Who Do Franchisees Work For: Themselves or the Network?

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Abstract This paper examines whether franchisees can be enticed to defy economic incentives to adhere to social pressure to meet targets. We examine this question in a franchise network of supermarkets. The franchisor sets targets that franchisees can choose to meet. If they choose to ignore the target they lose 0.5 percent of their sales. Notwithstanding this incentive, some franchisees can be better off to ignore the target. We observe that franchisees located in poorer areas are more profitable if they ignore the target set for them by the franchisor. Yet, our data also suggests that franchisees surrounded by a large group of compliers, are more inclined to comply with the targets even though that is at their (financial) detriment. We conjecture and find some evidence to suggest that they do so because their neighbors have incentives to put pressure on them achieving their targets. That is, we demonstrate that the network suffers in terms of sales levels if an increasing number of units choose not to meet the targets.

1. Introduction

In this paper we examine conditions where franchisees give priority to their own profit rather than to the profit of the whole network. Our measure of prioritizing is whether or not a franchisee chooses to comply with targets the franchisor sets for all franchisees comprising the network.

A typical target would be for each franchisee to comply with a specific price table posted by the franchisor. The franchisee has no formal contractual obligations to comply with the targets set by the franchisor. However, the franchisees can increase their earnings by complying with the target the firm sets. On the other hand, these increased earnings may be insufficient for individual franchisees given the costs they would have to incur to meet these targets. We examine conditions where franchisees can earn more if they decide not to comply with targets set by the franchisor. Our research site, a national supermarket franchise chain located in the Netherlands, provides an appropriate setting to study deviant franchisee incentives since all franchisees in the network have collectively agreed to the implementation of such a system of network-wide targets and each franchisee has no formal contractual obligation to comply with these targets. The expectation of the franchisor by imposing such a system is that, on average, all franchisees in the network will benefit from complying with them. This assumption is supported by the data because franchisees comply in 92 % of the cases with the targets set by the franchisor. Thus, our primary inquiry is geared towards understanding why 8% of the franchisees decide not to comply. In addition, we examine whether franchisees consider social costs when deciding to comply or not to comply with the targets set by the franchisor. We construct a measure to account for these social costs in terms of how closely a franchisee is located to another franchisee in the chain that does not comply with

the targets set by the franchisor (proximity) and by how densely that franchisee is surrounded by other complying franchisees (density).

We conjecture and find that franchisees located in poorer areas are less likely to comply with network targets. In other words, they deliberately choose NOT to contribute to the network. We also observe that they are more likely to comply if they face more social pressure from other franchisees in the network that comply with the targets. We argue that complying with the social norm becomes more salient to franchisees when they are located more closely to other franchisees in the network that do comply. This closeness manifests itself in increased interaction between complying franchisees due to more face-to-face meetings. By failing to comply with the target, the franchisee signals to the franchisor and to the other franchisees in the network that its priority is with the own shop profit and less so with progressing the network. The findings seem to suggest that face-to-face meetings increase the social cost of noncompliance, and therefore act as a complement to persuade the individual franchisee to comply.

We believe that the setting of this study provides us with some unique opportunities to empirically test theories that have been put forward in the extant literature. That is, the setting allows us to conduct tests in a natural real-firm setting that would typically require a laboratory experiment (List, 2006). One of the center pieces of motivational theory has been that financial incentives have negative effects on prosocial behavior (see for a review Gneezy, Meier and Rey-Biel, 2011). The idea would be that as soon people are rewarded their motivation to act prosocially dissipates. For instance, Fehr and Gächter (2002) show that cooperation decreases in the presence of financial incentives. However, at the same time financial incentives have been shown to demonstrably convince people to start doing the right thing. In “Pay Enough or Don’t Pay At All” Gneezy and Rustichini (2000) show that individuals can be convinced with money to assume the

desired behavior. Tayler and Bloomfield (2011) show that individuals respond to social norms if people surrounding them adhere to those norms. Our paper adds to this stream of literature in that in our setting franchisees are convinced with financial incentives to comply with a target set by the franchisor. We show that once the number of complying franchisees becomes sufficiently large other franchisees start to defy their financial incentives to follow suit with the social norm of compliance with the targets by exerting social pressure.

We believe this finding has consequences for how relations come about in organizations. According to relational-contract theory it is argued that seemingly similar units may achieve different levels of performance (Gibbons, and Henderson, 2012). The theory attributes these performance dissimilarities to the evolution of intra-firm relations over time. Our results suggest that conditions facing units may affect the likelihood of these relations coming about. In the first place we show that units that have fewer financial benefits from contributing to the network choose to defect from the collective interest of the network by not achieving the collective target. However, we also observe that when complying shops exert social pressure on a shop that would benefit from *noncompliance*, it is likely that it will still comply. These results not only increase our understanding of what drives individuals to build relations (Gibbons and Henderson, 2012), but also suggest that contact between actors affect their cooperative outcome (Kurzban, 2001; Fehr and Gächter, 2002) as put forward in economic psychology and motivational theory. That is, while the franchisor let individual franchisees choose to comply, the colleague franchisees who comply with the franchisees directives are less likely to give the individual franchisee this choice, but rather put social pressure in place to convince noncompliant franchisees that they should comply.

Our paper contributes to the management accounting literature in two dimensions: trade-offs between incentives and how market differences affect control. The targets that are set for each

franchisee are independent of the specific operations of the individual shops. As a consequence neither the target setter (principal) nor the individual franchisee (agent) is able to manipulate the target to affect the likelihood of achieving the target (Leone and Rock, 2002 and Bouwens and Kroos, 2011). That is, agents can do nothing that would increase their likelihood of achieving their target in the next period through manipulation of current results. Failing to achieve the target in the current period cannot enhance the likelihood of achieving the next-period target, nor will achieving the target in the current period affect the likelihood of not achieving the target in the current period. Subjectivity can also have no effect on our outcomes since all targets set by the franchisor are objective non-financial performance measures; for example, whether or not the franchisee maintains the temperature level of a fridge at pre-specified standards (See Appendix A for detailed elaboration on the specific performance measures used in each quarter). In other words, reneging is not an option as far as the franchisor is concerned. In addition, the franchisor has no incentive to do so anyhow as the money to be distributed among the units is independent of target achievement (Baker, Gibbons, Murphy, 2001). Absent these manipulations our study setting allows us to provide a precise estimate of how different units trade off the economic benefits (i.e., reimbursement vs. operational results) they can expect from their choice of whether or not to comply with the target.

Previous work in franchising has demonstrated that incentives enhance the likelihood of network survival (Shane, 2001 and Azoulay and Shane, 2001). One of the issues facing the franchisor in compiling these contracts is that she cannot anticipate any contingency that might affect network performance. Campbell et al. (2009) demonstrate how firms solve this problem using differing management control designs. They show for a sample of store chains that management control designs are a function of market dispersion. Specifically they find that

decentralization increases as dispersion levels increase. This shows that the head office resorts to incentives to entice store managers and owners to implement head office policies. Building on Campbell et al. (2009), we examine the effectiveness of such incentives in place within a network. In particular, we study the situation where the firm tries to entice franchisees to standardize quality and prices throughout the network using a carrot (incentive) rather than a stick (contract) to achieve that purpose.

The remainder of the paper proceeds as follows. In Section 2 we provide a literature review and develop our hypotheses, in Section 3 we describe our sample and data, in Section 4 we describe our research methodology, and in Section 5 we present our empirical results. We provide robustness checks in Section 6 and conclude with Section 7.

2. Literature Review and Hypotheses Development

Network or own interests? Super market chains differentiate themselves through price and non-price attributes; the latter also being referred to as quality factors. Basker and Noel (2012) argue that quality factors pertain to: product selection, freshness, inventory replenishment, service, cleanliness, location, parking, return policies, etc. Typically franchise organizations try to present their quality and pricing attributes uniformly. A typical feature of a franchise organization is, therefore, in its standardization of how units position themselves in the industry, what product lines they offer and how they approach their customer. These standardizations help the network to achieve its economies. For instance, Darr et al. (1995) demonstrate for a pizza franchise network how learning that occurs in individual stores spill over to shape working methods throughout the network. Consistent with Darr et al. (1995) Meiseberg (2013) shows for a sample of 122 franchise chains that next to local responsiveness, uniformity and system-wide adaptation are most relevant

to chain performance. In other words, uniformity and network-wide adoption of established working methods benefit the whole network. Such approach would suggest that the franchisor puts standards in place to enhance firm progress and that franchisees should be willing to submit themselves to network-specific working methods and structures. Accordingly, in the firm we study, we expect that individual franchisees in the network can benefit by complying with the targets set by the franchisor. More formally:

Hypothesis 1: A franchisee's profitability is positively associated with its decision to comply with the targets set by the franchisor.

