994) stated that a firm is a bundle of resources and acquisitions are an activity to acquire resources. Since it is uncertain whether new resource attainment improves organizational performance, acquisition activity is regarded as a risky activity (Singh, 1986; Pablo et al., 1996; Wiseman and Gomez-Mejia, 1998). In the manufacturing business sector, R&D is regarded as an activity that increases business risk because R&D is considered an investment activity that postpones the use of resource into the future for a higher return (Quirmbach, 1993; Barker and Mueller, 2002; Coles et al., 2006). Therefore, not surprisingly, Dewitt (2007) asserted that R&D activity increases business risk. Baysinger et al. (1991) also addressed the idea that corporate outsiders perceive R&D investment as a negative resource allocation because R&D increases business risk.

Upper echelon theory argues that strategic risk-taking is likely to be explained by the attributes of top managers (Hambrick and Mason, 1984; Finkelstein et al., 2009). The representative attributes to account for strategic decision making include TMTs’ age, tenure, education, share ownership, and stock options. The first attribute is the age of top
managers. Finkelstein and Hambrick (1996) contend that a CEO’s age is an important attribute for strategic change. Hambrick and Mason (1984) asserted that older CEOs have less physical and mental energy to integrate new information. Prior studies also contended that older CEOs consider their career security as a relatively more important factor, which leads managers to become defenders of strategic decision (Carlsson and Karlsson, 1970; Miles and Snow, 1978; Hambrick, 2005). Zhang (2006) and Hitt and Tyler (1991) determined that strategic change is negatively correlated with the age of top managers because strategic change entails risk. Herrmann and Datta (2006) examined the relationship between the CEO’s age and strategic risk-taking in the US manufacturing sector. The study verified the positive relationship between the age of top managers and strategic risk-taking. Moreover, Larraza-Kintana et al. (2007) found that the risk-taking in human resource management is negatively associated with the top managers’ age. Hagendorff and Vallascas (2011) also demonstrated that the CEO’s age negatively affects the risk-taking in the banking industry context.

Upper echelon theory suggests that longer tenured TMTs assign greater values to their career stability. That is, these TMTs are likely to become defenders (emphasis on stability and protection) rather than prospectors (emphasis on innovation and risk taking) (Miles and Snow, 1978). Longer tenured top managers seek to defend their careers and reputations, and thus take less operating risk because of the managers’ preference for stability. This behavior indicates that longer tenured top managers pursue risk-averse strategies. Previous studies showed that strategic change has a negative correlation with managers’ tenure (Wiersema and Bantel, 1992; Zhara, 2005; Zhang, 2006; Kellermanns et al., 2008). Coles et al. (2006) also demonstrated that longer tenured top managers take
less risk in their strategic choice. A number of studies verified the negative association between manager tenure and strategic risk-taking. Simsek (2007) found that TMTs with longer tenured top managers take less risk in their strategic decision-making. Coles et al. (2006) confirmed the negative association between the tenure of top managers and strategic risk-taking using S&P 500 firms’ managers. Furthermore, Gray and Cannella (1997) found the negative association between the tenure of top managers and the risk-taking behavior of large firms traded on the NYSE, NASDAQ, and AMEX.

TMTs’ level of formal education could be another determinant of strategic risk-taking. According to Finkelstein and Hambrick (1996), TMTs with more formal education are more confident in their knowledge, leading them to choose a more complicated option and a riskier strategy. Wiersema and Bantel (1992) and Karaevli and Zajac (2013) showed that there is a significant positive association between top managers' formal education levels and strategic deviations. Many studies have also identified a positive association between the formal education level of managers and strategic risk-taking. For instance, Barker and Mueller (2002) demonstrated that more educated top managers took more strategic risk in their decision making by employing firms listed in the Business Week’s top 1,000 companies. Similar results were found for international sample of firms. Nadkarni and Herrmann (2010) verified a positive association between the education of top managers and strategic risk-taking by investigating top managers of Indian companies. Li and Tang (2010) also found that highly educated Chinese managers took more strategic risks, and Karami et al. (2006) also found that more educated top managers of British small and medium-size enterprises took more risks in their strategic decisions.
The value of share ownership by the TMT, that is, the amount of equity owned by top managers, could become a determinant of a strategic decision (Filatotchev and Bishop, 2002; Pendleton et al., 1998). The extant literature asserts that top managers are more risk-averse when they have more share ownership because poor organizational performance decreases the value of share ownership (Baysinger et al., 1991; Forbes and Milliken, 1999; Hennart and Larimo, 1998; Wu and Tu, 2007). Moreover, Alessandri and Seth (2014) demonstrated the negative relationship between managerial ownership and international diversification using the sample of S&P 500 firms. Wright et al. (1996), Carpenter et al. (2001), and Sanders and Hambrick (2007) also verified that top managers with more share ownership take less risk in their strategic decision-making using American companies. Additionally, Sanders (2001) and George et al. (2005) showed that share ownership of top managers brings about less risky strategic decision (e.g., internationalization, diversification, and acquisition).

Stock options could also explain the strategic decision of top managers. Stock options have only right without obligation on their strategic decision and its failure. Therefore, stock options enable top managers to implement more aggressive decision making (Yermack, 1997; Aboody and Kasznik, 2000). DeFusco et al. (1990) and Core and Guay (2002) also stated that stock options encourage managers to take strategic risk due to the lack of obligation of the results from their strategic decision. That is, top managers are likely to be more aggressive in their strategic decision-making because they are not penalized for poor performance by the stock options granted to them (Heath et al., 1999; Rajgopal and Shevlin, 2002; Lie, 2005). Previous research verified the positive association between strategic risk-taking and stock options. For example, Sanders and
Hambrick (2007) showed that stock options enable top managers to undertake risky strategic decisions (e.g., R&D investment, capital investment, and acquisition investment). Prior research also demonstrated that there is a positive association between the value of stock options and strategic risk-taking (Wiseman and Gomez-Mejia, 1998; Sanders, 2001; Alessandri and Seth, 2014). The evidence indicates that stock options encourage managers to take more risk in their strategic decision.

**Franchising as a risk-averse strategy**

*Description of franchising*

According to Kaufmann and Dant (1996), franchising is a system for financing and marketing of business administration. Under a franchising system, franchisors depend on the resource of franchisees as a cost of the franchised property to distribute franchisors’ products and services (Combs et al., 2004; Andrew et al., 2007). Extant literature defines franchising as the practice of renting the right to use a firm's business model and brand during the contract period (Cave and Murphy, 1976; Carney and Gedajlovic. 1991). Prior studies also defined franchising as a system to screen the best partner in the long-term success of a business because of complex contract conditions and large franchising fees (Lafontine, 1992; Xiao et al., 2008; Moon and Sharma, 2014). Under a franchising contract, franchisees have a residual claim that is the right of a party to profits after the completion of all financial obligations to franchisors (Brickley et al., 1991; Combs and Castrogiovanni, 1994; Combs et al., 2011). Hence, franchisees often exert great effort in their management of the property to gain more wealth; such efforts
improve the franchised property’s sales and royalties to franchisors (Lafontaine, 1991; Lafontaine and Slade, 2002; Castrogiovanni et al., 2006). Studies have also asserted that franchising is a form of brand marketing in which a franchisor grants to franchisees rights that contain a franchisor’s trade-name and quality standards over a defined period of time for a specific location (Agrawal and Lal, 1995; Sashi and Karuppur, 2002).

**Theoretical foundation of franchising as a risk-averse strategy**

This section provides the theoretical foundations to explain why franchising is regarded as risk-averse strategy, and three theories: resource scarcity theory, agency theory, and risk-sharing theory. First of all, resource scarcity theory provides a theoretical underpinning for franchising. According to the resource scarcity theory, constrained resources can limit business expansion (Mahoney and Pandian, 1992; Peteraf, 1993; Westhead et al., 2001; Lockett and Thompson, 2001). Franchising is regarded as a solution to overcome resource constraints of businesses. According to Carney and Gedajlovic (1991), franchisor operates their businesses using franchisees’ capital instead of their own capital so that a business can achieve more rapid expansion through the franchising system. Therefore, top managers are less likely to be distressed by resource-constrained condition under franchising. Norton (1988) and Minkler (1992) also proposed that franchising enables franchisors to assimilate the knowledge of local markets and franchisees’ talent. Then, the knowledge of local market enables franchisors to acquire greater competitive advantages that can minimize business risk (March and Shapira, 1987; Leibowitz and Kogelman, 1992; Roh and Choi, 2010). In fact, Hsu et al. (2010) proposed that restaurant firms choose franchising to overcome capital constraints
to growth. That is, growing firms are more likely to need resources further indicating that constrains in resources is an obstacle for business growth (Wernerfelt, 1984; Baird and Thomas, 1985; Bromiley, 1991; Stanworth et al., 2004; Mariz-Pérez and García-Álvarez, 2009). Lafontaine (1992) conducted surveys and found that growth is the motivation of franchising managers. In addition, Fama and French (2001) showed that businesses with more investment opportunities require more resources to take advantage of their opportunities. Namely, firms with more investment opportunities are likely to be distressed by constrained resources. Therefore, top managers are likely to be less tolerant of constrained resources when they have abundant investment opportunities. In other words, more investment opportunities could lead businesses to increase their dependency on franchising.

