VOLUNTARY DISCLOSURE OF PERFORMANCE METRICS IN MARKETING CHANNELS

THREE ESSAYS ON VOLUNTARY DISCLOSURE OF PERFORMANCE METRICS IN MARKETING CHANNELS

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A Thesis Submitted to the School of Graduate Studies
in Partial Fulfilment of the Requirements for the Degree
Doctor of Philosophy in Business Administration

McMaster University DOCTOR OF PHILOSOPHY IN BUSINESS ADMINISTRATION

(2019) Hamilton, Ontario, Canada

TITLE: Three Essays on Voluntary Disclosure of Performance Metrics in Marketing Channels

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SUPERVISOR: Dr. Manish Kacker

NUMBER OF PAGES: x, 121

Lay Abstract

Distribution channel strategy has a long-term effect on firm performance, is associated with considerable irreversible costs, and can constitute a sustainable asset and competitive advantage for firms. Information asymmetry among the distribution channel members has been known as the basis of opportunistic actions in such exchange relationships. My dissertation research investigates drivers and consequences of information disclosure strategies and is focused on the firms' voluntary disclosure of performance metrics at the inter-firm relationship formation stage of developing marketing channels.

This dissertation consists of three inter-related essays. In the first one, I study drivers of voluntary information disclosures to prospective channel partners. Then, I investigate the performance consequences of such disclosures and their interactions with channel governance mechanisms such as screening, in the second study. Since firms are heterogeneous in the content of their disclosures, in the third study, I conduct a content analysis of the firm's disclosures to understand its influence on firm performance.

Based on Organizational Economics theories and Institutional Theory, I develop my theoretical frameworks and test them empirically using archival data. The empirical context for my work is the franchising industry because it is the most common type of partner-based retail system and is a significant component of the US economy as well as other developed countries and emerging economies.

The research findings offer both theoretical and practical implications for researchers and practitioners and contribute to the literatures on signaling and transaction cost theories as well as information disclosure and franchising.

Abstract

Research on Voluntary Information Disclosure (VID) has been of interest in several disciplines including, but not limited to, entrepreneurship, accounting, finance, law, and marketing. Although there has been extensive research on VID aimed at financial market investors, scant research in marketing exists on VID targeted at prospective business partners that can influence firm future performance significantly. Financial and marketing disclosures have been advocated for by investors and public policymakers as they mitigate the adverse selection problems between the firm and its stakeholders (e.g., investors, customers, and prospective channel partners). Managers are, however somewhat skeptical about its outcomes because of the cost of disclosures (i.e., ex-ante costs of collecting, processing and disseminating the information, ex-post costs of conflicts and litigations, competitive position and proprietary costs). My dissertation consists of three essays on *voluntary disclosure of performance metrics in marketing channels* and aims to enhance our understanding of the antecedents and consequences of such VIDs.

The first essay examines the antecedents of ex-ante VID for standardized contracts in marketing channels. Prior literature in accounting, entrepreneurship, and marketing has investigated drivers of information disclosures to analysts, investors, and customers. Nonetheless, this study bridges the gap in examining why some firms disclose information to prospective channel partners when it cost them to do so and makes the firms vulnerable to competitors. If the disclosure is a signal of quality, we are also interested in knowing whether it is a substitute for other signals of quality or a complement. I draw on signaling and institutional theories to develop a theoretical framework and empirically test it through econometric analyses of multi-sector panel data for the U.S. franchising industry. The results suggest that firms (e.g., franchisors) make such disclosures to prospective business partners (e.g., franchisees) in order to signal profitability of partnering, to attract financial and managerial resources, and develop their entrepreneurial networks. This study contributes to signaling theory literature by investigating organizational quality signaling, providing empirical evidence for drivers of multiple signaling and shedding light on the conflicting views on substitutability or complementarity of multiple quality signals. The study has implications for managers who wish to attract potential business

partners through signaling profitability of their business. Furthermore, there are some insights for regulators on the debate on making voluntary disclosures mandatory.

The second essay examines the performance consequences of i) signaling through ex-ante voluntary disclosure of performance metrics and ii) screening through selection standards, in the formation stage of new partnerships in marketing channels. It is essential for many entrepreneurial business networks to expand their channel by attracting business partners while still preventing low-quality partners from joining the network. However, information asymmetry between the two parties introduces a double-sided adverse selection problem to the relationship. In other words, the heterogeneous quality - the ability to perform the job - of each party (i.e. the focal firm or the prospective partner) is unknown to the other party. To date, most of the empirical studies have addressed the issue from only one side, either from the perspective of the buyer or the supplier, and have assumed that the other side is open to the relationship. However, in a selective inter-firm relationship that both parties have the option to select the other party, adverse selection problems should be resolved for both of them to enhance the performance of the partnership. To bridge this gap in the literature (i.e., to mitigate double-sided adverse selection problems), I propose a novel framework based on signaling and transaction cost theories. This study suggests and empirically examines a complementary effect of the simultaneous use of signaling and screening on the firm performance. I integrate secondary data from various sources to shape a unique multi-sector panel data set that allows for assessment of the effects of these predictors on firm performance over time through a rigorous econometric model. Contrary to some claims in the extant literature, the results demonstrate that rigorous screening process hurts the firm performance unless it is combined with a proper quality signaling mechanism. This study contributes to the B2B marketing literature and provides implications for practitioners by shedding light on the performance implications of channel governance mechanisms such as signaling and screening. Further, it provides empirical support for the effects of B2B marketing strategies on firm sales revenue growth.

The third essay looks closely into the voluntary disclosure of performance metrics. In the previous studies, the decision to disclose is operationalized as a binary variable of whether a firm discloses or not. In the absence of comprehensive regulation, disclosure strategies are subject to significant variation amongst firms, but can also vary over time within an individual firm.

Through a content analysis of disclosure documents and scrutiny of the different components that comprise them, I explore the impact of disclosure content on firm performance. This study attempts to reconcile conflicting views of managers, investors, analysts, and regulators. On the one hand, VID should positively impact firm performance through mitigating information asymmetry. On the other hand, skeptical managers make the argument that VID negatively impacts a firm's performance through costs of preparation, dissemination, potential litigation, and competition. Using a sample of publicly traded restaurant chains in the U.S., I empirically assess firm performance as a function of the disclosure strategy and its interactions with the firm's characteristics and governance mechanisms. I collect independent variables from the firms' disclosures through content analysis of public documents and obtain performance metrics of the firms in the stock market from Compustat. This study provides a novel context within which to investigate whether and how financial markets look at the firm's disclosure behavior in dealing with its prospective channel partners, and it contributes to marketing-finance interface literature.

My dissertation is positioned in the marketing strategy-entrepreneurship interface domain and is a multi-faceted study that looks at the phenomenon of VID from different angles and provides implications for several stakeholders.

Acknowledgment

First and foremost, I would like to express my immense gratitude to my supervisor, Dr. Manish Kacker, for his unfailing support and guidance since I was admitted to the Ph.D. program. His wisdom and patience were instrumental in my learning and progress throughout my Ph.D. tenure. Dr. Kacker's dedication, critical thinking, and prudence not only directed me during my Ph.D. studies but has also created a landmark for my future academic journey. Thank you Dr. Kacker for your kind help and support. Also, I would love to thank my dissertation committee members and the external examiner of my defense, Drs. Sourav Ray, Ruhai Wu, William Allender and Kersi Antia for their time and support as well as their constructive comments and suggestions that contributed to the improvement of my thesis.

Next, I would like to express my acknowledgment to all other faculty and staff members of the Degroote School of Business especially Deb Randall-Baldry and Kim Wilms for their valuable help. Also, I will remain thankful to my colleagues and friends in the Ph.D. program whose friendship and support was always my companion during this journey. I owe my sincere thanks to Drs. Raji Srinivasan and Josef Windsperger for their help and insights that have furthered my research and this dissertation.

Last but not least, I would like to thank my family specially my parents Ali and Tahereh and my dear wife, Pegah whose support and kindness have always been the source of my motivation. I owe Pegah my profound gratitude and sincere thanks for all her support and patience during these years. Thank you, Pegah for your love that has been the infinite source of my inspiration.

Farhad Sadeh, April 2019

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Chapter 1: Introduction

The primary focus of my research is on distribution channels strategy in business-to-business marketing. Distribution strategy has a long term effect on firm performance, is associated with considerable irreversible costs, and can constitute a sustainable asset and competitive advantage (Coughlan, Anderson, Stern, & El-Ansary, 2006; Purohit, 1997). Moreover, channel expenditures are a significant part of firms' cost, for example approximately 28% in pharmaceutical and 10% in automotive industry (Homburg, Vollmayr, & Hahn, 2014). Whereas distribution channel has been known as a prominent driver of firm performance, and a critical element of marketing strategy, it has not received enough attention from marketing researchers (Palmatier, Stern, & El-Ansary, 2014). Hence, my research looks at drivers and performance consequences of firms' channel strategies in the inter-firm relationship formation. Based on Institutional and Organizational Economics theories, I develop my theoretical frameworks and test them empirically using archival data. The franchising industry is my empirical context because it is the most popular manifestation of partner-based retail systems and has a huge impact on the US economy as well as other developed countries and emerging economies.

My dissertation research is focused on firms' voluntary disclosure of performance metrics at the inter-firm relationship formation stage of developing marketing channels. Drivers of voluntary information disclosure (VID) and its effects on firm performance have been investigated over 40 years in accounting (e.g., Chow & Wong-Boren, 1987; Raffournier, 1995; Verrecchia, 1983), finance (e.g., Craswell & Taylor, 1992; Diamond, 1985), marketing (e.g., Bayer, Tuli, & Skiera, 2017; Srinivasan & Sihi, 2012), law and economics (e.g., Grossman, 1981). However, there are still gaps in this literature, specifically regarding antecedents and

consequences of ex-ante VID to business partners that may have a significant impact on firm performance. Disclosure of proprietary information is a decision that entrepreneurs face when they need to attract participation from owners of valuable external resources. According to Healy and Palepu (2001), information asymmetry and agency conflicts between managers and external investors boost the demand for such disclosures. However, disclosures are not unambiguously value-increasing (by narrowing the information gap and lessening the cost of capital), but they have disadvantages and costs that make firms resistant to full disclosure (Hermalin & Weisbach, 2012). While this topic has been examined widely in capital markets, we seek to investigate it in marketing channels and particularly in the relatively novel and distinct context of franchising – here, the firm making disclosures is often looking to attract entrepreneurial participation from prospective franchisees (as opposed to only capital, debt or investments). The objective of my research is to investigate drivers of voluntary disclosure of performance metrics and to understand its performance outcomes for the firm in the relatively novel context of franchising. Therefore, my main research question is: "What are the Antecedents and Consequences of Voluntary Disclosure of Performance Metrics in Marketing Channels?"

I develop my theoretical frameworks grounded in organizational economic theories and test them using data from the U.S. franchising industry. Since its inception in the early 20th century, franchising has had a significant impact on retailing all over the world. According to IHS Economics (2016) franchising industry through 795,932 business establishments contributes more than nine million jobs and 552 billion dollars of GDP to the US economy. Similar patterns of economic influence have emerged in other developed countries – for example, in Canada, over 78,000 franchise system outlets employ in excess of a million people and account for over $100 billion in annual sales, about 40% of all retail sales and 10% of GDP (Canadian Franchise

Association, 2015). Under the U.S. franchise regulations, franchisors are supposed to disclose certain information to prospective franchisees through the Franchise Disclosure Document (FDD). In addition to the mandatory sections, this document includes a voluntary item, Financial Performance Representation (FPR), formerly known as earning claim. Compared to the U.S., the regulation of franchising in Canada is relatively new (e.g., legislation introduced in 2000 for Ontario and 2010 for Manitoba) and the establishment of the legal framework is at a comparatively nascent stage. For example, in British Columbia, a new Franchises Act has just come into force in 2017. Franchisor disclosure has always been a very important and challenging issue for the regulation, deployment and jurisdiction mechanisms and structures. Therefore, research in this area helps strategic decision making for both public policy makers and entrepreneurs in the franchising industry.

This thesis consists of three independent, but related studies and each study is supposed to be published as a standalone paper in scientific journals. Therefore, some overlap in the articles' sections such as literature review and methodology is unavoidable. However, each paper has its own contribution to the extant literature and takes part in the overall purpose of this thesis. Currently, the first essay (chapter 2) has been published in the Small Business Economic journal and the other two essays are being prepared for submission to high-quality marketing journals.

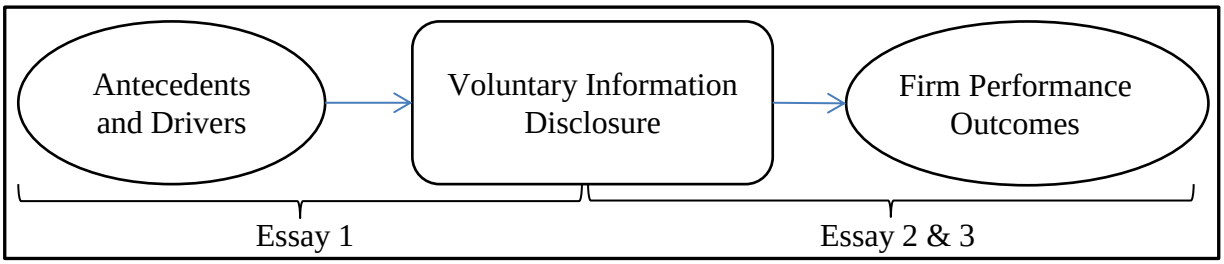

Figure 1: Overview of the Three Essays

As Figure 1 illustrates, the first study investigates the drivers of voluntary disclosure of the channel performance metrics. In the second study, I explore performance outcomes of the disclosure as a signal of quality and its interaction with the screening mechanism and transaction properties. The third study explores the effect of firm disclosure behavior and the content of the disclosure documents on firm performance. These three articles together aim to provide a novel overview of antecedents and consequences of ex-ante voluntary disclosure of performance metrics at the relationship formation stage of developing distribution channels. Such an overview has implications for marketing scholars as well as marketing practitioners and entrepreneurs who need to set their disclosure strategy for attracting new partners to their distribution channel.

In the first essay (chapter 2) grounded in signaling theory, I explore the drivers of VID in the form of FPR by franchisors. Grossman (1981) explains the information disclosure mechanism used by a more informed party (e.g., a seller) to persuade a less informed party (e.g., a buyer) about its implicit quality. Gallini and Lutz (1992) assert that a focal firm has better information about the profitability of the business than the prospective partner – so, the information asymmetry problem can be solved by the more informed party (the focal firm) through quality signals. Lafontaine (1993) offers the first empirical assessment of whether franchisors signal their quality to prospective franchisees. To enhance the extant literature and investigate the drivers of firm's ex-ante disclosure of performance metrics in B2B relationship formation, we develop a theoretical framework grounded in signaling theory to examine: i) whether disclosure strategy is associated with firm quality signaling to prospective partners; ii) whether multiple quality signals in a B2B context act as substitutes or complements, and iii) whether partner qualification is another predictor of information disclosure. We control the model for the cost of the signal, the degree of information asymmetry, environmental

uncertainty, institutional isomorphism and intensity of competition. We test our hypotheses using secondary, unbalanced panel data from Bond's Franchise Guides from 2001 to 2009. Bond's Franchise Guides have been publishing annually from 1985 to 2009, with some exceptions and have been widely used in the extant B2B literature and franchising research (e.g., Antia, Zheng, & Frazier, 2013; Gillis, Combs, & Ketchen, 2014; Kacker, Dant, Emerson, & Coughlan, 2016; Lafontaine & Blair, 2009; Lafontaine & Shaw, 1998, 2005). Our sample is an unbalanced panel of 8,152 observations from 1,639 franchisors of 44 industries over nine years. The average number of observations per firm is 4.97. Finally, in accordance with prior panel data analyses (Kosová & Lafontaine, 2010; Lafontaine & Shaw, 1999; Shane, Shankar, & Aravindakshan, 2006), we use fixed effects estimation to control for fixed effects of years and industry categories which is controlled in other franchising studies (e.g., Bates, 1995). Considering our binary dependent variable, we apply logistic regression to estimate our model. The results support our hypotheses that franchisors use VID for signaling the quality of their business and compensating for their rigorous qualification standard to accept the new franchisees.

In the second essay (chapter 3) we examine the performance implications of the VIDs. We claim that such disclosures mitigate information asymmetry between the focal firm and prospective partners and lead to better performance through lower ex-post transaction costs. Information asymmetry among the distribution channel members has been known as a basis of opportunistic actions in the exchange relationship (e.g., Mishra, Heide, & Cort, 1998). The inter-organizational relationship literature has suggested screening through selection processes as a mechanism for mitigating the information asymmetry and addressing the adverse selection problem (e.g., Bergen, Dutta, & Walker, 1992; Wathne & Heide, 2000). Although screening can alleviate the adverse selection problem of the focal party, it cannot solve this problem for the

other party. Therefore, such relationships face a *double-sided adverse selection* problem that is a critical issue in particular for firms that need to attract channel partners to develop their network and at the same time prevent low-quality partners from joining the channel, through qualification mechanisms that mitigates ex-post transaction costs such as monitoring and litigation (Stump & Heide, 1996; Wathne & Heide, 2000). This study proposes and examines organizational quality signaling through VID as a complementary mechanism to screening, in the presence of the double-sided adverse selection problem in an interfirm relationship. Based on the signaling and transaction cost theories, we hypothesize that the use of signaling and screening mechanisms at the formation stage of the new exchange relationships in distribution channels, influence firm performance, directly and through interactions that provides a synergistic effect. Also, we hypothesize that the interaction between screening and focal firm's specific investment as well as the interaction of signaling and partner's specific investment in the relationship, impact firm performance. We create a panel dataset by integrating Bond's Franchise Guides and Franchise Time magazine to build a unique dataset for this study. The performance measure is collected from Franchise Time magazine that annually publishes data from 200-300 franchise chains from several industries and has been used in previous research (e.g., El Akremi, Perrigot, & Piot-Lepetit, 2015; Kosova, LaFontaine, & Zhao, 2012). Our independent variables are collected from Bond's Franchise Guides. This combination provides us with a sample of 1620 observations from 354 franchisors of fifteen industries over nine years. The nature of our unbalanced panel data and theoretical framework imposes several limitations including attrition bias, endogeneity, and clustering effect. We address these constraints in our model specification by applying the *Conditional Mixed Process* (CMP), instrumental variables and a Heckman selection model. The CMP method introduced by Roodman (2011) fits seemingly unrelated regressions models for

recursive systems of equations and relies on simulated maximum likelihood methods including the Geweke–Hajivassiliou–Keane algorithm (Geweke, 1989; Hajivassiliou & McFadden, 1998; Keane, 1992). Applying CMP enables us to account for attrition bias and endogeneity through a system of simultaneous equations as explained below. The results support the idea that signaling and screening are complementary mechanisms in channel governance and they can enhance firm performance significantly when they are used together. Also, specific investment by the focal firm and its prospective partners moderate the effects of signaling and screening on the firm's performance. These findings contribute to the inter-organizational relationships literature by introducing the complementary effect of signaling and screening and provide implications for managers who need to develop their business network by a chain of high-quality partners. Also, the findings provide insights for entrepreneurs who are considering joining a marketing channel or a franchise network.

In the first and second essays, we examined the drivers and performance consequences of the VIDs as a dichotomous decision variable. However, our data and extant literature witness a significant heterogeneity in the content of the disclosure documents. Therefore, the third study is developed to investigate the effect of disclosure content on firm performance. Managers use financial reporting and disclosure for communicating the firm's current and future performance to external stakeholders. According to Bayer et al. (2017), analysts and investors advocate voluntary information disclosure, and regulators call for more disclosures frequently because they decrease uncertainty about future outcomes. However, disclosure costs and potential risks make managers reluctant to make voluntary disclosures. Therefore, research in this area can enhance our understanding about the performance consequences of such disclosures and help managers to make the optimal decisions. This study looks at the VID to prospective business

partners in a contractual B2B relationship. Given the principal-agent nature of these B2B relationships, agency theory and signaling can be an appropriate theoretical lens for building the conceptual framework. According to extant literature, firms need to communicate the strengths of their business to attract prospective partners (Grossman, 1981; Leland & Pyle, 1977). Ex-ante quality signaling through information disclosure mitigates information asymmetry between the parties and resolves the adverse selection problem (Mishra et al., 1998; Spence, 2002). Grounded in signaling and agency theories, we hypothesize the association of disclosure's content and attributes, and firm performance. We predict that the content of the disclosed information influences firm performance in the stock market in two opposite ways. First, through facilitating the prediction of cash-flow, and decreasing information asymmetry that leads to lower cost of capital, disclosure contents positively impact firm performance. Second, they hurt firm performance because of proprietary costs of disclosure and ex-post cost of potential conflicts and litigations. We test our theoretical framework by using a unique panel dataset of publicly traded U.S. franchise restaurants in the period of 2009-2017. We collected predictor measures through hand-coding of the franchise disclosure documents and stock market performance measures from the Compustat database. To address endogeneity and sample selection biases, we specified a Heckman selection model and applied the 2SLS estimator. The results show that each component of the disclosure documents can impact the firm's performance differently. For example, while disclosure of the outlet level sales revenue can hurt firm performance, the disclosure of the outlet level channel cost enhances firm performance. Also, we show that the source and content credibility of the disclosures moderates those effects. The results shed light on the controversial relationship between information disclosure and performance and the contrasting effects of a different component of disclosure documents on firm performance.

All in all, these three studies are developed in a way that they complement each other by shedding light on different parts of a big picture of antecedents and consequences of voluntary information disclosures. The relative independence and separation of the studies enable me to collect suitable datasets and apply appropriate empirical methods for each part of the main research question. Also, each study has its own implications for marketing scholars and managers while contributes to creating the above mentioned big picture as well.

References

Antia, K. D., Zheng, X., & Frazier, G. L. (2013). Conflict Management and Outcomes in Franchise Relationships: The Role of Regulation. *Journal of Marketing Research, 50*(5), 577-589. doi:10.1509/jmr.11.0144

Bates, T. (1995). A Comparison of Franchise and Independent Small Business Survival Rates. *Small Business Economics, 7*(5), 377-388.

Bayer, E., Tuli, K. R., & Skiera, B. (2017). Do Disclosures of Customer Metrics Lower Investors' and Analysts' Uncertainty but Hurt Firm Performance? *Journal of Marketing Research, 54*(2), 239-259. doi:10.1509/jmr.14.0028

Bergen, M., Dutta, S., & Walker, O. C. (1992). Agency Relationships in Marketing: A Review of the Implications and Applications of Agency and Related Theories. *Journal of Marketing, 56*(3), 1-24. doi:10.2307/1252293

Chow, C. W., & Wong-Boren, A. (1987). Voluntary Financial Disclosure by Mexican Corporations. *The Accounting Review, 62*(3), 533-541.

Coughlan, A. T., Anderson, E., Stern, L. W., & El-Ansary, A. I. (2006). *Marketing Channels* (7 ed.): Prentice Hall.

Craswell, A. T., & Taylor, S. L. (1992). Discretionary Disclosure of Reserves by Oil and Gas Companies: An Economic Analysis. *Journal of Business Finance & Accounting, 19*(2), 295-308. doi:10.1111/j.1468-5957.1992.tb00626.x

Diamond, D. W. (1985). Optimal Release of Information By Firms. *The Journal of Finance, 40*(4), 1071-1094. doi:10.2307/2328395

El Akremi, A., Perrigot, R., & Piot-Lepetit, I. (2015). Examining the Drivers for Franchised Chains Performance through the Lens of the Dynamic Capabilities Approach. *Journal of Small Business Management, 53*(1), 145-165. doi:10.1111/jsbm.12059

Gallini, N. T., & Lutz, N. A. (1992). Dual distribution and royalty fees in franchising. *Journal of Law, Economics, & Organization*, 471-501.

Geweke, J. (1989). Bayesian Inference in Econometric Models Using Monte Carlo Integration. *Econometrica, 57*(6), 1317-1339. doi:10.2307/1913710

Gillis, W. E., Combs, J. G., & Ketchen, D. J. (2014). Using Resource-Based Theory to Help Explain Plural Form Franchising. *Entrepreneurship Theory and Practice, 38*(3), 449-472. doi:10.1111/etap.12008

Grossman, S. J. (1981). The informational role of warranties and private disclosure about product quality. *Journal of law and economics*, 461-483.

Hajivassiliou, V. A., & McFadden, D. L. (1998). The Method of Simulated Scores for the Estimation of LDV Models. *Econometrica, 66*(4), 863-896. doi:10.2307/2999576

Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics, 31*(1–3), 405-440. doi:http://dx.doi.org/10.1016/S0165-4101(01)00018-0

Hermalin, B. E., & Weisbach, M. S. (2012). Information disclosure and corporate governance. *The Journal of Finance, 67*(1), 195-233.

Homburg, C., Vollmayr, J., & Hahn, A. (2014). Firm Value Creation through Major Channel Expansions: Evidence from an Event Study in the U.S., Germany, and China. *Journal of Marketing, 78*(3), 38-61

IHS-Economics. (2016). Franchise Business Economic Outlook for 2016. In: International Franchise Association Educational Foundation

Kacker, M., Dant, R. P., Emerson, J., & Coughlan, A. T. (2016). How Firm Strategies Impact Size of Partner-Based Retail Networks: Evidence from Franchising. *Journal of Small Business Management, 54*(*2*), 506-531. doi:10.1111/jsbm.12155

Keane, M. P. (1992). A Note on Identification in the Multinomial Probit Model. *Journal of Business & Economic Statistics, 10*(2), 193-200. doi:10.2307/1391677

Kosova, R., LaFontaine, F., & Zhao, B. (2012). *Scale, Scope, Ownership Changes, and Performance*. SSRN Working Paper. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1931021

Kosová, R., & Lafontaine, F. (2010). Survival and Growth in Retail and Service Industries: Evidence from Franchised Chains. *The Journal of Industrial Economics, 58*(3), 542-578. doi:10.1111/j.1467-6451.2010.00431.x

Lafontaine, F. (1993). Contractual arrangements as signaling devices: evidence from franchising. *Journal of Law, Economics, & Organization*, 256-289.

Lafontaine, F., & Blair, R. D. (2009). The Evolution of Franchising and Franchise Contracts: Evidence from the United States. *Entrepreneurial Business Law Journal, 3*(2), 381-434.

Lafontaine, F., & Shaw, K. L. (1998). Franchising growth and franchisor entry and exit in the US market: myth and reality. *Journal of Business Venturing, 13*(2), 95-112. doi:10.1016/S0883-9026(97)00065-7

Lafontaine, F., & Shaw, K. L. (1999). The dynamics of franchise contracting: Evidence from panel data. *Journal of Political Economy, 107*(5), 1041-1080. doi:10.3386/w5585

Lafontaine, F., & Shaw, K. L. (2005). Targeting managerial control: evidence from franchising. *RAND Journal of Economics, 36*(1), 131-150. doi:10.2307/1593758

Leland, H. E., & Pyle, D. H. (1977). Informational asymmetries, financial structure, and financial intermediation. *The journal of Finance, 32*(2), 371-387. doi:10.2307/2326770

Mishra, D. P., Heide, J. B., & Cort, S. G. (1998). Information asymmetry and levels of agency relationships. *Journal of marketing Research, 35*(3), 277-295. doi:10.2307/3152028

Palmatier, R., Stern, L., & El-Ansary, A. (2014). *Marketing Channel Strategy*: Pearson Education.

Purohit, D. (1997). Dual distribution channels: The competition between rental agencies and dealers. *Marketing Science, 16*(3), 228-245.

Raffournier, B. (1995). The determinants of voluntary financial disclosure by Swiss listed companies. *European Accounting Review, 4*(2), 261-280. doi:10.1080/09638189500000016

Roodman, D. (2011). Fitting fully observed recursive mixed-process models with cmp. *Stata Journal, 11*(2), 159-206.