However, such a one-size- fits- all standardization does not necessarily benefit all franchisees equally, or it may even disadvantage individual franchisees. Indeed individual franchisees face a trade-off between costs and benefits of serving the network or their own franchise. This is true, as franchisees are the residual claimants of their unit. Thus, from an economic standpoint, it would be expected that franchisees are inclined to give priority to activities that benefit their franchise rather than the network. To the extent that the individual unit would benefit by deviating from the standard, it stands to reason that units will try to make an effort to depart from it. Such a divergence may impose a cost on the network. In the firm we study, for instance, consumer organizations collect price information to post price comparisons among other retail firms. One franchise in the richer area may choose to charge higher prices in their neighborhood as price sensitivity is lower in these areas than in the poorer areas. Competitors will have no quibbles to point out this high priced franchisee to show that the consumer organizations are making a "mistaken comparison." Hence, the descending franchisee takes a risk of getting caught by the consumer organizations for charging higher prices than the competition charges. While this may be true for only a limited number of franchisees, the whole network would suffer from such a course of events as in the poorer areas price sensitivity is arguably higher (see Basker,

2011). On the other hand, units in the poorer areas may want to cut on quality so as to maintain margins. Consistent with that idea Matsa (2011) finds that quality in supermarkets located in poorer areas only improves once Wal-Mart enters into the market. Basker (2011) demonstrates that when income decreases, more people resort to Wal-Mart at the cost of the more upscale supermarkets. King et. al (2004) finds that "stores serving low-income shoppers use relatively little labor per 1,000 square feet of selling area. This helps keep labor costs as a percent of sales low, but gross margins for stores serving low-income consumers are also relatively low." These studies seem to suggest that supermarkets serving customers in different income brackets may adapt their product lines and the means of how these products are offered to the client. Hence, a franchisee that must follow suit a one size-fits-all policy may be tempted to descend. However, like with prices the decision to cut costs affecting the quality of how products are offered is also likely to touch other parts of the network. Not only consumer organizations observe and disclose these differences, so will customers that happen to be in the neighborhood and go into a lower quality shop. In fact deviations would impact the franchise organization. That is, when one franchisee decides not to meet the target the franchisor sets he is bound to harm the network. The question then becomes, will individual franchisors act against the interest of the network to benefit themselves when serving customers in different income brackets?

One of the impediments for diverting from the target is that the franchisee may be aware of the potential harm he inflicts on other units of the network. While, the benefit of deviating may still be higher than the cost to the diverging franchisee, he may consider the potential consequences of his actions to the network. Even, if the franchisee himself is willing to take such risk he might still be reluctant to do so. In an experiment Charness and Jackson (2009) show that 1/3 of their participants mute their risk taking if they know their risk appetite is larger than that of the others.

However, this is a result found in an experiment. It is not clear how individuals would act in practice if they can accrue benefit at the cost of the network. Standard agency theory would predict that individual franchisees would try anything to serve their interest. The fact that franchisees are the residual claimholders would make it attractive to deviate from the standard when their individual unit benefit from such actions. We, therefore, predict that franchisees will take actions at the risk of disadvantaging the network and test:

Hypothesis 2. A franchisee's profitability is positively associated with its decision to deviate from the targets set by the franchisor if it primarily serves customers residing in low income brackets.

Social Norms and Social Pressure. Outside the direct business atmosphere, Glaeser, Sacerdote, and Scheinkman (1996) and Glaeser (2004) have recognized that a relation exists between proximity and social interaction between individuals. These social interactions affect factors such as residence in cities and aggregate outcomes such as crime, where crime and social interaction are conjectured to feature a negative relation. Allegedly, proximity increases the primacy individuals attach to the relation they have with people who live close to them. In the realm of business firms, proximity has been associated with outcomes and cooperation. Landier et al. (2009) demonstrate that, measured by stock return, a divestment put through in units located in the state where the firm is headquartered is a more credible signal of management's willingness to restructure than an out-of-state divestment. The reason is that it appears to be more difficult to make decisions with a direct adverse effect on the interest of units that are in close proximity. Consistent with this idea, Landier et al. (2009) demonstrate that firms are reluctant to put through divestments for divisions located in the same state as where their headquarters are situated and that firms adopt a pecking order whereby they divest out-of-state entities before those in-state. They also document that units in close proximity are less likely to be forced to lay off personnel than

units located at a farther distance from headquarters and that geographically dispersed firms are less likely to pursue employee friendly policies.[1] Bormann et al. (2014) find for the transportation sector that firm units whose managers regularly meet are more likely to coordinate activities. These findings indeed suggest that it is more likely for firms to make decisions that benefit other units when they are in close proximity. It seems to be the case that the (likelihood of) physical meetings affect the incidence of making decisions that adversely affects other units.

Experimental work provides us with some guidance as to why and when managers might care more about units in closer proximity. Lundquist et al. (2009) find that people who have had an interaction compared to those who did not interact are far less likely to lie to the other. Leary and Kowalski (1990) show that individuals care about making a good impression on their peers. That is, for issues salient to them they want to assure that their peers are left with the impression that benefits them. Kurzban (2001) shows that inducing social psychological cues (e.g., eye contact) increases the likelihood of individuals contributing to a public good. Valley et al. (1998, 2002) show that cooperation increases when people have face-to-face meetings rather than alternative means of interaction, i.e., telephone or written word.

In addition to pure geographical proximity, a growing number of studies investigate the social aspects inherent in organizational and managerial decision making processes. Proponents of institutional theory, for example, generally focus on the role of social factors rather than economic or efficiency factors in driving organizational action, including external conformity pressures from regulatory bodies or parent organizations, social pressures from other organizations with ties to the focal organization, as well as collective, social construction processes (e.g., Meyer and Rowan, 1977; Burns and Wholey, 1993; Scott, 1995). The social psychology literature also emphasizes the

[1] Employee friendly policies includes firm actions that determine the level of employee retirement benefits, employee healthcare benefits, profit-sharing programs, union relations, and employee involvement

role of pressure to adhere to social norms and distinguishes between the existence of descriptive norms and injunctive norms (e.g. Cialdini et al. 1990). Descriptive norms represent individuals' perceptions of what other people commonly do, whereas injunctive norms specify individuals' perceptions of what ought to be done. In the context of our research setting, the targets set by the franchisor simultaneously represent descriptive and injunctive norms for the network, exerting social pressure to conformity. These works suggest that a franchisee's decision to comply with or deviate from the targets set by the franchisor is also affected by pressures to conform to social norms that an individual unit faces. The propensity to be under social pressure to conform with existing norms in the network is likely to affect individual franchisee units more strongly when they are surrounded by a larger number of other franchisees in the network that comply to such norms (density).

We follow Elster (1989) to define social norms. He defines social norms by the feature that they are not outcome-oriented. That is, the decision maker will not consider the outcomes but rather the social norm to guide his actions. He further requires for norms to be social, "they must be shared by other people and partly sustained by their approval and disapproval. They are also sustained by the feelings of embarrassment, anxiety, guilt and shame that a person suffers at the prospect of violating them." Based on Elster we conjecture that individuals are more likely to subject themselves to these social norms when he becomes more likely to be exposed as "a violator." Such exposure is more likely to happen when the violator is located in or is located close to a cluster of nonviolators. The reason is that nonviolators know that they (financially) suffer from the decision of their colleague. If the number of violators is large while they are located close to a violator, it is more likely for this violator to be held accountable for violating the social norm.

Such norms become more salient in a cluster of firms that share the same norms (i.e. compliance with group performance metrics).

Taken together the results of these studies suggest that proximity and density of franchisees are related to their decision to conform to the social norm of compliance with the target set by the franchisor. That is, we expect that franchisees that would otherwise be inclined not to comply with the target are more willing to comply if their unit faces more social pressure to conform to the norm of compliance. The reason is that these non-complying unit managers are more likely to meet each other and find themselves surrounded by more units that comply, making it more difficult for them to choose to ignore the target. We summarize our expectation in Hypothesis 3:

Hypothesis 3. Franchisees' financial incentives to deviate from the target set by the franchisor are mitigated by social pressures to conform to compliance with the target.

3. Sample and Data

Research Setting

Our research site is a national supermarket franchise chain located in the Netherlands. Like in each franchise organization the residual claims on profit resides with the franchisees. We reproduce our store locations in Figure 1. The franchise organization exhibited profitable financial performance and was acquired by a larger retailer that wants to expand its market share in the Netherlands after our data collection period. Our sample is comprised of all 311 stores in the network, and includes 8 quarters of data over 2010 and 2011. However, the firm could not reproduce the compliance measures or targets over the third quarter of the year 2010. The network offers a product line that places them beyond mid-end of the market spectrum. The franchisees have each contracted with the franchisor. On average the stores measure 1,050 m^2 producing approximately €200,000 sales a week, while gross profit averages on 26 percent and year EBIT

amounts to €102,000 (1% of total sales). Out of a total of 608 year-EBIT observations, 92 are loss making year observations and 25 franchisees made a loss two years in a row. The firm serves clients that differ significantly in their wealth. On average, each store in the franchise network serves areas where 8 percent of the households live at the so-called social minimum level, but they range from stores that serve areas populated by households of which 98 percent is richer than the social minimum to stores in the poorest areas where 19 percent of the households live at the social minimum level.[2]

Despite the wealth differences of the clients that the franchise organization serves, it implements firm policies to ensure that the products sold in each store of the network are of comparable quality. To achieve that objective the firm sets targets in an attempt to unify product line and price offerings throughout the firm network. These targets are set in terms of achieving minimum levels of performance in the dimensions of quality and price. Quality is measured in a quantitative form, e.g. hygiene is measured with the maximum temperature of a fridge. Achieving these minimum levels helps the network to assure that the delivery of goods and services are levelled in the network. This is important since supermarket chains are regularly compared by consumer organizations or even competitors will do so in an attempt to gain market share. The franchisor designed an incentive the system so as to prevent the necessity to impose compliance with network-wide objectives on franchisees whereby all franchisees in the network have collectively agreed to the implementation of such a system without any formal contractual obligations. In other words, the firm tries to entice franchisees to standardize quality and prices throughout the network using a carrot (incentive) rather than a stick (contract).