Agency theory could be used to build a theoretical background for franchising. According to the agency theory, agents that are more informed regarding the firm’s condition are more likely to work for their own benefits instead of maximizing the wealth of principals (Ross, 1973; Jensen and Meckling, 1976). Therefore, principals need to observe the behavior of managers; this observance, in turn, incurs monitoring costs (Hackett, 1976; Lafontaine, 1992; Michael, 2000). Excessive monitoring destroys the value of firms and organizational performance because monitoring requires business resources, (Williamson, 1987; Burkart et al., 1997; Castrogiovanni et al., 2006). In franchising, agency theory explains the relationship between franchisees and franchisors (Rubin, 1978; Dnes, 1993; Hua et al., 2013). In the franchising system, franchisees are agents because franchisors do not have sufficient information regarding the capability of agents (franchisees). If franchisees perform poorly in their operations, it can impair the
reputation and value of franchisors in the market (Lafontaine and Shaw, 1999; Roh and Choi, 2010; Lee et al., 2015). This situation leads franchisors to observe and discipline franchisees further to prevent value destruction. Therefore, franchisors need a device that makes franchisees behave in creating wealth for principals. A residual claim is a representative instrument to solve the agency problem in a franchising system. A residual claim refers to franchisees’ income after fully paying all financial obligations to the franchisor (e.g., franchising fee and royalty fees) (Brickley and Dark, 1987; Yavas, 1989; Brickley et al., 1991). Residual claims also play an important role in aligning the interests of franchisors and franchisees further because franchisees can retain their entire extra incomes after obligated payments. The aligned interests reduce the necessity of monitoring, allowing firms to reduce their monitoring costs (Cave and Murphy, 1976; Norton, 1988; Combs et al., 2004; Roh et al., 2013). Hsu et al. (2010) demonstrated that agency theory builds the theoretical foundation to explain restaurant firms’ franchising motivation.

Risk-sharing theory can also explain franchising. Firms use a franchising system to operate in remote regions (Allen and Lueck, 1995; Safón and Escribá-Esteve, 2011). Remote business operations are likely to take risks because businesses are less informed of the cultural, economic, and political conditions of local markets (Lafontaine and Bhattacharyya, 1995; Michael, 2000; Lee et al., 2015). This phenomenon leads businesses to adopt franchising, thereby reducing operational risk by sharing these risks with franchisees. Previous studies claimed that franchisors could also use franchisees’ capital (e.g., building, equipment, and land) when they enter a new market (Martin, 1988; Desai, 1997; Beal, 2014; Moon and Sharma, 2014). Furthermore, Combs et al. (2004)
showed that franchisors are likely to manage more profitable and less risky (company owned) outlets, whereas franchisees are likely to operate in more risky and less profitable outlets. Given these three theoretical arguments, franchising could be regarded as a risk-averse strategic decision.

*Importance of franchising in the restaurant industry*

Franchising is a popular business strategy in the restaurant business. The International Franchising Association (2013) reported that franchising of restaurant businesses produced 210 billion US dollar output in the US economy in 2013. The report indicates that the fast food restaurant industry demonstrated the largest franchising outputs among industries in the US. Therefore, Laschley and Morrison (2001) claimed that the restaurant industry is a potential research area for franchising due to its size and contribution to the US economy. The economic value and argument of Laschley and Morrison (2001) have motivated several researchers to examine the characteristics of franchising in the context of the restaurant industry (Roh, 2002; Combs et al., 2004; Hsu and Jang, 2009; Koh et al., 2009; Hsu et al., 2010; Hua and Dalbor, 2013; Madanoglu et al., 2013; Lee et al., 2015).
Hypotheses development

Top managers and franchising

Considering the argument of upper echelon theory, attributes related to top managers (e.g., age, tenure, education, share ownership, and stock option) are likely to explain the franchising decisions of restaurant firms in the United States. Upper echelon theory asserts that older top managers choose a less risky strategy because they do not have abundant mental stamina to process complicated information (Hambrick, 2007; Finkelstein et al., 2009). Therefore, it is expected that older managers are likely to prefer franchising because franchising reduces operational risk (Hambrick and Mason, 1984; Combs et al., 2004; Hsu et al., 2010). In addition, franchising becomes a favorable strategy for longer tenured managers who value their career stability more because franchising allows them to share the operational risk with franchisees and maintain a certain level of franchising fees as risk-averse strategic decision (Andrew et al., 2007; Finkelstein et al., 2009). Furthermore, share ownership of top managers is likely to affect the franchising decision because empirical evidence suggests that share ownership brings about risk-averse strategic decision of top managers (Wu and Tu, 2007; Alessandri and Seth, 2014). That is, since top managers are afraid of losing their wealth by taking risk in their strategic decision, top managers with share ownership are likely to pursue more risk-averse strategic decision. Hence, share ownership is likely to increase the dependency on franchising of top managers.

In contrast, highly educated top managers are more inclined to run their operations using owned outlets because they are confident in their knowledge to solve
complex problems (Hambrick and Mason, 1984; Finkelstein and Hambrick, 1996). That is, top managers’ confidence regarding their knowledge through education encourages them to take more risks leading them to decrease the dependency on franchising (Finkelstein et al., 2009; Roh et al., 2013). Moreover, stock options lead top managers to reduce the use of franchising. Sanders and Hambrick (2007) demonstrated that stock options encourage top managers to choose more risky business strategies because these top managers do not pay for the penalty of wealth in stock options. It suggests that top managers possessing more stock options implement more risk-seeking strategic decision in expectation of higher returns. Therefore, stock options enable top managers to decrease the dependency of franchising. Given the extant literature, this study proposes the following research hypotheses:

**Hypothesis 1:** The characteristics of TMT impact franchising decisions.

**Hypothesis 1a:** The average age of the TMT positively impacts franchising decisions.

**Hypothesis 1b:** The average tenure of the TMT positively impacts franchising decisions.

**Hypothesis 1c:** The average formal education of the TMT negatively impacts franchising decisions.

**Hypothesis 1d:** The value of share ownership by the TMT positively impacts franchising decisions.

**Hypothesis 1e:** The value of stock options by the TMT negatively impacts franchising decisions.
**Internationalization and franchising**

Prior studies addressed the uncertainty of international markets because it varies by economic conditions, cultural differences, and political stability (Johanson and Vahlne, 1977; Kwok and Reeb, 2000). These studies indicate that diversification to international markets entails risk. Numerous studies regarding restaurant businesses also showed that internationalization increases operational risk (Lee et al., 2011; HongLuan et al., 2013; Sun and Lee, 2013). For instance, McDonald’s developed a new menu that aimed to meet the demands of local customers internationally (Welch, 1989; Oviatt and McDougall, 1997; Bartlett and Ghoshal, 2000). Mitchell et al. (1992) demonstrated that changing the portfolio of international businesses impairs organizational performance. Samadi (2011) and Sun and Lee (2013) contended that the degree of internationalization in the restaurant industry is low because it costs to understand the cultural characteristic and customs regarding food for international markets. Since upper echelon theory argues that the strategic decisions of top managers are related to the inherent risk in a certain strategy, internationalization is likely to affect strategic decision-making of top managers (Hambrick and Mason, 1984; Finkelstein and Hambrick, 1996).

First, older top managers are likely to become more risk-averse under risky condition because they do not have enough mental stamina to process complicated sets of information (Hambrick and Mason, 1984; Matta and Beamish, 2008). Moreover, Finkelstein et al. (2009) asserted that more tenured top managers are risk-averse because they are more concerned about protecting their reputation, leading tenured top managers to become more risk-averse under uncertainty. Furthermore, studies have demonstrated...
that top managers are more risk-averse when they have more share ownership (Wright et al., 1996; Alessandri and Seth, 2014). Kahneman and Tversky (1979) contended that people are risk-averse in their decision making process when facing greater uncertainty. That is, the effects of age, tenure, and share ownership are likely to become stronger in uncertain conditions. Since for restaurant companies international market is more uncertain compared to domestic market, it is anticipated that internationalization would positively moderate the relationship between the attributes of the upper echelon theory (e.g., age, tenure, and share ownership) and franchising decision.

