Problem Sets 1: Summary of research interest

ECON833

Jaewoo Lee

My research of interest lies in buyer-supplier relationships. Now I've been working on one of those relationships, Franchisor-Franchisee relationship. My current research question of interest is how the implementation of Internet of Things (IoT) system impact franchisees' performance and what characteristics affect the effect of the system on the performance (i.e., moderating effect).

Franchising is one of the most popular business formats in the world. Many companies use it to facilitate the expansion of their business in geographically dispersed areas in a relatively short period time. It helps brand owners (i.e., franchisors) to mitigate vertical agency problems (but not eliminate) by allowing their franchisees to have the residual claimant in return for paying a certain set of fees to the brand owner for residual control rights including the use of the brand trademark and marketing some product or service developed and provided by them at a predetermined location [3, 10, 15].

There are, however, still discrepancies in goals between franchisors and franchisees. While franchisees do their best to maximize their wealth and use discretion for their convenience in their daily operations (e.g., failure to conform to stipulated quality standards and free riding on peer franchisees' quality management efforts) [4, 9], franchisors aim at maximizing the value of their trademark throughout their outlets [2]. Frachisors have employed different methods to control their franchisees' behavior to deter franchisees' opportunistic behavior such as sending monitors to individual franchised outlets, adding contract termination provisions [2, 4, 7, 8, 13]. Those efforts may face challenges (e.g., monitors' agency problem and monitoring costs due to physical distance), leading to failure to induce franchisees' to act in franchisors' interest. [1, 6, 12].

We argue that IoT technology can facilitate to monitor franchisees' behavior (i.e., what's happening at individual outlets) as well as help them with process management. IoT sensors enable users to collect automated real-time data at distributed locations and easily share them with different users through cloud platforms and smartphone apps. For example, in our research context, a Korean restaurant franchise network, the temperature of refrigerator and kitchen, and the acidity of kimchi are critical parameters in their product quality management. Information on those parameters can complement the franchisor's monitoring franchisees and give them insights on what action both parties should take to improve operations and product quality. Thus, our basic and fundamental hypothesis is:

The implementation of an IoT system improves franchisees' quality performance (e.g., customers' sensory evaluation of main entree.).

In addition, the relationship can be affected by different factors such as franchisees' trust in their franchisor [14], perceived cohesion among franchisees [5], franchisees' experience and physical distance from their franchisor [11], etc. Those variables will be addressed based on our further studies.

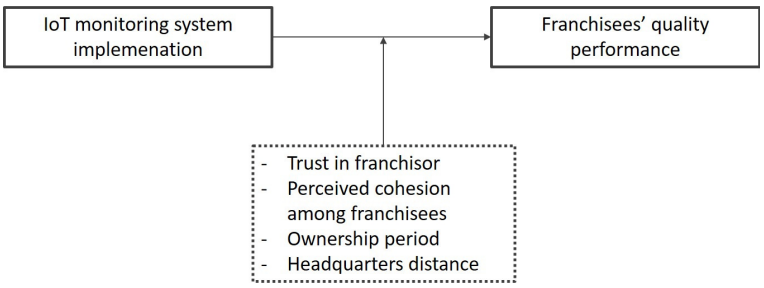

Figure 1: Framework

Figure 1 shows our basic framework including the main independent and dependent variables and moderators of interest.

The empirical model for the main hypothesis based a difference-in-differences design is:

$$Y_{it} = \beta_0 + \beta_1 W_{it} + \beta_2 G_{it} + \beta_3 T_{it} + \epsilon_{it} \tag{1}$$

where Y_{it} is performance, W_{it} is the product of IoT implementation(i.e., G_{it} =0,1) and post-implementation period (i.e., T_{it} =0,1).

We are going to conduct a field experiment with complete randomization to test our hypotheses in a Korean franchise restaurant context.

References

[1] Armen A Alchian and Harold Demsetz. Production, information costs, and economic organization. *The American economic review*, 62(5):777–795, 1972.

[2] James A Brickley and Frederick H Dark. The choice of organizational form the case of franchising. *Journal of financial economics*, 18(2):401–420, 1987.

[3] Richard E Caves and William F Murphy. Franchising: Firms, markets, and intangible assets. *Southern Economic Journal*, pages 572–586, 1976.

[4] James G Combs, Steven C Michael, and Gary J Castrogiovanni. Franchising: A review and avenues to greater theoretical diversity. *Journal of management*, 30(6):907–931, 2004.

[5] Assâad El Akremi, Karim Mignonac, and Rozenn Perrigot. Opportunistic behaviors in franchise chains: The role of cohesion among franchisees. *Strategic Management Journal*, 32(9):930–948, 2011.

[6] Karin Fladmoe-Lindquist and Laurent L Jacque. Control modes in international service operations: The propensity to franchise. *Management Science*, 41(7):1238–1249, 1995.

[7] Shelby D Hunt. Franchising: promises, problems, prospects. *Journal of Retailing*, 53(3):71–84, 1977.

[8] Rupinder Jindal. Reducing the size of internal hierarchy: the case of multi-unit franchising. *Journal of Retailing*, 87(4):549–562, 2011.

[9] Patrick J Kaufmann and Sevgin Eroglu. Standardization and adaptation in business format franchising. *Journal of Business Venturing*, 14(1):69–85, 1999.

[10] Francine Lafontaine. Agency theory and franchising: some empirical results. *The rand journal of economics*, pages 263–283, 1992.

[11] Brett Massimino and Benjamin Lawrence. Supersize me? franchisee size and voluntary compliance with corporate brand-building initiatives. *Journal of Operations Management*, 65(7):659–684, 2019.

[12] John W Pratt and Richard J Zeckhauser. Principals and agents: An overview. *Principals and agents: The structure of business*, 1:1–36, 1985.

[13] Paul H Rubin. The theory of the firm and the structure of the franchise contract. *The Journal of law and economics*, 21(1):223–233, 1978.

[14] Ayşe Elif Şengün and S Nazli Wasti. Revisiting trust and control: Effects on perceived relationship performance. *International Small Business Journal*, 27(1):39–69, 2009.

[15] Govert Vroom and Javier Gimeno. Ownership form, managerial incentives, and the intensity of rivalry. *Academy of Management Journal*, 50(4):901–922, 2007.