[2] The minimum level is set for different groups of the population at different levels and is defined by the Dutch Ministry of Social Affairs. For instance, the minimum level for a household with two children is higher than for a household comprised of two adults.

The system works as follows. The firm sets each quarter two specific targets, e.g. compliance with the price table (1 percent deviation allowed) and some hygienic target (e.g., maximum temperature of 45 degrees Fahrenheit in the fridges of the shop). Each quarter the franchisee makes available 0.5 percent of its total sales to the franchisor. On average this policy requires each store to pay around €13,000 per quarter. Out of these contributions the franchisor creates a "stimulation pool." The stimulation pool is subsequently divided by the number of achieved targets to calculate the amount each franchisee is eligible to be awarded. If all franchisees would achieve all targets, each franchisee would get a full reimbursement amounting to its original inlay plus interest. However, the targets achievers realize *de facto* a higher return than interest alone as not all franchisees comply with their targets. In 92 percent of the cases the targets are met. This high percentage suggests that the franchisees are highly motivated to achieve their target. This motivation stands to reason given that EBIT on average amounts to 1 percent of sales, a drop of EBIT with 0.5 percent point is in our case equals 50 percent profit reduction, i.e. the costs of non-compliance are significant. On top of this financial incentive the franchisor makes sure to communicate with the franchisee that compliance helps the network and also her own franchise store. Hence, the financial incentive is complemented with social norms.

Variable Measurement

Compliance with Firm Targets. The firm sets targets in objective quantifiable non-financial performance metrics. These targets are fully independent of the conditions facing the individual stores. Individual stores can choose to either comply or to not comply with targets set in these performance metrics. In our tests for Hypotheses 1 and 2 which are based on yearly data, we measure *Noncomply* as the total number of occasions that a store does not comply with the pre-

specified performance metrics for each quarter. In our tests for Hypothesis 3, we identify stores that are subject to more/less social pressures to conform to compliance with the target. To create the *Cluster* variable (See Section Compliance Clusters and Figure 3 for detailed explanation) we rescale our compliance variable from levels of noncompliance into a dichotomous variable. This procedure enables us to compare individual stores that do and do not comply. Accordingly, in subsequent tests based on quarterly data, we define *Noncomply* as a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the group performance metrics chosen for that quarter, and 0 otherwise. Figure 2 provides a graphical illustration of the compliance with the group performance metrics of each of the stores in each quarter. Stores that comply (do not comply) are represented as black (white) dots. Noncomplying stores are widespread over the country. In Table 1 Panels C we summarize how often stores comply with the measures. We observe that 68 percent of the stores never miss a target, while 94 percent miss 2 targets at the most over the 7 quarters included in the sample.

The firm distinguishes between two types of measures: price-related and quality-related metrics. In Appendix A, we reproduce the definitions of the types of measures used during the sample period. The distinction between price-related and quality-related metrics may be of importance because the different nature of these two types can result in different incentive effects for individual stores in the chain to comply or not comply with the chosen group performance metrics. By construction, price-related metrics are more salient to the customers (e.g., Basker 2011). Changing prices can occur almost effortlessly by programming the checkout registers via the computer. On the other hand, quality-related metrics such as safety and hygiene regulations may entail a considerable investment or effort (participation in a chains wide campaign, or investments in new fridges). Moreover, if the store manager perceives that the overall requirements

for meeting quality-related targets set by the franchise chain to be sub-optimally high, she may choose not to comply with such metrics. Therefore, due to the different nature of price-related and quality-related performance metrics we not only examine how franchisees achieve all measures but also examine whether achievements in individual quality or price measures differ in levels of achievement. Hence, we partition *Noncomply* into non-compliance attributed to price-related and quality-related group performance metrics. *P_noncomply* is defined as a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the price-related group performance metrics chosen for that quarter, and 0 otherwise. Similarly, *Q_noncomply* is defined as a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the quality-related group performance metrics chosen for that year, and 0 otherwise. In Table 1, Panel B we summarize our results. Over a year franchisees can achieve a maximum level of achievement of 1. The average of 0.08 indicates that 8 percent of the targets were missed by the franchisee. Franchisees missed their pricing targets in 5 percent of the cases. They further missed on quality measures in 6 percent of the cases.

Store Performance. We measure store performance as earnings before interest and tax (*EBIT*). We believe this is the relevant measure to test our conjectures. The reason is that managers are ultimately interested in how their decisions affect their bottom line performance. Hence, when individual franchisees decide whether (or not) to comply with firm targets, they trade off EBIT levels with their reimbursement (penalty) due to compliance (noncompliance). In other words, the franchisee will consider sales and cost effects at the same time, and both of these elements are included in EBIT. The firm provided us with firm-year data. We present the descriptive data on EBIT in Table 1 Panel B and show that the average profit amounts to €25,700 (€102,800) per

quarter (year). We collect 2,470 EBIT-quarter observations; they include 92 loss making years with 25 shops making a loss over both years included in the sample.

Area Poorness. In our theory, we predict that the wealth distribution of the client base will be associated with the compliance behavior of franchisees. We use the percentage of poor people in the area a store serves as our measure of (lack of) wealth, i.e. we measure relative poorness. We use census data to establish our measure of *Poorness.* The census bureau disaggregates its data in a fashion that allows us to measure poorness at the zip code level. We match this zip code level income data with the store zip code. We measure *Poorness* as the percentage out of a zip code population that lives at the so-called social minimum level. This level is defined by the Dutch parliament and differs dependent on household composition. For instance, for a married elderly couple the parliament defines a 30 percent lower minimum income than for a married couple with two children to care for. We summarize our data related to individual store characteristics in Table 1 Panel A. Our average *Poorness* measure amounts to 8 percent of the total population. While some stores are located in areas with 19 percent of the population living at the minimum, our sample also includes shops located in areas that only feature a poorness level of 2 percent of the population.

Compliance Clusters. From an interview we had with the firm controller we learned that franchisees pay visits to their colleagues who run a shop in their neighborhood. We were told that franchisees who work in each other's neighborhood are also more likely to use other means (phone, email) to contact their colleagues. Our compliance cluster measure is based on this interview and theory.

Earlier we defined social pressure for compliance to be a function of how closely a franchisee is located to another franchisee in the chain that does not comply with the targets set by the franchisor (proximity) and by how densely that franchisee is surrounded by other complying franchisees (density).Earlier we defined social pressure for compliance to be a function of how closely a franchisee is located to another franchisee in the chain that does not comply with the targets set by the franchisor (proximity) and by how densely that franchisee is surrounded by other complying franchisees (density). We incorporate these two aspects in creating the variable *Cluster* to measure social pressure for compliance. The construction of the *Cluster* variable is particularly important because this measure has not been studied in previous literature.

The *Cluster* variable is measured using the geospatial processing program ArcGIS. We first calculate the geographical distance (proximity) from the focal stores to the closest store in the overall franchise chain that does not comply with the group performance metrics. We incorporate the notion of compliance density by subsequently counting the number of complying stores that are located at a closer proximity than this calculated distance. The smaller the cluster of compliers, the more scope a franchisee has to defect from the social norm. We visualize this idea in Figure 3 where we compare a weak compliance cluster with a strong compliance cluster. The larger the cluster of compliers, the more the focal store is surrounded by other stores in the overall franchise chain that share the norm of compliance with the group performance metrics. Descriptive data are summarized in Table 1 Panel B. A low (high) number on *Cluster* indicates that few [i.e. weak compliance cluster in Figure 3] (many [i.e. strong compliance cluster in figure 3])) stores are in the vicinity of the focal store, and, thus, under less (more) social pressure to conform to the norm of compliance.

Control Variables. We employ additional control variables in our regression analyses. Depending on our model specification we control for size, years of franchisee ownership, distance to headquarters, customer satisfaction, capital investment, and total employee working hours. A full list of variables and their definitions is provided in Appendix B, Table 1 provides the descriptive statistics of our control variables.

4. Research Methodology

We use the following regression equation to test Hypothesis 1 and 2:

$$EBIT_{it} = \alpha_0 + \alpha_1 Poorness_{it} + \alpha_2 Noncomply_{it} + \alpha_3 Poorness_{it} * Noncomply_{it} + \alpha_4 Control\ Variables_{it} + \varepsilon_{it}$$

where, *EBIT* is our earnings variable, *Poorness* is the ratio of low income households, and *Noncomply* is the total number of occasions that a store does not comply with the set targets in each quarter. We include size, tenure of the franchisee, distance to headquarters and customer satisfaction to control for factors that may be related to our main explanatory variables.