In addition, top managers who are more educated are likely to take more risk in their strategic decisions (Finkelstein et al., 2009; Li and Tang, 2010). That is, more educated top managers are likely to depend more on their knowledge rather than a certain business strategy when they enter into riskier decision conditions. The pattern seems to be similar in the case of stock options. Individuals are loss-averse and previous studies contends that individuals become more risk-averse in their decision making when they enter into more uncertain situation (Kahneman and Tversky, 1979; Yermack, 1997). One of the reasons is that loss has a stronger effect than gain when individuals are in decision making situations given the assertion from prospect theory (Kahneman, 2003; Wu and Tu, 2007). Interestingly, previous studies contended that stock option enables top managers to avoid being responsible for their strategic decision making (Core and Guay, 2002; Sanders and Hambrick, 2007). Also, scholars asserted that high risk brings about high return and stock option can reduce the responsibility of top managers for taking high risks (Heath et al., 1999; Lie, 2005; Sanders and Hambrick, 2007). It indicates that top managers owning more stock options are likely to take more risk in their strategic
decision pursuing higher returns. Given these arguments, reduced responsibility by stock option leads top managers to take more risk under risky conditions by pursuing higher returns (Wu and Tu, 2007; Finkelstein et al., 2009). Combs et al. (2004) contended that company owned outlets are more profitable compared to franchising outlets. The higher return is likely to encourage top managers with either more education or stock options to select company owned stores rather than franchised stores (Sanders, 2001; Matta and Beamish, 2008; Finkelstein et al., 2009; Seo and Sharma, 2013). Hence, it is presumed that internationalization negatively moderates the relationship between these attributes (e.g., education and granted stock option to managers) of the upper echelon theory and franchising decision. Given the review of literature, this study proposes the following research hypotheses:

**Hypothesis 2**: Internationalization of restaurants moderates the relationship between characteristics of TMT and franchising decision of restaurants.

**Hypothesis 2a**: Internationalization of restaurants positively moderates the relationship between average age of TMT and franchising decision of restaurants.

**Hypothesis 2b**: Internationalization of restaurants will positively moderate the relationship between the average tenure of TMT and franchising decision of restaurants.

**Hypothesis 2c**: Internationalization of restaurant will negatively moderate the relationship between the average formal education of TMT and franchising decision of restaurants.

**Hypothesis 2d**: Internationalization of restaurants will positively moderate the relationship between the value of share ownership by the TMT and franchising decision of restaurants.
**Hypothesis 2e:** Internationalization of restaurant will negatively moderate the relationship between the value of stock options by the TMT and franchising decision of restaurants.

**Summary**

This chapter presented a review of background literature appropriate for this research. This section included the description of a (1) upper echelon theory, (2) upper echelon and strategic decisions, (3) franchising as risk-averse strategy, and (4) hypotheses development. Given this literature review, this study proposed research hypotheses that investigate the association between the attributes of the upper echelon theory (e.g., age, tenure, education, share ownership, and stock option) and franchising decision of restaurant companies. This chapter also proposed a moderating effect of internationalization between the attributes of the upper echelon theory and TMT’s franchising decisions. The next chapter lays out the methodology to test the proposed hypotheses and includes description of the sample, variables, and statistical analysis.
Chapter 3
Methodology

Introduction

This chapter illustrates the research methodologies used in the proposed study. There was one dependent variable in this study: the number of new stores opened as franchising (FRA) to capture the franchising decision of restaurant companies. The independent variables are the age of the top management team (TMT), the tenure of TMT, the formal education level of the TMT, the value of share ownership by TMT, and the value of stock option by TMT. In addition, internationalization was a moderator, measured by the number of outlets in international markets over the total number of outlets. This section also lays out the process used to select the most appropriate econometrics techniques to acquire the best linear unbiased estimator (BLUE) in the panel data used for this study. The following section is composed of the following: 1) data and samples, 2) description of variables, and 3) statistical techniques to analyze the data.

Data and sample

This study used a sample of publicly traded US restaurant firms. The companies were traded on American stock exchanges (e.g., AMEX, NASDAQ, and NYSE). The sample information was derived from the COMPUSTAT and EXECUCOMP databases. Data were also obtained using Standard Industrial Classification (SIC) code 5812 from
both COMPUSTAT and EXECUCOMP. The types of restaurants used in the sample were limited service restaurants (e.g., McDonald’s corporation and Wendy’s corporation) and full-service restaurants (e.g., Texas Road House and Cracker Barrel Old Country Store). Most of the accounting information such as total assets and net income was retrieved from COMPUSTAT. Additionally, the age of the TMT and the tenure of the TMT were acquired from EXECUCOMP. Information regarding TMT education and franchising data was collected from each company’s annual Form 10-K and other public sources such as (http://www.linkedin.com). The study period was 1999-2013 because of the data availability of Annual 10-K reports; internationalization and franchising data were severely limited before 1999 the annual 10-K reports. Cook’s distance was estimated to detect and eliminate outliers using 1 as the cutoff value. The number of companies was 29 and the data appeared as an unbalanced panel. Given the statistics of Cook’s distance test, seven outliers were detected and eliminated. The total number of observations was 312.

Variables

Main variables

This study had one dependent variable, the number of new stores opened as franchising (FRA) to measure the decision of franchising. This variable was measured by the number of newly opened stores as franchising in a given year by a restaurant company. Degree of internationalization (DOI) was a moderator in this study, measured by the number of outlets operated in the international market over total number of outlets.
in the company as more international operation brings about more operational risk (Johanson and Vahlne, 1977; George et al., 2005; Sun and Lee, 2013).

A number of studies have defined the TMT as all executives above vice president level (Geletkanycz and Hambrick, 1997; Keck, 1997; Carpenter et al., 2004). Hence, this study followed the same definition and the same data collection procedure. This study had the following main independent variables: the average age of TMTs (AGE), the average tenure of TMTs (TEN), the average formal education level of TMTs (EDU), the value of share ownership by TMT (OWN), and the value of stock option by TMT (STOP). Each TMT attribute was measured by the average of the members’ characteristics (e.g., age, tenure, and education) in accordance with the previous studies’ measures (Eisenhardt and Schoonhoven, 1990; Wiersema and Bantel, 1992; Geletkanycz and Hambrick, 1997; Keck, 1997). That is, AGE was the average age of TMT members on the sum of the ages of the TMT members divided by the number of TMT members. TEN is the average number of years served as the TMT for each of the TMT members in the firm. For instance, if a member in TMT started to serve as a TMT member in 2004, it was coded as 1 in case of 2004. After computing each of the TMT members’ number of years served in a company, this study calculated the average tenure of TMT members. EDU of each member was measured by a binary variable, and then the study computed the average of all TMT members. That is, if a TMT member held a graduate school degree (e.g., MBA, MS, JD, and PhD), that member was coded as 1. However, if a member in TMT held a Bachelor degree as the terminal degree or below, then that member was coded as 0. After the aggregation of the coding for education, this study computed the mean value to measure average TMT education level. Therefore, the EDU
variable ranged from 0 to 1. This study measured the value of share ownership as the sum of the value of share ownership by every TMT members. This study implemented natural log transformation as Wu and Tu (2007) implemented to measure share ownership. The measure of stock option ownership was the sum of the value of the stock options owned by every TMT members, and natural log transformation was performed to stock option as in Sanders (2001) and Sanders and Hambrick (2007).