Shane, S., Shankar, V., & Aravindakshan, A. (2006). The effects of new franchisor partnering strategies on franchise system size. *Management Science, 52*(5), 773-787.

Spence, M. (2002). Signaling in retrospect and the informational structure of markets. *American Economic Review, 92*(3), 434-459. doi:10.1257/00028280260136200

Srinivasan, R., & Sihi, D. (2012). Marketing Information Disclosures: A Review and Research Agenda. In S. Ganesan (Ed.), *Handbook of Marketing and Finance* (pp. 108-126). UK: Edward Edgar Publishing Limited.

Stump, R. L., & Heide, J. B. (1996). Controlling supplier opportunism in industrial relationships. *Journal of Marketing Research, 33*(4), 431-441. doi:10.2307/3152214

Verrecchia, R. E. (1983). Discretionary Disclosure. *Journal of Accounting and Economics, 5*, 179-194. doi:10.1016/0165-4101(83)90011-3

Wathne, K. H., & Heide, J. B. (2000). Opportunism in Interfirm Relationships: Forms, Outcomes, and Solutions. *Journal of Marketing, 64*(4), 36-51. doi:10.1509/jmkg.64.4.36.18070

Chapter 2: Essay 1

Quality Signaling through Ex-Ante Voluntary Information Disclosure in Entrepreneurial Networks: Evidence from Franchising[1]

Abstract

This paper examines the antecedents of ex-ante voluntary information disclosures for standardized contracts in entrepreneurial networks. Entrepreneurs (e.g., franchisors) may make such disclosures to prospective business partners in order to signal the profitability of partnering, attract financial and managerial resources and develop their entrepreneurial networks. In practice, only a fraction of franchisors make financial performance representations (FPR), an ex-ante voluntary information disclosure to prospective franchisees. We address gaps in the signaling, voluntary information disclosure, franchising, entrepreneurship, and small and medium enterprises (SME) literatures. We draw on signaling theory to develop a theoretical framework and investigate factors that influence a franchisor's disclosure decision. We evaluate hypotheses from our theoretical framework through econometric analyses of multi-sector panel data for the U.S. franchising industry. We estimate a logit model and use lagged independent variables to address our dichotomous independent variable and potential endogeneity respectively. Our results support the view that firms signal their quality through FPRs to attract potential business partners and expand their entrepreneurial networks. Beyond the extant literature, we find that rigorous partner qualification mechanism is another driver of voluntary information disclosure in franchising. Our findings also provide empirical support for the complementary role played by multiple quality signaling mechanisms used by franchisors and yield public policy implications for franchising.

Keywords: Marketing Channels, Retailing, Agency Theory, Franchising, Contracting, Voluntary Information Disclosure, Entrepreneurship, Signaling, Financial Performance Representations, Replication Studies, Econometrics Panel Data Modeling, Logistic Regression.

JEL Classifications: L14, L26, D22, K23, M38

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Introduction

When prospective investors assess a new business opportunity, one of the first questions that come to their minds is: "How much money can I make with this opportunity?" For example, when prospective franchisees consider buying franchising rights from a franchisor, they are likely to be interested in knowing how much money an average franchisee can make in that chain. In this regard, scholarly empirical research in franchising yields two important insights – the quality of the franchise business is very important for potential franchisees (e.g., Stanworth & Kaufmann, 1996) and franchisee expectations of the future value of the franchise business are frequently not met (Grünhagen & Dorsch, 2003). It is possible that franchisee dissatisfaction with unmet expectations can be traced to incomplete information available to prospective franchisees about the quality of the franchisor – this reflects the classical adverse selection problem in agency theory. Since there is no precise way to measure or guarantee future outcomes for new franchisees, franchisors may decide to voluntarily disclose some information about their current outlets' financial performance to signal the quality of their business concept.

The ex-ante voluntary information disclosure decision is typically faced by a variety of entrepreneurs and small and medium enterprises (SMEs) who grow by developing entrepreneurial networks and offer standardized contracts to resource owners who join these networks. Such entrepreneurial networks include not only well-established business models (such as franchising) but also newer economy networks (for example, sharing economy firms such as Uber and Airbnb). In this study, we want to learn what encourages or discourages firms to make such voluntary information disclosures to prospective members of their entrepreneurial networks. Additionally, we are interested in knowing whether such a disclosure is a signal of the quality of the business concept and if so, is it a complement to (or a substitute for) other signals

of quality. We draw on voluntary information disclosure, signaling, and franchising literatures (with an emphasis on research in the entrepreneurship and SME domains) to develop our theoretical framework and empirically evaluate our hypotheses using nine years of panel data from the U.S. franchising industry.

Voluntary disclosure of information to attract potential investors is a common practice in many financial, capital and other resource markets (Chow & Wong-Boren, 1987; Lardon & Deloof, 2014; Verrecchia, 1983). Information disclosures by firms have been the subject of extensive research in finance (e.g., Diamond, 1985; Keasey, Short, & McGuinness, 1992), accounting (e.g., Chow & Wong-Boren, 1987), law (e.g., Grossman, 1981) and marketing (e.g., Srinivasan & Sihi, 2012). We note two important gaps in this domain, particularly in the context of entrepreneurial networks and inter-organizational exchange relationships. First, there is room to enhance scholarly understanding of why some firms do not make voluntary disclosures of financial information to prospective exchange partners since hidden information can be interpreted as bad news (Milgrom, 1981). Second, there has been a debate in franchising and other literatures over whether disclosures of financial information should be mandatory or voluntary (e.g., Dye, 1985; Hershman & Mazero, 2008). We seek to address both these gaps in our study.

The signaling theory has been widely used to study exchange relationships characterized by the presence of information asymmetries. Spence (2002) provides multiple examples of the application of signaling theory for decreasing information asymmetry between two parties. Leland and Pyle (1977) argue that information differences are characteristic of markets and that entrepreneurs who have private information about their projects need to signal the quality of the project to resource suppliers. Backes-Gellner and Werner (2007) study how innovative

entrepreneurs signal their quality to financial resource owners. Extant research, grounded in signaling theory, has examined how firms signal their profitability through information disclosures to attract resources needed to develop their businesses (e.g., Grossman, 1981; Milgrom, 1981). According to Michael (2003), entrepreneurs can use voluntary information disclosures to signal their profitability and attract resources from external owners of resources. Given the importance of information in contemporary business models and exchange relationships, there are key gaps in the extant signaling literature that we aim to address. First, as Kirmani and Rao (2000) note, there is a relative paucity of empirical support for quality signaling, particularly with respect to entrepreneurial networks and business-to-business exchange relationships for SMEs. Second, there are different findings on whether multiple signals function as substitutes (Arthurs, Busenitz, Hoskisson, & Johnson, 2009; Gallini & Lutz, 1992; Lafontaine, 1993) or complements (Chung & Kalnins, 2001; Filatotchev & Bishop, 2002; Milgrom & Roberts, 1986). Although Kirmani and Rao (2000) present a theoretical typology for the use of multiple signals, this has not been empirically tested. Thus, there is a gap in our empirical understanding of when multiple signals serve as complements and when they work as substitutes.

We seek to address the above-mentioned gaps in the signaling and voluntary information disclosures in entrepreneurial networks using the context of franchising. Since its inception in the early 20th century, franchising has had a significant impact on retailing all over the world. IHS Economics (2016) estimates 795,932 franchised business establishments in the United States in 2016 that contribute more than nine million jobs and 552 billion dollars of GDP to the US economy. Similar patterns of economic influence have emerged in other developed countries. Furthermore, Michael (2014) empirically shows how franchising leads economic development in

developing nations. In the franchising literature, a relatively limited but growing body of research has examined franchisor signaling to prospective (e.g., Calderon-Monge & Huerta-Zavala, 2014; Fadairo & Lanchimba, 2013; Gallini & Lutz, 1992; Lafontaine, 1993; Lucia-Palacios, Bordonaba-Juste, Madanoglu, & Alon, 2014; Michael, 2009) and extant franchisees (Kacker & Wu, 2013). Michael (2009) examines the use of earnings claims[2] by franchisors to study cost, quality and competition-based predictors of signaling.

Our study aims to contribute to the extant entrepreneurship and SME literature on signaling, voluntary information disclosure, and franchising in multiple ways. First, we aim to shed light on the quality signaling role of voluntary information disclosure in a business-to-business context. Although research on this topic has been done in securities markets, there is room for a deeper understanding of this phenomenon in the context of inter-organizational entrepreneurial networks such as franchising. We empirically investigate the extant predictors of signaling behavior in the economics literature and suggest additional antecedents of signaling. Also, we provide insights on whether multiple quality signals act as substitutes or complements. Second, we seek to shed light on the issue of information disclosure regulation. There has been debate among public policymakers and other parties about the extent to which information disclosures should be mandatory. Progress in the understanding of what motivates voluntary information disclosures facilitates decisions on what information disclosures should be

[2] An earnings claim (an example of voluntary information disclosure by franchisors) is a document that franchisors use to provide some financial information to prospective franchisees. As of July 2007, the Uniform Franchise Offering Circular (UFOC) has been renamed as FDD (Franchise Disclosure Document) and earnings claims have been renamed as Financial Performance Representation (FPR) by the Federal Trade Commission (FTC). In this paper, when we refer to previous studies, we use the term ‘earnings claim’ instead of FPR to be consistent with the original source.

mandatory. In the context of franchising, such decisions can have a substantial impact on multiple stakeholders – governments, franchising-related businesses, and consumers. Finally, we seek to enrich the franchising literature by responding to the call from Michael (2009)[3] for testing his conclusions across multiple sectors – we use a relatively larger and newer panel dataset that covers numerous sectors. Panel data has several advantages over the cross-sectional data including but not limited to controlling for individual heterogeneity, less collinearity, more variability and efficiency, the better ability for constructing realistic behavioral hypotheses and uncovering dynamic relationships (Hsiao, 2014). Moreover, we extend his model by incorporating additional variables and alternative operationalizations of key constructs for capturing the effects of quality as well as examining the effects of partner qualification mechanisms on the provision of FPRs.

This paper is organized as follows. First, we review the literature on signaling theory, summarize the conceptual model in Michael (2009) and present our expanded theoretical model and hypotheses. This is followed by the presentation of our data, measurement, and empirical analyses that include a replication of the Michael (2009) model as well as a test of the

[3] We replicate this study for two reasons; First, many scholars submit that replication is a necessary procedure to verify theoretical insights from empirical studies (Honig, Lampel, Siegel, & Drnevich, 2014; Hubbard, Vetter, & Little, 1998; Tsang & Kwan, 1999). Second, Michael (2009) empirically tested his model using cross-sectional data from the restaurant industry. Research has shown significant differences between service and retail-type franchise chains (Barthélemy, 2008; Perrigot, 2006) and across different franchising sectors (Blair & Lafontaine, 2005). Our multi-industry multi-year dataset helps to test whether Michael's (2009) results are supported for other industries.

predictions of our expanded model. We conclude with a discussion of our results and the implications of our findings.

Theoretical Background and Framework

Since information asymmetry is at the heart of signaling theory, management researchers have applied signaling theory in a variety of research contexts characterized by it (Connelly, Certo, Ireland, & Reutzel, 2011). Signals are information that a receiver uses to predict the behavior of the sender. Thus, signals should transmit external information easily and should contain the quality and value of the signaled object (Lucia-Palacios et al., 2014). A good signal should be observable, irreversible, governed, credible and costly to imitate (Certo, Daily, & Dalton, 2001; Janney & Folta, 2006; Lee, 2001).

In the franchising literature, research has been done on signaling by franchisors. In their analytical model, Gallini and Lutz (1992) assume that the franchisor has better information about the profitability of the business than the franchisee – so, the information asymmetry problem can be solved by the more informed party (the franchisor) claiming an observable stake in the product's profitability. They relate their model to the analysis, by Leland and Pyle (1977), of profitability signals sent by entrepreneurs to attract potential shareholder investment in their project. Lafontaine (1993) offers the first empirical assessment of whether franchisors signal their quality by directly operating outlets and through contractual terms such as the royalty rate and franchise fee. Although she did not find empirical support for the use of franchise contract terms as a signal of profitability, Kacker, Dant, Emerson, and Coughlan (2016) and Shane, Shankar, and Aravindakshan (2006) subsequently find support for some previous signaling propositions. The latter claims that the lack of support for the signaling explanation in Lafontaine

(1993) is a result of measurement error. Calderon-Monge and Huerta-Zavala (2014) study the relationship between certain signals of quality from franchisors and the choice of a brand by prospective franchisees. Lucia-Palacios et al. (2014) is another contemporary study that demonstrates the effect of supporting services and contractual arrangement (as signals to attract prospective franchisees) on chain growth.

Michael (2009) indicates that many entrepreneurs use franchising to attract resources (e.g., financial and human resources, business location and physical assets) and resolve the agency problem between the local manager and the business owner. He investigates the use of signaling by entrepreneurs in the franchising context, by empirically examining franchisor use of earnings claims (now known as FPRs). Franchisors have an option to provide an FPR as a part of the Franchise Disclosure Document (FDD). Therefore, an FPR – a piece of information provided by the franchisor for disclosing an estimate of income – is a good example of voluntary information disclosure. In an FPR, a franchisor reports average sales and expenses and some other financial information, to enable a potential franchisee to estimate expected returns from her investment (Michael, 2009). Although the provision of an FPR is at the discretion of franchisors, they are forced by law to provide truthful information if they decided to provide it. Thus, an FPR is a source of credible information and has been used in a number of other studies (e.g., Clarkin & Rosa, 2005; Kaufmann, 1995; Michael, 1999).

To investigate franchisor behavior in disclosing information through FPR, we develop our model based on signaling theory. We build our model around quality signaling and partner qualification (for assessing the quality of prospective franchisees) as key predictors while controlling for the effect of other important factors.

Signaling Quality

The relationship between quality and signaling has been established in the information economics literature. Spence's (1973) seminal theoretical work shows how a job market applicant signals her quality (through higher education) to a prospective employer. Milgrom (1981) predicts that profitable firms that have good news are more likely to publish their information. Connelly et al. (2011) review more recent examples in the literature to illustrate how underlying quality is signaled by disseminating information about different dimensions of quality through a variety of means such as the ownership of stakes, display of resources and the inclusion of prestigious directors on the board. A franchisor sells franchise rights to franchisees, so the quality of its franchise concept impacts profitability for franchisees. Therefore, we argue that franchisors provide an FPR to signal profitability of their business concept to potential franchisees and, hence, we expect a higher likelihood of making FPR for the franchisors with a higher quality of the business. Since there is no global, precise and readily available measure of franchisor quality, we search for other signals of quality that have been established in the extant literature to see whether there is an association between them and voluntary information disclosure in the form of FPRs.

Ongoing Fees: The relationship between price and quality and the use of price as a signal of unknown quality have been the subject of many studies in the economics literature (e.g., Bagwell & Riordan, 1991; Milgrom & Roberts, 1986; Nelson, 1970). In the franchising literature, Gallini and Lutz (1992) proposed royalty rates as a signal of franchisor quality for franchisees. According to Kacker et al. (2016), these ongoing fees facilitate a franchisor's provision of continuing support and advertising services that build and promote the chain's brand. Brand equity and a franchisor's ongoing efforts to promote the brand name are important

indicators used by prospective franchisees for choosing a franchisor (Guilloux, Gauzente, Kalika, & Dubost, 2004). There is considerable support in the literature for the view that ongoing fees are positively related to the franchisees' business profitability and that they are indicators of franchisor's expenditure for product differentiation and future level of services provision (Kacker et al., 2016; Lafontaine, 1992; Michael, 1999, 2009).[4] In his property rights view of franchising fee structure, Windsperger (2001) notes that franchisors with higher intangible assets, such as brand name and know-how, request higher royalties as residual income rights. Given these links between ongoing fees and franchisor quality and between franchisor quality and the likelihood of a franchisor making an FPR, we posit:

H1a: The higher the ongoing fees charged by a franchisor, the higher the likelihood that the franchisor will make an FPR.

This hypothesis (as well as a number of subsequent ones) implies a complementary and mutually reinforcing relationship among signals of quality. Thus, the quality signaling effect of ongoing fees charged by a franchisor can be direct (Gallini & Lutz, 1992) as well as indirect, in terms of influencing the likelihood of other signals such as FPR being made (Michael, 2009). This is consistent with other signaling models (Milgrom & Roberts, 1986) and empirical studies

[4] Price (2000) examines the effect of contractual payments on the likelihood of making an earnings claim. She reports a positive relationship between contractual payments (including the royalty rate) made by franchisees to the franchisor and the franchisor's likelihood of making an earnings claim. It should be noted that she views contractual payments (including ongoing fees) as a measure of the franchisee's investment risk rather than as an indicator of franchisor quality. This perspective may not fully recognize the initial and ongoing services (provided by the franchisor to franchisees) that correspond with initial and ongoing contractual payments.

(Chung & Kalnins, 2001; Filatotchev & Bishop, 2002) that have incorporated multiple signals of quality.

If we assume that franchisors duplicate their message by using multiple signals, it is possible that these different signaling mechanisms can serve as substitutes. A number of researchers have considered multiple signals as substitutes (e.g., Arthurs et al., 2009; Gallini & Lutz, 1992; Lafontaine, 1993). Using this rationale, we develop a competing hypothesis[5] and posit that a franchisor who signals its quality by charging high ongoing fees does not need to signal quality through the provision of an FPR. Therefore,

H1b: The higher the ongoing fees charged by a franchisor, the lower the likelihood that the franchisor will make an FPR.

Commitment to Industry Standards: Akerlof (1970) argues that licensing and certification reduce uncertainty around quality. In economics and strategic management, there is a large body of literature that supports signaling quality through third-party certification and commitment to standards. For example, Terlaak (2007) examines 'certified management standards' as a potential signal of quality, since they are less costly to acquire for firms with higher quality standards. According to Montiel, Husted, and Christmann (2012), attaining such certifications are costly and act as a quality signal; however, implementing these standards without the third-party certification are not considered signals since they are costly to observe.

[5] This approach of using competing hypotheses has been used in extant research in franchising (e.g., Hendrikse, Hippmann, & Windsperger, 2015) and entrepreneurship (e.g., Strotmann, 2007) and enhances the objectivity and rigor of theory testing (Armstrong, Brodie, & Parsons, 2001). It has its roots in the 'Strong Inference' model of inductive-reasoning based scientific inquiry (Platt, 1964) and recognizes the limitations of scientific inquiry grounded in single hypotheses (Chamberlin, 1897).

Therefore, considering the commitment to industry standards as a quality dimension, we posit that:

H2a: A franchisor's commitment to industry standards is positively associated with the likelihood of the franchisor providing an FPR.

Again, assuming signals are substitutes, we can posit a competing hypothesis that if franchisors can signal their quality through Commitment to Industry Standards, they should be less likely to provide an FPR. Support for this competing hypothesis is also provided by Price (2000), who posits that franchisors with better reputations are less likely to voluntarily disclose their earnings information.

H2b: A franchisor's commitment to industry standards is negatively associated with the likelihood of the franchisor providing an FPR

Complexity: Complexity of the business concept is defined by Shane (1998) as the number of services provided by the franchisor to support the chain members – these include services such as (but not limited to) central data processing, central purchasing, and field training. Kacker et al. (2016) posit that these supporting services can differentiate the business concept, enhance brand equity and serve as a quality signal of the business concept. Kaufmann and Dant (2001) conclude that franchisors who invest in promoting their brand and providing high levels of training to support their brand also offer high levels of ongoing support. Therefore, they considered the amount of training by franchisor as an indicator of quality. Some other researchers have also viewed a franchisor's services and training as an indicator or cause of quality (Justis & Chan, 1991; Luangsuvimol & Kleiner, 2004). Thus, we posit that:

H3a: The greater the complexity of a franchisor's franchise concept, the higher the likelihood of the franchisor making an FPR.

Again, we present a competing hypothesis, based on the notion that signals of the quality act as substitutes.

H3b: The greater the complexity of a franchisor's franchise concept, the lower the likelihood of the franchisor making an FPR.

Concept Development Time: According to Aldrich and Auster (1986), new and younger firms are faced with high failure risk that diminishes as they spend time on organizational learning and developing their organizational processes and routines. Kacker et al. (2016) posit that franchisors who spent more time in developing their business concepts before commencing franchising are more likely to create unique and strong franchise concepts and be in a better position to fully dedicate their resources to monitoring franchisees and safeguarding the brand once they start franchising. Thus, they view concept development time as a signal of franchisor quality. Lafontaine (1993) views the number of years a franchisor was in business before commencing franchising as a measure of reputation. She notes that years of operation prior to franchising – years that franchisors have spent in developing their business concepts – is evidence of their success and the value that franchisor brings to the business by itself. Therefore:

H4a: The longer a franchisor's concept development time, the higher the likelihood of the franchisor providing an FPR.

Continuing with the rationale of substitute signals advanced in previous sections, we also posit the following competing hypothesis:

H4b: The longer a franchisor's concept development time, the lower the likelihood of the franchisor providing an FPR.

The fraction of Ownership: Leland and Pyle (1977) model a capital market where entrepreneurs search for financing for their project with unknown quality. They claim that entrepreneurs signal favorability of a project to market through their fraction of ownership of it. Grounded in transaction cost economics, Hsieh, Lazzarini, Nickerson, and Laurini (2010) show that ownership of downstream processes facilitates controlling and monitoring and this that to better process quality (in terms of lower variability and higher reliability).

In the franchising literature, Gallini and Lutz (1992) show how company ownership acts as a way of convincing potential franchisees about the profitability of the business. Sorenson and Sorensen (2001) empirically show that franchisor-owned units contribute to chain growth and stability more than franchised units do. Based on the theoretical rationale of underinvestment in shared assets because of potential opportunism, free riding, and conflict, Michael (1999) shows that franchising (measured as the percent of franchised outlet in a chain) is negatively associated with investment in advertising and this hurts shared assets such as the chain's brand value. Michael (2000) empirically shows the effects of ownership on quality for the hotel and restaurant industry. He argues that, as a residual claimant of the business, a franchisee's individual effort on quality compensates the whole chain and hence the franchisee does not gain the entire benefit of her efforts. This is an externality that encourages free-riding by other members of the chain, adversely impacting quality. Building on these theoretical rationales, Michael (2009) argues that franchisors are more likely to keep ownership of outlets when they are more profitable. Thus, we posit:

H5a: The higher a franchisor's fraction of ownership, the higher the likelihood of the franchisor providing an FPR.

There is a counter-argument, in terms of viewing an FPR as a substitutable signal of quality. This leads to the following competing hypothesis:

H5b: The higher a franchisor's fraction of ownership, the lower the likelihood of the franchisor providing an FPR.

Partner qualification

Signaling profitability of the business through information disclosure enlarges the pool of both low and high-quality applicants. Although such disclosures alleviate the adverse selection problem for the partner (Mishra, Heide, & Cort, 1998), it increases the same risk for the discloser because it attracts many low-quality applicants. When a franchisor faces an adverse selection problem in evaluating potential franchisees who want to join the franchise network, she can overcome this problem through rigorous qualification requirements for new franchisees (Kacker et al., 2016). However, the use of such requirements reduces the pool of prospective franchisees and creates a greater need for the franchisor to compensate them for investment risk and remain attractive compared to other opportunities available to them. Seshadri (2002) defines the favorability of external agency as a latent variable and hypothesizes that it is positively related to the minimum-net worth required of the potential franchisee. He argues that a high level of required net worth decreases the number of qualified applicants. In order to attract these qualified applicants, a franchisor may need to make an FPR to mitigate that negative effect and increase the attractiveness of the franchising opportunity. Kacker et al. (2016) posit that the initial fixed fees paid by franchisees to the franchisor are also a tool to alleviate the adverse

selection problem posed by new franchisees. High initial fixed fees serve as a mechanism for screening and qualifying potential franchisees. By using them, a franchisor can decrease the likelihood of franchisee opportunism and ease the adverse selection problem posed by prospective franchisees (Stump & Heide, 1996). Price (2000) specifically considers such fees as measures of the franchisee's investment risk. Therefore, we posit:

H6: The greater the rigor of a franchisor's qualification requirements, the higher the likelihood of the franchisor providing an FPR.

Empirical Analyses

Data

We test our hypotheses using secondary, unbalanced panel data from Bond's Franchise Guides from 2001 to 2009. Bond's Franchise Guides have been publishing annually from 1985 to 2009, with some exceptions. This is a survey-based database of more than 1000 franchise chains in the U.S. and Canada and has been widely used in extant franchising research (Antia, Zheng, & Frazier, 2013; Gillis, Combs, & Ketchen, 2014; Kacker et al., 2016; Lafontaine & Blair, 2009; Lafontaine & Shaw, 1998, 2005). We excluded Canadian franchisors (constituting about 10 percent of the data) from the dataset because our assumptions about FPR are based on U.S. regulations. The sample is an unbalanced panel of 8,152 observations from 1,639 franchisors of 44 industries over 9 years. Average number of observations per franchisor is 4.97. Table 1 contains details of our variables and constructs' operationalization.

Insert Table 1 about here

Dependent Variable

The dependent variable in our framework is whether the franchisor provides an FPR. Therefore, we operationalize it as a binary dichotomous variable with a value of one when a franchisor provides an FPR and zero otherwise. Although there may be some variations in the content of FPRs across franchisors, investigating them is beyond the scope of this study. We believe this operationalization does not hurt our conclusions since our goal in this study is finding what makes franchisors decide to provide or not provide an FPR.

Independent Variables

Quality

Since we do not have access to a direct measure of quality, we hypothesized a relationship between dimensions of the quality and the dependent variable. In this section, we explain how those dimensions are measured.

Ongoing fees: A franchisee usually pays ongoing fees (such as royalties and advertising fees) to a franchisor. To capture all ongoing fees, we operationalize them through the summation of the royalty rate and the advertising fee.

Commitment to Industry Standards: Lafontaine (1993) notes that, in addition to royalty rates and franchise fees, there may be other ways for franchisors to signal their quality. She mentions the International Franchise Association (IFA) membership as an indicator of franchise chain quality because it entails respecting certain criteria and a code of ethics. Sen (1993) suggests that IFA membership decreases chain-specific risks. IFA's code of ethics and its training and supporting programs increase the quality of its members. Hence, we operationalize the franchisor's commitment to industry standards through their IFA membership status. This

operationalization takes the form of a binary variable, with a value of one for IFA members and zero otherwise.

Complexity: We measure the complexity of the business by counting the number of supporting services provided by the franchisor to franchisees (Kacker et al., 2016; Shane, 1998).

Concept Development Time: Many franchisors start their chains by initially operating owned units and subsequently opening franchised units. Lafontaine and Shaw (1998) find that business experience before franchising is a primary factor affecting franchisor survival and growth. They argue that years of operation prior to franchising – years that franchisors have spent on developing their business concepts – is evidence of their success and the value that the franchisor brings to the business by itself. In a later study (Lafontaine & Shaw, 2005), they used the number of years in business that the franchisors spent on developing their system before they began to franchise as a measure of the value of the brand. Consistent with the extant literature, we measure this construct using the number of years between initiation of the business and the first franchisee sale.

The fraction of Ownership: Franchisors often simultaneously manage some outlets by themselves and sell ownership rights for other outlets to franchisees. We measure this variable as the proportion of all outlets that are owned and operated by the franchisor.

Partner Qualification

Consistent with the rationale that is presented for H6, we measure the rigor of a franchisor's qualification requirements through the minimum-net worth required of the potential franchisee and the amount of the initial franchise fee.