Our first hypothesis pertains to whether EBIT considerations are associated with the decision of whether or not to comply with the targets set by the franchisor. If the incentive system of the overall franchise chain is set up in such a way that noncompliance with the group performance metrics has adverse effects on each individual store's profitability we expect to obtain a negative coefficient for α_2. We include the main effect of Poorness to account for the possibility that individual stores located in richer areas are able to make more profit ($\alpha_1>0$).With hypothesis 2, we examine whether franchisees located in poorer areas can improve their EBIT by choosing to deviate from the targets set by the franchisor. Our variable of interest is α_3, the interaction between *Poorness* and *Noncomply*. That is, in our theory we predict that it is costlier to comply for stores

who operate in the poorer areas. If compliance with group performance metrics constitutes a constraint for individual stores to earn more profits, stores located in poorer areas may be able to reap greater benefits by not complying with the group performance metrics. Accordingly, to reject our null hypothesis we require to obtain a positive coefficient on the interaction term (i.e. $\alpha_3 > 0$). In order to disentangle whether this effect is driven by noncompliance with price-related or quality-related group performance metrics, we run the same regression by replacing *Noncomply* with *P_noncomply* and *Q_noncomply*, respectively.

In the lead up to hypothesis 3 we argue that stores facing social pressure to conform to the norm of compliance are enticed to follow suit irrespective of their financial disincentives of adhering to that norm. To test our hypothesis we run the following logit regression:

$$Noncomply_{it} = \beta_0 + \beta_1 Poorness_{it} + \beta_2 Cluster_{it} + \beta_3 Poorness_{it} * Cluster_{it} + \beta_4 Control\ Variables_{it} + \varepsilon_{it}$$

Again, our main interest is in the interaction of *Poorness* (financial incentive not to comply) with *Cluster* (social pressure to comply). The greater *Cluster*, the more the focal store is surrounded by other stores in the overall franchise chain that share the norm of compliance with the group performance metrics. Accordingly, we expect β_3 to be negative (i.e. $\beta_3 < 0$).

5. Empirical Results

Correlations

We present the correlation matrix of our main variables and control variables in Table 2. First, we observe that the dependent variable profit (*EBIT*) we use to test Hypothesis 1 and 2 is not related to compliance or poorness. This is consistent with our expectations in that we conjecture a potential relation between the interaction of compliance and poorness. We see that EBIT is related to how long a franchise owner runs his store and with customer satisfaction. Store size and

customer satisfaction are significantly related to *Noncomply*. These results are mainly manifests in quality related measures and net in price related measures. Sales levels are negatively related to poorness, but positively related to our *Cluster* measure. The latter suggest that when a store is located in an area surrounded by more units that are complying, i.e. an area where there is more social pressure to comply with the group performance metrics, the higher the sales. We also observe the noncompliance in the previous period is negatively correlated with next period sales. Customer satisfaction, investments and hours worked have a predictable relation with sales. The data indicates that a negative relation exists between our cluster variable and noncompliance. In other words, the likelihood of noncompliance (imposing social norm) reduces when a store is located in an area surrounded by more units that are complying, i.e. an area where there is more social pressure to comply with the group performance metrics, the higher the compliance. Noncompliance is negatively related with customer satisfaction and hours worked.

Multivariate Regression Analyses

Hypothesis 1. As predicted in Hypothesis 1, we obtain a negative coefficient for α_2 as demonstrated in Table 3. The first column provides results for the unspecified *Noncomply* measure. This suggests that stores deviating from targets set by the franchisor suffer from negative profitability. This result fortifies our initial assumption that the incentive system of the overall franchise chain is set up in such a way that noncompliance with the group performance metrics has adverse effects on each individual store's profitability. The second column partitions noncompliance into price-related (*P_noncomply*) and quality-related (*O_noncomply*) noncompliance. The significant negative coefficient on *O_noncomply* suggests that the negative

effect on the store's profitability identified in the first column is primarily driven by noncompliance with quality-related performance metrics.

Hypothesis 2. To test hypothesis 2, we are interested in the coefficient of the interaction between *Poorness* and *Noncomply*. Such a result would suggest that franchisees serving a client base in a lower income bracket can benefit by not meeting the target set by the franchisor. They will lose their inlay 0.5 percent of sales, to earn this amount back via increased sales and/or lower costs. The results are shown in Table 3. In the first column, we report the results for our unspecified noncompliance measure. We observe that the interaction loads at a 5 percent level of significance (COEFF. = 9,304; p<5%) on our *EBIT* measure. When we specify our noncompliance measure into price and quality, we find in the second column of Table 3 that the interaction between *Q_noncomply* and *Poorness* is significantly related to *EBIT* (COEFF.= 9,627; p<5%) , whereas the interaction between *P_noncomply* and *Poorness* is not related to *EBIT*. Again, this suggests that the effect on the store's profitability identified in the first column is primarily driven by noncompliance with quality-related performance metrics. The results suggest that the wealth distribution of the client base a store serves is related to the choice of the franchisee whether or not to comply with the targets set by the franchisor.

Hypothesis 3. The results of our analysis to test hypothesis 3 are summarized in Table 4. We find for our model using the unspecified measure *Noncomply* in the first column, and our model using noncompliance with quality-related measure, *O_noncomply*, in the third column that the main effect of *Poorness* on *Noncomply/P_noncomply* (COEFF. = 0.119; p<1% / COEFF. = 0.134; p<1%) is significantly positive. These results are consistent with the findings on the tests

we performed to examine hypothesis 2 in that we show that franchisees indeed act based on their financial incentives. Combined with the insignificant main effect of *Cluster* on *Noncomply/P_noncomply*, this suggests that franchisees are considerably more subject to financial incentives rather than social pressures in determining their compliance behavior.

Our main variable of interest to test hypothesis 3, however, is the interaction between *Poorness* and *Cluster*. A significant negative coefficient interaction would suggest that stores that have an incentive not to comply (i.e., franchisee serving poorer clients) are more likely to comply when they are under more social pressure to conform to compliance. In other words, social pressure can act as a mediator for franchisees that would otherwise have considerable incentives to deviate from compliance with the targets set by the franchisor. We find supporting evidence for hypothesis 3 in Table 4. In the first column, we find for our model using the unspecified measure *Noncomply* that the interaction variable between *Poorness* and *Cluster* loads negatively on noncompliance (COEFF. = -0.006; p<5%) and find the same result for the model using noncompliance with quality-related measures, *Q_noncomply* in column 3 (COEFF.= -0.008; p<5%). Again for our price-related measure, *P_noncomply*, we find no results to indicate that compliance is related to the interaction of the income level of the client base and the social pressure to conform to compliance for a franchisee that would otherwise benefit from not complying. This is consistent with our findings for H2. That is, we did not find poorness to provide incentives to deviate from price targets (H2), nor do we find poorness to be associated with higher levels of compliance with price targets when they are faced with higher levels of social pressure to comply with them.

The number of employee working hours spent as well as the level of investment spent in a franchise store are related to noncompliance. These results are consistent with our intuition in that more hours or more investment would enhance the likelihood of compliance. For instance, recent

investments in fridges would increase the likelihood that the quality measure is met. The general level of investments is an indicator for the likelihood that that is the case.

6. Robustness Checks

Switching Between Compliance/Noncompliance. Our analysis in Table 4 based on the binary variable *Noncomply* is a levels analysis in that it accounts only for the *actual* compliance behavior in each quarter. However, only considering franchisee's *actual* compliance behavior may pose a problem since the analyses cannot distinguish between noncomplying franchisees who remained noncompliant following the last quarter and noncomplying franchisees who became newly noncompliant. Therefore, in Table 5, we run a changes analysis where we focus on franchisees that exhibit changes in compliance behavior. Franchisees can either switch from compliance to noncompliance or from noncompliance to compliance. The former is captured by the binary variable *Switch_to_nc* which is coded as 1 if a store complied in the prior period but started to not comply in the current period, and 0 otherwise. The latter is captured by the binary variable *Switch_to_c* which is coded as 1 if a store did not comply in the prior period but started to comply in the current period, and 0 otherwise.

Table 5 Panel A presents the results from logit regression analyses using these two variables in column 1 and 2, respectively. Column 1 where *Switch_to_nc* is the dependent variable shows similar results as in Table 4. We obtain a significant main effect of *Poorness* (COEFF. = 0.148, $p<1\%$) and the significantly negative coefficient (COEFF. = -0.006, $p<5\%$) on the interaction term suggests that franchisees facing higher social pressure to conform to compliance are less likely to switch from compliance to noncompliance in the next period. We do not obtain

such results in column 2 where the units of interest are stores that switch from noncompliance to compliance.