**Control variables**

There were several control variables incorporated in this study, including the gender of the top managers (GEN), investment opportunity (IO), annual sales growth (GRO), financial leverage (DEBT), the number of pre-existing franchising (PFRA), size of TMT (STMT), and total number of newly opened store in a focal year (TNSO). Previous studies contended that females are more risk-averse as compared to males (Jianakoplos and Bernasek, 1998; Schubert et al., 1999). Risk-averse pattern of female managers also emerged in previous studies (Wu and Tu, 2007; Seo and Sharma, 2013). Therefore, this study used the gender of top managers as a control variable. Gender was a binary variable, with female top managers being coded as 0 and male top managers being coded as 1. After coding each TMT member’s gender, this study computed the average for the gender of TMT members as an aggregate variable. Resource scarcity claims that businesses adopt franchising to accomplish more rapid expansion because the available resources are constrained (Caves and Murphy, 1976; Hsu and Jang, 2009). Since firms in the growth stage requires more resources, so this research incorporated firm growth (GRO) as a control variable as well. Delmar et al. (2003) suggested using annual changes
in relative revenue as the measure of growth. Hence, Growth was calculated by the change in revenue from the previous period to the current period. Additionally, businesses with more investment opportunities need more resource, causing higher resource-constrain for the business (Fama and French, 2001; Kim and Gu, 2009). Hence, this study selected investment opportunity (IO) as another control variable. IO was measured by market to book value. This study also employed financial leverage (DEBT) as a control variable because financial leverage represents the debt dependency of a company. That is, financial leverage captures the resource-constrained condition of a business measured by debt to assets ratio (Jensen and Meckling, 1976; Jensen, 1986). The number of pre-existing franchising outlets was also controlled for in the analysis to account for the franchising experience of a company. This study also controlled for the size of the TMT (STMT) as an additional control variable because prior research suggested that the size of the TMT affects strategic decision-making. Lastly, this study controlled total number of stores opened (TNSO) in the focal year. The purpose of TNSO is to capture the amalgam of overall growth and emphasis on franchising. Table 1 presents the details of the variables used in this study, and Figure 2 illustrates proposed models used to analyze the data.

Table 1 Description of variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRA (Number of new stores opened as franchising)</td>
<td>Number of new stores opened as franchising</td>
</tr>
<tr>
<td>AGE (Age of TMT)</td>
<td>Average age of TMT members served in a restaurant company</td>
</tr>
<tr>
<td>TEN (Tenure of TMT)</td>
<td>Average length of time TMT members served in a restaurant company</td>
</tr>
<tr>
<td>EDU (Education of TMT)</td>
<td>Average formal education level of TMT</td>
</tr>
<tr>
<td>Variable</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>OWN (Ownership of TMT)</td>
<td>The value of share ownership by TMT</td>
</tr>
<tr>
<td>STOP (Stock option of TMT)</td>
<td>The value of stock option by TMT</td>
</tr>
<tr>
<td>DOI (Degree of internationalization)</td>
<td>Number of internationalization outlets/Total number of outlets</td>
</tr>
<tr>
<td>GEN (Gender of TMT)</td>
<td>Gender of top managers (0 = Male and 1 = Female)</td>
</tr>
<tr>
<td>IO (Investment opportunity)</td>
<td>Market value total/Book value total</td>
</tr>
<tr>
<td>GRO (Annual sales growth)</td>
<td>(Sales_t – Sales_t-1) / Sales_t-1</td>
</tr>
<tr>
<td>DEBT (Financial leverage)</td>
<td>Total debt/Total assets</td>
</tr>
<tr>
<td>PFRA (Pre-existing franchising)</td>
<td>Pre-existing number of franchising outlets</td>
</tr>
<tr>
<td>STMT (Size of TMT)</td>
<td>The number of top managers in a TMT</td>
</tr>
<tr>
<td>TNSO (Total number of stores opened in the focal year)</td>
<td>Total number of stores opened in the focal year</td>
</tr>
</tbody>
</table>

Note: FRA is dependent variable. AGE, TEN, EDU, OWN, and STOP are independent variables. DOI is moderators. GEN, IO, GRO, DEBT, PFRA, and TNSO are control variables.

Figure 2 Research hypotheses
Statistical analysis

This study chose several econometrics techniques for data analysis. To check basic assumptions of the model, this research performed the Modified Wald test (for heteroskedasticity), and the Wooldridge test (for autocorrelation) (Baltagi, 2008; Gujarati and Porter, 2008; Greene, 2006). In addition, this study implemented the Breusch-Pagan Lagrange Multiplier (BPLM) test and the Hausman test to select a more adequate model for data analysis using the panel regression method (Gasser et al., 1982; Baltagi and Li, 1990; Hair et al., 2006; Wooldridge, 2009; Asteriou and Hall, 2011).

Baum (2001) and Tadak et al. (2011) suggested the Modified Wald test for a groupwise heteroskedasticity test in panel data using residuals given the Wald statistics. The null hypothesis of the Modified Wald test for groupwise heteroskedasticity is as follow:

\[ H_0: \sigma_i^2 = \sigma_i \text{ for } i = 1 \ldots N_g. \]

Where \( N_g \) stands for the number of cross sectional units, and the significance of Wald statistics indicates the presence of heteroskedasticity that could affect the standard error of estimation. Therefore, the estimated standard error is not valid if the estimation is influenced by heteroskedasticity (Greene, 2006; Gujarati and Porter, 2009).

This study also conducted the test of serial correlation using the Wooldridge test for autocorrelation in panel data. Autocorrelation occurs when the error terms from different observations are correlated with one another (Wooldridge, 2009; Gujarati and Porter, 2009). Since autocorrelation affects the standard error, estimated statistics are not valid in the model with autocorrelation as this could cause bias for the estimated
coefficient. The null hypothesis of the Wooldridge test for autocorrelation is that there is no autocorrelation in the model as follow:

\[ H_0: E(u_t u_j) = 0 \]

Where \( u_t \) is the residual in a given period \( t \), \( u_j \) is the residual in a given period \( j \), and the significance of the Wooldridge test for autocorrelation statistics stands for the autocorrelation in the model. Therefore, the estimated standard error is not valid, if the estimation is influenced by autocorrelation (Drukker, 2003; Wooldridge, 2009).

Given that this study used panel data, in order to acquire best linear unbiased estimator (BLUE), it was essential to minimize the omitted variable bias. Hence, this study identified a more adequate model between the pooled OLS, random-effect (RE) model, and fixed-effect (FE) models. This study performed the Breusch-Pagan Lagrange multiplier (BPLM) test to identify a more appropriate model between OLS and RE by the comparison of their residuals. The following is the hypothesis of BPLM test:

\[ H_0: \text{var} (u_t) = \sigma^2 = 0 \]

RE model incorporates unobserved effect into the model for the purpose of minimizing the omitted variables bias. That is, RE model contains unobserved effect \( a_{it} \) in the model. According to Wooldridge (2009), unobserved effect \( a_{it} \) is uncorrelated with each independent variable. The model is presented as follows:

\[ Y_i = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \cdots + \beta_k X_{kt} + a_{it} + u_{it} \]

\[ \text{Cov}(X_{it}, a_{it}) = 0, \ t = 1, 2.. T; \ i = 1, 2.. k \]
The FE model is widely used for the analysis of panel data. The model employs dummy variables to capture the time invariant effect (Greene, 2006; Wooldridge, 2009). Consider a model with an independent variable as follows:

\[ Y_i = \beta_1 X_{it} + a_i + u_{it}, \quad t = 1, 2, \ldots, T \quad (1) \]

\[ \bar{Y}_t = \beta \bar{X}_t + a_i + \bar{u}_{it} \quad (2) \]

where, \( \bar{Y}_t = T^{-1} \sum_{t=1}^{T} Y_{it} \) and \( a_i \) is fixed over time.

By subtracting (2) from (1), the model appears as follows:

\[ Y_i - \bar{Y}_t = \beta X_{it} - \bar{X}_t + u_{it} - \bar{u}_{it}, \quad t = 1, 2, \ldots, T \quad (3) \]

where \( Y_i - \bar{Y}_t \) is the time demeaned-data on \( Y \), and \( a_i \) was disappeared in model 3.

Wooldridge (2009) noted that the fixed-effect estimator refers to estimator based on time-demeaned variable. Additionally, Gujarati and Porter (2009) showed that the slope coefficient is invariant over time and across individual. Since the dummy variable only affects the intercept, FE incorporates the dummy variable into the model to capture the time effect and the individual effect into the model. However, FE assumes that \( a_i \) is a part of the independent variable as follows.

\[ \text{Cov}(X_{it}, a_i) \neq 0, \quad t = 1, 2, \ldots, T; \quad i = 1, 2, \ldots, k \]

Although the FE model controls both time effect and individual effect, the degree of freedom is sacrificed in FE. However, the RE model is limited to control time effect and individual effect, RE model preserves the degree of freedom. Hence, it is critical to identify a more adequate model given the characteristics of data. Hausman test is commonly used to choose a more appropriate model. According to Baltagi (2008), the Hausman test identifies a more adequate model between FE and RE given the covariance.
between independent variable \( X_i \) and unobserved effect \( a_i \). Table 2 presents the summary of proposed statistical instruments.

