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## **Using Analytics to Identify How Restaurant CEO Overconfidence Affects Performance**

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## About the Author



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# Using Analytics to Identify How Restaurant CEO Overconfidence Affects Performance



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## Introduction

In the world of big data, data analysis has become extremely important in capturing meaningful insights from a tsunami of information. This is no exception in the hospitality world where plenty of interesting data can be retrieved through various operation reports created within businesses. From annual filings such as 10-K reports, to social media or customer reviews on websites, each business produces more than a sufficient amount of information every day that could help industry experts identify interesting insights about their customers, better understand the nature of the hospitality operation, and ultimately help businesses achieve success.

In a similar manner, business analytics has become one of the core tools among corporate/operation researchers in the field of hospitality management. I'd like to introduce one of my past studies that used business analytics to explain how CEO

attributes lead to firm-level performance. This paper was published in the Cornell Hospitality Quarterly in 2021.

### **Impact of Overconfident CEOs on Restaurant Performance (Kim & Jang, 2021)**

Overconfident individuals believe their knowledge, skills, and capabilities are better than they are (March & Shapira, 1987; Seo & Sharma, 2014). Therefore, they overestimate expected returns while underestimating the possibility of failure (March & Shapira, 1987). In this regard, highly confident CEOs are more likely to make aggressive investment decisions (Seo & Sharma, 2014). This implies that overconfident CEOs would substantially contribute to firm-level growth more than non-overconfident CEOs in the restaurant industry where a greater market presence leads to achieving economy of scale. Meanwhile, the high risk-taking behavior of overconfident CEOs also suggests that they are detrimental to firm-level profitability as their hubris often leads to investing in less-than-optimal projects with a higher possibility of failure.

Meanwhile, restaurant firms widely expand their market presence through a system of franchising (Hsu & Jang, 2009), since franchising enables franchisors to diffuse capital risk (Lafontaine & Bhattacharyya, 1995). This suggests that any high-risk decision-making by overconfident CEOs and the consequent outcomes could substantially be mitigated by franchising.

The analytical part of this research explored how to measure CEO overconfidence. To briefly elaborate, I used the stock option-based measurement to estimate CEO overconfidence which assumes that overconfident CEOs overestimate a firm's future performance and believe that the value of their stocks will continue to increase. Therefore, if a CEO is overconfident, he or she chooses to hold exercisable stock options longer after the vesting period despite the positive payoffs where the market price of exercisable stocks is at least 67% more than the exercise price (Malmendier & Tate, 2005a, 2005b, 2008).

**Table 1** displays the descriptive statistics of the main variables. As shown in Table 1, there are less (ratio-wise) overconfident CEOs in the franchise restaurant firms than the non-franchise firms. This may suggest that franchise firms which have already achieved economies of scale prefer hiring CEOs who are risk-averse to maintain the stability of the operation. This is also evident in the fact that full-service restaurants have hired more overconfident CEOs than quick-service restaurants.

*Table 1. Descriptive statistics*

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	Overconfident CEO	Non-overconfident CEO
Non-franchise restaurants	9.0%	4.4%
Franchise restaurants	32.1%	54.5%

In terms of empirical results, this study found that CEO overconfidence has a significant positive effect on firm growth, and franchising has a negative moderating effect on the relationship between CEO overconfidence and firm growth. This suggests that since franchising enables firms to expand their market presence with fewer assets compared to non-franchised restaurants, franchising negatively moderates the CEO overconfidence-growth relationship. It should be noted that firm asset size increases the most for non-franchised firms with overconfident CEOs, followed by franchise firms with overconfident CEOs, franchise restaurants with non-overconfident CEOs, and non-franchise firms with non-overconfident CEOs.

In addition, this study also found that CEO overconfidence has no significant effect on firm profitability. This result suggests that although overconfident CEOs may exploit more growth options, ultimately the effect of CEO overconfidence on profitability

remains minimal. Meanwhile, the study also revealed that franchising has a positive moderating effect on the relationship between CEO overconfidence and firm profitability. This implies that because franchising improves profitability through economies of scale and stable franchising fee collection, franchising positively moderates the adverse effect of CEO overconfidence on firm profitability. This means that franchising could be utilized as a financial buffer to mitigate the profit-aggravating decision-making of overconfident CEOs.

This study provides some crucial practical implications for the industry. First, this study found that CEO overconfidence significantly enhances firm growth but harms profitability in the restaurant industry. This suggests that CEOs' personal traits, such as overconfidence, are critically related to firm performance. Considering personal traits are not easily altered (Trevelyan, 2008), this result highlights the importance of corporate board's monitoring their CEOs. For instance, the board could control overconfident CEOs' adverse effects on firm profitability by linking their compensation to profitability indices rather than firm size. Second, the results of this study also showed that franchising positively moderates the adverse effect of CEO overconfidence on firm profitability. This result suggests that franchise restaurant firms are better situated than non-franchise firms in terms of maintaining profitability while pursuing firm growth through franchise expansion. In other words, franchising is a strategic tool that could mitigate the profitability-reducing risk associated with CEO overconfidence. This information will allow investors to better understand overconfident CEOs when deciding whether to hold or invest in restaurant stocks.

### **Closing Remarks**

It is a common misunderstanding that a strong mathematics and statistics background are required to perform appropriate business analytics. However, for hospitality management, statistics is a tool used to analyze data, which is only valid as long as it serves its purpose. What is more crucial for business analytics in today's hospitality environment is industry expertise that can develop hospitality-related ideas that require

the application of analytical tools. For this reason, it is becoming increasingly more important that both academics and industry professionals collaborate to ensure the best for the future of the hospitality industry.

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