In Table 5 Panel B, we also account for franchisees that do not exhibit changes in compliance behavior and run a multinomial logit regression model. Multinomial logit models can be viewed as an extension of the binary logit model whereby the dependent variable has three or more unordered categories. Our dependent variable is *Switcher* which is a categorical variable coded as 0 if a store switched from compliance to noncompliance, coded as 1 if a store does not switch (i.e. either remains complying or non-complying), and coded as 2 if a store switched from noncompliance to compliance. The comparison group for this analysis are stores that did not exhibit changes in compliance behaviors, i.e. stores that are coded as 1 for the *Switcher* variable. Again, we obtain similar results as in the previous analyses. Column 1 of Table 5 Panel B presents the relative risk ratios of switchers to noncompliance (i.e. *Switcher* = 0) compared to nonswitchers (i.e. *Switcher* = 1). We observe that the relative risk ratio is 1.163 and significant for *Poorness*. This means that the risk of being a switcher to noncompliance versus a nonswitcher is 1.16 times greater for franchisees that serve a low-income client base. We also observe that the relative risk ratio is 0.994 and significant for the interaction variable. This means that the risk of being a switcher to noncompliance versus a nonswitcher is about 0.6% (= (0.994 – 1)*100) lower for franchisees that serve a lower-income client base and face more social pressure to conform to compliance.

Economic Spillover Effect of Noncompliance on the Network. Throughout the paper we assume that the other franchisees in the network benefit from compliance of an individual franchisee. While this is consistent with what the franchisor is convinced of, we have not

established whether such an economic spillover effect is present. To estimate whether or not this is the case, we run the following model:

$$Salesindex_{i,t} = \beta_0 + \beta_1[Noncompliance]_{i,t-1} + \beta_2[Noncomplianceothers]_{i,t-1} + \beta_3 Poorness_{i,t} + \beta_4 Control\ Variables_{i,t} + \varepsilon_{i,t}$$

where *Noncompliance* is measured with one of the following: (1) *Noncomply*, (2) *P_noncomply*, and (3) *Q_noncomply*. *Noncomplianceothers* is calculated using the metric that is chosen for Noncompliance. Specifically, it is defined as follows:

$$Noncomplianceothers = \sum_{j=1, i \neq j}^{300} (1/distance\_j) * Noncompliance\_j$$

It is a composite measure of the compliance behavior of all other franchisees in the network (excluding the compliance behavior of the focal franchisee) weighted by the inverse of the distance of each franchisee to the focal franchisee. Such a weighting allows us to put more weight on the compliance behavior of franchisees that are located more closely to the focal franchisee as opposed to franchisees that are located farther away. We use the sales index as opposed to EBIT as our dependent variable in order to more accurately assess the effect on customer behavior. Moreover, since compliance/noncompliance results for the current period are only communicated to customers and the end of each quarter, the effect on changes in customer behavior can most likely be observed with a lag. As such, we are interested in how the lagged compliance behavior of franchisees affects sales. A significant negative coefficient for β_2 would suggest that noncomplying behavior other franchisees in the network has adverse effects on the sales of the focal franchisee after controlloing for its own compliance behavior.

The results are tabulated in Table 6 Panel A. In addition to the significant negative coefficient on lagged *Noncomply*, we also observe that lagged *Noncomply_others* loads negatively in column 1. This suggests that the compliance behavior of other franchisees in the network has a significant negative effect on the sales of the focal unit. In column 2 and 3, we focus on price-

related performance measures and quality-related performance measures, respectively. Whereas column 3 reveals similar results as for the unspecified noncompliance measure *Noncomply*, column 2 documents a significant positive coefficient for lagged *P_noncomply_others*. This result suggests that noncompliance on quality-related performance measures has a negative spillover effect on the overall network, but not necessarily in the case of price-related performance measures. Franchisees choosing to overprice their products lose their customers to other non-overpricing franchisees in the network, potentially boosting sales of the latter.

In Table 6 Panel B, we provide deeper insights into whether such spillover effects can be mainly attributed to the compliance behavior of those that are in the vicinity of each franchisee. To examine this possibility, we run the following regression model:

$$Salesindex_{i,t} = \beta_0 + \beta_1[Noncompliance]_{i,t-1} + \beta_2[Noncomplianceothers\_near]_{i,t-1} + \beta_3[Noncomplianceothers\_far]_{i,t-1} + \beta_4 Poorness_{i,t} + \beta_5 Control\ Variables_{i,t} + \varepsilon_{i,t}$$

where *Noncompliance* is measured with one of the following: (1) *Noncomply*, (2) *P_noncomply*, and (3) *Q_noncomply*. *Noncomplianceothers_near* and *Noncomplianceothers_far* are calculated using the metric that is chosen for *Noncompliance*. Specifically, *Noncomplianceothers_near* is defined as:

$$Noncomplianceothers\_near = \sum_{j=1, i\neq j}^{n} (1/distance\_j) * Noncompliance\_j$$

where n equals the number of stores that are located at a closer distance from the focal store than the mean of all mutual distances between individual stores. Similarly, *Noncomplianceothers_far* is defined as:

$$Noncomplianceothers\_far = \sum_{j=1, i\neq j}^{n} (1/distance\_j) * Noncompliance\_j$$

where n equals the number of stores that are located at a distance further away from the focal store than the mean of all mutual distances between individual stores. If we expect that the spillover effect on the network is primarily due to compliance behavior of those that are located at a close

distance from the unit of analysis, the significant results on the lagged *Noncomplianceothers* in Table 6 Panel A should primarily be observed on the lagged *Noncomplianceothers_near* variable and less so on the lagged *Noncomplianceothers_far* variable. The results in Table 6 Panel B confirm our predictions. In column 1 and 3, we observe that only *Noncomply_others_near* and *Q_noncomply_others_near* loads significantly. From column 2, we observe that the spillover effect of compliance behaviors on price-related performance measures can also be attributed to those that are located farther away from the unit of analysis.

Cluster Composition. If the stores in our compliance clusters happen to be stores in richer areas, our measure *Cluster* would proxy for stores in richer areas. In such a case, our results in Table 4 and Table 5 can be interpreted based on an alternative explanation that stores exhibit more compliance with group performance metrics not due to pressure to adhere to social norms but due to economic incentives. Under such a scenario, our *Cluster* variable could be interpreted as representing stores that have a poor client base in its immediate environment, but is otherwise surrounded by stores that serve rich clients. If that would be the case, the focal store might comply simply because it also targets richer clients. In order to test this alternative explanation we perform analyses to investigate whether our compliance clusters exhibit a similar level of poorness. We calculate the average *Poorness* for our compliance clusters in each quarter. This variable is defined as *Cluster_Poorness_Mean*. We also calculate *Cluster_Poorness_Std* which is the standard deviation of *Poorness* for all stores in our compliance cluster in each quarter. In Figure 3, we provide a graphical illustration of the distribution of *Cluster_Poorness_Mean*. We observe that *Cluster_Poorness_Mean* is relatively normally distributed with a mean 7.36%. This figure is comparable to the mean of 7.52% for *Poorness* in Table 1.

We also provide a correlation table for *Poorness*, *Cluster*, *Cluster_Poorness_Mean*, and *Cluster_Poorness_Std* in Table 7. We observe that *Poorness* and *Cluster_Poorness_Mean* are positively correlated. There is, therefore, little indication for the alternative explanation which would be that our *Cluster* variable represents stores that has a poor client base in its immediate environment, but is otherwise surrounded by stores that serves rich clients. Given our results, the stores in our compliance clusters cannot happen to be stores in richer areas. Moreover, *Cluster* and *Cluster_Poorness_Mean* are not significantly correlated which further suggests that our *Cluster* measure cannot be a proxy for area poorness.

7. Discussion and Conclusion

In this paper we try to ask the question whether social pressure to conform to social norms can drive out economic incentives. In our research setting, we present franchisees that face financial incentives to deviate from targets set by the franchisor when located in poorer areas. Noncompliance with these targets has an immediate adverse effect to each franchisee that amounts to a loss of 0.5 percent of their sales. Despite such immediate loss, however, we establish that franchisees serving a low-income client base are better off to undertake this immediate loss and gain from reductions in operating expenses, an investment that would have been made otherwise if the franchisee chose to comply with the targets. Yet, as soon as more complying franchisees appear in the vicinity of a franchisee that would benefit from not complying, imposing social pressure to conform to compliance, we find that the likelihood for those franchisees to comply increases. These results suggest that franchisees that would rather not comply start to choose compliance, even though they would have been financially better off when they had not complied.

We believe our results potentially enhance our knowledge of how firms can control the actions of their agents. The results suggest that the firm can achieve higher levels of control. If they can make sure that individual units are surrounded by units that comply with firm targets (see also Tayler and Bloomfield, 2011). In our case the firm uses strong economic incentives to entice units who would benefit if they would not comply. This results in a nontrivial number of compliers (92 percent in our sample), who, if need to, impose compliance on units inclined not to comply. In addition, the results potentially advance our understanding of relational contracting theory (Gibbons and Henderson, 2012) in that we observe that firms can increase the likelihood of meeting network targets if they can rely on individual units putting pressure on other units. In other words, control can be increased without further extension of financial incentives provided that a sufficient number of units are persuaded through financial incentives to meet a firm level target. The potential threat of a negative spillover affecting compliers will motivate those units to discipline the other units. This latter result is not necessarily fully explained by relational contracting theory in that it seem to be the case that complying colleagues monitor potential noncompliant colleagues. The latter result entails a monitoring explanation, rather than a relationship-building explanation. Measured by the network outcome this combination of relationship building (franchisor franchisee) and the monitor activity it brings about works out well for the firm. That is, the monitoring activity supplements the franchisor endeavor to increase the likelihood that the service delivered is uniform across the whole network. Compared to the previous work looking into targets, the distinguishing feature from the targets we study is that they are independent of any particular feature of an individual unit in the franchise network we study. This enables us to analyze how agents respond to targets that have not been manipulated.