Table 2 Summary of statistical analysis

<table>
<thead>
<tr>
<th>Test name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cook’s distance</td>
<td>Detect outliers</td>
</tr>
<tr>
<td>Modified Wald test</td>
<td>Test of heteroskedasticity in panel data</td>
</tr>
<tr>
<td>Wooldridge test</td>
<td>Test of autocorrelation in panel data</td>
</tr>
<tr>
<td>Breusch-Pagan Lagrange multiplier test</td>
<td>Test for Random effect adoption (R.E vs. OLS)</td>
</tr>
<tr>
<td>Hausman test</td>
<td>Test for Fixed effect adoption (R.E vs. F.E)</td>
</tr>
</tbody>
</table>

*Note: R.E stands for random effect model, F.E stands for fixed effect model

This study chose panel feasible generalized least square (FGLS) regression to conduct the data analysis because Modified Wald statistics and Woodridge test detected heteroskedasticity (p<.01) and autocorrelation (p<.01), respectively (Smith and McAleer, 1994; Baum, 2001; Hoechle, 2007). The FGLS model refers to the model that transforms the equations to obtain equal variance by weighting the estimators (Greene, 2006; Hair et al., 2006). Scholars argue that FGLS is performed when ordinary least square (OLS) is inefficient, and therefore FGLS enhances the estimations under the presence of heteroscedasticity and serial correlation (Gujarati and Porter, 2009; Wooldridge, 2009). Moreover, the BPLM statistics were significant (p<.01), suggesting that it was necessary to select the RE model rather than OLS for the analysis. After implementing BPLM test, this study used the Hausman test to a select more appropriate model between FE and RE.
Since Hausman statistics was significant (p<.01), FE was selected as a more adequate model.

In addition, panel data was comprised of two components. One component was yearly observations as a time factor, and another component was the individual firms (Baltagi, 2008; Wooldridge, 2009). Hence, the two-way model was regarded as the appropriate model. A two-way model refers to the model that incorporates both year effect and firm effect (Baltagi, 2008). If the model contains only year effect or firm effect, the model is likely to be impaired by the omitted variable bias (Greene, 2006; Wooldridge, 2009). Therefore, this study implemented FGLS model by incorporating both firm effect and time effect into the model. Lastly, this study conducted a sub-sample analysis. The sub-sample analysis was either the restaurant companies that had both international and domestic operations, or restaurant companies that operated only in the domestic market without considering the moderating variable. The following were the regression equations of this study:

**Hypothesis 1**

\[
FRA_{it} = \beta_0 + \beta_1 AG_{it} + \beta_2 TEN_{it} + \beta_3 EDU_{it} + \beta_4 OWN_{it} + \beta_5 STOP_{it} + \beta_6 GEN_{it} \\
+ \beta_7 IO_{it} + \beta_8 GRO_{it} + \beta_9 DEBT_{it} + \beta_{10} PFRA_{it} + \beta_{11} STMT_{it} + \beta_{12} TNSO_{it} + e_{it}
\]

**Hypothesis 2**

\[
FRA_{it} = \beta_0 + \beta_1 AG_{it} + \beta_2 TEN_{it} + \beta_3 EDU_{it} + \beta_4 OWN_{it} + \beta_5 STOP_{it} + \beta_6 DOI_{it} \\
+ \beta_7 AG_{it} \times DOI_{it} + \beta_8 TEN_{it} \times DOI_{it} + \beta_9 EDU_{it} \times DOI_{it} + \beta_{10} OWN_{it} \times DOI_{it} \\
+ \beta_{11} STOP_{it} \times DOI_{it} + \beta_{12} GEN_{it} + \beta_{13} IO_{it} + \beta_{14} GRO_{it} + \beta_{15} DEBT_{it} + \beta_{16} PFRA_{it} \\
+ \beta_{17} STMT_{it} + \beta_{18} TNSO_{it} + e_{it}
\]
where $\text{FRA}_{it}$ is number of new stores opened as franchising, $\text{AGE}_{it}$ is average age of TMT members served in a restaurant company, $\text{TEN}_{it}$ is average length of time TMT members served in a restaurant company, $\text{EDU}_{it}$ is average formal education level of TMT members served in a restaurant company, $\text{OWN}_{it}$ is the value of share ownership by TMT, $\text{STOP}_{it}$ is the value of stock option by TMT, $\text{DOI}_{it}$ is degree of internationalization (number of internationalization outlets/total number of outlets), $\text{GEN}_{it}$ is gender of top managers, $\text{IO}_{it}$ is investment opportunity (Market to book value), $\text{GRO}_{it}$ is annual sales growth ($\text{Sales}_t - \text{Sales}_{t-1} / \text{Sales}_{t-1}$), $\text{DEBT}_{it}$ is financial leverage, $\text{STMT}_{it}$ is the size of TMT, $\text{PFRA}_{it}$ is pre-existing number of franchising outlets, and $\text{TNSO}_{it}$ is total number of stores opened in the focal year.

**Summary**

This chapter described the methods to test the proposed hypotheses. The chapter started with the illustration of the data, the source of information, and procedures (e.g., Compustat, Execucomp, and Annual 10K of restaurant companies in the US). After that, the variables used were described along with variable measures. There was one dependent variable, five independent variables, one moderator, and seven control variables. Moreover, this chapter depicted the procedures of statistical analyses, including the statistical tests (e.g., Cook's distance, Modified Wald test, Wooldridge test, BPLM test, and Hausman test) to choose adequate models and model specifications. The next chapter presents the results of the analyses, including descriptive statistics, the correlation matrix, and the results of the regression analyses.
Chapter 4

Results

Introduction

This section presents the results of the analyses. The first section reviews the descriptive statistics. The second section presents the correlation matrix. The third part summarizes the results of multiple regression analysis. Furthermore, the regression analysis assessed (1) the overall effect of the attributes from upper echelon theory, (2) the moderating effect of internationalization, and (3) assessed the sub-sample analysis in terms of internationalization.

Descriptive statistics

The dataset of this study included 29 publicly traded restaurant companies. The total number of observations was 312. Table 3 describes the results of descriptive statistics. The mean value of FRA was 79.13, with standard deviation of 199.56. The minimum value of FRA was -51 and the maximum value of FRA was 1,159. AGE had a mean value and standard deviation of 50.84 and 3.41, respectively, ranging from 39.24 to 61.02. The mean value of TEN was 7.98 and its standard deviation was 3.26, ranging from 1.57 to 20.61. The descriptive statistics indicated that EDU had a mean value of 0.40 and a standard deviation of 0.24. The minimum value was 0 and the maximum value was 1. The descriptive statistics provided information on OWN (Mean = 2,527, S.D = 4,764, Min = 0, and Max = 32,730) and STOP (Mean = 20,452, S.D = 49,219, Min = 0,
and Max = 452,238). Restaurant firms’ DOI had a mean value of 0.08 and standard deviation of 0.16. Its minimum and maximum values were 0 and 0.83, respectively. The mean value of GEN was 0.12, with its standard deviation of 0.18. The value ranged from 0 to 0.83. Table 3 also describes the information for IO (Mean = 1.63, S.D = 1.36, Min = 0.03, and Max = 8.28) and GRO (Mean = 0.09, S.D = 0.23, Min = -0.89, and Max = 2.33). DEBT had a mean value of 0.27 with standard deviation of 0.67. The minimum value was 0.12 and the maximum value was 1.43. In addition, the mean value of PFRA was 2.106 and standard deviation was 5.093, ranging from 0 to 27.882. Lastly, the descriptive included STMT values (Mean = 5.49, S.D = 1.36, Min = 3, and Max = 9) and TNSO values (Mean = 122.42, S.D = 359.67, Min = -714, and Max = 2,571).

Table 3 Descriptive statistics

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<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Minimum</th>
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<td>122.42</td>
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<td>2,571</td>
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</table>

Note: FRA is number of new stores opened as franchising (Dependent variable), AGE is average age of TMT members served in a restaurant company, TEN is average length of time TMT members served in a restaurant company, EDU is average formal education level of TMT members served in a restaurant company, OWN is the value of share ownership by TMT (thousands of dollar), STOP is the value of stock option by TMT (thousands of dollar), DOI is degree of internationalization (number of internationalization outlets/total number of outlets), GEN is gender of top managers, IO is investment opportunity (Market to book value), GRO is annual sales growth (Sales_t – Sales_t-1) / Sales_t-1, DEBT is financial leverage, PFRA is Pre-existing number of franchising outlets, STMT is the size of TMT, TNSO is total number of stores opened in the focal year.
Correlation matrix

Table 4 presents the correlation matrix. FRA negatively correlated with TEN (r = -0.17, p<0.01), EDU (r = -0.17, p<0.01), and GEN (r = -0.17, p<0.05). This suggests that more tenured top managers and companies that had more educated top managers implemented less franchising while companies that had a higher proportion of female managers performed less franchising. In addition, FRA positively correlated with OWN (r = 0.19, p<0.01). That is, top managers with more share ownership used franchising more. Franchising was regarded as a popular strategy for the restaurant companies implementing internationalization from the correlation coefficient between FRA and DOI (r = 0.70, p<0.01). Moreover, franchising was implemented more by restaurant companies with greater investment opportunities given the correlation coefficient between FRA and IO (r = 0.30, p<0.01), and restaurant firms with more pre-existing franchising outlets given the correlation coefficient between FRA and PFRA (r = 0.56, p<0.01).