Control Variables

In modeling the impact of quality on signaling, it is necessary to control for the effect of other potential drivers (Rostamkalaei & Freel, 2016). Signaling theory suggests cost and competition as other factors that may influence the signaling decision (e.g., Cheong & Kim, 2004; Connelly et al., 2011; Grossman, 1981; Michael, 2009; Milgrom, 1981). Since we focus on quality signaling through voluntary information disclosure, we control for cost and competition. ***Cost of Signal*** consists of ex-ante costs of gathering and processing the information to be disclosed, ex-post costs of potential litigations related to the FPR. We measure these costs using the size of the chain – this is a proxy for capturing ex-ante costs (precision of the information) and ex-post costs (number of potential litigants, the likelihood of leakage of proprietary information as well as access to resources for deterring and fighting potential litigation and leakage of proprietary information). ***Competition*** is defined here between franchisors in the same industry to attract a potential franchisee who has chosen an industry sector (Michael, 2009; Stanworth & Kaufmann, 1996). We measure competition in two ways – market share and two-firm-concentration ratio[6].

Multi-unit Franchising. Some franchisors permit existing franchisees to add additional units and/or pursue conversion franchising. These franchisees typically have more information about the profitability of new franchised units than prospective franchisees that are new to the chain. Bagwell and Riordan (1991) demonstrate a decline in the use of high prices as signals of

[6] We used this measure since it is suggested as a better measure by Golan, Judge, & Perloff (1996) and Kwoka (1979) and allows us to be consistent with Michael (2009). To assess the robustness of our model, we also estimated it using the more common four-firm-concentration measure. Our estimation results revealed that the empirical support for our hypotheses was not affected by this change.

quality when the number of informed consumers increases and the degree of information asymmetry decreases. With the same reasoning, it can be argued that when franchisors allow for additional units and/or conversion there will be a higher proportion of informed customers in their market. In such a situation, franchisors may have a relatively weaker incentive to provide FPR. Therefore, we control for this effect in our model using two dummy variables.

Institutional Isomorphism is another factor that impacts the disclosure decision. Michael (2009) hypothesizes that franchisors claim when their industry competitors or a highly visible competitor chooses to claim. Thus, we account for this effect through two control measures – the number of competitors who make FPRs and a dummy variable with the value of one if the market leader makes FPR and zero otherwise.

We also control for the effect of ***Environmental Uncertainty*** since it impacts the cost of signaling[7]. Consistent with existing empirical work in franchising (e.g., Hendrikse & Windsperger, 2011; López-Bayón & González-Díaz, 2010), we use contract duration to measure this construct. Extant research has shown that there is a relationship between contract duration and environmental uncertainty. However, there are conflicting rationales and evidence about whether the relationship is negative (Crocker & Masten, 1988; López-Bayón & González-Díaz, 2010) or positive (Hendrikse & Windsperger, 2011). Since this is a control variable in our model, we do not hypothesize any direction for its effect on the voluntary information disclosure decision.

[7] We thank an anonymous reviewer for this insight.

Table 1: Constructs, Variables and Operationalizations

Construct/ Factor	Variable	Operationalization
Information Disclosure	Provision of FPR	Binary variable with a value of one if the franchisor provides an FPR and zero otherwise.
Quality	Ongoing fees	Sum of the Royalty Rate and Advertising Fee. Both of them are expressed as a percentage of sales and are paid by a franchisee to the franchisor on an ongoing basis.
	Commitment to Industry Standards	Dummy variable with a value of one if the firm is a member of IFA and zero otherwise.
	Complexity	Counting the number of supporting services provided by the franchisor to franchisees: Central Data Processing Central Purchasing Field Operations Evaluation Field Training Initial Store Opening Inventory Control Franchisee Newsletter Regional or National Meetings 800 Telephone Hotline (Source: Kacker et al., 2016; Shane, 1998)
	Log Concept Development Time	Natural logarithm of the number of years between business establishment and first franchise sale. (Source: Kacker et al., 2016; Lafontaine & Shaw, 1998)
	Fraction of Ownership	Percent of outlets owned by the franchisor.
Partner Qualification	Log Min Net Worth	Natural logarithm of the minimum net worth (in USD thousands) that the potential franchisee should have.
	Log Initial Investment	Natural logarithm of the initial franchise fee (in USD thousands) required from franchisees by the franchisor.
Cost	Log total units	Natural logarithm of total number of units in the chain including franchised and owned units. Considering the ex-ante cost of gathering and processing the data and ex-post cost of potential litigations, we assumed that larger chains are more likely to afford the costs. We used logarithm as we expect this relative cost declines when chains get larger, at a decreasing rate.
Competition	Market Share	The proportion of all outlets in the industry category which associated with the franchisor.
	Two Firm Concentration	The proportion of all outlets in the industry category which associated with the two biggest chains in the industry.
Information Asymmetry	Degree of Information Asymmetry	Two dummy variables which are one if the franchisor agrees with having additional outlets for the same franchisee or conversion and zero otherwise.
Institutional Isomorphism	Does the market leader provide FPR?	Dummy variable with a value of one if the market leader makes FPR and zero if not.
	Log number of competitors who make FPR.	Natural logarithm of the number of other franchisors within the sector that provide FPR.
Environmental Uncertainty	Contract Duration	Average duration of the contract between franchisor and franchisees.

Methodology

Before testing our model and hypotheses[8], we replicate as much of Michael (2009) model as we can using our multi-sector panel dataset. This enables us to assess the robustness of his findings, which were based on empirical analyses of cross-sectional data from one sector (restaurants). In the replication portion of our empirical analyses, we use similar operationalizations to facilitate comparisons with the original work.[9] There are two exceptions. First, we did not have access to data on the percent of franchisees who failed, so we did not test the corresponding hypothesis. Second, instead of using final product sales data, we operationalize market share in a different manner. This is influenced by the availability of data as well as the view that the market here involves the sale of franchising rights to operate retail units. Thus, we follow Brickley, Misra, and Van Horn (2006) and calculate market share for a franchise chain as the number of outlets of the chain divided by total number of outlets in the industry. Table 2 and 3 contains descriptive statistics, correlations, and estimation results for the replication, using the same Probit regression method and our multi-sector panel dataset. Our results are largely consistent with those in the original study and serve as an indicator of the robustness of Michael's (2009) findings.

[8] Note that some of our hypotheses (H1a, H5a, H5b) are similar to hypotheses first developed and presented by Michael (2009).

[9] Michael (2009) measured cost of signal and ongoing fees with the number of owned units and royalty rate respectively.

Table 2: Descriptive Statistics and Correlations for Replication of Michael (2009) Model

No	Variable	# of Obs.	Mean	Std. Dev.	Min	Max	1	2	3	4	5	6	7	8	9
1	Does firm claim?	8,056	0.30	0.460	0.00	1.00	1.00								
2	Log of owned units	5,605	1.93	1.839	0.00	9.03	0.13	1.00							
3	Royalty	7,917	5.13	3.279	0.00	40.0	-0.01	0.00	1.00						
4	Percent owned	8,128	15.36	24.01	0.00	100	0.03	0.37	-0.01	1.00					
5	Market Share	8,130	0.05	0.104	0.00	0.96	0.04	0.32	-0.01	-0.11	1.00				
6	Two-firm concentration	8,150	0.51	0.216	0.17	1.48	0.00	-0.01	-0.02	-0.02	0.17	1.00			
7	Does market leader claim?	8,150	0.38	0.485	0.00	1.00	0.04	0.02	0.06	0.04	0.01	-0.01	1.00		
8	Log of percent who claim.	7,970	-1.32	0.507	-3.17	1.47	0.09	0.15	-0.08	0.06	0.03	0.00	0.13	1.00	
9	Log of number of competitors who claim	7,970	2.24	1.020	0.00	5.49	0.02	0.16	-0.03	0.02	0.27	-0.22	-0.06	0.52	1.00

Table 3: Michael (2009) Model Replication – Probit Estimation Results from Pooled Panel

	H1	H2	H3	H4	H5
Log of owned units	0.0801***	.0892***	.0862***	.0853***	.0801***
	(0.0094)	(.0095)	(.0102)	(.0100)	(.0094)
Royalty		-.0016			
		(.0057)			
Percent owned			-0.0011		
			(.0007)		
Market Share				-0.2559	
				(.1751)	
Two-firm concentration					0.0036
					(0.0780)
Log likelihood	-3486.3	-3380.5	-3485.1	-3485.2	-3486.3
Chi-squared test	72.40***	86.90***	74.71***	74.55***	72.40***
Degree of freedom	1	2	2	2	2

Notes: 1. Standard error is under coefficient. 2. Significance levels marked as * for 10%, ** for 5%, *** for 1%. 3. Constant not reported in this table to facilitate interpretation.

We enhance the model in the following manner. First, we focus on the quality signaling rationale and add new dimensions of quality to the model (i.e., Commitment to Industry Standard, Complexity, and Concept Development Time). Second, we introduce "partner qualification" as a new antecedent. Third, we control for many other predictors of signaling

behavior to disentangle the impact of quality factors on the signaling decision. Fourth, we use alternate and, in our view, more accurate operationalization for some of the focal constructs and control variables (e.g., ongoing fees, cost). Descriptive statistics and correlations for the expanded model are reported in Tables 4 and 5.

Table 4: Descriptive Statistics for Expanded Model

No	Variable	No. of Observations	Mean	Std. Dev.	Min	Max
1	Provision of FPR	8,056	0.303	0.460	0.000	1.000
2	Ongoing Fees	6,032	6.718	3.791	0.000	40.00
3	Commitment to Industry Standard	5,697	0.514	0.500	0.000	1.000
4	Complexity	8,152	6.585	1.762	0.000	11.000
5	Concept Development Time	6,869	1.607	1.130	0.000	4.860
6	Percent unit owned	6,395	14.643	23.021	0.000	100.0
7	Log Min Net Worth	6,122	5.074	1.143	0.000	9.616
8	Log Franchise Fee	6,172	3.061	0.642	-0.357	6.022
9	Log Total Units	8,130	4.453	1.719	0.000	10.40
10	Two Firm Concentration	8,150	0.495	0.174	0.186	1.000
11	Market Share	8,130	0.046	0.104	0.000	0.963
12	Additional Unit Agreement	8,044	0.847	0.360	0.000	1.000
13	Conversion	7,449	0.640	0.480	0.000	1.000
14	Market Leader FPR	8,150	0.379	0.485	0.000	1.000
15	Log No. of competitor with FPR	7,970	2.240	1.001	0.000	3.850
16	Contract Duration	7,877	11.128	5.120	0.000	40.00

We test the predictions of our expanded model using the multi-sector, panel data set. In accordance with prior panel data analyses (Kosová & Lafontaine, 2010; Lafontaine & Shaw, 1999; Shane et al., 2006), we use fixed effects estimation to control for fixed effects of years and industry categories which is controlled in other franchising studies (e.g., Bates, 1995). As discussed earlier, our binary dependent variable prevents us from using OLS. Additionally, we cannot use Probit estimation because it is biased for fixed effects estimation (Baltagi, 2008).

Table 5: Correlations for Expanded Model

No	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Provision of FPR	1.00															
2	Ongoing Fees	0.09	1.00														
3	Commitment to Industry Standard	0.20	0.10	1.00													
4	Complexity	0.10	0.10	0.09	1.00												
5	Concept Development Time	0.07	-0.06	0.05	0.02	1.00											
6	Percent unit owned	0.07	0.02	-0.06	-0.03	0.25	1.00										
7	Log Min Net Worth	0.18	0.09	0.22	0.13	0.11	0.26	1.00									
8	Log Franchise Fee	0.12	0.13	0.21	0.07	0.05	0.11	0.41	1.00								
9	Log Total Units	0.14	0.11	0.38	0.16	-0.05	-0.22	0.14	0.10	1.00							
10	Two Firm Concentration	0.06	-0.06	0.04	0.00	-0.06	-0.11	-0.13	-0.01	0.04	1.00						
11	Market Share	0.06	-0.01	0.19	0.08	0.00	-0.09	-0.05	0.08	0.50	0.25	1.00					
12	Additional Unit Agreement	-0.08	-0.06	-0.05	0.02	0.05	-0.03	-0.04	-0.09	-0.03	-0.04	-0.06	1.00				
13	Conversion	0.00	0.02	0.02	0.09	0.05	0.03	0.05	-0.06	0.08	-0.13	0.00	0.08	1.00			
14	Market Leader FPR	0.07	0.01	0.04	-0.01	-0.01	-0.03	-0.08	0.06	0.03	0.18	0.02	-0.09	-0.09	1.00		
15	Log No. of competitor with FPR	-0.03	0.10	-0.01	0.02	0.10	0.14	0.28	0.03	0.01	-0.43	-0.38	0.04	0.16	-0.13	1.00	
16	Contract Duration	0.05	0.10	0.09	0.07	-0.02	0.07	0.31	0.16	0.24	-0.13	0.03	-0.02	0.05	-0.11	0.22	1.00

Therefore we estimate our model using a Logit model. We considered royalty rate, advertising fee, franchise fee and IFA membership as endogenous variables because it can be argued that franchisors may make decisions about providing an FPR and those strategies simultaneously. Consistent with extant franchising literature (e.g., Combs, Michael, & Castrogiovanni, 2009; Gonzalez-Diaz & Solis-Rodriguez, 2012; Kacker et al., 2016; Lafontaine, 1992; Mitsuhashi, Shane, & Sine, 2008; Shane et al., 2006), we use lagged independent variables to account for endogeneity. Although these variables remain constant for many franchisors over several years, they are frequent strategic choices of the franchisor. In other words, a franchisor has the option to change contract characteristics every year; however, they may strategically decide to keep them unchanged. Therefore, the lagged variable is assumed exogenous since it is a decision that has been made in the last period.

Equation 1 shows our econometric model where i is the franchise system, t is the year, FPR is the binary variable for the provision of FPR, X_{it} is the matrix of exogenous variables, Z_{it-1} is the matrix of lag of endogenous variables, YEAR and CAT are sets of dummy variables for j years and n categories.

$$Logit\ FPR_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 Z_{it-1} + \sum_{J=s}^{E} \gamma_j YEAR_{jit} + \sum_{1}^{N} \delta_n CAT_{nit} + \alpha_i + \varepsilon_{it} \qquad (1)$$

Results

As illustrated by Table 6, the estimation results for our expanded model (Model 1) reveal that the model as a whole is significant at conventional levels. With respect to individual hypotheses, we observe that all focal quality hypotheses (H1a, H2a, H3a, H4a, and H5a) are supported. There is also partial support for H6 (partner qualification). We also note that the competing hypotheses (H1b, H2b, H3b, H4b, and H5b) are not supported. Although our results

support the signaling impact of ownership, Lafontaine and Shaw (2005) show that the proportion of owned units declines in early stages of franchising. They find that this percentage remains stable for franchisors with more than seven years of experience and at least 15 outlets. One implication of this finding is that fraction of ownership is an appropriate measure of quality only for franchise chains that have reached a threshold level of experience (7 years) and size (15 outlets). Therefore, we also estimated our model with data for this part of the sample only (Model 2 in Table 6).[10] When comparing the results for Model 2 to those for Model 1, we observe that there is no change in the significance of the variables, that there are larger coefficients for some variables and also a better overall model fit (Pseudo R^2).

Our results shed new light on the antecedents of information disclosure and quality signaling by franchisors. All coefficients of quality signals (H1a, H2a, H3a, H4a, H5a) are positive and significant – this indicates clear support for the quality signaling rationale. Furthermore, these results suggest complementarity in the use of multiple signals – franchisors that signal their quality through other mechanisms are more likely to also signal their quality with FPRs.

We hypothesized (H6) that franchisors use FPRs to diminish the negative effect of rigorous partner qualification standards that franchisors use to alleviate the adverse selection problem they face. In the empirical results, there is support for minimum net worth but not for the franchise fee. Considering the relatively high correlation between the two variables and lower

[10] We thank an anonymous reviewer for this suggestion.

variation in the franchise fee, it can be argued that minimum net worth has more ability to show the effects of rigorous partner qualification standards.

Table 6: Logit Estimation Results for Expanded Model (9 year panel data set)

			Model 1		Model 2†	
Log likelihood			-1593.161		-1367.301	
Chi-squared test			604.7***		571.6***	
Degree of freedom			61		61	
Pseudo R2			0.1595		0.1729	
Independent Variables	Hypothesis	Hyp. effect sign	Coeff.	St. Error	Coeff.	St. Error
Ongoing Fees	H1	+/-	0.051***	0.015	0.037**	0.016
Commitment to Ind. Stan.	H2	+/-	0.681***	0.101	0.705***	0.111
Complexity	H3	+/-	0.074**	0.029	0.070**	0.033
CDT	H4	+/-	0.146***	0.043	0.159***	0.047
Percent unit owned	H5	+/-	0.005**	0.002	0.006**	0.003
Log Min Net Worth	H6	+	0.249***	0.058	0.302***	0.063
Log Franchise Fee	H6	+	0.070	0.102	0.021	0.112
Control Variables						
Log Total Units			0.126***	0.040	0.132**	0.051
Two Firm Concentration			-0.564	0.491	-0.320	0.522
Market Share			-1.032	0.678	-1.131	0.751
Additional Unit Agreement			-0.400***	0.125	-0.425***	0.136
Conversion			-0.107	0.098	-0.120	0.106
Market Leader FPR			0.549***	0.153	0.605***	0.167
Log competitor with FPR			-2.939***	0.246	-3.129***	0.272
Contract Duration			-0.007	0.011	-0.003	0.012
Constant			4.935***	0.904	5.318***	1.013
No of Sig. Year dummies			4		6	
Year dummies joint Sig.			Yes***		Yes***	
No of Sig. Category dummies			40		41	
Category dummies joint Sig.			Yes***		Yes***	

Notes: * p<.1; ** p<.05; *** p<.01
† Model 2 shows the results for only a sample of franchisors with more than 7 years of experience and 15 units

Control variables. The significant effect of the cost of signaling is consistent with signaling and franchising literatures and supports the view that high cost is a barrier to signaling. No measures of competition have a significant effect. There is a significant negative coefficient for the addition of outlets but not for conversion – this suggests that franchisors who allow for

addition of outlets by their current franchisees have relatively lower incentives to disclose information through FPR. The significant effect of institutional isomorphism suggests that some signals result from imitative behavior rather than rational economic decision making. We do not observe a significant effect for environmental uncertainty.

Complementarity of Quality Signals

Our empirical analyses revealed positive effects of different quality constructs on the voluntary disclosure decision. To advance our understanding of using multiple signals, we categorized the six signals in our model using the Kirmani and Rao (2000) signal classification typology (Table 7). Kirmani and Rao (2000) posit that when signals belong to different categories, they work as complements.

Table 7: Signal Classification Results

Type / Signal	Default-Independent Signals		Default-Contingent Signals	
	Sale-Independent	Sale-Contingent	Revenue-Risking	Cost-Risking
FPR				✓
Ongoing Fees			✓	
Commitment to Ind. Standard	✓			
Complexity		✓		
Concept Dev. Time	✓			
Ownership Fraction			✓	

For the classification of quality signals in our study, we prepared an explanation of the signals as well as a classification procedure and asked five researchers (familiar with franchising literature and signaling theory) to classify the signals. We calculated the inter-rater reliability of the results as Krippendorff's alpha of 0.83, based on Hayes and Krippendorff (2007). FPR classification was the only inconsistent result and resolved after discussion between raters and the researchers. Considering the high ex-post costs associated with FPRs, it was classified as a default-contingent signal. All other signals were classified as default-independent (except

ongoing fees and ownership that are classified as revenue-risking default-contingent signals). Although an FPR is in the same primary type as ongoing fees, it is different in that it is a cost-risking (rather than a revenue-risking) default-contingent signal. Thus, the signals are spread across different types, and there is no other revenue-risking, default-contingent signal (in addition to an FPR). Consequently, the other quality signals in our framework are complementary to FPR.

Discussion and Implications

Discussion

This study is aimed to explain voluntary financial information disclosure as a signal of quality and elaborate on its relationship with other signals of quality. While much of the extant entrepreneurial signaling literature is focused on the personal characteristics of entrepreneurs, board members or underwriters as signals of quality (e.g., Asoni & Sanandaji, 2016; Backes-Gellner & Werner, 2007; Williams, Duncan, & Ginter, 2010), we concentrate on organizational strategies and attributes that can be used as a signal of quality by entrepreneurs who want to develop their businesses through franchising. In contrast to Michael (2009), we find strong support for the quality signaling rationale for making an FPR when we use additional measures of quality (Commitment to Industry Standards, Complexity and Concept Development Time) along with an enhanced measure of ongoing fees. Our finding that higher quality franchisors are more likely to make an FPR also supports the idea of multiple quality signals working as complements rather than substitutes. Our analyses also reflect Kirmani and Rao's (2000) suggestion that signals from different categories work in a complementary manner. To our knowledge, this analysis provides the first empirical valuation of Kirmani and Rao's position on

the complementarity of signals and, in doing so, offers a possible mechanism for reconciling divergent results in extant research – some empirical studies find signals functioning as substitutes (e.g., Arthurs et al., 2009; Lafontaine, 1993) while others find them working as complements (Chung & Kalnins, 2001; Filatotchev & Bishop, 2002).

Our results also provide some support for the relationship between partner qualification processes and provision of FPR. This not only reflects agency theory prescriptions for franchisor alleviation of the adverse selection problem posed by prospective franchisees but also is consistent with the transaction cost theory literature about partner screening and selection process. According to Wathne and Heide (2000), increasing the rigor of the selection process by imposing selection costs on a partner can be a good strategy for managing opportunism. Although high qualification standards shrink the pool of franchisee applicants, signaling profitability of business through FPR attracts high-quality franchisees.

Implications

This study has theoretical, managerial and policy implications. We make contributions to scholarly research on signaling, voluntary information disclosure, franchising, entrepreneurship, and SMEs, provide managerial implications for franchising practitioners and offer public policy insights on the issue of voluntary versus mandatory information disclosure in franchising.

We contribute to signaling theory in multiple ways. First, whereas much of the empirical research on entrepreneurship looks at quality signals in securities markets and the issue of attracting investors to a firm's stock, this study considers quality signaling to prospective entrepreneurial network partners in franchising. In addition to differences between the two contexts in terms of forms, risks, and benefits, the ability to study quality signals over time as a

longitudinal process (instead of one shot IPO events) is an important and unique feature of our research context (franchising). Second, observing multiple signals over several years enables us to assess the signal intensity and consistency (Gao, Darroch, Mather, & MacGregor, 2008; Riley, 1975). Our results show a positive correlation between the use of FPR and five other quality signals. Also, our data reveals relative stability in the use of signals over time (70-90 percent) for most of the signals and 92 percent stability in use of FPR over the nine years of the study. These results suggest that it is feasible to, in a franchising context, empirically assess signaling theory views about how intensity and consistency of signals can beneficially impact performance. Third, this study attempts to reconcile potentially conflicting views on whether signals are potential substitutes or complements. Our findings support the latter view and are consistent with economic models that entail the use of multiple signals (Milgrom & Roberts, 1986). According to Kirmani and Rao (2000), empirical studies that incorporate multiple signals are sparse. Using their theoretical model, we classified our signals to understand and explain complementarity between franchisor use of an FPR and other signals of franchisor quality. This is also consistent with the idea that the effectiveness of signals depends on their consistency, which is reflected by consistent communication through multiple signals that capture different dimensions (Gao et al., 2008; Riley, 1975).

This study contributes to the franchising and voluntary information disclosure literatures in several ways. First, it answers Michael's (2009) call for testing his conclusions (about voluntary information disclosure in franchising) across multiple industries – we replicate his model using a larger and newer multi-industry panel data. He found support for the effect of the cost of signal but not for the quality and competition and our findings from the replication of his model are consistent with his original findings and provide evidence of their robustness. Second,

we develop an enhanced model with amended operationalizations for some of the variables in Michael (2009) as well as additional dimensions of quality and new antecedents[11]. Third, we address potential causality and endogeneity problems by using panel data and lagged predictors. A key new finding, resulting from our enhanced model, data and estimation approach, is the emergence of clear support for the quality signaling rationale for the provision of an FPR by a franchisor.

Our results have some implications for franchising practitioners. Our empirical findings in support of our quality signaling hypotheses suggest that high-quality franchisors should provide FPR to signal their profitability to prospective franchisees. The provision of FPRs is more important for high-quality franchisors with rigorous screening and qualification requirements (e.g., minimum net worth) for prospective franchisees. In a broader context, this study supports quality signaling by entrepreneurs and SMEs who need to attract business partners for investment in their entrepreneurial networks. Our results yield implications for prospective franchisees as well – only a fraction of franchisors make FPR, and these tend to be higher quality franchisors. Thus, prospective franchisees should consider whether a franchisor makes an FPR when deciding whether to become a franchisee of a chain.

This study also has public policy implications for voluntary information disclosure in franchising. FPR requirements and enforcement have been the subject of debate in the US among the Federal Trade Commission (FTC), the Small Business Administration's Office of Advocacy,

[11] Given the results in our replication model, it can be claimed that the differences between the findings in our enhanced model and those in Michael (2009) are not because of the data used but on account of the augmentation of antecedents included and the amended operationalization of constructs in our enhanced model.

NASAA, the American Bar Association (ABA), the International Franchise Association (IFA), and members of Congress (Price, 2000). Our findings reveal strong support for the quality signaling rationale for making an FPR – high-quality franchisors are more likely to make an FPR than a low-quality franchisor. Thus, the informational value of voluntary FPRs may reduce the benefits of making such disclosures mandatory. In other words, for prospective franchisees, there is no quality signaling value in a mandatory FPR while they can infer underlying franchisor quality when making an FPR is voluntary.

Limitations and Future Research

In this study, we empirically examined signaling behavior (in the form of voluntary information disclosure) in a business to business, entrepreneurial network context – these contexts have rarely been the subject of such investigations. However, our empirical analyses are limited to franchising data – therefore, further research may be needed to test our hypotheses in other entrepreneurship and SME contexts. We use the provision of FPR as our dependent variable, in the form of a dichotomous variable. Although the provision of FPR is not mandatory, it is regulated by FTC franchise rules and UFOC Item 19 guidelines. Recent research by Benoliel (2016) shows variation, across franchisors, in the information that is provided in their respective FPRs. Since this research only considers whether a franchisor provides or does not provide an FPR, future research could evaluate antecedents of the variation in the content of FPRs across franchisors.[12]

[12] We thank an anonymous reviewer for this insight.

References

Akerlof, G. (1970). The market for lemons: Quality uncertainty and the market mechanism. *Quarterly Journal of Economics, 84*(3), 488-500.

Aldrich, H., & Auster, E. R. (1986). Even dwarfs started small: Liabilities of age and size and their strategic implications. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 8, pp. 165-186). Greenwich, CT: JAI Press.

Antia, K. D., Zheng, X., & Frazier, G. L. (2013). Conflict Management and Outcomes in Franchise Relationships: The Role of Regulation. *Journal of Marketing Research, 50*(5), 577-589. doi:10.1509/jmr.11.0144

Armstrong, J., Brodie, R., & Parsons, A. (2001). Hypotheses in Marketing Science: Literature Review and Publication Audit. *Marketing Letters, 12*(2), 171-187. doi:10.1023/A:1011169104290

Arthurs, J. D., Busenitz, L. W., Hoskisson, R. E., & Johnson, R. A. (2009). Signaling and initial public offerings: The use and impact of the lockup period. *Journal of Business Venturing, 24*(4), 360-372. doi:10.1016/j.jbusvent.2008.02.004

Asoni, A., & Sanandaji, T. (2016). Identifying the effect of college education on business and employment survival. *Small Business Economics, 46*(2), 311-324. doi:10.1007/s11187-015-9686-5

Backes-Gellner, U., & Werner, A. (2007). Entrepreneurial Signaling via Education: A Success Factor in Innovative Start-Ups. *Small Business Economics, 29*(1), 173-190. doi:10.1007/s11187-006-0016-9

Bagwell, K., & Riordan, M. H. (1991). High and Declining Prices Signal Product Quality. *American Economic Review, 81*(1), 224-239.