Our study is also subject to several limitations. First, we should be cautious to generalize the findings we show in this study. Our research setting deals with a special type of social norm; one that originates from a financial incentive and that is not necessarily inculcated in the organization (Fischer and Huddart, 2008). That is, the norms that reside in the firm to comply are arguably in place due to the financial incentives. However, the social pressure that the complying units can put on units inclined not to comply given their financial incentives seems to lead these units not to follow their financial incentives but rather the social norm that the other units impose on them: "thy shall comply." If units do not comply, other units do suffer in terms of their sales levels.

In addition, we can only demonstrate our results for the situation in one franchise network. While our results are consistent with theory, we hasten to say that our study examines one franchise network. The advantage is that this allows us to exclude alternative explanations that could explain our results. We need future work to allow us to conclude whether or not social norms can indeed be relied upon to drive out economic incentives. Nevertheless, in this sample our results confirm a positive answer to that question.

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Figure 1
Store locations

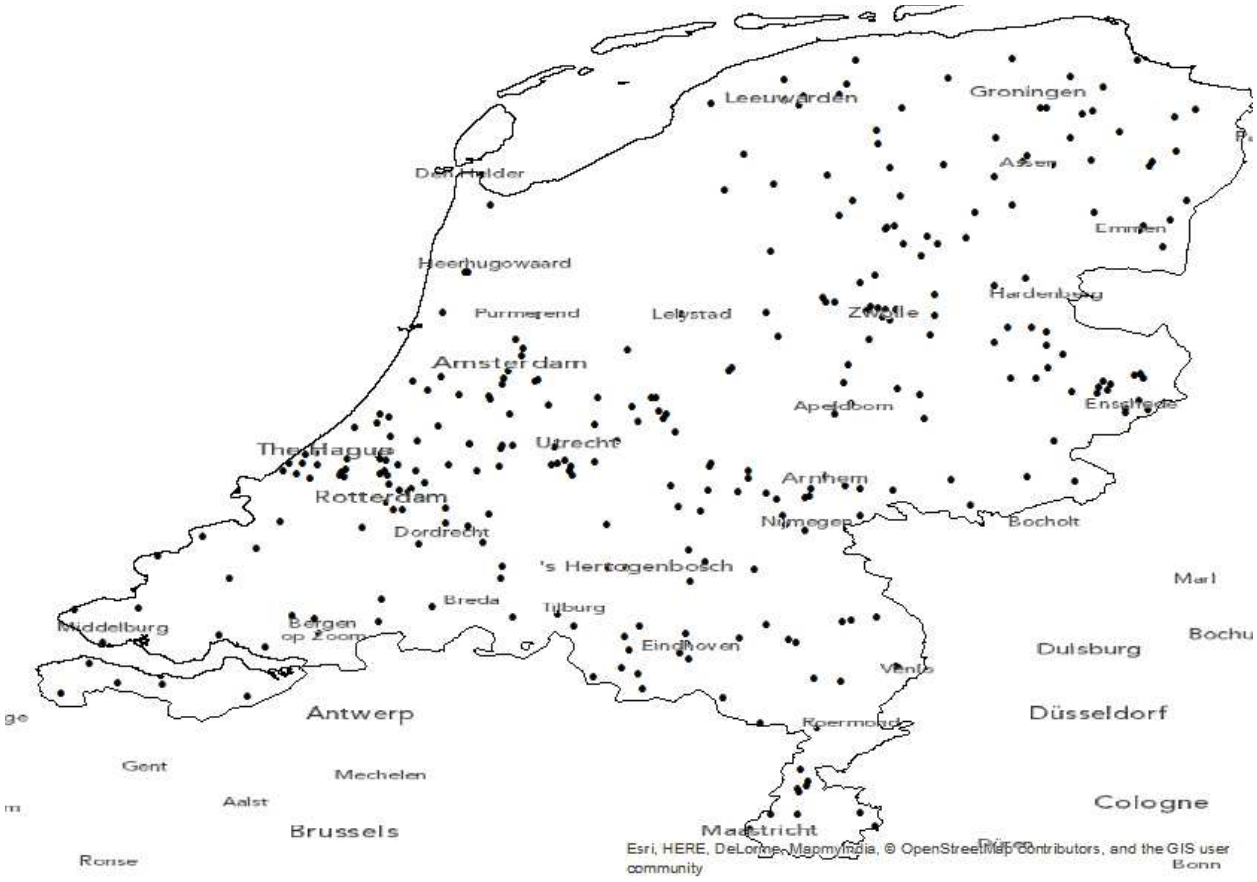
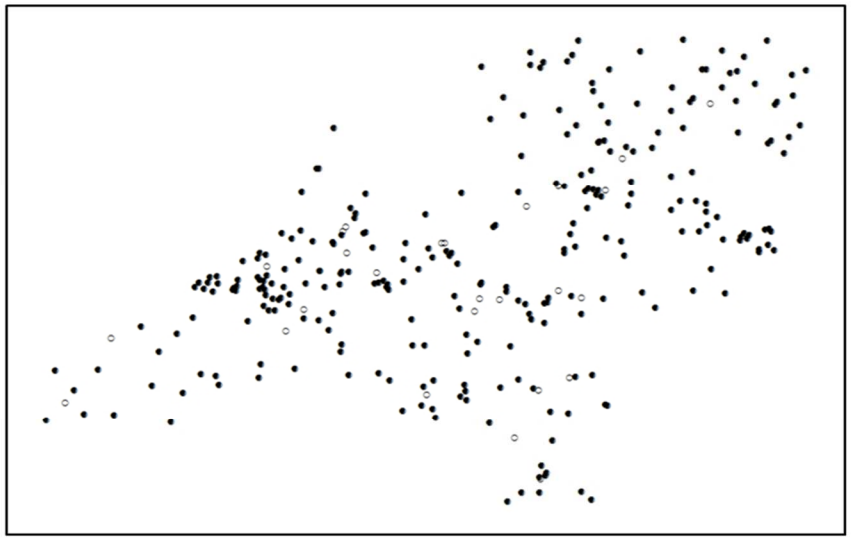
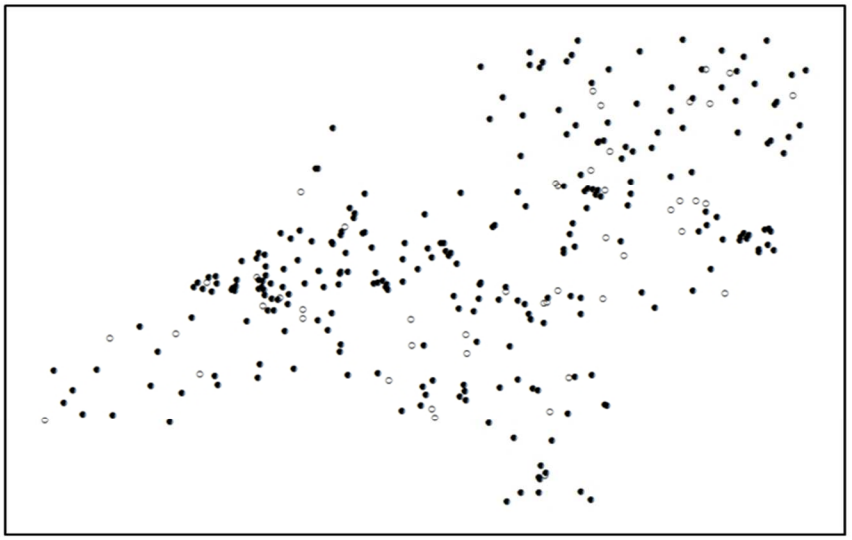

Leeuwarden
Groningen
Den Helder
Assen
Emmen
Heerhugowaard
Harderwijk
Purmerend
Lelystad
Zwolle
Amsterdam
Apeldoorn
Enschede
The Hague
Utrecht
Arnhem
Rotterdam
Nijmegen
Bocholt
Dordrecht
's Hertogenbosch
Marl
Breda
Tilburg
Middelburg
Bergen op Zoom
Eindhoven
Bochum
Dulsburg
Venlo
Antwerp
Roermond
Düsseldorf
Gent
Mechelen
Aalst
Cologne
Brussels
Maastricht
Ronse
Bonn
Esri, HERE, DeLorme, Mapmyindia, © OpenStreetMap contributors, and the GIS user community