AGE positively correlated with TEN (r = 0.26, p<0.01) and EDU (r = 0.18, p<0.01), whereas it negatively correlated with GRO (r = -0.14, p<0.05). This implies that older top managers were more tenured, and educated; however, older top managers also had lower sales growth. TEN positively correlated with EDU (r = 0.32, p<0.01). This suggests that more tenured top managers were also more educated. However, TEN negatively correlated with DOI (r = -0.15, p<0.01), GEN (r = -0.16, p<0.01), and PFRA (r = -0.28, p<0.01). It could be inferred that tenure of top managers was negatively associated with the number of international operations and the number of pre-existing
franchising stores. Additionally, large proportion of female top managers was less tenured. EDU had a negative correlation with DOI (r = -0.16, p<0.01), GEN (r = -0.33, p<0.01), and PFRA (r = -0.55, p<0.01); companies that had more educated top managers implemented less internationalization. Also, companies that had more educated top managers managed less pre-existing franchising stores. Furthermore, a TMT with a larger proportion of female top managers were less educated.

OWN positively correlated with STOP (r = 0.20, p<0.01) and DOI (r = 0.13, p<0.05). Hence, TMTs with more ownership had more stock options, and they invested more in international operation. However, OWN negatively correlated with GEN (r = -0.33, p<0.01), suggesting that TMTs with a higher degree of female top managers had less share ownership. STOP positively correlated with DOI (r = 0.23, p<0.01), IO (r = 0.33, p<0.01), GRO (r = 0.15, p<0.01), and PFRA (r = 0.14, p<0.05). This implies that top managers with more stock options invested in more international operation, and they had higher market to book value, more sales growth, and more pre-existing franchising stores. STOP also correlated negatively with GEN (r = -0.20, p<0.01), suggesting that TMTs with female top managers had fewer stock options. DOI negatively correlated with GEN (r = -0.12, p<0.05). This suggests that companies that had more female top managers invested less in international operations. Additionally, DOI positively correlated with PFRA (r = 0.21, p<0.01). It could be inferred that franchising was popular for the sample restaurant companies implementing internationalization.

GEN positively correlated with PFRA (r = 0.16, p<0.01), suggesting that TMTs that had more female top managers had more pre-existing franchising stores. IO
positively correlated with GRO ($r = 0.25, p<0.01$). It could be inferred that investment opportunities were positively correlated with the growth in sales. In addition, DEBT had a negative correlation with PFRA ($r = -0.13, p<0.05$) and IO ($r = -0.12, p<0.05$). That is, restaurant companies depending more on debt not only had less pre-existing franchising stores but also had less investment opportunity. STMT was positively correlated with DOI ($r =0.21, p<0.01$) and PFRA ($r = 0.17, p<0.01$), suggesting that restaurant companies that had more TMT members had more internationalization and pre-existing franchised stores. However, STMT had negative correlations with TEN ($r = -0.14, p<0.05$) and GEN ($r = -0.16, p<0.01$), meaning that size of TMT negatively correlated with both tenure and female proportion of TMTs. Lastly, TNSO positively correlated with FRA ($r = 0.53, p<0.01$), OWN ($r = 0.33, p<0.01$), STOP ($r = 0.46, p<0.01$), DOI ($r = 0.45, p<0.01$), IO ($r = 0.29, p<0.01$), and PFRA ($r = 0.35, p<0.01$). It can be inferred that restaurant companies opening more stores not only grant more share and stock options to top managers but also have more investment opportunities, pre-existing franchising stores, and higher degree of internationalization.
Table 4 Correlation Matrix (N =312)

Note: FRA is number of new stores opened as franchising (Dependent variable), AGE is average age of TMT members served in a restaurant company, TEN is average length of time TMT members served in a restaurant company, EDU is average formal education level of TMT members served in a restaurant company, OWN is the value of share ownership by TMT (thousands of dollar), STOP is the value of stock option by TMT (thousands of dollar), DOI is degree of internationalization (number of internationalization outlets/total number of outlets), GEN is gender of top managers, IO is investment opportunity (Market to book value), GRO is annual sales growth (Sales t – Sales t-1 / Sales t-1), DEBT is financial leverage, P FRA is Pre-existing number of franchising outlets, STMT is the size of TMT, TNSO is the total number of stores opened in the focal year. * p<.05 **p<.01

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<th>DEBT</th>
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Results of regression analyses

Table 5 illustrates the results of the FGLS regression analysis. Model 1 presents the outputs of regression analysis to test H1. PFRA had a positive coefficient (β = 20.556, Wald = 2.10, p<0.05). Consistent with the proposed hypotheses, AGE was positively significant (β = 4.359, Wald = 1.99, p<0.05), suggesting that older TMTs were more risk-averse in their strategic decision-making. Moreover, EDU had a negative coefficient (β = -107.341, Wald = -2.38, p<0.01), suggesting that restaurant companies that had more educated top managers implemented less franchising, and this was also consistent with H1c. OWN had a positive coefficient (β = 7.437, Wald = 1.99, p<0.05), indicating that top managers with more ownership implemented more franchising (becoming more risk-
averse). This result was consistent with H1d. Model 1 was statistically significant, given the value of Wald Chi2 statistics (Wald Chi2 = 1561.84, p<0.01).

Model 2 illustrates the results to test H2. Among the control variables, two variables were significant to account for FRA: STMT (β = 13.688, Wald = 2.54, p<0.01) and TNSO (β = -1.871, Wald = -3.68, p<0.01). The DOI×TEN interaction was significant (β = 110.342, Wald = 4.28, p<0.01), indicating that more tenured top managers of restaurant companies become more risk-averse under increased uncertainty. This result lends support to H2b. The DOI×EDU had a negative coefficient (β = -886.022, Wald = -3.65, p<0.01), suggesting that restaurant companies that had more educated top managers chose less franchising (risk-seeking) when they operated in international markets. This result supported H2c. However, on the other hand, DOI×OWN had a positive coefficient (β = 174.547, Wald = 7.42, p<0.01), meaning that top managers owning more shares chose more franchising (risk-averse) when they operated in international markets. This result provided support to H2d. Model 2 was also statistically significant (Wald Chi2 = 2089.59, p<0.01).
Table 5 Results of FGLS regression analyses (N = 312)

Note: FRA is number of new stores opened as franchising (Dependent variable), AGE is average age of TMT members served in a restaurant company, TEN is average length of time TMT members served in a restaurant company, EDU is average formal education level of TMT members served in a restaurant company, OWN is the value of share ownership by TMT (thousands of dollar), STOP is the value of stock option by TMT (thousands of dollar), DOI is degree of internationalization (number of internationalization outlets/total number of outlets), GEN is gender of top managers, IO is investment opportunity (Market to book value), GRO is annual sales growth (Sales_t – Sales_{t-1} / Sales_{t-1}), DEBT is financial leverage, PFRA is Pre-existing number of franchising outlets, STMT is the size of TMT, TNSO is total number of stores opened in the focal year. * p<.05 **p<.01

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<th>Variable</th>
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<th>Model 2 β (Wald)</th>
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<td>2089.59**</td>
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</table>

Table 6 illustrates the results of FGLS regression analysis conducted with the sub-sample. Model 3 presents information for restaurant companies performing only domestic operations. The number of observations was 160. No attributes were significant to account for the franchising decision of restaurant companies. Model 3 was statistically significant (Wald Chi2 = 145.18, p<0.01). Model 4 depicted the sub-sample analysis for
restaurant companies operating in both domestic and international markets. The number of observations for this analysis was 152, and the analysis was statistically significant (Wald Chi2 = 817.75, p<0.01). The coefficients of PFRA (β = 0.023, Wald = 3.48, p<0.01) and was statistically significant in a positive direction suggesting that companies with more previously franchised units increased their franchising outlets. TNSO was also statistically significant and had a negative sign (β = -0.126, Wald = -2.75, p<0.01). EDU also had a negative coefficient (β = -325.511, Wald = -2.74, p<0.01). It could be inferred that companies that had more educated top managers chose less franchising when operating in international markets. Meanwhile, OWN had a positive coefficient (β = 13.849, Wald = 1.98, p<0.05). It suggests that top managers with more share ownership became more risk-averse in their strategic decision-making.
Table 6 Results of FGLS regression analyses – Sub-sample analyses