Baltagi, B. (2008). *Econometric Analysis of Panel Data*: John Wiley & Sons.

Barthélemy, J. (2008). Opportunism, knowledge, and the performance of franchise chains. *Strategic Management Journal, 29*(13), 1451-1463. doi:10.1002/smj.719

Bates, T. (1995). A Comparison of Franchise and Independent Small Business Survival Rates. *Small Business Economics, 7*(5), 377-388.

Benoliel, U. (2016). *Are Disclosures Really Standardized? The Case of Quick Service Restaurant Franchises* Paper presented at the The 30th Annual International Society of Franchising Conference Groningen, The Netherlands.

Blair, R. D., & Lafontaine, F. (2005). *The Economics of Franchising*. New York: Cambridge University Press.

Brickley, J. A., Misra, S., & Van Horn, R. L. (2006). Contract Duration: Evidence from Franchising. *Journal of Law and Economics, 49*(1), 173-196. doi:10.1086/501081

Calderon-Monge, E., & Huerta-Zavala, P. (2014). Brand and performance signals in the choice of franchise opportunities. *The Service Industries Journal, 34*(9-10), 772-787. doi:10.1080/02642069.2014.905920

Certo, S. T., Daily, C. M., & Dalton, D. R. (2001). Signaling firm value through board structure: An investigation of initial public offerings. *Entrepreneurship Theory and Practice, 26*(2), 33-50.

Chamberlin, T. C. (1897). Studies for Students: The Method of Multiple Working Hypotheses. *The Journal of Geology, 5*(8), 837-848. doi:10.2307/30054868

Cheong, I., & Kim, J. Y. (2004). Costly information disclosure in oligopoly. *The Journal of Industrial Economics, 52*(1), 121-132. doi:10.1111/j.0022-1821.2004.00218.x

Chow, C. W., & Wong-Boren, A. (1987). Voluntary Financial Disclosure by Mexican Corporations. *The Accounting Review, 62*(3), 533-541.

Chung, W., & Kalnins, A. (2001). Agglomeration effects and performance: A test of the Texas lodging industry. *Strategic Management Journal, 22*(10), 969-988. doi:10.1002/smj.178

Clarkin, J. E., & Rosa, P. J. (2005). Entrepreneurial teams within franchise firms. *International Small Business Journal, 23*(3), 303-334. doi:10.1177/0266242605052075

Combs, J. G., Michael, S. C., & Castrogiovanni, G. J. (2009). Institutional influences on the choice of organizational form: the case of franchising. *Journal of Management*. doi:10.1177/0149206309336883

Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling theory: A review and assessment. *Journal of Management, 37*(1), 39-67. doi:10.1177/0149206310388419

Crocker, K. J., & Masten, S. E. (1988). Mitigating Contractual Hazards: Unilateral Options and Contract Length. *The RAND Journal of Economics, 19*(3), 327-343. doi:10.2307/2555660

Diamond, D. W. (1985). Optimal Release of Information By Firms. *The Journal of Finance, 40*(4), 1071-1094. doi:10.2307/2328395

Dye, R. A. (1985). Strategic accounting choice and the effects of alternative financial reporting requirements. *Journal of accounting research, 23*(2), 544-574. doi:10.2307/2490826

Fadairo, M., & Lanchimba, C. (2013). *Signaling the quality of a business concept; Evidence from a structural equations model with Brazilian data.* Paper presented at the 40th Annual Conference of the European Association for Research in Industrial Economics.

Filatotchev, I., & Bishop, K. (2002). Board Composition, Share Onership, and'Underpricing' of U.K. IPO Firms. *Strategic Management Journal, 23*(10), 941-955. doi:10.1002/smj.269

Gallini, N. T., & Lutz, N. A. (1992). Dual distribution and royalty fees in franchising. *Journal of Law, Economics, & Organization*, 471-501.

Gao, H., Darroch, J., Mather, D., & MacGregor, A. (2008). Signaling Corporate Strategy in IPO Communication A Study of Biotechnology IPOs on the NASDAQ. *Journal of Business Communication, 45*(1), 3-30. doi:10.1177/0021943607309349

Gillis, W. E., Combs, J. G., & Ketchen, D. J. (2014). Using Resource-Based Theory to Help Explain Plural Form Franchising. *Entrepreneurship Theory and Practice, 38*(3), 449-472. doi:10.1111/etap.12008

Golan, A., Judge, G., & Perloff, J. M. (1996). Estimating the size distribution of firms using government summary statistics. *The Journal of Industrial Economics*, 69-80. doi:10.2307/2950561

Gonzalez-Diaz, M., & Solis-Rodriguez, V. (2012). Why do entrepreneurs use franchising as a financial tool? An agency explanation. *Journal of Business Venturing, 27*(3), 325-341. doi:10.1016/j.jbusvent.2011.03.001

Grossman, S. J. (1981). The informational role of warranties and private disclosure about product quality. *Journal of law and economics*, 461-483.

Grünhagen, M., & Dorsch, M. J. (2003). Does the Franchisor Provide Value to Franchisees? Past, Current, and Future Value Assessments of Two Franchisee Types. *Journal of Small Business Management, 41*(4), 366-384. doi:10.1111/1540-627X.00088

Guilloux, V., Gauzente, C., Kalika, M., & Dubost, N. (2004). How France's Potential Franchisees Reach Their Decisions: A Comparison with Franchisers' Perceptions. *Journal of Small Business Management, 42*(2), 218-224. doi:10.1111/j.1540-627X.2004.00107.x

Hayes, A. F., & Krippendorff, K. (2007). Answering the Call for a Standard Reliability Measure for Coding Data. *Communication Methods and Measures, 1*(1), 77-89. doi:10.1080/19312450709336664

Hendrikse, G., Hippmann, P., & Windsperger, J. (2015). Trust, Transaction Costs and Contractual Incompleteness in Franchising. *Small Business Economics, 44*(4), 867-888. doi:10.1007/s11187-014-9626-9

Hendrikse, G., & Windsperger, J. (2011). Determinants of contractual completeness in franchising. In M. Tuunanen, G. Cliquet, G. Hendrikse, J. Windsperger, (Ed.), *New Developments in the Theory of Networks* (pp. 13-30). Heidelberg: Physica-Verlag.

Hershman, S., & Mazero, J. G. (2008). *Financial Performance Representations: The New and Updated Earnings Claims* (1 ed.). Illinois: American Bar Association.

Honig, B., Lampel, J., Siegel, D., & Drnevich, P. (2014). Ethics in the Production and Dissemination of Management Research: Institutional Failure or Individual Fallibility? *Journal of Management Studies, 51*(1), 118-142. doi:10.1111/joms.12056

Hsiao, C. (2014). *Analysis of Panel Data* (3rd ed.). New York: Cambridge university press.

Hsieh, C., Lazzarini, S. G., Nickerson, J. A., & Laurini, M. (2010). Does Ownership Affect the Variability of the Production Process? Evidence from International Courier Services. *Organization Science, 21*(4), 892-912. doi:10.1287/orsc.l090.0482

Hubbard, R., Vetter, D. E., & Little, E. L. (1998). Replication in strategic management: Scientific testing for validity, generalizability, and usefulness. *Strategic management journal, 19*(3), 243-254. doi:10.1002/(SICI)1097-0266(199803)19:3<243::AID-SMJ951>3.0.CO;2-0

IHS-Economics. (2016). Franchise Business Economic Outlook for 2016: International Franchise Association Educational Foundation

Janney, J. J., & Folta, T. B. (2006). Moderating effects of investor experience on the signaling value of private equity placements. *Journal of Business Venturing, 21*(1), 27-44. doi:10.1016/j.jbusvent.2005.02.008

Justis, R. T., & Chan, P. S. (1991). Training for franchise management. *Journal of Small Business Management, 29*(3), 87.

Kacker, M., Dant, R. P., Emerson, J., & Coughlan, A. T. (2016). How Firm Strategies Impact Size of Partner-Based Retail Networks: Evidence from Franchising. *Journal of Small Business Management, 54*(*2*), 506-531. doi:10.1111/jsbm.12155

Kacker, M., & Wu, R. (2013). Specific Investments in Franchisor–Franchisee Relationships: A Model. *Journal of Marketing Channels, 20*(1-2), 120-140. doi:10.1080/1046669X.2013.747863

Kaufmann, D. (1995). The case against mandatory earnings claim disclosure. *Franchise Law Journal, 15*(1), 3.

Kaufmann, P. J., & Dant, R. P. (2001). The pricing of franchise rights. *Journal of Retailing, 77*(4), 537-545. doi:10.1016/S0022-4359(01)00053-7

Keasey, K., Short, H., & McGuinness, P. (1992). New issues on the U.K. Unlisted Securities Market: The ability of entrepreneurs to signal firm value. *Small Business Economics, 4*(1), 15-27. doi:10.1007/bf00402212

Kirmani, A., & Rao, A. R. (2000). No Pain, No Gain: A Critical Review of the Literature on Signaling Unobservable Product Quality. *Journal of Marketing, 64*(2), 66-79. doi:10.1509/jmkg.64.2.66.18000

Kosová, R., & Lafontaine, F. (2010). Survival and Growth in Retail and Service Industries: Evidence from Franchised Chains. *The Journal of Industrial Economics, 58*(3), 542-578. doi:10.1111/j.1467-6451.2010.00431.x

Kwoka, J. E. (1979). The effect of market share distribution on industry performance. *The Review of Economics and Statistics*, 101-109. doi:10.2307/1924836

Lafontaine, F. (1992). Agency theory and franchising: some empirical results. *The RAND Journal of Economics, 23*(2), 263-283. doi:10.2307/2555988

Lafontaine, F. (1993). Contractual arrangements as signaling devices: evidence from franchising. *Journal of Law, Economics, & Organization*, 256-289.

Lafontaine, F., & Blair, R. D. (2009). The Evolution of Franchising and Franchise Contracts: Evidence from the United States. *Entrepreneurial Business Law Journal, 3*(2), 381-434.

Lafontaine, F., & Shaw, K. L. (1998). Franchising growth and franchisor entry and exit in the US market: myth and reality. *Journal of Business Venturing, 13*(2), 95-112. doi:10.1016/S0883-9026(97)00065-7

Lafontaine, F., & Shaw, K. L. (1999). The dynamics of franchise contracting: Evidence from panel data. *Journal of Political Economy, 107*(5), 1041-1080. doi:10.3386/w5585

Lafontaine, F., & Shaw, K. L. (2005). Targeting managerial control: evidence from franchising. *RAND Journal of Economics, 36*(1), 131-150. doi:10.2307/1593758

Lardon, A., & Deloof, M. (2014). Financial disclosure by SMEs listed on a semi-regulated market: evidence from the Euronext Free Market. *Small Business Economics, 42*(2), 361-385. doi:10.1007/s11187-013-9484-x

Lee, P. M. (2001). What's in a name. com?: The effects of '. com'name changes on stock prices and trading activity. *Strategic Management Journal, 22*(8), 793-804. doi:10.1002/smj.177

Leland, H. E., & Pyle, D. H. (1977). Informational asymmetries, financial structure, and financial intermediation. *The journal of Finance, 32*(2), 371-387. doi:10.2307/2326770

Luangsuvimol, T., & Kleiner, B. H. (2004). Effective franchise management. *Management Research News, 27*(4/5), 63-71. doi:10.1108/01409170410784482

Lucia-Palacios, L., Bordonaba-Juste, V., Madanoglu, M., & Alon, I. (2014). Franchising and value signaling. *Journal of Services Marketing, 28*(2), 105-115. doi:10.1108/JSM-09-2013-0253

López-Bayón, S., & González-Díaz, M. (2010). Indefinite contract duration: Evidence from electronics subcontracting. *International Review of Law and Economics, 30*(2), 145-159. doi:10.1016/j.irle.2010.03.001

Michael, S. (2014). Can franchising be an economic development strategy? An empirical investigation. *Small Business Economics, 42*(3), 611-620. doi:10.1007/s11187-013-9500-1

Michael, S. C. (1999). The Elasticity of Franchising. *Small Business Economics, 12*(4), 313-320. doi:10.1023/A:1008019418231

Michael, S. C. (2000). The effect of organizational form on quality: the case of franchising. *Journal of Economic Behavior & Organization, 43*(3), 295-318. doi:10.1016/S0167-2681(00)00125-6

Michael, S. C. (2003). First mover advantage through franchising. *Journal of business venturing, 18*(1), 61-80. doi:10.1016/S0883-9026(01)00085-4

Michael, S. C. (2009). Entrepreneurial Signaling to Attract Resources: The Case of Franchising. *Managerial and Decision Economics, 30*(6), 405-422. doi:10.1002/mde.1460

Milgrom, P. (1981). Good news and bad news: Representation theorems and applications. *The Bell Journal of Economics, 12*(2), 380-391. doi:10.2307/3003562

Milgrom, P., & Roberts, J. (1986). Price and advertising signals of product quality. *Journal of Political Economy, 94*(4), 796-821. doi:10.1086/261408

Mishra, D. P., Heide, J. B., & Cort, S. G. (1998). Information asymmetry and levels of agency relationships. *Journal of marketing Research, 35*(3), 277-295. doi:10.2307/3152028

Mitsuhashi, H., Shane, S., & Sine, W. D. (2008). Organization governance form in franchising: efficient contracting or organizational momentum? *Strategic Management Journal, 29*(10), 1127-1136. doi:10.1002/smj.702

Montiel, I., Husted, B. W., & Christmann, P. (2012). Using private management standard certification to reduce information asymmetries in corrupt environments. *Strategic Management Journal, 33*(9), 1103-1113. doi:10.1002/smj.1957

Nelson, P. (1970). Information and Consumer Behavior. *Journal of Political Economy, 78*(2), 311-329. doi:10.1086/259630

Perrigot, R. (2006). Services vs retail chains: are there any differences? *International Journal of Retail & Distribution Management, 34*(12), 918-930. doi:10.1108/09590550610714648

Platt, J. R. (1964). Strong Inference: Certain Systematic Methods of Scientific Thinking May Produce Much More Rapid Progress than others. *Science*(146), 347-353.

Price, R. (2000). Who reports earnings when reporting is optional? The market for new franchises. *Journal of Accounting and Economics, 28*(3), 391-423. doi:10.1016/S0165-4101(00)00009-4

Riley, J. G. (1975). Competitive Signaling. *Journal of Economic Theory, 10*(2), 174-186. doi:10.1016/0022-0531(75)90049-6

Rostamkalaei, A., & Freel, M. (2016). The cost of growth: small firms and the pricing of bank loans. *Small Business Economics, 46*(2), 255-272. doi:10.1007/s11187-015-9681-x

Sen, K. C. (1993). The use of initial fees and royalties in business-format franchising. *Managerial and decision Economics, 14*(2), 175-190. doi:10.1002/mde.4090140209

Seshadri, S. (2002). Outlet ownership in franchising systems: an agency based approach. *Managerial and Decision Economics, 23*(6), 355-369. doi:10.1002/mde.1073

Shane, S. (1998). Research notes and communications: Making new franchise systems work. *Strategic Management Journal, 19*(7), 697-707. doi:10.1002/(SICI)1097-0266(199807)19:7<697::AID-SMJ972>3.0.CO;2-O

Shane, S., Shankar, V., & Aravindakshan, A. (2006). The Effects of New Franchisor Partnering Strategies on Franchise System Size. *Management Science, 52*(5), 773-787. doi:10.1287/mnsc.1050.0449

Sorenson, O., & Sorensen, J. B. (2001). Finding The Right Mix: Franchising, Organizational Learning, And Chain Performance. *Strategic Management Journal, 22*(6/7), 713-724. doi:10.1002/smj.185

Spence, M. (1973). Job market signaling. *The quarterly journal of Economics, 87* (3), 355-374.

Spence, M. (2002). Signaling in retrospect and the informational structure of markets. *American Economic Review, 92*(3), 434-459. doi:10.1257/00028280260136200

Srinivasan, R., & Sihi, D. (2012). Marketing Information Disclosures: A Review and Research Agenda. In S. Ganesan (Ed.), *Handbook of Marketing and Finance* (pp. 108-126). UK: Edward Edgar Publishing Limited.

Stanworth, J., & Kaufmann, P. (1996). Similarities and differences in UK and US franchise research data: towards a dynamic model of franchisee motivation. *International Small Business Journal, 14*(3), 57-70. doi:10.1177/0266242696143003

Strotmann, H. (2007). Entrepreneurial Survival. *Small Business Economics, 28*(1), 87-104. doi:10.1007/s11187-005-8859-z

Stump, R. L., & Heide, J. B. (1996). Controlling supplier opportunism in industrial relationships. *Journal of Marketing Research, 33*(4), 431-441. doi:10.2307/3152214

Terlaak, A. (2007). Order without Law? The Role of Certified Management Standards in Shaping Socially Desired Firm Behaviors. *The Academy of Management Review, 32*(3), 968-985. doi:10.2307/20159344

Tsang, E. W. K., & Kwan, K.-M. (1999). Replication and Theory Development in Organizational Science: A Critical Realist Perspective. *The Academy of Management Review, 24*(4), 759-780. doi:10.2307/259353

Verrecchia, R. E. (1983). Discretionary Disclosure. *Journal of accounting and economics, 5*, 179-194. doi:10.1016/0165-4101(83)90011-3

Wathne, K. H., & Heide, J. B. (2000). Opportunism in Interfirm Relationships: Forms, Outcomes, and Solutions. *Journal of Marketing, 64*(4), 36-51. doi:10.1509/jmkg.64.4.36.18070

Williams, D. R., Duncan, W. J., & Ginter, P. M. (2010). Testing a model of signals in the IPO offer process. *Small Business Economics, 34*(4), 445-463. doi:10.1007/s11187-008-9130-1

Windsperger, J. (2001). The fee structure in franchising: a property rights view. *Economics Letters, 73*(2), 219-226. doi:10.1016/S0165-1765(01)00491-8

Chapter 3: Essay 2

Performance Implications of Organizational Signaling and Screening: Evidence from Franchising

Abstract

This paper examines the performance consequences of ex-ante screening and signaling through voluntary information disclosure (VID) in marketing channel relationship formation. It is essential for entrepreneurial networks such as franchisors to expand their franchised network by attracting channel partners, on the one hand, and by preventing low-quality partners from joining the channel on the other hand. Firms may use a screening mechanism to screen the quality of the prospective partners. Also, they have the choice to disclose their private information to signal their quality. Understanding the effects of these two mechanisms on firm performance have been the interest of both researchers and practitioners. We draw on the signaling and transaction cost theories and VID literature to develop a theoretical framework and investigate the direct and interactive impact of screening, signaling and specific investments on firm performance. We evaluate the hypotheses of our theoretical framework through econometric analyses of unique multi-sector panel data for the U.S. franchising industry. Our study sheds light on the interactive effects of signaling, screening and transaction properties on firm performance.

Keywords: Signaling, Screening, Inter-firm Relationship, Franchising, Voluntary Information Disclosure (VID), Financial Performance Representations, Panel data analyses, Performance Metrics, Contracting

Introduction

Information asymmetry among distribution channel members has been known as a basis for opportunistic actions in exchange relationships (e.g., Mishra et al., 1998). In Akerlof's (1970) terminology the inability of one exchange party to discover the inherent quality of the other party's skill, service or product is known as the 'adverse selection' problem. Prior studies have suggested screening through a selection process as a mechanism for mitigating information asymmetry and addressing the adverse selection problem (e.g. Bergen, Dutta, & Walker, 1992; Wathne & Heide, 2000). Although screening[13] can alleviate the problem of the focal party (i.e., the principal in the agency theory terminology), in many cases there still is an information problem for the other party (i.e., agent).

Contrary to traditional agency theory characterization, in many interfirm relationship settings, each party has the simultaneous role of both principal and agent. For example, in franchising, this phenomenon is identified by Grünhagen et al. (2016) as 'dual-agency' because in this type of relationships each party is relied on the behavior of the other party to realize the business goals. This double-sided adverse selection problem is a critical issue for firms that on the one hand need to attract channel partners and their assets such as financial and managerial resources to survive and grow (Michael, 2009). On the other hand, they need to prevent low-quality partners from joining the network through qualification and selection standards to mitigate ex-post transaction costs such as monitoring and litigation (Stump & Heide, 1996;

[13] In this article we use screening and selection process sometimes interchangeably and they refer to the initial screening of partners by the focal firm through a set of pre-defined criteria. It does not refer to the final selection of the partners.

Wathne & Heide, 2000). In the absence of proper information disclosure and such screening mechanisms, both sides of the partnership encounter the problem of adverse selection (Grünhagen et al., 2016). This is a problem faced by entrepreneurs who grow by developing their channel and offer standardized contracts to resource owners who want to join the network. Such channels include established business formats such as franchising as well as emerging sharing economy organizations and platform businesses that operate as contractual networks (e.g., Uber, Airbnb, etc.). In this study, using data from the franchising industry in the U.S., we investigate the performance outcomes of organizational quality signaling through VID as a complementary mechanism to screening, in the presence of the double-sided adverse selection problem in formation stage of an interfirm relationship.

In business to business relationship formation, partners need to select each other *ex-ante***,** in a way that minimizes ex-post opportunism and conflicts that leads to better performance outcomes for the partnership. In the extant channel literature (e.g., Bergen et al., 1992; Wathne & Heide, 2000), screening through a set of selection criteria is recommended for preventing low-quality partners from joining the network. However, such a screening mechanism (for example through participation in a specific certification process) may be too costly for the partner (e.g., franchisee who want to join a franchise chain). Therefore, in a selective play[14], when the partner has the choice of not to play, she may choose not to bear the cost of becoming qualified for this network and hence join another business that has a simpler selection process. For example, franchisors set criteria such as financial net worth, business experience and so on for the

[14] "Selective play" paradigm refers to a setting that player have the option to leave the relationship, contrary to the prisoner dilemma game in which players are locked in their relationship. (Hayashi & Yamagishi, 1998)

prospective franchisees that want to join their network. Through this process, the franchisor can make sure that the franchisee possesses the necessary capabilities and skills to conduct the business. This screening mechanism alleviates the franchisor's adverse selection problem, but it can hurt their network performance by decreasing the number of prospective franchisees. To address this problem, a franchisor needs to convince the prospective franchisees about the profitability of business to the extent that compensates the screening costs for them. We suggest that signaling quality of the business concept through voluntary disclosure of private information is a suitable mechanism for this purpose. Quality signaling dampens the negative effect of rigorous screening on potential partners' motivation for partnership and hence increases the number of applicants for the partnership. Also, such a signal provides the partner (i.e., franchisee) an assurance about the quality of the franchise concept and hence, alleviates the adverse selection problem for the partner. In a nutshell, simultaneous screening and signaling by the principal (franchisor), mitigates the double-sided adverse selection problems of the principal as well as the agent (franchisee) and leads to better performance.

The franchising industry has been the subject of many studies on agency problems (e.g., Bhattacharyya & Lafontaine, 1995; Shane, 1996) and is a very good example of an institutional setting in which each party (i.e., franchisor or franchisee) needs information about the other party's quality before entering the exchange relationship. Furthermore, franchising has become the most common method of retailing in North America in the recent decades and continues to make substantial contributions to the developed and emerging economies. According to IHS Economics (2016), almost 800,000 franchised business establishments have contributed 550 billion dollars of GDP and more than nine million jobs to the US economy. Therefore, research

in the franchising context has substantial implications for both practitioners and researchers in retailing and distribution channels and contributes to the interfirm relationships literature.

In this study grounded in the agency and transaction cost theories and the interfirm relationship literature, we build a theoretical framework to investigate the performance outcomes of simultaneous screening and signaling in formation stage of an exchange relationship. We empirically test our framework through a unique multi-source panel dataset from the franchising industry. This paper aims to contribute to the extant literatures on interfirm relationship, voluntary information disclosure, signaling and franchising, in multiple ways. First, we provide theoretical and empirical evidence for the limitation of screening as a sole channel governance mechanism for mitigating the adverse selection problem in interfirm relationship formation. We introduce signaling as a complementary mechanism to screening for addressing the double-sided adverse selection problem. Second, we contribute to the VID literature and answer Srinivasan and Sihi's (2012) call for research on the effects of voluntary marketing information disclosure as one of the research areas that not only extends the marketing literature but also contributes to finance and accounting literatures. We examine the effect of VID on firm performance in a relatively new context (i.e., franchising). Whereas VID has been studied mostly in the context of financial markets (Healy & Palepu, 2001). Therefore, our study provides insights on the consequences of VID to the stakeholders other than stock market investors and analysts, and contributes to a better understanding of outcomes of VID. Third, we contribute to the signaling theory literature, through providing insights on the performance outcomes of quality signaling in a business-to-business context and signaling interaction with screening as another channel governance mechanism. Although signaling has been as an advantageous mechanism in B2B relationships, there have been very few empirical studies on signaling consequences in a B2B

setting. Fourth, we seek to enrich the franchising literature and provide insights for franchising practitioners and public policy maker by investigating the consequences of franchisors' VID strategies. Our results help them in figuring the extent to which disclosures need to be mandatory. This issue has been the topic of a long time debate in franchising practice and regulatory.

This paper is organized as follows. First, we present our theoretical background and framework. This is followed by a description of data and measures and our empirical analyses. We conclude with a discussion of the results and implications of the study.

Theoretical Background and Framework

Screening. Akerlof (1970) synthesizes the quality uncertainty resulting from information asymmetry in markets and explains the presence of an adverse selection problem when there is information hidden from an exchange party. Both agency and transaction cost theories predict negative outcomes for such an information problem. Grounded in transaction cost theory Heide and John (1990), propose ex-ante verification of the partner's ability for doing business as a mechanism to preempt opportunistic actions. According to Stump and Heide (1996), the ambiguity about the performance of the partner and her potential opportunism is associated with qualification of the partner. Agency literature suggests screening as a mechanism to address the adverse selection problem and to assure the ability of the agent to perform the job (Bergen et al., 1992). Screening is a process through which a principal determines a set of selection criteria for choosing prospective partners. Therefore, we posit that ex-ante screening through a partner screening mechanism improves the firm's performance.

H1a: The rigor of screening mechanism in the formation stage of a partnership is positively associated with firm performance.

Although the screening mechanism can prevent the low-quality partners from joining the channel, it can also disappoint high-quality potential partners if it imposes an excessive cost on them. Sometimes the screening process is defined as going through a costly process; for example, Xerox Corporation forces its potential suppliers to participate in a specific certification program (Wathne & Heide, 2000). In free economies, there are often many investment opportunities for entrepreneurs such as prospective franchisees. Therefore in the formation stage of partnership - when they are yet not locked-in to the relationship, - they may choose to ignore a potential partnership that has a high ex-ante cost of screening. Thus, everything else being equal, a principal with rigorous selection standards will have a smaller pool of partnership applicants. This smaller pool leads to selecting low quality applicants or less favorable contract terms that result in lower performance. Therefore, we posit a competing hypothesis:[15]

H1b: The rigor of screening mechanism in the formation stage of a partnership is negatively associated with firm performance.

Signaling. In economic contract theory, signaling involves one party sending some information to another party. As explained by Spence's (1973) seminal study, an agent sends signals to the principal to prove her capabilities for performing the job. The signaling theory has

[15] This approach of formulating competing hypotheses has been applied in the extant literature such as marketing (e.g., Bayer, Tuli, & Skiera, 2017; Stump & Heide, 1996) and franchising (e.g., Hendrikse, Hippmann, & Windsperger, 2015). It enriches the precision and objectivity of theory testing (Armstrong, Brodie, & Parsons, 2001).

been applied in management studies in a variety of research contexts that are characterized by information asymmetry between an agent and the principal (Connelly, Certo, Ireland, & Reutzel, 2011). Grounded in the above explanation of dual-agency, we introduce singling as a complementary mechanism to screening for solving this double-sided adverse-selection problem. We argue that when a principal (e.g., franchisor) in some tasks plays the agent role for the other party, then she needs to signal her quality (i.e., the ability to perform her tasks) to the other party and attract them to join the partnership. Otherwise, the agent (e.g., franchisee) remains skeptical about the quality of business opportunity, thus they may hesitate to join or invest in such a relationship. Therefore, we posit:

H2a: Signaling a firm's quality of the business opportunity in the formation stage of a partnership is positively associated with the firm's performance.