Figure 2

Complying /Noncomplying stores in the first quarter of 2010



Complying /Noncomplying stores in the second quarter of 2010



Complying /Noncomplying stores in the fourth quarter of 2010

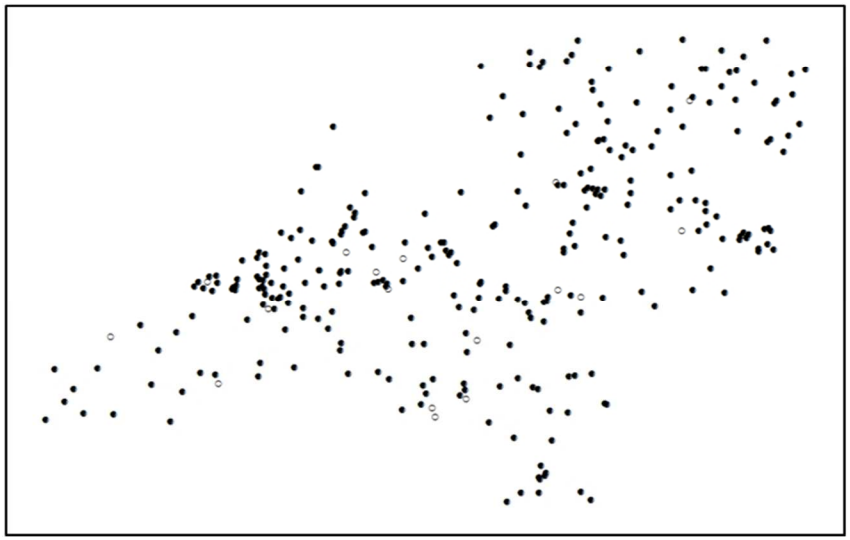
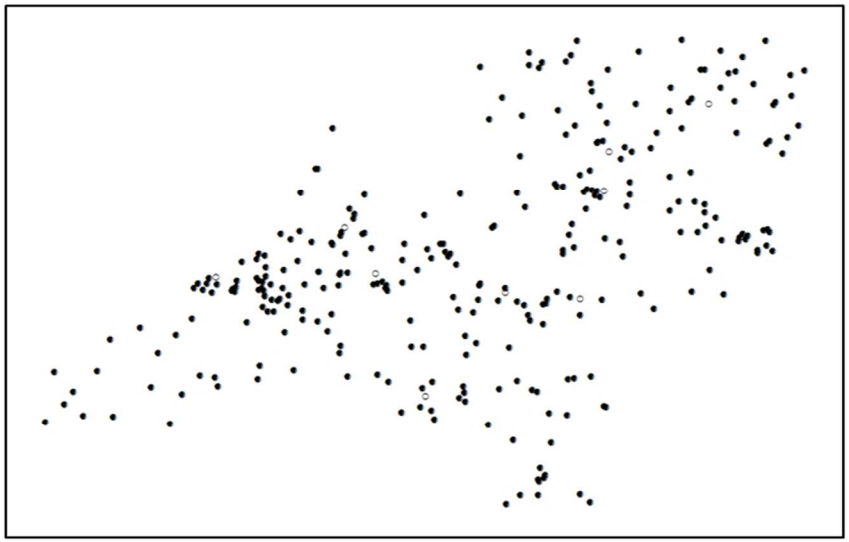
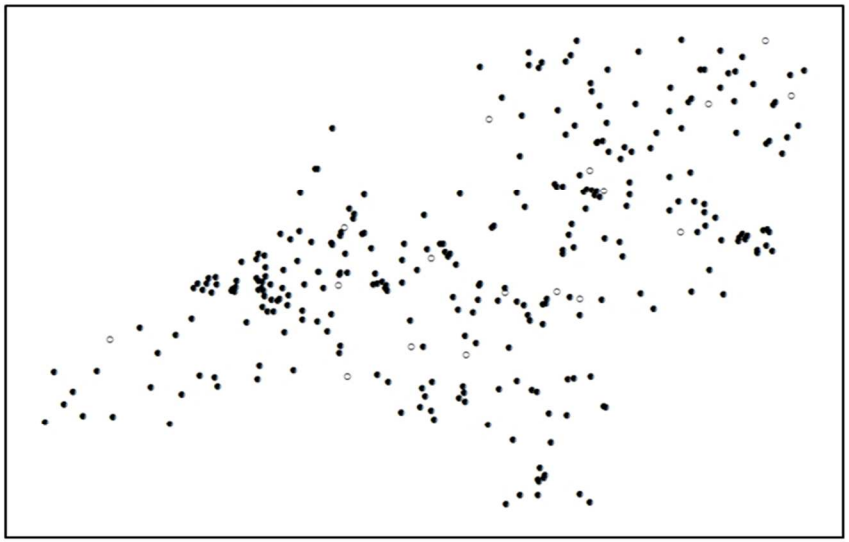


Figure 2 (Continued)

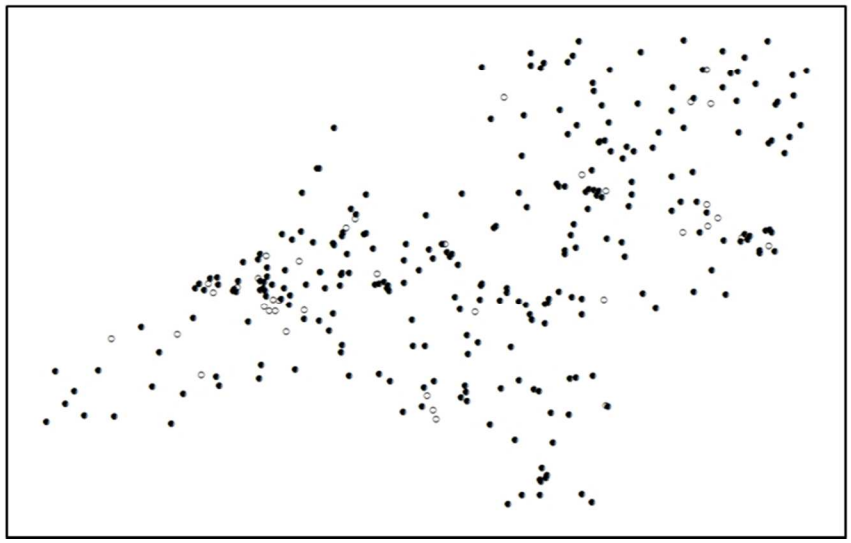
Complying /Noncomplying stores in the first quarter of 2011



Complying /Noncomplying stores in the second quarter of 2011



Complying /Noncomplying stores in the third quarter of 2011



Complying /Noncomplying stores in the fourth quarter of 2011

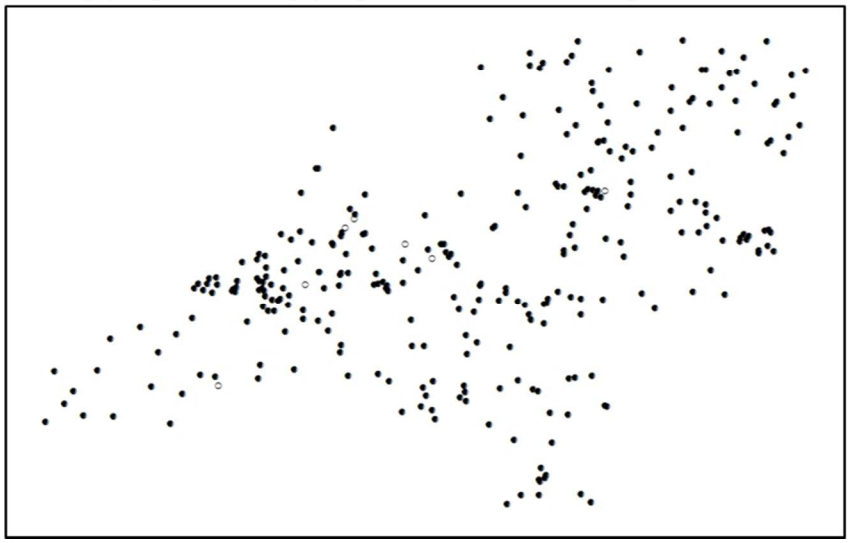
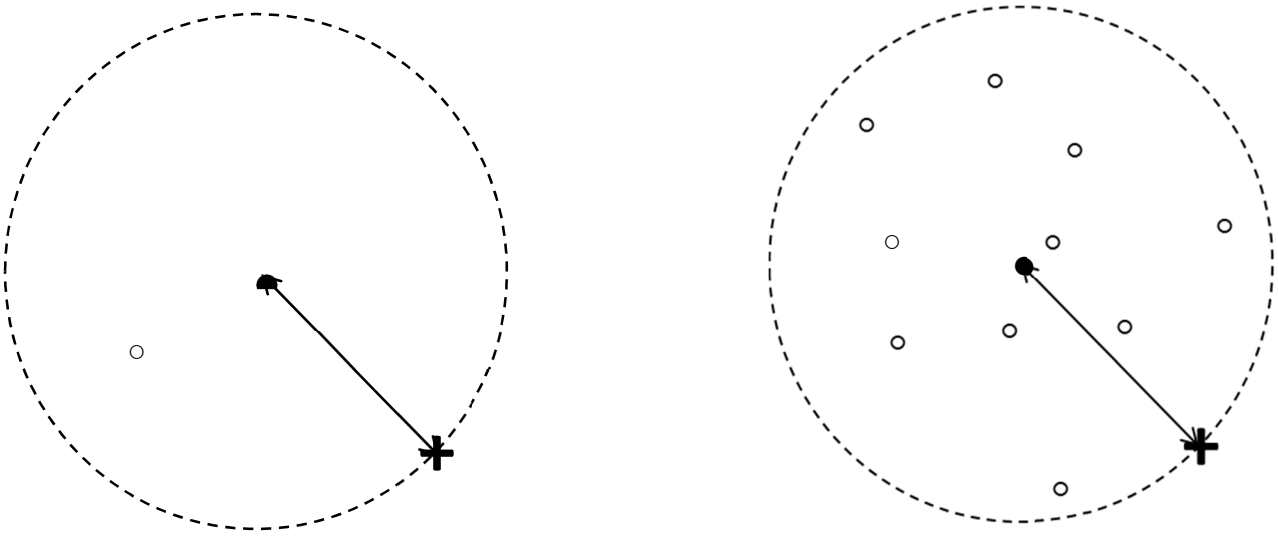