**Note:** FRA is number of new stores opened as franchising (Dependent variable), AGE is average age of TMT members served in a restaurant company, TEN is average length of time TMT members served in a restaurant company, EDU is average formal education level of TMT members served in a restaurant company, OWN is the value of share ownership by TMT (thousands of dollar), STOP is the value of stock option by TMT (thousands of dollar), DOI is degree of internationalization (number of internationalization outlets/total number of outlets), GEN is gender of top managers, IO is investment opportunity (Market to book value), GRO is annual sales growth (Sales_t – Sales_t-1) / Sales_t-1, DEBT is financial leverage, PFRA is Pre-existing number of franchising outlets, STMT is the size of TMT, TNSO is total number of stores opened in the focal year. * p<.05 **p<.01 Model 3 uses restaurant firms operate in domestic area; Model 4 uses restaurant firms operate in both domestic and international areas.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 3 (N=160) β (Wald)</th>
<th>Model 4 (N=152) β (Wald)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>123.206(2.04)*</td>
<td>-786.454(-2.74)**</td>
</tr>
<tr>
<td>GEN</td>
<td>-24.877(-0.64)</td>
<td>-16.526(-0.16)</td>
</tr>
<tr>
<td>IO</td>
<td>-2.969(-0.80)</td>
<td>11.612(0.82)</td>
</tr>
<tr>
<td>GRO</td>
<td>1.230(0.05)</td>
<td>-11.668(-0.37)</td>
</tr>
<tr>
<td>DEBT</td>
<td>-1.416(-0.17)</td>
<td>1.361(0.72)</td>
</tr>
<tr>
<td>PFRA</td>
<td>2.590(0.65)</td>
<td>0.023(3.48)**</td>
</tr>
<tr>
<td>STMT</td>
<td>0.094(0.38)</td>
<td>14.124(1.25)</td>
</tr>
<tr>
<td>TNSO</td>
<td>0.014(0.68)</td>
<td>-0.126(-2.75)**</td>
</tr>
<tr>
<td>AGE</td>
<td>-2.662(-1.33)</td>
<td>-0.107(-0.03)</td>
</tr>
<tr>
<td>TEN</td>
<td>1.688(1.19)</td>
<td>3.155(0.53)</td>
</tr>
<tr>
<td>EDU</td>
<td>-26.394(-0.77)</td>
<td>-325.511(-2.74)**</td>
</tr>
<tr>
<td>OWN</td>
<td>-0.981(-0.47)</td>
<td>13.849(1.98)*</td>
</tr>
<tr>
<td>STOP</td>
<td>0.322(0.31)</td>
<td>0.337(0.10)</td>
</tr>
</tbody>
</table>

Wald Chi2 | 145.18** | 817.75**
Summary

In this chapter, the results of descriptive statistics, correlation matrix, and regression analyses were presented. This study implemented panel FGLS regression to analyze the data given the results of various tests (e.g., Modified Wald test, Wooldridge test, BPLM test, and Hausman test). The overall results of the tested hypotheses are presented in Table 7. The summary of results shows that hypothesis 1a, hypothesis 1c, and hypothesis 1d were supported. This indicates that age, formal education level, and share ownership of top managers were able to explain franchising decisions of restaurant companies. More specifically, age and share ownership positively affected the franchising decision of TMTs in the restaurant industry; however, education level of TMT was negatively associated with the franchising decision. In addition, the results provided evidence to support hypothesis 2b, hypothesis 2c, and hypothesis 2d. These findings indicate that top managers who were more educated chose less franchising in international markets, whereas top managers that owned more shares and had more tenure became more risk-averse in international markets by depending more on franchising. The next chapter presents the discussions, implications, and limitations, and future direction of this study.
<table>
<thead>
<tr>
<th>Hypotheses test</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a The average age of the TMT positively impacts franchising decisions.</td>
<td>Supported</td>
</tr>
<tr>
<td>1b The average tenure of the TMT positively impacts franchising decisions.</td>
<td>Not supported</td>
</tr>
<tr>
<td>1c The average formal education of the TMT negatively impacts franchising decisions.</td>
<td>Supported</td>
</tr>
<tr>
<td>1d The value of share ownership by the TMT positively impacts franchising decisions.</td>
<td>Supported</td>
</tr>
<tr>
<td>1e The value of stock options by the TMT negatively impacts franchising decisions.</td>
<td>Not supported</td>
</tr>
<tr>
<td>2a Internationalization of restaurants positively moderates the relationship between average age of TMT and franchising decision.</td>
<td>Not supported</td>
</tr>
<tr>
<td>2b Internationalization of restaurants will positively moderate the relationship between the average tenure of TMT and franchising decision.</td>
<td>Supported</td>
</tr>
<tr>
<td>2c Internationalization of restaurant will negatively moderate the relationship between the average formal education of TMT and franchising decision.</td>
<td>Supported</td>
</tr>
<tr>
<td>2d Internationalization of restaurants will positively moderate the relationship between the value of share ownership by the TMT and franchising decision.</td>
<td>Supported</td>
</tr>
<tr>
<td>2e Internationalization of restaurant will negatively moderate the relationship between the value of stock options by the TMT and franchising decision.</td>
<td>Not supported</td>
</tr>
</tbody>
</table>
Chapter 5
Conclusions

Introduction

The following sections summarize the conclusions of this study. First, this chapter interprets the results of the analyses. That is, it illustrates how attributes of the upper echelon theory account for franchising decisions, and the moderating effect by the degree of internationalization between these attributes and franchising decision. Subsequently, this chapter describes both the theoretical and practical contributions of this study. Moreover, this chapter presents the interpretation of the results of the analyses for control variables as well as limitations and directions of future research.

Discussions

The results showed that age, education, and share ownership of TMT members significantly accounted for overall franchising decisions of US restaurant companies. To be specific, older top managers depended more on franchising in their strategic decision-making, likely due to their not enough mental stamina to process complex information (Herrmann and Datta, 2006; Zhang, 2006; Finkelstein et al., 2009). Education was also identified as a critical factor affecting the decision to franchise. That is, TMTs that were more educated were less likely to implement franchising, possibly because the knowledge of top managers enabled them to work more by themselves rather than depend on franchising as their business strategy; this result was supported by previous studies
(Simsek, 2007; Chatterjee and Hambrick, 2007). The last important attribute to explain the decision of franchising was the value of share ownership by TMTs. This study found a positive association between shared ownership and risk-averse decisions (franchising). This could indicate that top managers of restaurant companies become more risk-averse as they have more share ownership (Hambrick, 2007; Alessandri and Seth, 2014). In sum, older restaurant managers and those with a higher value of share ownership were more likely to become more risk-averse in their strategic decision-making, whereas more educated top managers of restaurant companies were more likely to tolerate strategic risk-taking.

This study tested the moderating effect of internationalization on the relation between the attributes of TMT and franchising decision; upper echelon theory suggests that the relationship between the attributes of top managers and strategic choice is based on the inherent risk in a strategic decision (Finkelstein et al., 2009). Moreover, extant literature suggests that international markets are riskier as compared to the domestic market (Mitchell et al., 1992; Matta and Beamish, 2008; Sun and Lee, 2013). Given these results, this study demonstrated that tenure, education, and share ownership were significant factors that accounted for franchising decisions in the restaurant industry. As Hambrick and Mason (1984) proposed that more tenured top managers of restaurant companies appeared to have a more risk-averse tendency in strategic decision-making under uncertainty. In contrast, it can be inferred from these results that more educated top managers of restaurant companies were more likely to tolerate risk in their strategic decisions if they operated in international markets. Furthermore, this study verified that the degree of internationalization positively moderates the relationship between share
ownership and franchising decision. This indicates that top managers who owned more shares in the restaurant industry were more risk-averse in uncertain (international) conditions. The significant results of the sub-sample analysis support this association. Overall, the results verified that top managers in the restaurant industry with more tenure and share ownership became more risk-averse when they operate in more risky conditions, while highly educated restaurant TMTs tend to take more risks in strategic decision-makings.