Since signaling entails disclosure of information, managers are skeptical about its impact on firm performance for several reasons. First, competitors may take advantage of the disclosed information (Dedman & Lennox, 2009). Second, the cost of collecting, processing and disseminating the information negatively affects the firm's performance (Bayer et al., 2017). For example franchisors have only access to franchisees' sales data because they collect royalty that is usually a percentage of sales. However, franchisees are independent entities and usually they are not obligated to share their cost information with the franchisor. Therefore, collecting this information can be costly for franchisors. Third, disclosure of the information about the business profitability gives the partners an opportunity for litigations if they cannot realize the expected profit. For example, Hershman and Mazero (2008) note that VIDs by franchisors could be misinterpreted as a performance guarantee by a prospective franchisee. Price (2000) notes this issue as a significant cause of many FTC enforcement actions against the franchisors. Thus, the

cost of handling such conflicts and litigations hurts firm performance. Therefore, we posit another competing hypothesis.

H2b: Signaling a firm's quality of the business opportunity in the formation stage of a partnership is negatively associated with the firm's performance.

Screening and signaling. As we discussed, screening and signaling have their own advantages and disadvantages for firm performance. Although we hypothesized competing relationships, regardless of which one is supported empirically we argue that both effects still exist. Therefore, the empirical results reveal the dominant direction for the effects of signaling and screening while both negative and positive effects exist as the result of advantages and disadvantages of the two mechanisms. However, we posit that each of signaling and screening mechanisms has the ability to counterbalance the other mechanism's disadvantages in an interfirm relationship setting that each part has the option to enter the relationship or not. Screening through selection standards may decrease the number of prospective partners. However, if the principal chooses to signal profitability of the partnership, then potential partners have more incentive to join the applicants' pool. Moreover, although the signaling mechanism attracts both low- and high-quality potential partners to join the network, the selection mechanism has the ability to screen and prevent the low-quality agents from entering the network. Hence, screening and signaling act as complementary mechanisms in the channel relationship formation and enhance firm performance when they are used together. We posit a positive effect for their interaction on firm performance.

H3: Simultaneous use of signaling and rigorous screening mechanisms by a firm, is positively associated with the firm's performance

Specific investments. During the formation stage of an interfirm relationship, in addition to evaluating the abilities of the partner to perform the job, firms need a mechanism to ensure that their partner will not engage in opportunistic actions in future. Transaction cost theory suggests that specific investments -in a partnership- that have little salvage value out of the relationship increases the risk of opportunism by the receiver (Stump & Heide, 1996; Williamson, 1985). However, Ghosh and John (1999) suggest that specific investment in joint value-creation processes can benefit the partnership and create competitive advantages. According to Jap (1999), such investments can lead to enhanced strategic outcomes through benefit 'pie expansion.' Rokkan, Heide, and Wathne (2003) find that specific investment consequences are contingent on certain relationship conditions and such investments can create bond and decrease the receiver's opportunism in the presence of a strong norm of solidarity. In our model of interfirm relationship formation, when a firm with rigorous partner selection standard, promises higher specific investment in that specific relationship, we expect better performance for the firm. Such investments give assurance to the partner about the adherence of the firm to developing the business and give her incentive for going through the costly selection process. Therefore, the principal's promise for specific investment in the relationship dampens the negative effect of rigorous screening mechanism and enhances firm performance.

H4: The firm's (principal) promises for more specific investment in the relationship, positively moderates the relationship between the rigor of screening mechanism and firm performance.

Likewise, specific investments in the partnership by business partners such as franchisees can enhance the partnership performance under certain conditions. Signaling profitability of the business opportunity by focal firm attracts all types of prospective partners -including opportunistic ones- to the business. However, the signaler can also ask for some specific

investments in the partnership by the applicants. Such a requirement act as a self-selection mechanism and prevent opportunistic agents from joining the channel because they can lose their investment if they do not perform well. Thus, we predict that simulators signaling by the focal firm and asking prospective partners for specific investments to the partnership will enlarge the pool of applicants but only with high-quality ones. This pool provides the focal firm with the opportunity to expand its channel with high-quality partners who contribute to a high level of performance. Hence we posit that:

H5: The firm's (principal) request for more specific investment in the relationship from the partner (agent), positively moderates the relationship between the firm's signaling and performance.

Empirical Analyses

Data

We test our hypotheses using unbalanced panel data from the franchising industry in the U.S. from 2001 to 2009. We build our unique sample by combining data from two different sources. Our independent variables are from the Bond's Franchise Guides that have been publishing annually from 1985 to 2009, with some exceptions. It includes more than 1000 franchise chains and has been widely used in the extant franchising research (Antia, Mani, & Wathne, 2017; Combs & Castrogiovanni, 1994; Lafontaine & Blair, 2009; Lafontaine & Shaw, 2005). The performance measure is collected from Franchise Time magazine that annually publishes data for 200-300 franchise chains from several industries. Our final sample is an unbalanced panel of 1620 observations from 354 franchisors from different industries for nine years. Table 1 contains details of our variables and constructs' operationalization.

Table 1: Constructs, Variables and Operationalizations

Construct/ Factor	Variable	Operationalization
Firm Performance	Log Chain Sales Growth	Log ((dollar sales t - dollar sales t-1) /dollar sales t-1)
Screening	Selection Process	Mean of franchisor ratings (Unimportant = 1 to Very Important = 5) of the importance of criteria used for selection of a potential franchisee. (Antia et al., 2017; Kacker et al., 2016) including: - Financial Net Worth - General Business Experience - Specific Industry Experience - Formal Education - Psychological Profile - Personal Interview
Signaling	Provision of FPR	Binary variable with value of one if the franchisor provides an FPR and zero otherwise.
Franchisor Specific Investment	Training	Number of hours of training that franchisor provides for the franchisees.
Franchisee Specific Investment	Franchise Fee	Amount of the initial franchise fee.

Dependent variable

We measure performance by the chain's sales revenue growth. Drivers of firm organic growth have been under extensive research (e.g., Delmar, Davidsson, & Gartner, 2003; Nobeoka & Cusumano, 1997) and growth has always been a dominant issue for the managers because it is closely tied to the stakeholders' expectations and firm survival (Bahadir, Bharadwaj, & Parzen, 2009). Therefore, the chain's sales growth would be a managerially important and theoretically relevant performance measure and has been suggested by previous studies in measuring firms performance in business service offerings (Kohtamäki, Partanen, Parida, & Wincent, 2013). Also, our theoretical framework looks at the use of governance mechanisms at the formation stage of new exchange relationships in a business network. In another word, we look at ex-ante signaling and screening as well as promises and requests for specific investments in a new franchise relationship. We maintain that proper use of these governance mechanisms at the formation stage of new relationships furthers the growth of the franchise network with high-

quality franchisees. According to Fadairo and Lanchimba (2014), franchisees who provide human and financial resources contribute to the rapid growth of the network. Therefore, we need to measure the performance of such a process in a way that captures both the quantity and quality of new members. Sales revenue growth can measure the product of growth in the number of members of the chain and quality of members. Because growing the network with low-quality members may dampen the rate of growth in sales. Also, franchising literature claim that ongoing royalties that franchisors collect are the biggest part of their revenue and is tightly connected to the performance of their franchisees (Blair & Lafontaine, 2005). Therefore, we use this two-dimensional measure that captures growth in the chain and quality of the members –i.e., the capability to generate sales. We collect chain sales revenue data from Franchise Time magazine and calculate the annual chain's percentage sales revenue growth as the performance measure.

Independent Variables

Screening. Franchisors screen their prospective franchisees through a set of selection criteria. We measure the rigor of the screening process with the average of the franchisors rating of the importance of the selection criteria on a five-point scale. This construct is measured similarly in prior franchising research (Antia et al., 2017; Kacker, Dant, Emerson, & Coughlan, 2016).

Signaling. Michael (2009) claims that entrepreneurs such as franchisors signal quality of their business concept to prospective franchisees to attract their resources. He suggests voluntary disclosure of earnings by franchisor as a signal of quality. Sadeh and Kacker (2018) find empirical evidence from a panel data of more than 1600 franchise chains to support the idea that franchisors signal quality through voluntary disclosure of their performance metrics in the form of Financial Performance Representations (FPR). FPR contains the franchisor's current chain

financial metrics such as sales, costs, and profit. Franchisors have the option to provide FPR as a voluntary item of the Franchise Disclosure Document (FDD) that is a required document by the Federal Trade Commission (FTC). Although the provision of FPR is voluntary, franchisors are required by law to provide truthful information if they decide to provide the FPR. Therefore an FPR supposedly contains truthful information and is a signal of quality (Sadeh & Kacker, 2018). Thus, we measure franchisor's signaling by a binary variable that takes the value of one if the franchisor provides FPR and zero otherwise.

Specific Investment. We measure franchisor's specific investment by the amount of training that they provide to their franchisees. Franchisors vary in the amount of training that they provide to their franchisees and their investment in training for each franchisee is not useable out of that relationship. Training has been widely used in franchising literature as the measure of franchisors specific investment (e.g., Hendrikse et al., 2015).

We measure franchisee specific investment by the amount of initial franchise fee that franchisees are required to pay to the franchisor. This is usually a lump-sum non-refundable fee that the franchisee pays initially. Although a franchisee should invest heavily for equipment, building and so on, the franchise fee is purely specific to the relationship, and they lose it completely if they exit the chain. Prior franchising researchers also have viewed franchise fee as the franchisee specific investment (e.g., Sen, 1993).

Control Variables. Consistent with the extant franchising literature we control for the effects of chain size and age because they can systematically impact the performance (Kacker et al., 2016). We also control for the effect of environmental uncertainty using contract duration time as prior studies (e.g., Sadeh & Kacker, 2018). To account for economic trends, we added

dummy variables for the fixed effect of year. We control for franchisor membership of the International Franchising Association (IFA) because IFA members work with a higher level of standards that can contribute to a higher rate of sales growth. Table 2 provides descriptive statistics, and bivariate correlations of our variables.

Table 2: Descriptive Statistics and Correlations

	Variable	Obs	Mean	Std. Dev.	Min	Max	1	2	3	4	5	6	7	8	9
1	Log Sales Growth	1,156	0.72	0.12	0.09	2.54	1								
2	Selection Process	1,500	3.58	0.57	1.5	5	-0.04	1							
3	Provision of FPR	1,607	0.43	0.50	0	1	0.03	-0.07	1						
4	Training	1,562	23.67	22.94	0	405	0.02	0.17	0.07	1					
5	Franchise Fee	1,579	29.59	18.83	0	300	-0.06	0.10	0.10	0.10	1				
6	Chain Size	1,619	1672.82	3974.90	18	35603	0.03	0.03	-0.16	-0.06	0.07	1			
7	IFA Membership	1,476	0.83	0.38	0	1	0.02	-0.13	0.04	-0.08	0.01	0.10	1		
8	Business Age	1,619	34.46	18.78	3	107	-0.07	0.15	-0.04	0.13	-0.01	0.31	-0.06	1	
9	Contract Duration	1,602	14.10	6.88	0	50	0.01	0.03	0.01	0.13	0.11	0.07	0.03	0.07	1

Model Specification

The nature of our unbalanced panel data and theoretical framework imposes several limitations including attrition bias, endogeneity, and clustering effect. In this section, we address these constraints in our model specification through applying *Conditional Mixed Process* (CMP), instrumental variables and a Heckman selection model. CMP method that is introduced by Roodman (2011), fits seemingly unrelated regressions models for recursive systems of equations and relies on simulated maximum likelihood methods including the Geweke–Hajivassiliou–Keane algorithm (Geweke, 1989; Hajivassiliou & McFadden, 1998; Keane, 1992). According to Sande and Ghosh (2018), CMP is a strong approach for estimating a model that contains various types of dependent and endogenous variables. It provides more efficient estimates comparing to

traditional GMM class estimators (e.g., OLS and 2SLS) for limited endogenous variables (e.g., binary or truncated variables) and recursive systems (Roodman, 2011). This method has been used in previous marketing studies (Antia et al., 2017; Kashyap, Antia, & Frazier, 2012). Applying CMP enables us to account for attrition bias and endogeneity through a system of simultaneous equations as explained below.

In our unbalanced panel data, some franchisors were not present at all years of the data. Therefore we need to make sure that the absences are random and not systematic, otherwise, the parameters of estimates may be biased (Heckman, 1979). To account for a potential sample selection bias, consistent with prior studies in marketing (e.g., Antia et al., 2017; Srinivasan, 2006), we condition the inclusion of an observation in our sample on franchisor characteristics – i.e. size, age, IFA membership, and expansion projection- that contribute to its survival. Thus, we conduct a first stage selection model regression (Equation 1) and calculate the Inverse Mills Ratio (IMR) and insert it in the second stage regression (Equation 6).

$$\boldsymbol{INCLUDE}_{it} = \beta_1 + \beta_2 SIZE_{it} + \beta_3 IFA_{it} + \beta_4 AGE_{it} + \beta_5 EXPAN_{it} + \omega_{it} \quad (1)$$

INCLUDE = 1 if the firm i data for year t is included in the data, and 0 otherwise
$SIZE_{it}$ = Total number of outlets for franchisor i at time t
IFA_{it} = Membership of IFA for franchisor i at time t
AGE_{it} = Age of franchisor i at time t
$EXPAN_{it}$ = Expansion target of franchisor i at time t
$\omega \sim$ i.i.d. (μ_1, σ_α^2)

All governance mechanisms – screening, signaling, and specific investments- that we use as predictors are franchisor's strategic choices and hence not random assignments. Therefore, they are not exogenous and can cause biased parameters of estimation. To account for this endogeneity problem, we should find instrumental variables that are correlated with the endogenous variables (relevant) and uncorrelated with the error term (Angrist & Pischke, 2009).

We use lagged mean levels of the endogenous variables across the sample firm's peers (Germann, Ebbes, & Grewal, 2015) defined as the franchisors that operate in the same industry. Antia et al. (2017) apply the same approach and claim that within an industry franchisors mimic their peer's strategies, and it leads to some level of homogeneity in the use of governance mechanisms. This is also consistent with Germann et al. (2015) argument that the focal firm and its peers operate under similar market conditions and share similar expectations from their strategies. Therefore, our instruments meet the relevance condition. For the sake of the exclusion restriction, consistent with the prior studies we argue that although peers' strategies impact the focal franchisor's strategy, they are not likely to affect her performance outcomes directly. To define industries and peers, we use the Bond's Franchise Guide categorization that divide the franchisors into 40 industries.

Instrument Validity Checks

In addition, to controlling for the relevance and exclusion restriction conditions of the instruments, we need to check for empirical validity. The Cragg-Donald Wald F-statistic is calculated for each of the instruments in each of the first stage equations, and they all exceed the threshold of 10 that satisfies validity of the instrument. Otherwise, according to (Wooldridge, 2010), the weak correlation between the endogenous variables and the instruments lead to biased parameters of estimation.

We specify our model as four first stage equations (2 to 5), each for an endogenous variable and the second stage equation (6) that regresses firm performance on the endogenous variables as below.

$$\boldsymbol{SELECT}_{it} = \beta_{10} + \sum_{11}^{14} \beta\, MeanLevels_{i(t-1)} + \beta_{15} SELECT_{i(t-1)} + \sum_{1.6}^{1.25} \beta\, OtherIVs + \omega_{1it} \qquad (2)$$

$$\boldsymbol{SIGNAL}_{it} = \beta_{20} + \sum_{21}^{24} \beta\ MeanLevels_{i(t-1)} + \beta_{25} SIGNAL_{i(t-1)} + \sum_{2.6}^{2.25} \beta\ OtherIVs + \omega_{2it} \quad (3)$$

$$\boldsymbol{TRAIN}_{it} = \beta_{30} + \sum_{31}^{34} \beta\ MeanLevels_{i(t-1)} + \beta_{35} TRIAN_{i(t-1)} + \sum_{3.6}^{3.25} \beta\ OtherIVs + \omega_{3it} \quad (4)$$

$$\boldsymbol{FFEE}_{it} = \beta_{40} + \sum_{41}^{44} \beta\ MeanLevels_{i(t-1)} + \beta_{45} FFEE_{i(t-1)} + \sum_{4.6}^{4.25} \beta\ OtherIVs + \omega_{4it} \quad (5)$$

$$\boldsymbol{PERFORM}_{it} = \beta_{50} + \beta_{51}\overline{SELECT_{it}} + \beta_{52}\overline{SIGNAL_{it}} + \beta_{53}\overline{TRAIN_{it}} + \beta_{54}\overline{FFEE_{it}} + \beta_{55}\overline{SELECT_{it}} * \overline{SIGNAL_{it}} + \beta_{56}\overline{SELECT_{it}} * \overline{TRAIN_{it}} + \beta_{57}\overline{SIGNAL_{it}} * \overline{FFEE_{it}} + \sum_{5.8}^{5.23} \beta\ Controls + \beta_{524} IMR_{it} + \omega_{5it} \quad (6)$$

Where,

$PERFORM_{it}$ = The sales revenue growth rate for firm i at year t
SELECT = The rigor of screening mechanism
SIGNAL = 1 if a firm provide signal and 0 otherwise
TRAIN = Firm/Franchisor's specific investments
FFEE = Partner/Franchisee's specific investments
MeanLevels = Set of instrumental variables generated by the average of the firm's peers strategies
OtherIVs = Instrumental variables other than the MeanLevels
$\omega \sim$ i.i.d. (μ_2, σ^2),

Results

Table 3 illustrates the CMP estimation hierarchical results. The explanatory power of our final model is demonstrated by the significant Chi-square statistic of 4493.02 ($p < 0.001$). The results support H1b ($p < 0.05$) and reject H1a. It means rigor of the screening mechanism is negatively associated with sales growth rate. H2a and H2b that suggest a relationship between signaling and performance are not supported. However, we found significant support for the complementary effect of signaling to the relationship of screening and performance ($p < 0.05$). This is an interesting result and implies that a combination of signaling and screening weakens some negative effects and results in a significant positive effect for the interaction. We have not hypothesized the direct effects of training and franchise fee on firm performance, but the results

show a significant effect on performance for franchise fee but not for training. However, both hypotheses regarding the interaction effect of specific investment and governance mechanisms (H3 and H4) are supported ($p < 0.1$). Regarding the control variables, none of them except business age and the joint effect of the dummy variables for years are significant.

Table 38: CMP Regression Results

	Hyp.	Model 1 Coeff.	St. Err.	Model 2 Coeff.	St. Err.	Model 3 Coeff.	St. Err.
Independent Variables							
Selection Process	H1			-0.003	0.007	-0.022**	0.010
Provision of FPR	H2			0.005	0.008	0.002	0.008
Training	-			0.000	0.000	0.000	0.000
Franchise Fee	-			-0.001**	0.000	-0.001***	0.000
Interactions							
Screening* FPR	H3					0.033**	0.013
Screening* Training	H4					0.001*	0.000
FPR* Franchise Fee	H5					0.001*	0.001
Control Variables							
Chain Size		0.000	0.000	0.000	0.000	0.000	0.000
IFA Membership		0.005	0.010	0.004	0.010	0.004	0.010
Business Age		-0.001***	0.000	-0.001***	0.000	-0.001***	0.000
Contract Duration		0.000	0.001	0.000	0.001	0.000	0.001
IMR		-0.005	0.016	0.001	0.017	0.003	0.017
Constant		0.724***	0.019	0.725***	0.020	0.730***	0.020
No of Sig. Year dummies		2		2		2	
Year dummies joint Sig.		Yes***		Yes***		Yes***	
Log-likelihood		1371.47		1341.34		1348.256	
Chi-squared test		4470.15***		4479.21***		4493.02***	
Degree of freedom		39		43		46	

Notes: * p<.1; ** p<.05; *** p<.01

Figures 1 to 3 illustrate the interaction effects on firm performance. Figures 1 and 2 illustrates how the negative effect of screening on performance, diminished through signaling or high levels of training. Figure 3 shows that franchisors with high franchise fee will have better performance if they signal their quality.

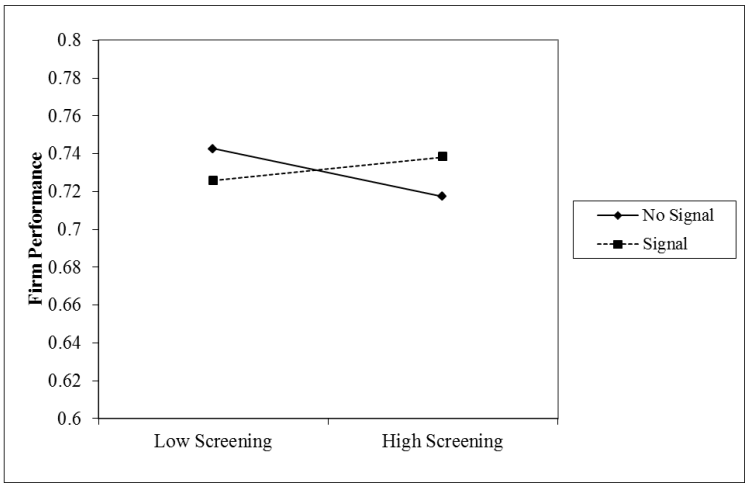

Figure 1: Firm Performance as a Function of Screening at Different Levels of Signaling

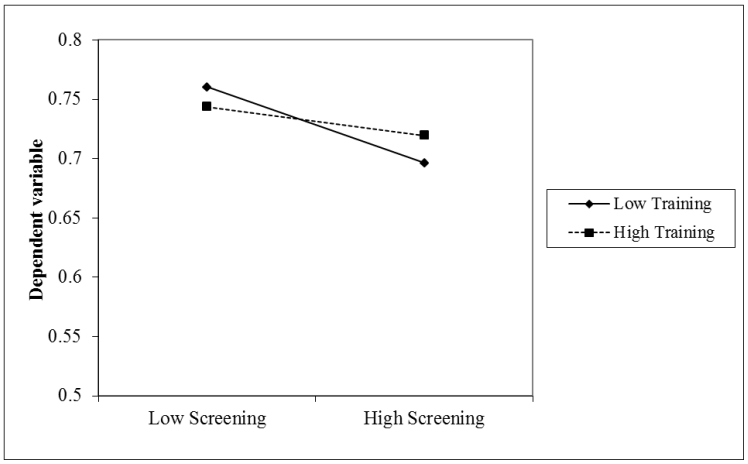

Figure 2: Firm Performance as a Function of Screening at Different Levels of Training

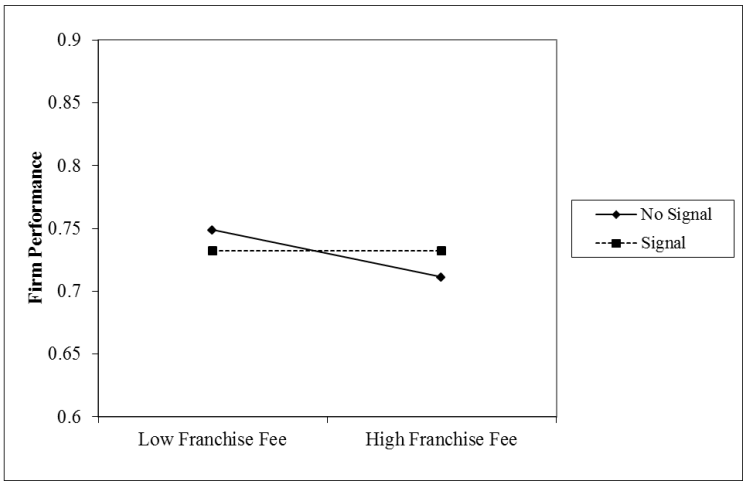

Figure 3: Firm Performance as a Function of Franchise Fee at Different Levels of Signaling

Discussion and Implications

This study aims to investigate the direct and interactive effects of channel governance mechanisms on the firm's performance. Extant literature in marketing suggests that ex-ante screening efforts decrease the risk of ex-post opportunism and hence leads to better performance. However, our results show otherwise. One explanation can be the absences of signaling and its interaction with screening in the equation that leads to biased parameters of estimation for the effect of screening. Also, in an interfirm relationship formation setting that is subject to double-sided adverse selection problems, rigorous screening can hurt performance because it makes the partnership too costly even for high-quality prospective partners. In such a setting, we propose and empirically show that signaling own quality diminishes the negative effect of screening and leads to a positive interactive effect on firm performance. In other words, signaling acts as a complementary mechanism to screening and enlarges the pool of prospective partners and mitigates the shrinking effect of rigorous screening. On the other hand, the screening mechanism prevents low-quality potential partners that were attracted through the signaling mechanism.

Moreover, the results demonstrate that specific investments in the partnership can have a positive effect on performance if they are combined with an appropriate governance mechanism. Channel partnership relations such as franchising are long-time contractual relationships. We show that the balance of expectations and promises in such a relationship leads to better performance. Our results show that the combination of firm signaling and expectation of a partner's specific investment provides such balance and enhances firm performance. Likewise, a rigorous screening mechanism by a firm can be balanced with the firm's promises for specific investments in the prospective partnership.

Theoretical Implications

This study contributes to the interfirm relationship, signaling and transaction cost theories literatures. We scrutinize the effect of screening in an interfirm relationship formation that is subject to double-sided adverse selection problem and each party has the option to enter the relationship or not. Our study shows that positive performance outcome of screening mechanism that is suggested by extant literature for preventing opportunism is conditional on appropriate signaling through VID. However, this conclusion holds when the prospective partners have the option to choose the firm or do not enter the relationship.

We contribute to organizational quality signaling research in multiple ways. We have empirically studied performance consequences of signaling in a business-to-business context and considered quality signaling to prospective channel partners in franchising. Whereas much of the empirical research on this topic look at quality signals in securities markets and the issue of attracting investors to a firm's stock. In addition to differences between the two contexts in terms of forms, risks, and benefits, the ability to study quality signals over time as a longitudinal process (instead of one shot IPO[16] events) is an important and unique feature of our research context (i.e., franchising). This feature enables the researchers to study the stability and strength of signals over time. Beyond the direct effect of signaling, this study has implications for firms that face a shortage of prospective partners because of their rigorous screening standards. Extant literature on transaction cost theory maintains that high ex-ante selection and screening standards decrease ex-post transaction costs of having low-quality channel partners (Heide, Wathne, & Rokkan, 2007; Stump & Heide, 1996; Wathne & Heide, 2000). However, this study shows that

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such a positive effect is conditional on signaling the quality of the business through VID. We show that in addition to this relationship there is another opposite force by screening that hurts firm performance through lowering the number of potential partners. Thus, the addition of signaling and its interaction with screening to the equation can reveal the pure effect of screening, at least in the context of contractual relationship formation in marketing channels.

This study contributes to the franchising and VID literature in several ways. It provides empirical support for the indirect positive impact of quality signaling through the provision of FPR on the franchisor's performance. However, we could not find a significant direct effect. Although previous studies (Michael, 2009; Price, 2000; Sadeh & Kacker, 2018) explore the drivers of providing FPR, performance outcomes of such activity had rarely been studied yet.

Managerial Implications

This study provides a novel framework for managers who want to develop their marketing channel by attracting high-quality business partners. We show that the best outcomes in terms of sales revenue growth can result from simultaneous screening and signaling mechanisms.

Our results have some implications for franchising practitioners. Our empirical findings in support of quality signaling suggest that high-quality franchisors should provide FPR to signal their profitability to prospective franchisees. In a broader context, this study supports quality signaling by entrepreneurs who need to attract business partners for investment in their entrepreneurial networks. Even though signaling may not have a direct impact, a strategic combination of signaling and screening helps the managers to grow their firm performance with a chain of high-quality partners.

This study has implications for business public policymakers. Franchise disclosure enforcement and requirements have been the subject of extensive debate among several parties in the U.S. including the Federal Trade Commission (FTC), the International Franchise Association (IFA), North American Securities Administrators Association (NASAA), the Small Business Administration's Office of Advocacy (SBAOA), the American Bar Association (ABA), and members of Congress (Price, 2000). This study reveals beneficial outcomes of holding provision of FPRs voluntary. Signaling value of voluntary FPRs gives franchisors some incentives to prepare and provide FPR to attract franchisees. Therefore, making the provision of FPR mandatory undermines the signaling value of it and imposes the unnecessary cost of enforcement to the public.

Limitations and Future Research

This study has some limitations as of any other research. We have investigated the interaction of signaling with screening and specific investment. Future research may study the signaling interaction with other channel governance mechanisms (i.e., incentive, monitoring, and socialization) and other transaction attributes.

In this study, we empirically examined signaling behavior (in the form of VID) in a business-to-business context – this context has rarely been the subject of such investigations. However, our empirical analyses are limited to franchising data – therefore, further research may be needed to test our hypotheses in other business-to-business contexts and channel types.

References

Akerlof, G. (1970). The market for lemons: Quality uncertainty and the market mechanism. *Quarterly Journal of Economics, 84*(3), 488-500.

Angrist, J. D., & Pischke, J.-S. (2009). *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton, NJ: Princeton University Press.

Antia, K. D., Mani, S., & Wathne, K. H. (2017). Franchisor-Franchisee Bankruptcy and the Efficacy of Franchisee Governance. *Journal of Marketing Research*(In press). doi:10.1509/jmr.14.0182

Armstrong, J., Brodie, R., & Parsons, A. (2001). Hypotheses in Marketing Science: Literature Review and Publication Audit. *Marketing Letters, 12*(2), 171-187. doi:10.1023/A:1011169104290

Bahadir, S. C., Bharadwaj, S., & Parzen, M. (2009). A meta-analysis of the determinants of organic sales growth. *International Journal of Research in Marketing, 26*(4), 263-275. doi:http://dx.doi.org/10.1016/j.ijresmar.2009.06.003

Bayer, E., Tuli, K. R., & Skiera, B. (2017). Do Disclosures of Customer Metrics Lower Investors' and Analysts' Uncertainty but Hurt Firm Performance? *Journal of Marketing Research, 54*(2), 239-259. doi:10.1509/jmr.14.0028

Bergen, M., Dutta, S., & Walker, O. C. (1992). Agency Relationships in Marketing: A Review of the Implications and Applications of Agency and Related Theories. *Journal of Marketing, 56*(3), 1-24. doi:10.2307/1252293

Bhattacharyya, S., & Lafontaine, F. (1995). Double-sided moral hazard and the nature of share contracts. *The RAND Journal of Economics*, 761-781.

Blair, R. D., & Lafontaine, F. (2005). *The Economics of Franchising*. New York: Cambridge University Press.

Combs, J. G., & Castrogiovanni, G. J. (1994). Franchisor Strategy: A Proposed Model and Empirical Test of Franchise versus Company Ownership. *Journal of Small Business Management, 32*(2), 37.

Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling theory: A review and assessment. *Journal of Management, 37*(1), 39-67. doi:10.1177/0149206310388419

Dedman, E., & Lennox, C. (2009). Perceived competition, profitability and the withholding of information about sales and the cost of sales. *Journal of Accounting and Economics, 48*(2), 210-230. doi:http://dx.doi.org/10.1016/j.jacceco.2009.07.003

Delmar, F., Davidsson, P., & Gartner, W. B. (2003). Arriving at the high-growth firm. *Journal of Business Venturing, 18*(2), 189-216. doi:http://dx.doi.org/10.1016/S0883-9026(02)00080-0

Fadairo, M., & Lanchimba, C. (2014). Organizational choices and performance in distribution systems. *Applied Economics, 46*(14), 1609-1623. doi:10.1080/00036846.2013.872766

Germann, F., Ebbes, P., & Grewal, R. (2015). The Chief Marketing Officer Matters! *Journal of Marketing, 79*(3), 1-22. doi:10.1509/jm.14.0244

Geweke, J. (1989). Bayesian Inference in Econometric Models Using Monte Carlo Integration. *Econometrica, 57*(6), 1317-1339. doi:10.2307/1913710

Ghosh, M., & John, G. (1999). Governance Value Analysis and Marketing Strategy. *Journal of Marketing, 63*, 131-145. doi:10.2307/1252107

Grünhagen, M., Zheng, X., & Wang, J. J. (2016). When the Music Stops Playing: Post-litigation Relationship Dissolution in Franchising. *Journal of Retailing*(In Press). doi:http://doi.org/10.1016/j.jretai.2016.10.002

Hajivassiliou, V. A., & McFadden, D. L. (1998). The Method of Simulated Scores for the Estimation of LDV Models. *Econometrica, 66*(4), 863-896. doi:10.2307/2999576

Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics, 31*(1–3), 405-440. doi:http://dx.doi.org/10.1016/S0165-4101(01)00018-0

Heckman, J. J. (1979). Sample Selection Bias as a Specification Error. *Econometrica, 47*(1), 153-161. doi:10.2307/1912352

Heide, J. B., & John, G. (1990). Alliances in Industrial Purchasing: The Determinants of Joint Action in Buyer-Supplier Relationships. *Journal of Marketing Research, 27*(1), 24-36. doi:10.2307/3172548

Heide, J. B., Wathne, K. H., & Rokkan, A. I. (2007). Interfirm Monitoring, Social Contracts, and Relationship Outcomes. *Journal of Marketing Research, 44*(3), 425-433.

Hendrikse, G., Hippmann, P., & Windsperger, J. (2015). Trust, Transaction Costs and Contractual Incompleteness in Franchising. *Small Business Economics, 44*(4), 867-888. doi:10.1007/s11187-014-9626-9

IHS-Economics. (2016). Franchise Business Economic Outlook for 2016. In: International Franchise Association Educational Foundation

Jap, S. D. (1999). Pie-Expansion Efforts: Collaboration Processes in Buyer-Supplier Relationships. *Journal of Marketing Research, 36*(4), 461-475. doi:10.2307/3152000

Kacker, M., Dant, R. P., Emerson, J., & Coughlan, A. T. (2016). How Firm Strategies Impact Size of Partner-Based Retail Networks: Evidence from Franchising. *Journal of Small Business Management, 54*(*2*), 506-531. doi:10.1111/jsbm.12155

Kashyap, V., Antia, K. D., & Frazier, G. L. (2012). Contracts, Extracontractual Incentives, and Ex Post Behavior in Franchise Channel Relationships. *Journal of Marketing Research, 49*(2), 260-276. doi:10.1509/jmr.09.0337

Keane, M. P. (1992). A Note on Identification in the Multinomial Probit Model. *Journal of Business & Economic Statistics, 10*(2), 193-200. doi:10.2307/1391677

Kohtamäki, M., Partanen, J., Parida, V., & Wincent, J. (2013). Non-linear relationship between industrial service offering and sales growth: The moderating role of network capabilities. *Industrial Marketing Management, 42*(8), 1374-1385. doi:https://doi.org/10.1016/j.indmarman.2013.07.018

Lafontaine, F., & Blair, R. D. (2009). The Evolution of Franchising and Franchise Contracts: Evidence from the United States. *Entrepreneurial Business Law Journal, 3*(2), 381-434.

Lafontaine, F., & Shaw, K. L. (2005). Targeting managerial control: evidence from franchising. *RAND Journal of Economics, 36*(1), 131-150. doi:10.2307/1593758

Michael, S. (2009). Entrepreneurial signaling to attract resources: the case of franchising. *Managerial and Decision Economics, 30*(6), 405-422.

Nobeoka, K., & Cusumano, M. A. (1997). Multiproject Strategy and Sales Growth: The Benefits of Rapid Design Transfer in New Product Development. *Strategic Management Journal, 18*(3), 169-186.

Price, R. (2000). Who reports earnings when reporting is optional? The market for new franchises. *Journal of Accounting and Economics, 28*(3), 391-423. doi:10.1016/S0165-4101(00)00009-4

Rokkan, A. I., Heide, J. B., & Wathne, K. H. (2003). Specific Investments in Marketing Relationships: Expropriation and Bonding Effects. *Journal of Marketing Research, 40*(2), 210-224. doi:10.1509/jmkr.40.2.210.19223

Roodman, D. (2011). Fitting fully observed recursive mixed-process models with cmp. *Stata Journal, 11*(2), 159-206.

Sadeh, F., & Kacker, M. (2018). Quality signaling through ex-ante voluntary information disclosure in entrepreneurial networks: evidence from franchising. *Small Business Economics, 50*(4), 729-748. doi:10.1007/s11187-017-9892-4

Sande, J. B., & Ghosh, M. (2018). Endogeneity in survey research. *International Journal of Research in Marketing, 35*(2), 185-204. doi:https://doi.org/10.1016/j.ijresmar.2018.01.005

Sen, K. C. (1993). The use of initial fees and royalties in business-format franchising. *Managerial and decision Economics, 14*(2), 175-190. doi:10.1002/mde.4090140209

Shane, S. (1996). Hybrid Organizational Arrangements and Their Implications for Firm Growth and Survival: A Study of New Franchisors. *The Academy of Management Journal, 39*(1), 216-234.

Spence, M. (1973). Job market signaling. *The quarterly journal of Economics, 87* (3), 355-374.

Srinivasan, R. (2006). Dual distribution and intangible firm value: Franchising in restaurant chains. *Journal of Marketing, 70*(3), 120-135.

Srinivasan, R., & Sihi, D. (2012). Marketing Information Disclosures: A Review and Research Agenda. In S. Ganesan (Ed.), *Handbook of Marketing and Finance* (pp. 108-126). UK: Edward Edgar Publishing Limited.

Stump, R. L., & Heide, J. B. (1996). Controlling supplier opportunism in industrial relationships. *Journal of Marketing Research, 33*(4), 431-441. doi:10.2307/3152214

Wathne, K. H., & Heide, J. B. (2000). Opportunism in Interfirm Relationships: Forms, Outcomes, and Solutions. *Journal of Marketing, 64*(4), 36-51. doi:10.1509/jmkg.64.4.36.18070

Williamson, O. E. (1985). *The Economic Intstitutions of Capitalism*: Free Press.

Wooldridge, J. M. (2010). *Econometric Analysis of Cross Section and Panel Data* (2 ed.): MIT Press.

Chapter 4: Essay 3

Do Voluntary Information Disclosures During B2B Contractual Relationship Formation Help or Hurt Firm Performance?

Abstract

Voluntary Information Disclosure (VID) plays a crucial role in communicating a firm's current and future performance to its internal and external stakeholders. Yet, there are few studies on VID to business partners in marketing channels. Such VIDs can mitigate the problems that are triggered by information asymmetry between the members of a marketing channel according to the inter-organizational relationship literature. This study investigates the VID of a firm's channel performance metrics to prospective B2B partners and its effect on firm performance. Through a combination of manual-coding of franchisor disclosure documents, financial statement data and econometric analyses of panel data, we examine the impact of firms' disclosure strategies on their performance. In doing so, this study attempts to reconcile conflicting views among researchers as well as between managers and external stakeholders such as investors, analysts, and regulators about the performance implications of VID. On the one hand, VID should positively impact firm performance by mitigating information asymmetry between a firm and its stakeholders. On the other hand, skeptical managers may view such disclosures as negatively impacting a firm's performance through higher costs of preparation and dissemination of disclosures, increased likelihood of potential litigation because of disclosures, and revelation of information to competitors. Using a panel data sample of publicly traded restaurant chains in the U.S., we empirically assess firm performance as a function of the content and other characteristics of VID. The results support our prediction that various elements of the disclosure may impact the performance differently. Whereas disclosure of revenue lowers firm performance, the disclosure of the outlet level channel's costs improves firm performance. Also, we found that the disclosure source and content credibility moderate those direct effects. This study provides a novel context that enables us to investigate whether and how a firm financial performance is impacted by its disclosure behavior in dealing with the firm's prospective B2B partners. Previous research in marketing has shown that disclosures to consumers and external stakeholders in financial markets affect firm performance. This research shows how disclosures to external operational stakeholders (specifically, prospective contractual partners) also influence firm performance. Thus, in conjunction with the existing literature, we facilitate a more comprehensive understanding of how a firm's VID to various external stakeholders impacts its performance.

Keywords: Voluntary Information Disclosure, Information Asymmetry, B2B Contractual Relationship Formation, Content Analysis, Sales Revenue Disclosures, Cost Disclosure, Disclosure Source Credibility, Disclosure Content Credibility

Introduction

Managers use financial reporting and disclosure for communicating firm strategies and performance to external stakeholders. Voluntary Information Disclosure (VID) has been the subject of extensive research in accounting (e.g., Chow & Wong-Boren, 1987; Raffournier, 1995; Verrecchia, 1983), finance (e.g., Craswell & Taylor, 1992; Diamond, 1985), marketing (e.g., Bayer, Tuli, & Skiera, 2017; R. Srinivasan & Sihi, 2012), law and economics (e.g., Grossman, 1981). This topic has been of the interest to scholars and practitioners for several reasons. First, antecedents and consequences of financial disclosure have been of interest to accounting researchers for a long time (e.g., Leuz & Wysocki, 2016; Verrecchia, 1983) because such disclosures play a crucial role for managers in communicating firm governance and performance to outside stakeholders (Healy & Palepu, 2001). Moreover, financial disclosure literature provides a noble opportunity to understand 'the role of accounting information in firm valuation and corporate finance'(Core, 2001, p. 442). Second, researchers have tried to reconcile relatively conflicting views of managers, investors, and regulators regarding the costs and benefits of VID (Bayer et al., 2017). Third, long last debates on the extent to which disclosures need to be mandatory have motivated researchers to investigate the consequences of VIDs in various contexts (Dye, 1985; Hershman & Mazero, 2008). Fourth, VID provides a great context for investigating signaling and agency problems to the strategy, entrepreneurship and marketing researchers (Gomulya & Mishina, 2017; Sadeh & Kacker, 2018).

Despite the traditional economic literature that suggests full disclosure by a seller to prevent the buyers from being suspicious of the product quality, Verrecchia (1983) claims that disclosure-related costs such as the proprietary cost of information may explain managers

reluctance to disclose information. This theory motivated researchers in accounting and finance, and more recently in marketing to examine the effect of disclosure on firm value (e.g., Bayer et al., 2017; McCarthy, Fader, & Hardie, 2017). Marketing literature has paid more attention recently to voluntary information disclosure as a signaling mechanism or a communication tool to mitigate the information asymmetry between firms and their investors, customers or business partners (e.g., McCarthy et al., 2017; Sadeh & Kacker, 2018). Moreover, in recent years, Marketing Science Institute (MSI) and Marketing Accountability Standards Board (MASB) advocate and call for expanding and formalizing marketing disclosures (Bayer et al., 2017), and there have been calls for more research on marketing information disclosures (e.g., R. Srinivasan & Sihi, 2012). With a few exceptions, most studies have been investigated VID to financial market stakeholders, and the literature has been relatively silent on performance consequences of ex-ante VID in contractual business-to-business relationships. However, focusing only on disclosures to financial market stakeholders hinders a comprehensive understanding of how disclosures can impact firm performance. VID to prospective and existing operational partners can mitigate information asymmetry, lead to more coordination and efficiency and lower ex-post transactions costs in work with current partners and overcome potential adverse selection problems in the selection of new partners. All of this should lead to better operational performance and, consequently, better financial performance. In the context of B2B relationship, Price (2000) and Sadeh and Kacker (2018) show that franchisors use VID to compensate the high investment risk and to signal quality of the business to prospective partners. However, to the best of our knowledge, there is no study on the performance outcomes of ex-ante VID in B2B contractual relationships. Table 1 provides a brief review of the key studies that motivate this study and explore drivers or outcomes of marketing information disclosures –i.e., any

information about a firm's marketing activities, programs, assets and personnel (R. Srinivasan & Sihi, 2012).

Voluntary disclosures have been studied mostly in the context of information disclosure to financial markets or consumers, while there have been very few studies on voluntary disclosures aimed at other stakeholders (Healy & Palepu, 2001). Such disclosures are directed to other parties; however, if this process makes the information available to the public, then financial markets still react to that for two reasons. First, they can analyze the information and its impact on firm performance. Second, this type of voluntary disclosure shows the behavior of a firm in its interactions with other stakeholders, such as prospective business partners that impact the future performance of the firm. Potential business partners are important audiences of such disclosures because they play a prominent role in the future performance of the firm. According to extant literature, firms need to communicate the strengths of their business to attract prospective partners (Grossman, 1981; Leland & Pyle, 1977). Such ex-ante information disclosure mitigates information asymmetry between the parties and resolves the adverse selection problem (Mishra, Heide, & Cort, 1998; Spence, 2002). To deepen our understanding of this matter, we explore whether and how VID to prospective business partners impacts firm performance in financial markets.

Table 9: Brief Review of Key Papers

Study	**Context/ Data**	**Theory base**	**Disclosure**	**Discloser to Disclosee**	**Operationalization of disclosure-Data**	**Variable of Interest**	**IV**	**DV Used**	**Moderators**	**Key Findings**
Sadeh and Kacker (2018)	Franchising/ Bond's Franchise Guide	Signaling	FPR	Franchisor to Prospective Franchisee	Binary- Panel (9 years)	Antecedents of VID	Quality signals, Partner qualification	VID	-	VID is a signal of quality
Bayer, Tuli, and Skiera (2017)	Customer metrics disclosures by Telecom and Airlines/ Stock market	Information Disclosure	Customer Metrics in 10-K reports	Firm to Stock Market Investors	Content- Panel	Consequences	The quantity of backward/ forward-looking disclosures	Analysts' uncertainty Investors' Uncertainty Cash-flow	-	Forward-looking disclosures of customer metrics are negatively associated with investors' uncertainty in both industries, and with analysts' uncertainty in the Telecom industry
McCarthy et al. (2017)	Subscription-Based Businesses/ DISH Network and Sirius XM Holdings	Customer-Based Corporate Valuation	Publicly Disclosed Customer Data in 10-Q and 10-K reports	Firm to Stock Market Investors	Content- Panel	Consequences	customer acquisition and retention	Firm Value	-	Firm value can be predicted by publicly disclosed customer data
Groening, Mittel, and Zhang (2016)	Multi-sector public firms	Signaling	All Public sources	Firm to Stock Market Investors	Content- Multi-level	Consequences	Employee- and customer-related achievements and lapses	Tobin's q	Business Scope	Cross-validation of signals positively affects the firm value
Price (2000)	Franchising/ FPR	Information Disclosure	FPR	Franchisor to Prospective Franchisee	Binary and content- Cross-section	Antecedents of VID	Investment risk for Prospective Franchisee, Proprietary cost	VID	-	High investment risk and low cost of releasing proprietary information lead to VID.
Verrecchia (1983)	Analytical Modeling	Signaling		Manager to Traders	-	Antecedents	-	-	-	Cost of disclosure explains the discretion to disclosure

Grounded in the information disclosure and inter-organizational relationship literature, we develop our theoretical framework. We propose that components of a VID to prospective partners vary in terms of their impact on firm performance. On the one hand, by decreasing information asymmetry between the firm and its business partners that mitigates ex-post conflicts and litigations, VID may enhance the firm performance. On the other hand, there are disclosure components that may hurt the performance by establishing unrealistic expectations about the future performance of the business that leads to dissatisfaction of the partners and ex-post transaction cost of dealing with conflicts. According to Bayer et al. (2017), analysts and investors advocate VID, and regulators call for it frequently because it decreases uncertainty about future outcomes. However, disclosure's costs and potential risks make managers reluctant to make voluntary disclosures. Therefore, in this research, we model and empirically test the impact of VID on firm value to reconcile these conflicting views. Also, we investigate the factors that can moderate such effects.

We test our theoretical framework using data from the franchising industry. Franchisors are required by FTC regulations to disclose certain types of information in the form of a Franchise Disclosure Document (FDD) to prospective franchisees before they sign a long-term franchise contract. This FDD also includes a voluntary item, Financial Performance Representation (FPR) – formerly called Earnings Claim – that consists of information provided by the franchisor for disclosing current outlets' performance metrics such as sales, profit, expenses, and some other financial information. Researchers have studied the antecedents of providing FPRs by franchisors (Michael, 2009; Price, 2000; Sadeh & Kacker, 2018) and prior studies (Benoliel, 2016) reveal significant heterogeneity in the content of the FPRs. Also, market demand for transparency forces more franchisors to provide voluntarily FPRs and because of this

trend the ratio of the franchisors who provide FPR has increased from about 20% in 2000 (Blair & Lafontaine, 2005) to 65% in 2016 (Nowakowski, 2017). Provision of FPR by most franchisors decreases their variation in that regard but increases the need for in-depth investigation of the FPRs' contents as the source of heterogeneity in franchisors' disclosure behavior. According to Nowakowski (2017), while 94% of FPRs include average nit revenue data, only 47% of them disclose operating expenses. Figure 1 shows the variation in disclosing cost and profit information by franchisors in their FPR. In this study, we investigate the effect of variation in the content of FPRs on firm performance through a content analysis of these documents.

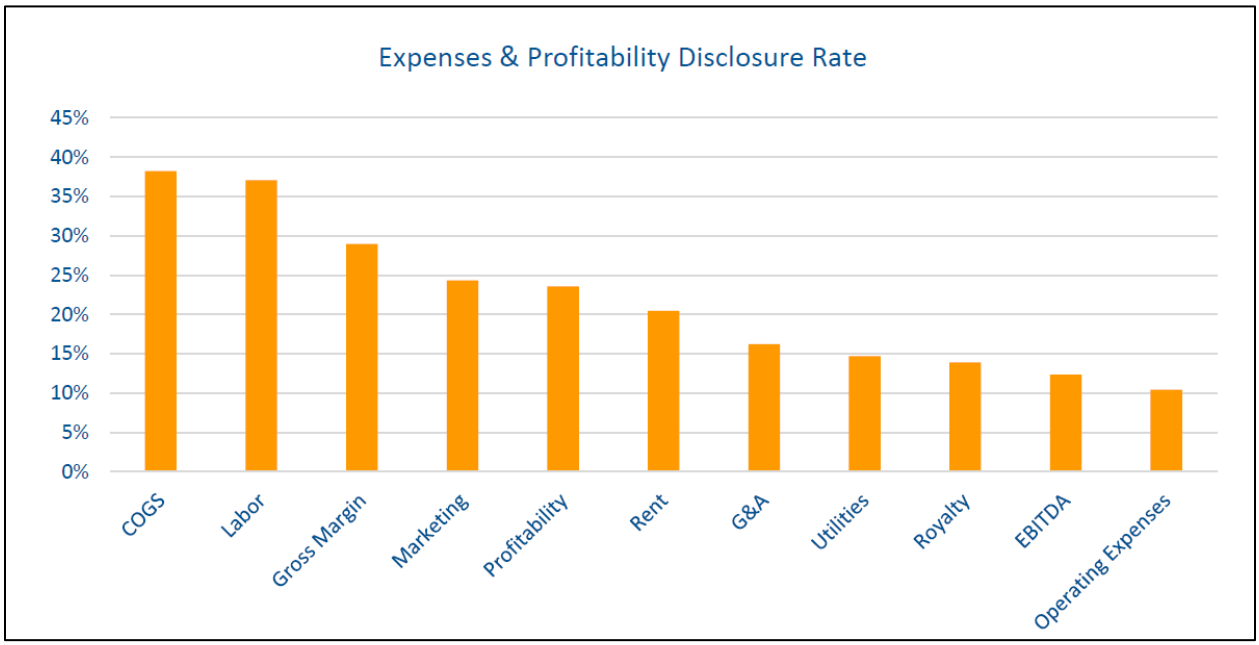

Figure 1: Expenses and Profitability Disclosure Rate; Source: Nowakowski (2017)

We suggest that positive and/or negative effects of disclosure on performance can result from different components or characteristics of the disclosure. Therefore, we put these aspects of voluntary disclosure documents under scrutiny to shed light on the mechanism through which content and other characteristics of disclosure impact firm performance. This is relatively a similar procedure to Bayer et al. (2017) but in a different context. They show that disclosure of

forward- vs. backward-looking customer metrics impact firm performance differently. In the context of distribution channels, we differentiate outlet level Sales Revenue Disclosure (SRD) and outlet level Cost Disclosure (CD) and propose the opposite effects for them on firm performance. Also, we posit that Disclosure Source Credibility (DSC) and Disclosure Content Credibility (DCC) moderate these relationships.

We test the hypotheses using a panel of 57 restaurant chains that were owned by 48 publicly traded firms observed for 284 firm years. This sample covers all publicly listed U.S. chains in the food industry that have made their FDDs publicly available and voluntarily provide FPRs. Conducting the study with a single industry sample helps us to control for the between-industry heterogeneity. We collected firm performance data from Compustat, and disclosure data through manual-coding of the content of FDDs. We correct for selection bias and endogeneity of explanatory variables using a Heckman selection model and estimating a two-stage least square (2SLS) model with instrumental variables respectively. The results support the hypotheses that SRD negatively impacts the performance while CD is associated with higher performance outcomes. These findings provide some insights on the conflicting views about VID consequences and support our idea that a disclosure content can justify differential performance outcomes. We also found partial support for the moderation effect of DSC and DCC that we predict in our hypotheses. The findings are robust to alternative estimation methods.

This study contributes to the marketing theory, practice and public policy in several ways. First, we collect manually-coded data from FPRs to conduct the first empirical analysis on the association of the FPRs' contents and firm performance. This procedure enables us to disentangle and measure the effects of a disclosure's various contents on the firm's performance. For example, such detailed data enables us to uncover the differing performance implications of

a firm's disclosure of revenue vs. disclosure of costs. Second, we contribute to the marketing metrics literature by placing *voluntary disclosure of the firm's channel performance metrics to prospective partners* under scrutiny. Although MASB encourages more disclosure of marketing metrics, the potential cost can make managers reluctant to VID. Thus, we try to reconcile conflicting arguments for and against more disclosure and provide new insights that enable managers to have a better understanding of potential costs and benefits of their disclosure strategies. The findings give additional confidence to managers in their B2B relationship formation when they need to disclose their channel's performance metrics to prospective partners. Third, from the seminal framework of Srivastava, Shervani, and Fahey (1998) marketing researchers examined the various aspects of the marketing-finance interface as well as the relationship between marketing assets and firm value (for a review please see S. Srinivasan & Hanssens, 2009). However, there have been relatively few studies about B2B marketing assets' impact on firm performance (Homburg, Vollmayr, & Hahn, 2014), whereas according to Srivastava, Shervani, and Fahey (1999) 'supply chain management process' is one of the three core processes that impact shareholder value. Therefore, we extend the literature by making the novel prediction that firm investment in the provision of meaningful disclosures to prospective business partners influences firm value. This study provides insights for managers who need to develop and grow their business by attracting business partners, specifically for franchisors when they need to attract franchisees to develop their network. The implications are not limited to the established retail formats such as franchising, but there are insights for emerging sharing economy organizations and platform businesses such as Uber and Airbnb. Lastly, since there has been an intense debate among different stakeholders about making voluntary information

disclosures standard and/or mandatory, our results provide some insights for regulators and public policy makers as well.

Theoretical Background and Framework

Srivastava, Shervani, and Fahey (1998) in their seminal conceptualization of marketing – finance interface suggest that developing market-based assets such as distribution channels and partner relationships increase shareholder value by accelerating and boosting cash-flow and decreasing volatility. They claim that marketing assets such as distribution channel are not 'simply the objects of marketing's action,' but they can be leveraged and conceptualized as market-based assets that contribute to shareholder value. Their argument has motivated researchers to develop frameworks that connect marketing activities to firm value and increases pressure on marketing managers to establish the financial accountability of firms' marketing programs (S. Srinivasan & Hanssens, 2009). However, Lev (2004) suggest that marketing executives need to disclose more information to investors and the capital market about their intangible assets to provide them with a better picture of future performance outcomes.