In consideration of the control variables, this study found that pre-existing franchising levels significantly explained the franchising decision. It indicates that franchising experience could help organizations make the franchising decision more easily. Size of TMT was identified as a significant attribute to explain the franchising decision in model 2. It could be inferred that companies with more top managers became more risk-averse in their strategic decision-making. Meanwhile, total number of stores opened in a focal year significantly accounted for the franchising decision with negative direction in model 2 and model 4. The possible explanation is that the number of newly opened stores decreased, while the number of franchising store is increased. That is, restaurant companies closed company owned stores; however, they increased the franchising stores. This pattern is likely to be more prominent during an economic recession given that individuals become more risk-averse when they enter into riskier conditions (Kahneman and Tversky, 1979; Kahneman, 2003). Other attributes (e.g., gender of top managers, investment opportunity, sales growth, financial leverage, and size of TMT) were non-significant, indicating that these attributes were not influential to
explain strategic decision-making of franchising when the attributes of TMTs were selected as main explanatory variables.

Even though most of attributes showed the significance to account for the franchising decisions of restaurant companies, stock option was identified as a non-significant attribute to account for the franchising decision of restaurant companies. A possible reason for non-significance could be the high standard deviation of the variable. Among the attributes from the upper echelon theory, the standard deviation of stock options presented was the highest (S.D = 49,219). Although this study implemented a natural log transformation to reduce the standard error of stock option, the standard error might be too high to attain robust estimation results (Hair et al., 2006; Gujarati and Porter, 2009).

**Theoretical Contributions**

This study examined how upper echelon theory explains risk-averse strategic decision making. Most of the previous studies attempted to account for risky strategic decisions using the upper echelon theory rather than risk-averse strategic decision-making (Wiersema and Bantel, 1992; Chatterjee and Hambrick, 2007; Larraza-Kintana et al., 2007; Matta and Beamish, 2008; Seo and Sharma, 2013). Thus, studies that investigated how upper echelon theory has attempted to explain risk-averse strategic decision are scarce. Extending the upper echelon theory to account for risk-averse strategic decision-making presents exciting opportunities. This research aimed to explain risk-averse decision making using the upper echelon theory and chose franchising as a
representative case of a risk-averse strategic decision. In fact, Combs et al. (2004) proposed the relationship between franchising decision and attributes based on the upper echelon theory. Despite their proposal, little research has been done to determine the association between the attributes of upper echelon theory and the franchising decision. Hence, this research applied upper echelon theory to risk-averse strategic decision making (franchising) and provided empirical evidence to support its utility in this area. Resource scarcity theory, agency theory, and risk-sharing theory offer the theoretical foundations to explain why franchising is regarded as a risk-averse strategy. Additionally, this study chose to study the restaurant industry because its economic contribution through franchising is the largest in the US as compared to any other industry, such as lodging and automobile service industries (Samadi, 2011; International Franchising Association, 2013).

In addition, Hambrick and Mason (1984) and Finkelstein et al. (2009) contended that the top management team (TMT) has better accountability for strategic decision making than the single influential player (e.g., CEO and founder of business) because the decisions of multiple players rather than single player are more likely to decide the direction of the organization. Despite of the importance of the TMT, few studies in the hospitality have adopted TMT to explain strategic decision-making. In other words, studies in the hospitality area have examined the characteristics of single CEO rather than TMT (Kim and Gu, 2005; Barber et al., 2007; Madanoglu and Karadag, 2008; Guillet et al., 2012, Guillet et al., 2013). Therefore, this research selected the TMT as the study subject to explain strategic decision-making of restaurant companies. This research also investigated the moderating role of internationalization.
Moreover, Hambrick and Mason (1984) showed that the risk inherent in strategic decisions influences the attributes of upper echelon theory. It indicates that top managers’ decisions are likely to be different in more risky conditions. Previous studies contended that international markets are more uncertain, and operating in these markets increases the operational risk of businesses (Mitchell et al., 1992; Matta and Beamish, 2008; Sun and Lee, 2013). These studies also suggest that companies are involved in riskier conditions as they operate more in international markets. Given the risky conditions of international markets, this study presumed that there was a moderating effect of internationalization on the relation between the attributes of the upper echelon theory and franchising decision. Hence, this study expanded the area of internationalization research to upper echelon theory as well as to the area of franchising.

**Practical implication**

This study suggests practical implications for industry practitioners. First, this study enhances the information related to how restaurant companies’ TMTs decide to franchise. Sun and Lee (2013) and Paek et al. (2013) suggested that companies that can predict the pattern of their competitors can create an advantage (e.g., efficient resource allocation and reevaluation of their own strategic decision) in the market. Given the results presented in this study, top managers of restaurant companies could predict the behavior of other players in the market, given the TMT profiles of competitors. Therefore, this information enables restaurant companies to decide whether they have to increase their franchising or not in a given market by being able to predict the behavior of their
competitors. By doing so, they could not only maintain an adequate franchising portfolio but also accomplish more efficient resources allocation. Prior studies have contended that maintaining an appropriate level of franchising dependency (Hsu and Jang, 2009; Moon and Sharma, 2014) and efficient resource allocation (Wernerfelt, 1984; Baird and Thomas, 1985; March and Shapira, 1987; Mahoney and Pandian, 1992; Peteraf, 1993) play a critical role to enhance the organizational performance. Results of this research could be used to accomplish a stronger competitive advantage in the market.

The results of this study could also help shareholders of restaurant companies to better manage their agents, the TMTs. That is, shareholders can manage the strategic decisions of agents using the profile of TMTs. For instance, if shareholders prefer a risk-averse strategic direction to a risk-seeking direction, shareholders can either choose older top managers or provide more tenure and the share ownership to their managers. On the contrary, if shareholders value risk-seeking decisions, they could select more educated top manager. In sum, results of this study could be valuable for shareholders. Theoretically, these results could also contribute to the management of the agency problem (Ross, 1973; Jensen, 1986; Fama and French, 2001; Larraza-Kintana et al., 2007; Haynes et al., 2014).

Limitations and suggestions for future research

This study is not without limitations. First, the sample is only restricted to publicly traded restaurant companies (e.g., McDonald’s corporation and Starbucks corporations), given the data availability in EXECUCOMP and COMPUSTAT.
Moreover, the sample was comprised of only companies in the US and this limitation could undermine the generalizability of the results. That is, the implications of this study are likely to be applicable only to restaurant companies in the US. If a similar study was conducted in a different geographical context (e.g., Asian, European, and African countries) or implemented using the information of private companies, the results could improve the generalizability and validity of this study. Hence, future studies could pursue these avenues of research to enhance the generalizability and validity of these results.

Second, data availability for this research was limited. The main source of franchising information, the main dependent variable of this research, was derived from annual 10K reports of the companies. Unfortunately, annual 10K only provided net franchising information, and therefore franchising decision could not be disaggregated. Therefore, the information was limited in that the closing stores and opened store could not be identified. If future research uses the disaggregated information, it could capture the franchising decision of restaurant companies more precisely, enabling more robust explanation of the franchising decision.

In addition, the opposite direction of effects of internationalization could be considered as the subject of future research. In other words, it would be valuable to examine how top managers of international restaurant companies (e.g., Tim Horton Inc.) decided to operate in the US. By examining the opposite direction, international market based restaurant companies could enhance the understanding of the upper echelon theory. Therefore, the results could encourage international market based restaurant companies to operate more actively in the US market. As a result, the entrance of international
restaurant companies could create more employment opportunities and increase its economic impact.

This study only considered franchising as a representation of a risk-averse strategic decision. Other than franchising, upper echelon theory could explain the motivation of different risk-averse strategic decisions, and possibly in other industry contexts. Therefore, future research could investigate another risk-averse strategic decision and choose other adequate industries as study contexts. By doing so, future research could expand the scope of upper echelon theory to account for more risk-averse strategic decisions.

Finally, future research needs to consider surveys or psychological constructs to guide data collection. Extant studies either used survey or psychological construct (e.g., greed of CEO and narcissism of CEO) to collect the information of top managers and showed their validity to account for the strategic decision (Li and Hambrick, 2005; Graffin et al., 2013). Since a survey was useful to investigate the psychological mechanism (e.g., attitude, value, and, intention, and decision) of top managers, it is recommended that the use of a survey for future researchers could further contribute to our understanding of TMT decisions. Even though upper echelon theory proposes the observable characteristics to explain the behavior of top managers, the available information in this study was constrained to understand their value and cognition for their strategic choice. Therefore, future studies could consider survey methods and psychological constructs to further investigate the motivation and characteristics of top managers.
References


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- Franchising and management contracts
- Risk management
- Payout policy in hospitality management
- Strategic management from upper echelon perspectives
- Corporate social responsibility