Information disclosure and its impact on firm performance have been subject of debates among researchers, managers, investors, and regulators. Sorescu, Shankar, and Kushwaha (2007) provide support from literature for and against preannouncement of new products. On the one hand, economic theories suggest that cost and competition hinder full disclosure of information (e.g., Farrell, 1985; Hauser & Shugan, 1983; Michael, 2009). For instance, Verrecchia (1983) offers an explanation for how disclosure costs prevent managers from disclosing information, although traders may interpret this behavior as hiding bad news. Robertson, Eliashberg, and Rymon (1995) claim that new product information disclosure can alert incumbent firms and

trigger a defensive strategy that may outweigh the benefits of the announcement. On the other hand, there is a large body of literature motivating information disclosure because it lowers information asymmetry and the cost of capital and facilitates prediction of cash-flow (Bayer et al., 2017). In the presence of anecdotal, theoretical and empirical arguments for and against VID, we aim to look closer at the content of business-to-business information disclosures to see if it can be a source of variation in the outcomes. In other words, we claim that the content of disclosure plays an important role in the outcomes that occur as a consequence of the disclosure.

Extant literature has shown that various aspects of the disclosures can impact their outcomes differently. Sorescu et al. (2007) maintain that preannouncement of new products leads to positive short-term returns only if the firm provides specific information about the product, whereas it causes long-term abnormal return if they provide continuous information about the product progress to the market. Bayer et al. (2017) investigate the consequences of forward- and backward-looking disclosures of customer metrics and find that forward- and backward-looking disclosures can lead to different results, and there is significant heterogeneity in such disclosures among firms and across industries. Also, they show that forward-looking measures are negatively associated with investors' uncertainty. In this study, we look at firms' voluntary disclosure of their existing channel's performance metrics to their prospective channel partners and investigate different outcomes of disclosure of the sales revenue vs. outlet costs. Our theoretical framework suggests that different interpretation of these two pieces of information by the prospective partners, competitors, and the market is associated with the variation in performance of the firms and hence firms intangible value.

Average outlet Sales Revenue Disclosure (SRD)

Like other types of disclosures, the disclosure of information about gross revenue for attracting channel partners can decrease information asymmetry between the focal firm and its prospective channel members. However, such disclosures can hurt the future performance of the firm and outweigh the benefits in several ways. First, according to Bayer et al. (2017) cost of collecting, processing and disseminating the information impacts the firm cash-flow negatively; therefore, disclosure costs damage firm performance. Second, there is a chance that competitors take advantage of the disclosed information that damages financial performance of the disclosing firm (Berger & Hann, 2007; Dedman & Lennox, 2009; Robertson et al., 1995). Third and most importantly, the disclosure of sales revenue without considering the associated costs of doing business can create unrealistic expectations about the profitability and gives the partners an opportunity for litigations if they cannot achieve the expected revenue. Although the disclosed revenue information is truthful, they are mostly based on the well-established outlets' performance. However, a new partner will need time to establish its operating unit and reach the full revenue potential for that unit or location. Consequently, there is a greater likelihood of unrealistic expectations. Hershman and Mazero (2008) suggest that voluntary disclosure of past performance metrics by franchisors may be misinterpreted as a performance guarantee by a prospective franchisee. Price (2000) notes this issue as a significant cause of many FTC enforcement actions against the franchisors. Thus, we claim that ex-ante cost of preparing the disclosure, the risk of taking advantage of the information by competitors and the ex-post cost of handling conflicts, litigations and contract terminations resulting from revenue disclosures dwarf the benefits and hurt the firms' performance.

H1: *Voluntary disclosure of outlet level sales revenue information, is negatively associated with the firm's performance.*

Average outlet Cost Disclosure (CD)

According to the agency theory literature, there may be information asymmetry between the exchange partners about their intention and ability to perform their job and hence disclosure of information which mitigates such asymmetry, improves the channel relationship and enhances the firm's performance (Akerlof, 1970; Bergen, Dutta, & Walker, 1992; Mishra et al., 1998). Such information asymmetry also makes the less informed party vulnerable to opportunistic actions by the other party and leads to ex-post transaction costs (Wathne & Heide, 2000). Therefore, ex-ante disclosure of information facilitates the partner selection process and let the partners make their decisions in joining a channel based on realistic expectations. This process decreases relationship ex-post transaction costs such as conflicts and litigations and enhances coordination in the channel which all leads to better firm performance. Therefore, we posit that disclosure of outlets' operations costs to prospective partners, provides a sharper picture of the profitability of the business to the prospective channel partners. Provision of cost elements of the business helps prospective partners have a more realistic calculation and expectation. This is a critical issue in the early stages of the business because the operational costs that a new contractual partner faces are not lower than an established outlet; while they have to wait for the revenue to become steady over time. Therefore, we hypothesize that benefits of ex-ante CD exceed its preparation costs through lowering the information asymmetry between the firm and its prospective partners, enhancing their partnership quality, decreasing ex-post transaction cost of conflicts, litigations and relationship termination and finally enhancing the firm performance.

H2: *Voluntary disclosure of outlets level cost information, is positively associated with the firm's performance.*

Moderation Effects

In this section, we hypothesize the interaction effect of the two above types of information disclosure as well as moderation effects of source and content credibility of these disclosures on firm performance.

We provided hypotheses for the individual effect of different types of disclosure content (i.e., SRD and CD) on firm performance. However, in many instances, firms provide both of these metrics in their disclosure document. Thus the question is how do they interact with each other? As noted above, in our reasoning for H1, the disclosure of sales revenue can lead to misinterpretation of information or unrealistic expectations about the future performance of the business, particularly for new partners. According to Blair and Lafontaine (2005) prospective franchisees evaluate franchise opportunities by the 'anticipated profit flows.' However, many of them are not 'sophisticated' and 'well-informed' enough to perform an accurate calculation of life-cycle costs and net present value. Disclosure of costs in addition to sales information enables the prospective partners to calculate potential profits, but similarly, this calculated profit can lead to unrealistic expectations of profit and create the same ex-post transaction costs. Therefore we posit that:

H3: *Disclosure of outlet level sales revenue and outlets level costs together is negatively associated with the firm's performance.*

Disclosure Source Credibility (DSC)

Source credibility – "*the extent to which a communicator is perceived to be a source of valid assertions (i.e., credible), and the degree of confidence in the communicator's intent to communicate the assertions he or she considers most valid (i.e., benevolent)"* (Doney & Cannon, 1997, p. 41) – leads to confidence and will make the information more persuasive (Harmon & Coney, 1982). In addition to their theoretical framework and empirical supports, Harmon and Coney (1982) provide examples of politicians, advertisers, lawyers and communication strategists who recruit and use credible individuals to send their message more persuasively. Grounded in signaling and screening theory, Gomulya and Mishina (2017) suggest that credibility alters the process of evaluating disclosed information by the stakeholders, and receivers give lower weight to information from less credible sources. Their findings suggest that "stakeholders adjust the underlying strategy used to evaluate firms when signalers become less credible" (Gomulya & Mishina, 2017, p. 578). Therefore we suggest that higher DSC reinforces the effect of disclosures on performance.

H4: The source c*redibility of the disclosure reinforces the negative association between SRD and firm performance.*

H5: The source c*redibility of the disclosure reinforces the positive association between CD and firm performance.*

Disclosure Content Credibility (DCC)

Each type of disclosures can be varied according to the credibility of their content and extant literature maintain that content credibility impacts the disclosure outcomes. According to Sanders and Boivie (2004) credible indicators of potential quality that convey information to the

market, affect firm valuation because such credible indicators are effective at changing buyers perceptions about the fundamental quality of the seller. Busenitz, Fiet, and Moesel (2005) show that credible signals mitigate information asymmetry between a venture and future investors and enhance the expected future value of the venture. Likewise, we suggest that the credibility of disclosure content reinforces the effect of disclosures on performance.

H6: The content *credibility of disclosure reinforces the negative association between SRD and firm performance.*

H7: The content *credibility of disclosure reinforces the positive association between CD and firm performance.*

Research Design

Empirical Context and Data Collection

We test our theoretical framework and hypotheses using unbalanced panel data of publicly traded franchised restaurant chains in the U.S. for the period of 2009–2017. We obtained this data from two main sources including Compustat, and Franchise Disclosure Documents (FDD). Our sample consists of 57 restaurant chains owned by 48 firms observed for 284 firm years, and the average number of firm-years is 6.17 (minimum = 1 year; maximum = 9 years). Franchisors use disclosure of information for attracting potential franchisees to their chain and becoming a member of their distribution channel. Also, franchising is the most common type of retailing in the U.S. and many other developed and developing countries. Therefore it constitutes a suitable empirical context for this study.

Measures

Performance. Consistent with previous studies, to quantify firm performance we use Tobin's q that is a forward-looking, stock market-based measure of firm intangible value (R. Srinivasan, 2006). According to Katsikeas, Morgan, Leonidou, and Hult (2015), because of researchers interest in financial performance outcomes of marketing strategies, application of financial market returns measures such as Tobin's q have been growing rapidly over the past decade. Tobin's q is defined by Tobin (1969) as the ratio of the market value of a firm's asset to the current replacement cost of the assets. It is a forward-looking, market-based measure of firm performance and reflects the long-term expectation of the investors about the firm future cash flow (Kang, Germann, & Grewal, 2016). Tobin's q measures the price that the market is willing to pay above or below 'the replacement cost of a firm's asset' and also, adjust for market risk because it combines accounting and capital market information (Germann, Ebbes, & Grewal, 2015). The advantage of such a forward-looking measure 'over accounting measures is that it incorporates multiple dimensions of a firm's financial viability within one stable measure that is relatively insulated from management manipulation' (Gielens & Geyskens, 2012, p. 209).

This measure has been used vastly in the finance and marketing research (e.g., Martin, Josephson, Vadakkepatt, & Johnson, 2018; Nezami, Worm, & Palmatier, 2018; Whitler, Krause, & Lehmann, 2018, and the above mentioned studies) and is a good measure of performance for our study because we are interested in future implications of voluntary disclosures for the firm value. However, recently there have been warnings about misuse of this measure by the researchers. According to Bendle and Butt (2018), accounting-based approximations of Tobin's q that are used by marketing researchers can be problematic. They show that Tobin's q is not comparable across industries but this is not our concern in this study because our sample is only

from the restaurant industry in the United States. Also, they claim that this measure is 'biased toward false positives when firms make marketing investments' (Bendle & Butt, 2018, p. 497). Although this problem may not affect our results, we note on this problem in the limitations section of this manuscript.

Independent variables. We collected data for our independent variables through manual-coding of FDDs. Disclosure measures were collected from FPR (item 19) of the FDDs. We measure SRD and CD by binary variables with the value of one if the franchisor discloses information about the range of revenue and costs of their current channel respectively and value of zero otherwise. We use range instead of inclusion of the sales data because all franchisors provide at least the average of sales, but they vary in providing the range of the sales data that makes the disclosure more precise. We use the proportion of the outlets that are owned by a franchisor as the measure of DSC because disclosures of business profitability look more credible when they are made by a franchisor who has made larger investments in the business. The higher proportion of owned outlets shows the franchisor's confidence in the business. Also, these franchisors have access to data from larger number of outlets that makes their disclosure more precise and reliable and hence credible. To measure DCC, we used the proportion of franchised outlets that are included in the disclosed information. Some franchisors disclose revenue or cost information only for company-owned outlets or a small fraction of franchised outlets. However, since the owned outlets have access to more resources, and they can integrate their purchases and lower their costs, these numbers are less credible (in terms of information about the performance of franchised outlets) in the view of a prospective franchisee than a disclosure which includes data from a higher fraction or all franchised outlets.

Table 2: Operationalization of the variables

Construct/ Variable	Operationalization
Firm Performance	Tobin's q = (AT + (CSHO ∗ PRCC_F) – CEQ)/ AT AT: Total asset CSHO: Common Shares Outstanding PRCC_F: Price of shares at the end of the financial year CEQ: Total common/ordinary equity
Sales Revenue Disclosures (SRD)	Disclosure of the range of actual sales. (Yes=1; No=0)
Outlets Cost Disclosure (CD)	Disclosure of actual cost data. (Yes=1; No=0)
Disclosure Source Credibility (DSC)	The proportion of owned outlets by the franchisor.
Disclosure Content Credibility (DCC)	The proportion of franchisees which their data was included in the disclosure.
Size	Total no. of owned and franchised outlets of the franchisor.
Terminations	Number of franchise contracts terminated in the year.
Royalty	Royalty rate charged by the franchisor.
Leverage	The firm's financial leverage.
IMR	Inverse Mills Ratio
Category	Dummy variables assigned to each of the 11 restaurant categories: Burger, Chicken, Pizza and Pasta, Coffee & Snack, Casual Dining, Full-service restaurant, Sandwiches, Ice cream, Mexican, Seafood, Multi-sector

Control variables. We added several control variables to our model to account for their impact on firm performance above our hypothesized effects. We control for the fixed effect of year and business category of the observations to account for macro-economic trends and sector-specific effects on firm performance. Although all firms in the sample are restaurant chains, we categorize them in sub-sectors because restaurant sub-sectors have relatively different markets. For example, full-service restaurants market conditions are different than hamburger restaurant or coffee shops. Table 4 shows the list and frequency of these sub-sectors in our data. We added the firm size - measured by the number of outlets - to our model to control for resource availability (Groening, Mittal, & "Anthea" Zhang, 2016) that impacts firm performance. Also, we controlled for ongoing royalty rates charged by franchisors because they enhance franchisor

brand investments that impact firm performance (Butt, Antia, Murtha, & Kashyap, 2018). The number of franchise contracts that are terminated in each year is also added to the model to control for their effect on firm performance. Consistent with previous studies we control for financial leverage – the ratio of book debt to total asset- because it can impact Tobin's q (Kang et al., 2016). Table 2 provides a summary of our operationalizations.

Model Specification

Our empirical model needs to address some concerns that are rooted in the nature of our data and theoretical framework. First, our sample is unbalanced panel data, and hence we need to account for potential selection bias resulted from non-random missing data. According to Heckman (1979) estimation of a model with non-random missing observations result in biased parameters of estimation. Therefore we address the selection bias by specifying a Heckman selection model to obtain Lee's lambda (Inverse Mill's Ratio) and include it in the final regression model (Heckman, 1979; R. Srinivasan, 2006). The selection model includes age (number of years in business), size (total number of outlets) of a franchisor because newer and smaller franchisors were more likely to exit (R. Srinivasan, 2006) and year specific dummies (Butt et al., 2018). Second, our predictors such as disclosure of revenue or cost are the franchisor's strategic choices and hence not random assignments. Therefore, they are not exogenous and can cause a biased estimation for parameters. Durbin and Wu-Hausman tests of endogeneity of these variables yielded significant evidence of endogeneity (χ^2=17.06, $p < .01$; $f = 3.94$, $p < .01$). We correct for the potential endogeneity bias by specifying a Two-Stage Lease Square (2SLS) estimation model and using instrumental variables that are –theoretically-correlated with the endogenous variables –the relevance condition- and uncorrelated with the error term –the exclusion restriction condition (Angrist & Pischke, 2009). Finding a "good"

instrumental variable enables us to simulate a random assignment of the subjects in experimental methods (Rossi, 2014) that are the gold standard for addressing the endogeneity bias. However, it is hard to find a perfect IV, and there is no true test for their quality except justification of a good IV based on institutional knowledge (Rossi, 2014). As instrumental variables, we use mean levels of the endogenous variables across the sample firm's peers, excluding the focal firm, lagged one year (R. Srinivasan & Ramani, 2019). According to Germann, Ebbes, and Grewal (2015), the focal firm and its peers operate under similar market conditions because they operate in the same industry, and also they share similar expectations from their strategies. Therefore, the similarity in the market conditions and performance expectations satisfy the relevance condition for the instrumental variables. This approach has been used by Antia et al. (2017) under an assumption that within an industry, franchisors mimic their peers' behavior that leads to homogeneity in the use of governance mechanisms (DiMaggio & Powell, 1983). According to Grewal and Dharwadkar (2002), the concerns with social fitness and organizational legitimacy develop processes that form institutions and institutional mechanisms. Such mechanisms influence marketing channels' internal polity and economy in the same environment. Although these mechanisms influence the strategy of individual firms, they do not impact their performance except through the focal firm strategy. Therefore, consistent with the studies mentioned above, we argue that peers' strategies impact the focal firm strategy, but they are not likely to affect the firm's performance outcomes directly –that satisfies exclusion restriction condition. Therefore, we specify our selection and 2SLS models as follows:

Selection Model:

$$INCLUDE_{it} = \gamma_0 + \gamma_1 SIZE_{it} + \gamma_2 AGE_{it} + \sum_{y=3}^{11} \gamma_y YEAR_y + \Omega_{it}$$

2SLS Model:

$$\text{Tobin's } q_{it} = \beta_0 + \beta_1 SRD_{it} + \beta_2 CD_{it} + \beta_3 DSC_{it} + \beta_4 DCC_{it} + \beta_5 SRD_{it}*CD_{it} + \beta_6 DSC_{it}*SRD_{it} + \beta_7 DSC_{it}*CD_{it} + \beta_8 DCC_{it}*SRD_{it} + \beta_9 DCC_{it}*CD_{it} + \beta_{10} SIZE_{it} + \beta_{11} TERIN_{it} + \beta_{12} ROY_{it} + \beta_{13} LEV_{it} + \beta_{14} IMR_{it} + \sum_{k=15}^{23} \beta_k YEAR_k + \sum_{r=24}^{33} \beta_r CAT_r + \alpha_i + €_{it}$$

Where:

$INCLUDE_{it}$ = availability of for firm i at year t
SIZE = size of the franchise channel
AGE= age of the business
Tobin's q_{it} = firm intangible value for the firm i at year t
SRD = sales revenue disclosure
CD = outlet cost disclosure
DSC = disclosure source credibility
DCC = disclosure content credibility
TERMIN = number of franchise contracts that are terminated
ROY = franchisor's royalty rate
LEV = firm leverage
IMR = inverse mills ratio
YEAR = year
CAT = franchisor business category
$\alpha_i \sim$ i.i.d. (μ_1, σ_α^2), and $€_{it} \sim$ i.i.d. (μ_2, σ_α^2).

Results

Model-free evidence

As Table 3 shows, Tobin's q is significantly and negatively correlated with SRD ($r = -0.27$, $P < 0.01$). This correlation is consistent with our theoretical framework which predicts disclosure of sales revenue can hurt the firm's performance. However, as expected, we observe a positive and significant correlation between Tobin's q and CD ($r = 0.14$, $P < 0.05$). This observation supports our prediction of the positive impact of disclosure of outlets costs on the firm's performance. Thus, the results provide model-free initial evidence in support of our hypothesized main effects. Furthermore, we tested for multicollinearity of variables by estimating the maximum variance inflation factor (VIF) because of the high correlation between

termination and size variables. The highest VIFs (4.41 and 3.02 for size and termination respectively) are less than the threshold of 10 (Mason & Perreault, 1991). Thus we found no significant potential for multicollinearity issue.

Table 3: Correlations and descriptive statistics

No.	Variable	1	2	3	4	5	6	7	8	9
1	Tobin's q	1.00								
2	SRD	-0.27*	1.00							
3	CD	0.14*	-0.15	1.00						
4	DSC	-0.25*	-0.09	0.21*	1.00					
5	DCC	0.16*	0.26*	-0.24*	-0.24*	1.00				
6	Size	0.24*	-0.22*	0.12*	-0.32*	0.03	1.00			
7	Terminations	0.23*	-0.28*	0.16*	-0.24*	-0.07	0.75*	1.00		
8	Royalty	0.29*	-0.16*	0.15*	0.06	-0.03	-0.01	0.13*	1.00	
9	Leverage	-0.15*	-0.16*	-0.12*	-0.16*	0.16*	0.11	0.10	-0.20*	1.00
No. of Observations		256	284	284	284	268	284	281	281	254
Mean		2.81	0.65	0.76	0.31	0.64	2533.58	15.76	4.91	0.34
Std. Dev.		2.01	0.47	0.42	0.30	0.39	3872.51	39.99	0.72	0.48
Minimum		0.84	0	0	0	0	6	0	0.96	0.00
Maximum		14.32	1	1	1	1	17021	315.00	7.00	4.92

* significant at $p < .05$

Table 4: Subsector Categories

Restaurant Category	Code	Frequency	Percent	Cum.
Burger Places	1	31	10.92	10.92
Chicken	2	27	9.51	20.42
Pizza and Pasta	3	36	12.68	33.10
Coffee & Snack	4	38	13.38	46.48
Casual Dining	5	52	18.31	64.79
Full service restaurant	6	17	5.99	70.77
Sandwiches	7	27	9.51	80.28
Ice cream	8	4	1.41	81.69
Mexican	9	7	2.46	84.15
Seafood	10	8	2.82	86.97
Multi-sector	11	37	13.03	100
Total		284	100	

Model estimation

Table 5 provides our stepwise regression estimation results. Model 1 and 2 present a model with only control variables and a model with control variables and only the simple effects respectively. Model 3 shows the estimation result for the theoretical framework. The overall model is significant (Wald $\chi^2 = 397.25$, $p < 0.01$), and supports significant explanatory power of our hypothesized predictors of firm performance. The main effects of SRD and CD on Tobin's q are significant, negative ($\beta = -1.32$, $p < 0.01$) and positive ($\beta = 1.33$, $p < 0.01$) respectively. Therefore our H1 and H2 are supported. Our H1 proposes that disclosure of sales revenue is negatively associated with the firm's performance. However, H2 suggest that disclosure of outlets costs is positively associated with Tobin's q and benefit firm performance. We found a significant and negative effect ($\beta = -3.27$, $p < 0.01$) for the interactive effect of SRD and CD on firm performance that supports H3. This result supports the idea that with cost and revenue information, the prospective partner not only has unrealistic expectations about revenues but also about profits that can lead to conflicts and hurts firm performance.

Regarding moderation effect of DSC, our results confirm a positive and significant effect ($\beta = 7.55$, $p < 0.01$) for the interaction effect of SRD and DSC (H4) that is opposite of our prediction. One explanation for this result is that the credibility of the disclosed sales revenue information dampens its negative effect. In fact, the more credible, and precise data leads to more realistic expectations and enhances firm performance. We found no significant effect for the interaction of CD and DSC that leads to rejection of H5.

Table 5: 2SLS Estimation Results

Tobin's q	Hyp.	Model 1		Model 2		Model 3	
		Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.
Independent Variables							
SRD	H1			-1.861***	0.382	-1.323***	0.312
CD	H2			1.559***	0.464	1.332***	0.380
DSC	-			-5.628***	1.686	-1.488	1.214
DCC	-			-0.085	0.511	0.079	0.740
Interactions							
SRD*CD	H3					-3.274***	0.966
SRD*DSC	H4					7.554***	1.460
CD*DSC	H5					2.797	3.479
SRD*DCC	H6					-2.769***	0.869
CD*DCC	H7					2.536	2.872
Control Variables							
Size		3.9E-4***	0.000	7.37E-5	0.000	3.9E-4***	0.000
Terminations		-0.011**	0.005	-0.017***	0.006	-0.020***	0.004
Royalty		0.446**	0.192	0.557**	0.245	0.197	0.180
Leverage		-1.176***	0.355	-1.472***	0.499	-1.167***	0.396
IMR		-2.447**	1.151	2.460	1.795	-1.818	1.500
Constant		1.963	1.212	1.735	1.467	2.433**	1.127
No of Sig. Year dummies		7		6		5	
Year dummies joint Sig.		Yes*		No		No	
No of Sig. CAT dummies		7		4		5	
CAT dummies joint Sig.		Yes***		Yes***		Yes***	
Wald χ^2		231.38***		203.28***		397.25***	
Degree of freedom		22		26		31	
R-squared		0.5364		0.3759		0.6481	
Root MSE		1.4935		1.7328		1.3011	
Tests of endogeneity							
Durbin		-	-	$\chi2$ (4) =	17.06***	$\chi2$ (9) =	22.09***
Wu-Hausman		-	-	F(4,169)	3.94***	F(9,159)	2.19**

Notes: * p<.1; ** p<.05; *** p<.01

Similarly, we found partial support for the moderation effect of DCC. The empirical results support our prediction for the negative effect of SRD and DCC ($\beta = -2.76$, $p < 0.01$) on performance that means credibility of disclosure's content reinforces the effect of SRD. Therefore, H6 is supported, but we find no empirical support for H7 that predicts the same reinforcement effect for disclosure of cost (CD). Lack of support for H5 and H7 that hypothesize

the interaction effect of credibility and cost disclosures may suggest that the issue of credibility is much greater for revenue disclosures than for cost disclosures. One reason is cost disclosures are easier to validate from external sources. For example, it is possible to find information about lease expenses or labor and raw material costs from other sources whereas outlet level sales information is difficult to be validated from other sources.

Regarding the control variables, we find a significant effect for six of eleven category-specific fixed effects and significant effect for joint hypotheses testing of all dummies together ($\chi^2(10) = 66.82$, $P < 0.01$). However, we find no significant effect for the joint hypotheses of year-specific fixed effects. Also our results show significant positive and negative effect for franchised channel size ($\beta = .00039$, $p < 0.01$) and channel relationship dissolution ($\beta = -.02$, $p < 0.01$) respectively. This means the size of the franchised channel enhances the firm's performance while franchise relationship termination hurts firm intangible value. We also find a significant negative association ($\beta = -1.16$, $p < 0.01$) between the firm's financial leverage and its intangible value that is consistent with previous studies (R. Srinivasan, 2006). We find no significant effect for royalty rate control variable. Also, we found no significant effect for the inverse Mills ratio that suggests no selection bias in the sample because of the potential non-random missing data. (Heckman, 1979)

Robustness Tests and Post Hoc Analyses

Alternative estimators

To evaluate the dependency of our empirical results on the empirical setting, we test our theoretical framework with alternative estimation approaches. Initially, we estimated our model using the two-stage least-square (2SLS) estimator. Our model is over-identified because we have more instruments than endogenous variables. Therefore, we also estimated the model through the

GMM and LIML estimators to test the robustness of the results in case of an issue with the 2SLS distributional and heteroscedasticity assumptions. According to Angrist and Pischke (2009), LIML results are less precise but also less biased than 2SLS, so robust LIML results rule out the week instrument risk. Our results remained robust against the alternative estimator.

Post Hoc Analysis of Significant Interactions

To enhance our understanding of the moderation effects, we analyze the simple slopes for all the significant interaction effects (Aiken & West, 1991). Figure 2.a shows that while disclosure of outlets costs improves a firm's performance, it reinforces the negative effect of SRD when they are both disclosed. This result suggests that whereas disclosure of cost and revenue enables the prospective partners to calculate the profit, the unrealistic expectations of revenue will be converted to unrealistic expectations of profit. Figure 2.b suggests that the credibility of the disclosure's source can reverse the negative effect of SRD on the firm intangible value. To offer an explanation for this observation, we suggest that credibility and accuracy of the information lead to a more realistic expectation of profit and dampens the negative effect of SRD on firm performance. Finally, as suggested by Figure 2.c credibility of revenue disclosures reinforce their negative effect on firm performance.

Discussion

Despite the growing demand of the market for more disclosures and interest of practitioners and scholars to know its consequences, there have been few insights into performance implications of voluntary disclosure of marketing information, particularly in a B2B relationship context. In this study, we explored the relationship between the content of such disclosures and the firm intangible value. In this section, we conclude this study with a

discussion of theoretical and managerial implications as well as limitations of this study and future avenues for research.

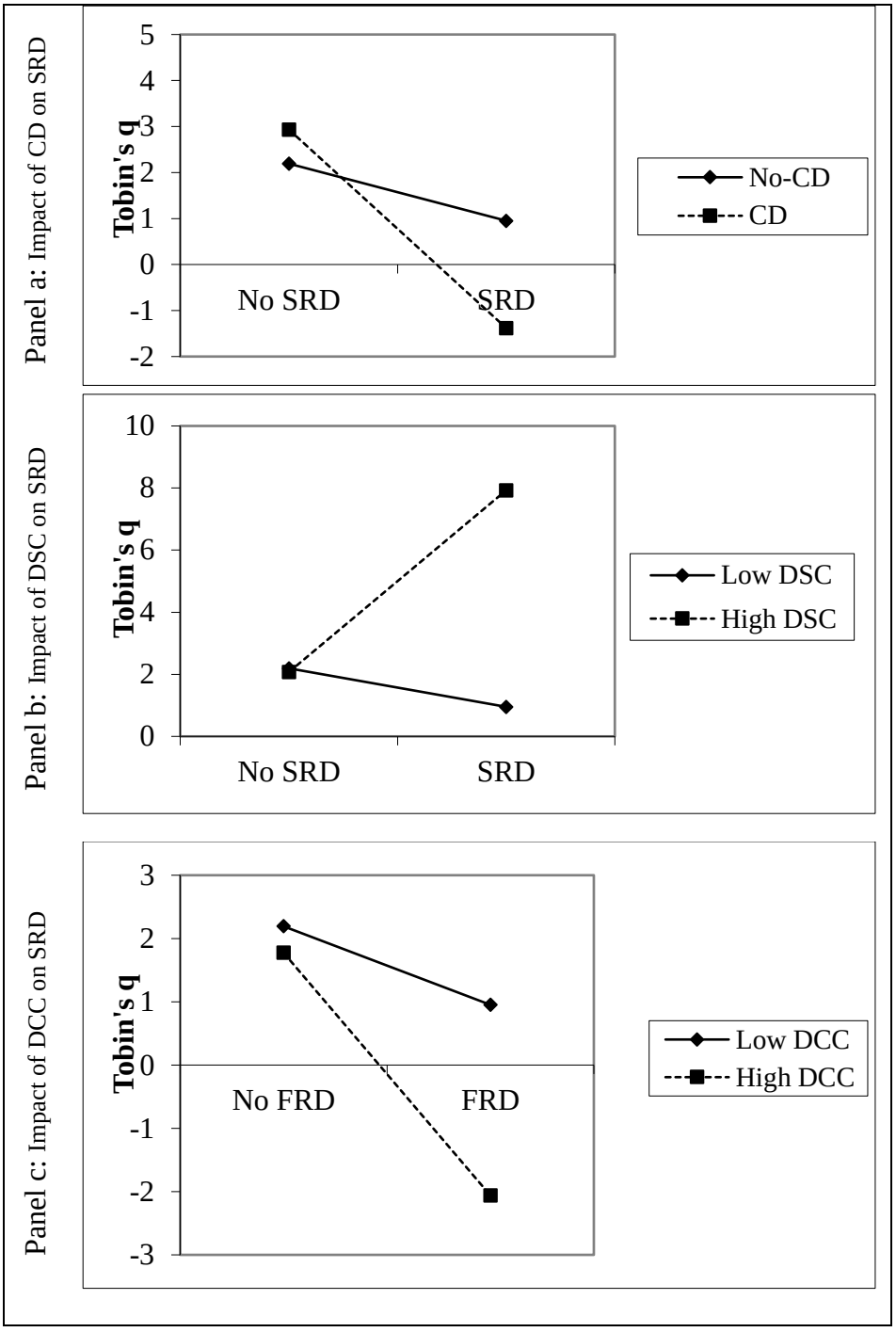

Figure 2: Simple slope analysis for significant interactions

Theoretical Contributions

First, manual-coding of the content of the FPRs enables us to disentangle and measure the differential effects of revenue vs. cost disclosures on performance. This separation reconciles the conflicting views of managers, investors, analysts and scholars on the costs and benefits of disclosures. While investors, analysts, and most scholars advocate voluntary disclosure because of its effect on information asymmetry, managers are concerned about the costs of voluntary disclosures. Our theoretical framework and empirical results demonstrate that each part of a disclosure document can lead to different consequences. We show that not every piece of information mitigates information asymmetry, but they may cause unrealistic expectations and hence dissatisfaction for business partners. As shown by our results, the disclosure of sales revenue to attract channel partners, even though truthful, may cause expectations that may not be achieved by every new partner -at least in a short run. However, the disclosure of the cost of the business assists the prospective partners to have more realistic calculation about their potential loss or profit if they enter the partnership. Thus, it truly mitigates the information asymmetry and decreases ex-post transaction costs of dealing with conflicts and litigations or opportunistic behaviors for the firm.

Second, this study contributes to marketing metrics literature by scrutinizing voluntary disclosure of *distribution channel performance metrics* to prospective channel members and providing insights on the implications of such disclosures. Despite a number of calls by researchers, and Marketing Accountability Standards Board (MASB) considerable efforts to raise awareness regarding reporting of marketing metrics (Gregory & Moore, 2012) we provide one of a few empirical studies on performance implications of disclosure of such metrics. We defined SRD, CD, DSC, and DCC as the examples of measures that can help researchers and

practitioners to evaluate a disclosure document quantity and quality. Development of such scales enables the researchers to go farther than measuring provision of VID as a black box by a dichotomous variable and assist them in conducting more accurate empirical analyses of VID implications and such marketing metrics to firm value.

Third, although prior studies demonstrate significant support for the relationship between marketing assets and firm value, the literature has yet to offer a comprehensive view of B2B marketing assets and their effects on firm performance. We extend the literature of marketing-finance interface by providing theoretical and empirical support for the connection between B2B marketing assets and firm performance. We show that a firm's investment in the provision of meaningful disclosures of its marketing channel's performance metrics to prospective business partners influences the firm's performance. Moreover, we show this influence can be negative or positive based on the content of the disclosure.

Lastly, we contribute to the VID literature and signaling theory by providing some empirical pieces of evidence for the moderation effect of source and content credibility on disclosure consequences. Comparing to mandatory disclosures, this issue is more critical for voluntary disclosures that are less regulated and standardized which make the audiences skeptical about the quality of the disclosed information.

Managerial Implications

This study provides insights to managers who are skeptical about the consequences of VID because of its costs and potential risks. We suggest a novel division of disclosures' contents that facilitates managers' decision regarding which information to disclose. In particular, our findings provide managers with more confidence in their B2B relationship strategies when they

need to disclose their channel's performance metrics to prospective partners and other stakeholders such as investors and financers. According to Nowakowski (2017) and industry reports lenders and franchisees demand transparency and performance disclosure; thus franchisors who provide FPR represent lower credit risk and receive better credit scores. Therefore, in the presence of such market demand for disclosures, our findings assist managers in making a decision about the quantity and quality of their VID. Moreover, the results have some implication for firms such as franchisors who need to develop and grow their business network by attracting new business partners to join their channel and develop their network. These insights are not limited to traditional business network formats such as franchising but have implications for emerging sharing economy organizations and platform businesses such as Uber, and Airbnb that operate as contractual networks.

We also offer some insights for public policymakers that help them in their long-time debate on the extent to which disclosures need to be mandatory. This study's findings suggest that making disclosure of information such as SRD mandatory may hurt both sides of a relationship in a distribution channel. As we discussed earlier, such disclosures may lead to unrealistic expectations about the profitability of the business that may cause failure of the business for the new channel members who may be small and young entrepreneurial entities. Also, such failures in the channel hurt the focal firm performance through ex-post transaction costs. Therefore, any effort in making more disclosures mandatory or standardizing a form of VID need to consider such potential consequences.

Limitations and Future Research

Like any research, this study has limitations that open an avenue for future research. This study is focused on manual-coding of the content of FPRs and their effect on firm performance

in the restaurant industry. Considering that disclosure's standards, practices and consequences are context- and industry-specific, future research is needed to investigate VID in other industries and contexts and to enhance the generalizability of our findings. Future research may also examine the performance implications of disclosure of marketing assets metrics other than distribution channels that were the subject of this research.

Our theoretical framework hypothesizes the effect of VID on firm performance through information asymmetry as well as channel's agency and transaction costs. However, because of data limitations our empirical model tests only the association of VID's content and firm performance. Therefore, future researchers may shed more lights on this mechanism by examining the above-mentioned mediation effects.

Consistent with many previous studies in marketing and finance, we used Tobin's q as our measure of performance. However, as noted by Srinivasan and Hanssens (2009) this measure has some limitations as other stock market-based measures have. Although our theoretical framework and single industry data minimize the problems that are raised about this measure (Bendle & Butt, 2018) future research using other measures of performance and new estimation methods of Tobin's q can cover potential limitations and test the robustness of our results.

Finally, we looked at the effect of VID on firm performance through its costs and benefits in a relationship with business partners. However, such VID to business partners is available to stock market investors and analysts. Thus, it can impact the firm performance in the stock market through perceived risk or benefits by these other stakeholders. Future research can investigate this relationship and demonstrate the indirect effect of VID on performance that is the result of making the information available to the public by disclosing to certain parties.

References:

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.

Akerlof, G. (1970). The market for lemons: Quality uncertainty and the market mechanism. *Quarterly Journal of Economics, 84*(3), 488-500.

Angrist, J. D., & Pischke, J.-S. (2009). *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton, NJ: Princeton University Press.

Antia, K. D., Mani, S., & Wathne, K. H. (2017). Franchisor-Franchisee Bankruptcy and the Efficacy of Franchisee Governance. *Journal of Marketing Research*(In press). doi:10.1509/jmr.14.0182

Bayer, E., Tuli, K. R., & Skiera, B. (2017). Do Disclosures of Customer Metrics Lower Investors' and Analysts' Uncertainty but Hurt Firm Performance? *Journal of Marketing Research, 54*(2), 239-259. doi:10.1509/jmr.14.0028

Bendle, N. T., & Butt, M. N. (2018). The Misuse of Accounting-Based Approximations of Tobin's q in a World of Market-Based Assets. *Marketing Science, 37*(3), 484-504. doi:10.1287/mksc.2018.1093

Benoliel, U. (2016). *Are Disclosures Really Standardized? The Case of Quick Service Restaurant Franchises* Paper presented at the The 30th Annual International Society of Franchising Conference Groningen, The Netherlands.

Bergen, M., Dutta, S., & Walker, O. C. (1992). Agency Relationships in Marketing: A Review of the Implications and Applications of Agency and Related Theories. *Journal of Marketing, 56*(3), 1-24. doi:10.2307/1252293

Berger, P. G., & Hann, R. N. (2007). Segment profitability and the proprietary and agency costs of disclosure. *The Accounting Review, 82*(4), 869-906.

Blair, R. D., & Lafontaine, F. (2005). *The Economics of Franchising*. New York: Cambridge University Press.

Busenitz, L. W., Fiet, J. O., & Moesel, D. D. (2005). Signaling in Venture Capitalist—New Venture Team Funding Decisions: Does it Indicate Long–Term Venture Outcomes? *Entrepreneurship Theory and Practice, 29*(1), 1-12.

Butt, M. N., Antia, K. D., Murtha, B. R., & Kashyap, V. (2018). Clustering, Knowledge sharing, and intrabrand competition: a multiyear analysis of an evolving franchise system. *Journal of Marketing, 82*(1), 74-92.

Chow, C. W., & Wong-Boren, A. (1987). Voluntary Financial Disclosure by Mexican Corporations. *The Accounting Review, 62*(3), 533-541.

Core, J. E. (2001). A review of the empirical disclosure literature: discussion. *Journal of Accounting and Economics, 31*(1), 441-456. doi:10.1016/S0165-4101(01)00036-2

Craswell, A. T., & Taylor, S. L. (1992). Discretionary Disclosure of Reserves by Oil and Gas Companies: An Economic Analysis. *Journal of Business Finance & Accounting, 19*(2), 295-308. doi:10.1111/j.1468-5957.1992.tb00626.x

Dedman, E., & Lennox, C. (2009). Perceived competition, profitability and the withholding of information about sales and the cost of sales. *Journal of Accounting and Economics, 48*(2), 210-230. doi:http://dx.doi.org/10.1016/j.jacceco.2009.07.003

Diamond, D. W. (1985). Optimal Release of Information By Firms. *The Journal of Finance, 40*(4), 1071-1094. doi:10.2307/2328395

DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review, 48*(2), 147-160.

Doney, P. M., & Cannon, J. P. (1997). An examination of the nature of trust in buyer-seller relationships. *the Journal of Marketing*, 35-51.

Dye, R. A. (1985). Strategic accounting choice and the effects of alternative financial reporting requirements. *Journal of accounting research, 23*(2), 544-574. doi:10.2307/2490826

Farrell, J. (1985). Voluntary disclosure: Robustness of the unraveling result, and comments on its importance.

Germann, F., Ebbes, P., & Grewal, R. (2015). The Chief Marketing Officer Matters! *Journal of Marketing, 79*(3), 1-22. doi:10.1509/jm.14.0244

Gielens, K., & Geyskens, I. (2012). The marketing-finance interface in channels of distribution research: A roadmap for future research. In S. Ganesan (Ed.), *Handbook of Marketing and Finance* (pp. 204-224). Cheltenham: Edward Elgar Publishing.

Gomulya, D., & Mishina, Y. (2017). Signaler Credibility, Signal Susceptibility, and Relative Reliance on Signals: How Stakeholders Change their Evaluative Processes After Violation of Expectations and Rehabilitative Efforts. *Academy of Management Journal, 60*(2), 554-583.

Gregory, J., & Moore, M. (2012). Aligning Marketing and Finance with Generally Accepted Standards for Valuing Brands: Opportunities and Obstacles. *Corporate Finance Review, 17*(3), 20.

Grewal, R., & Dharwadkar, R. (2002). The Role of the Institutional Environment in Marketing Channels. *Journal of Marketing, 66*(3), 82-97. doi:10.1509/jmkg.66.3.82.18504

Groening, C., Mittal, V., & "Anthea" Zhang, Y. (2016). Cross-Validation of Customer and Employee Signals and Firm Valuation. *Journal of Marketing Research, 53*(1), 61-76. doi:10.1509/jmr.12.0272

Grossman, S. J. (1981). The informational role of warranties and private disclosure about product quality. *Journal of law and economics*, 461-483.

Harmon, R. R., & Coney, K. A. (1982). The persuasive effects of source credibility in buy and lease situations. *Journal of Marketing research*, 255-260.

Hauser, J. R., & Shugan, S. M. (1983). Defensive Marketing Strategies. *Marketing Science, 2*(4), 319-360. doi:10.1287/mksc.2.4.319

Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics, 31*(1–3), 405-440. doi:http://dx.doi.org/10.1016/S0165-4101(01)00018-0

Heckman, J. J. (1979). Sample Selection Bias as a Specification Error. *Econometrica, 47*(1), 153-161. doi:10.2307/1912352

Hershman, S., & Mazero, J. G. (2008). *Financial Performance Representations: The New and Updated Earnings Claims* (1 ed.). Illinois: American Bar Association.

Homburg, C., Vollmayr, J., & Hahn, A. (2014). Firm Value Creation through Major Channel Expansions: Evidence from an Event Study in the U.S., Germany, and China. *Journal of Marketing, 78*(3), 38-61

Kang, C., Germann, F., & Grewal, R. (2016). Washing Away Your Sins? Corporate Social Responsibility, Corporate Social Irresponsibility, and Firm Performance. *Journal of Marketing, 80*(2), 59-79. doi:10.1509/jm.15.0324

Katsikeas, C. S., Morgan, N. A., Leonidou, L. C., & Hult, G. T. M. (2015). Assessing Performance Outcomes in Marketing. *Journal of Marketing, 80*(2), 1-20. doi:10.1509/jm.15.0287

Leland, H. E., & Pyle, D. H. (1977). Informational asymmetries, financial structure, and financial intermediation. *The journal of Finance, 32*(2), 371-387. doi:10.2307/2326770

Leuz, C., & Wysocki, P. D. (2016). The Economics of Disclosure and Financial Reporting Regulation: Evidence and Suggestions for Future Research. *Journal of Accounting Research, 54*(2), 525-622. doi:10.1111/1475-679X.12115

Lev, B. (2004). Sharpening the intangibles edge. *Harvard business review, 6*, 109-116.

Martin, K. D., Josephson, B. W., Vadakkepatt, G. G., & Johnson, J. L. (2018). Political Management, Research and Development, and Advertising Capital in the Pharmaceutical Industry: A Good Prognosis? *Journal of Marketing, 82*(3), 87-107. doi:10.1509/jm.15.0297

Mason, C. H., & Perreault, W. D. (1991). Collinearity, Power, and Interpretation of Multiple Regression Analysis. *Journal of Marketing Research, 28*(3), 268-280. doi:10.1177/002224379102800302

McCarthy, D. M., Fader, P. S., & Hardie, B. G. S. (2017). Valuing subscription-based businesses using publicly disclosed customer data. *Journal of Marketing, 81*(1), 17-35.

Michael, S. C. (2009). Entrepreneurial Signaling to Attract Resources: The Case of Franchising. *Managerial and Decision Economics, 30*(6), 405-422. doi:10.1002/mde.1460

Mishra, D. P., Heide, J. B., & Cort, S. G. (1998). Information asymmetry and levels of agency relationships. *Journal of marketing Research, 35*(3), 277-295. doi:10.2307/3152028

Nezami, M., Worm, S., & Palmatier, R. W. (2018). Disentangling the effect of services on B2B firm value: Trade-offs of sales, profits, and earnings volatility. *International Journal of Research in Marketing, 35*(2), 205-223. doi:https://doi.org/10.1016/j.ijresmar.2017.12.002

Nowakowski, A. (2017). FINANCIAL PERFORMANCE REPRESENTATION. In: Frandata.

Price, R. (2000). Who reports earnings when reporting is optional? The market for new franchises. *Journal of Accounting and Economics, 28*(3), 391-423. doi:10.1016/S0165-4101(00)00009-4

Raffournier, B. (1995). The determinants of voluntary financial disclosure by Swiss listed companies. *European Accounting Review, 4*(2), 261-280. doi:10.1080/09638189500000016

Robertson, T. S., Eliashberg, J., & Rymon, T. (1995). New Product Announcement Signals and Incumbent Reactions. *Journal of Marketing, 59*(3), 1-15. doi:10.2307/1252115

Rossi, P. E. (2014). Invited Paper—Even the Rich Can Make Themselves Poor: A Critical Examination of IV Methods in Marketing Applications. *Marketing Science, 33*(5), 655-672. doi:10.1287/mksc.2014.0860

Sadeh, F., & Kacker, M. (2018). Quality signaling through ex-ante voluntary information disclosure in entrepreneurial networks: evidence from franchising. *Small Business Economics, 50*(4), 729-748. doi:10.1007/s11187-017-9892-4

Sanders, W. G., & Boivie, S. (2004). Sorting things out: Valuation of new firms in uncertain markets. *Strategic Management Journal, 25*(2), 167-186.

Sorescu, A., Shankar, V., & Kushwaha, T. (2007). New Product Preannouncements and Shareholder Value: Don't Make Promises You Can't Keep. *Journal of Marketing Research, 44*(3), 468-489.

Spence, M. (2002). Signaling in retrospect and the informational structure of markets. *American Economic Review, 92*(3), 434-459. doi:10.1257/00028280260136200

Srinivasan, R. (2006). Dual Distribution and Intangible Firm Value: Franchising in Restaurant Chains. *Journal of Marketing, 70*(3), 120-135.

Srinivasan, R., & Ramani, N. (2019). With Power Comes Responsibility: How Powerful Marketing Departments Can Help Prevent Myopic Management. *Journal of Marketing, 83*(3), 108-125. doi:https://doi.org/10.1177/0022242919831993

Srinivasan, R., & Sihi, D. (2012). Marketing Information Disclosures: A Review and Research Agenda. In S. Ganesan (Ed.), *Handbook of Marketing and Finance* (pp. 108-126). UK: Edward Edgar Publishing Limited.

Srinivasan, S., & Hanssens, D. M. (2009). Marketing and Firm Value: Metrics, Methods, Findings, and Future Directions. *Journal of Marketing Research, 46*(3), 293-312. doi:10.1509/jmkr.46.3.293

Srivastava, R. K., Shervani, T. A., & Fahey, L. (1998). Market-Based Assets and Shareholder Value: A Framework for Analysis. *Journal of Marketing, 62*(1), 2-18. doi:10.2307/1251799

Srivastava, R. K., Shervani, T. A., & Fahey, L. (1999). Marketing, Business Processes, and Shareholder Value: An Organizationally Embedded View of Marketing Activities and the Discipline of Marketing. *Journal of Marketing, 63*(4_suppl1), 168-179. doi:10.1177/00222429990634s116

Tobin, J. (1969). A General Equilibrium Approach To Monetary Theory. *Journal of Money, Credit and Banking, 1*(1), 15-29. doi:10.2307/1991374

Verrecchia, R. E. (1983). Discretionary Disclosure. *Journal of Accounting and Economics, 5*, 179-194. doi:10.1016/0165-4101(83)90011-3

Wathne, K. H., & Heide, J. B. (2000). Opportunism in Interfirm Relationships: Forms, Outcomes, and Solutions. *Journal of Marketing, 64*(4), 36-51. doi:10.1509/jmkg.64.4.36.18070

Whitler, K. A., Krause, R., & Lehmann, D. R. (2018). When and how Board Members with Marketing Experience Facilitate Firm Growth. *Journal of Marketing, 82*(5), 86-105. doi:10.1509/jm.17.0195

Chapter 5: Conclusion

My dissertation consists of three relatively independent but inter-related essays that investigate antecedents and consequences of Voluntary Information Disclosures (VID) in a contractual Business-to-Business relationships context. Although each essay targets an important gap in the extant literature, the three of them together provide a more cohesive view of the drivers and performance implications of VID in B2B contractual relationship formation. In each study, I develop a theoretical model grounded in relevant Marketing literature and the organizational economic theories and then test my hypotheses with the relevant secondary data.

My first essay explores the drivers of franchisor provision of VIDs to prospective franchisees. The ex-ante VID decision is typically faced by a variety of entrepreneurs and small and medium enterprises (SMEs) who grow by developing a distribution channel and offer standardized contracts to resource owners who join these channels. Previous studies, anecdotal evidence, and industry reports show that managers act differently in their decisions to provide VID. In this study, we want to understand what encourages or discourages managers to make such a VID to their prospective business partners. Our results support the view that firms use VID to signal the quality of their business to potential business partners and attract them to join their distribution channel. Also, we found that a rigorous partner qualification mechanism is another driver of VID in franchising. Our findings also provide empirical support for the complementary role played by multiple quality signaling mechanisms used by franchisors.

Essay 2 investigates performance consequences of signaling through VID and screening in the formation stage of a relationship in distribution channels. It is essential for entrepreneurial firms such as franchisors to expand their distribution channel by attracting high-quality business partners on the one hand, and preventing low-quality partners from joining the network on the

other hand. Firms may use a selection mechanism to screen the quality of the prospective partners. Also, they have the choice to disclose their private information to signal their own quality. Such disclosure enables the prospective partners to estimate their potential revenue if they invest in that partnership. We draw on the signaling and transaction cost theories as well as the voluntary information disclosure literature to develop a theoretical framework and investigate the direct and interactive impacts of screening and signaling on firm performance. My findings support the idea that intensive screening mechanism may hurt performance. Whereas signaling through VID can complement such strategy and provide positive performance consequences. The results also show that the effects of screening and signaling on performance are moderated by firm and partner specific-investments in the partnership respectively. This study reveals the interactive effects of signaling through performance metrics disclosure and screening on firm performance.

Essay 1 and 2, therefore, complement each other by exploring drivers and consequences of VID. The first essay discovers that franchisors use VID to signal their quality and offset the negative effect of their high-level qualification standards on the number of potential partners. Whereas, the second study examines the interactive effect of such signaling and screening on the firm performance. Despite this complementarity, essay 1 and 2 differ from each other in the way that each of them investigates one side of the VID phenomenon. Essay 1 examines why some firms provide VID and essay two studies what happens to the firm which does so. Although these two studies provide a big picture of VID process, both of them look at this phenomenon as a dichotomous variable. However, studies have shown that firms not only vary in their decision to provide VID, but there is also significant heterogeneity in the content of the VID documents (Benoliel, 2017). Therefore, there is a need for investigating the performance implications of

variation in the content of VID documents. Such a study can enhance our understanding of costs and benefits of disclosures. Also, it can explain why some managers believe disclosures' costs exceed their benefits.

My third essay examines the relationship between the content of VID and firm performance. This study complements my previous two studies by looking more closely into the VID documents and disentangles performance consequences of the different components of the VIDs. This essay differs from my previous studies in two ways. First, my third essay looks closely at the variation in the content of VID instead of looking at it as a binary action. Second, it explores the performance implications of VID by using a stock market-based measure of performance. Through manual-coding of the content of VIDs and collecting firms' financial performance measures data, hypotheses are tested empirically. As we predicted, the results reveal that each component of VID can have a different effect on firm performance. The study shows that disclosure of outlet level revenue information can hurt firm performance. However, the disclosure of the outlet level costs benefits the performance through mitigating information asymmetry between the firm and its prospective partners. I also found partial support for the prediction that the credibility of the source and content of the VIDs can reinforce the direct effect of disclosure content on the firm performance.

These three essays offer implications for the marketing channels and inter-organizational relationship theory and practice. They contribute to signaling theory by providing empirical evidence for signaling in a B2B context and suggesting a relatively new context for investigating signaling theory. Extant literature has investigated the use of signaling to customers and employees. However, despite its relative importance, signaling to prospective channel partners have yet many corners to discover. My study has some implications for the inter-organizational

relationship literature by proposing and examining the complementary effect of signaling and screening on the firm performance in the formation stage of distribution channel relationships. Screening has been known in the extant literature as a channel governance mechanism for preventing opportunism actions. However, going through an intensive screening mechanism can disappoint potential partners because of its heavy costs. Our study shows that simultaneous effective signaling mechanism can motivate the potential partners and offset the screening disadvantages. This thesis also contributes to the information disclosure literature by providing the first evidence of the effect of content of VID by franchisors on their performance by manual-coding of these disclosure documents. The results provide insights for the debate on the costs and befit of voluntary disclosures. They suggest that the content of a voluntary disclosure can influence its outcomes.

This thesis also provides some insights for marketing practitioners in particular for managers who need to expand their business's distribution channel by attracting new partners. These three essays together offer a detailed picture of the advantages and disadvantages of providing VID for attracting new partners. Therefore, we enhance the managers' ability for calculating costs and benefits of providing a voluntary disclosure and evaluating their disclosure strategies.

Considering the longtime debate between managers, researchers and public policymakers on the extent to which disclosures should be mandatory, this thesis offers some insights for public policymakers. Specifically, on the debate on making franchisors FPR mandatory in the U.S. (and probably other geographic jurisdictions) my findings can provide shreds of evidence for costs and benefits of such regulation. Signaling value of VIDs and their embedded ex-ante and ex-post costs undermines the arguments for making them mandatory.

In summary, my thesis original and significant contribution to scholarly knowledge is representing an initial step in exploring antecedent and consequences of franchisor VIDs specifically and providing insights for other types of VID by demonstrating differential consequences of the content of VIDs. It evaluates different aspects of such disclosure strategies, their drivers and consequences as well as interactions between the different elements of a VID and between VID and other channel governance mechanisms. I hope my research facilitates managerial decisions in this regard and furthers scholarly work on voluntary information disclosures.

References

Benoliel, U. (2017). Are Disclosures Really Standardized: An Empirical Analysis. *Vill. L. Rev.*, *62*, 1.