Figure 3

Compliance Cluster



(a) Weak Compliance Cluster (b) Strong Compliance Cluster

Compliance clusters (*Cluster*) are measured using the geospatial processing program ArcGIS. Figure 3 provides a detailed illustration of how the variable *Cluster* is defined. For each individual store in the franchise chain (denoted as a black dot), we calculate the geographical distance to the closest store that does not comply with the group performance metrics (denoted as a cross). This geographical distance is used as the radius to form a circular area surrounding each focal store. *Cluster* counts the number of complying stores that is located within this circular area (denoted as white dots). It changes every quarter since the set of stores in the franchise chain that choose to comply/not comply with the group performance metrics changes every quarter. The smaller the compliance cluster, the more scope a franchisee has to defect from the social norm. The larger the compliance cluster, the more the focal store is surrounded by other stores in the overall franchise chain that share the norm of compliance with the group performance metrics. Accordingly, higher values for *Cluster* designate individual stores to be more in clusters with stronger norms of compliance. Figure 3 (a) and (b) provide illustrations of weak and strong compliance clusters respectively. We believe that our measure is comprehensive in that it takes into account (1) how closely a focal store is located to another store in the franchise chain that does not comply with the group performance metrics (proximity) and (2) by how many complying stores the focal stores is surrounded (density).

Figure 4
Cluster and Area Poorness: Distribution

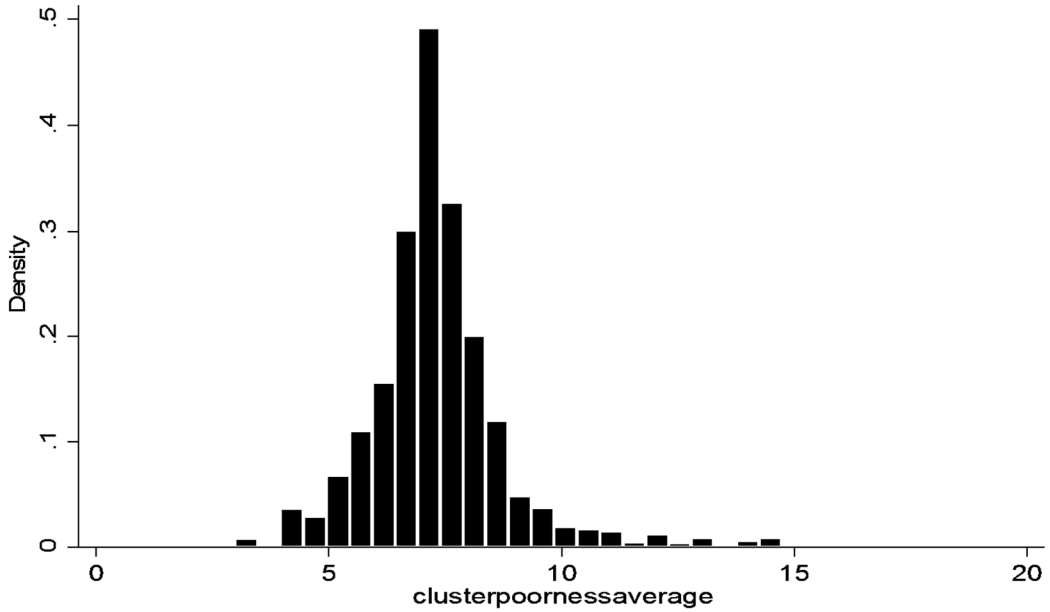


Table 1
Descriptive Statistics

The sample consists of 311 individual stores in the franchise chain. Panel A provides summary statistics of store characteristics. *Poorness* is measured as the percentage of households in the surrounding area a store is located (based on 4-digit postal codes) that live on the social minimum income. *Distance to headquarters* is defined as the distance of the focal store to the headquarters in kilometers. *Distance to closest store* is defined as the distance of the focal store to another store in the franchise chain located at closest proximity in kilometers. We measure *Shop size* as the net sales per floor in square meters. *Customer satisfaction* is a score that can range from 1 to 10. Local customers provided that score based on their evaluations of the shop they visited. *Owned years* is defined as the number of years a franchisee has worked as store manager for each respective individual store. Panel B provides the summary statistics for store-quarter observations. *EBIT* is calculated as revenue minus expenses, excluding tax and interest expenses. *Sales index* is defined as sales in quarter t divided by sales in quarter t-4. *Noncomply* is a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the group performance metrics chosen for that quarter, and 0 otherwise. For further analyses we partition *Noncomply* into non-compliance attributed to price-related and quality-related group performance metrics. *P_noncomply* is defined as a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the price-related group performance metrics chosen for that quarter, and 0 otherwise. Similarly, *Q_noncomply* is defined as a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the quality-related group performance metrics chosen for that quarter, and 0 otherwise. *Cluster* is the number of complying stores that are located at a closer proximity than the closest located store which does not comply with the group performance metrics. *Invest* is a proxy for the level of capital investment of each store and is defined as depreciation expense divided by sales. *Hours* measures working hours by employees at the store for each quarter. *Distance to closest noncomplying store* is defined as the distance of the focal store to the closest noncomplying store in kilometers. Panel C provides the number of stores by frequency of noncompliance.

Panel A: Store Characteristics

	No. of stores	Mean	Standard Deviation	Min	Max
Poorness	311	0.08	3.23	0.02	0.19
Distance to headquarters	301	86	54	1	225
Distance to closest store	301	6	4	0.5	24
Shop size	311	1,056	338	381	2,748
Customer satisfaction	284	7.94	0.35	6.20	8.69
Owned years	289	8.39	3.34	1.24	11

Panel B: Summary Statistics for Store-Quarter Observations

	Observations	Mean	Standard Deviation	Min	Max
EBIT	2,432	25,713	49,239	-197,994	419,455
Sales index	2,470	1.00	0.08	0.68	1.56
Noncomply	2,173	0.08	0.27	0	1
P_noncomply	931	0.05	0.21	0	1
Q_noncomply	2,173	0.06	0.24	0	1
Cluster	2,488	17	23	0	114
Invest	2,424	0.01	0.01	-0.01	0.03
Hours	2,424	14,436	5,363	3,959	38,802
Distance to closest noncomplying store	2,107	26	22	1	159

Table 1 Panel C: Number of stores by frequency of noncompliance

Frequency of Noncompliance	Number of Stores	Percentage of stores	Cumulative percentage of stores
0	213	68%	68%
1	53	17%	86%
2	25	8%	94%
3	8	3%	96%
4	5	2%	98%
5	2	1%	98%
6	4	1%	99.9%
9	1	0.3%	100%
Total	311		

Table 2
Correlation Table

Table 2 provides the correlations of all variables used in our analyses. *Poorness* is measured as the percentage of households in the surrounding area a store is located (based on 4-digit postal codes) that live on the social minimum income. *Distance to headquarters* is defined as the distance of the focal store to the headquarters in kilometers. We measure *Shop size* as the net sales per floor in square meters. *Customer satisfaction* is a score that can range from 1 to 10. Local customers provided that score based on their evaluations of the shop they visited. *Owned years* is defined as the number of years a franchisee has worked as store manager for each respective individual store. *EBIT* is calculated as revenue minus expenses, excluding tax and interest expenses. *Sales index* is defined as sales in quarter t divided by sales in quarter t-4. Population density is defined as the population per square kilometer of the area a store is located (based on 4-digit postal codes). *Noncomply* is a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the group performance metrics chosen for that quarter, and 0 otherwise. For further analyses we partition *Noncomply* into non-compliance attributed to price-related and quality-related group performance metrics. *P_noncomply* is defined as a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the price-related group performance metrics chosen for that quarter, and 0 otherwise. Similarly, *Q_noncomply* is defined as a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the quality-related group performance metrics chosen for that quarter, and 0 otherwise. *Cluster* is the number of complying stores that are located at a closer proximity than the closest located store which does not comply with the group performance metrics. *Invest* is a proxy for the level of capital investment of each store and is defined as depreciation expense divided by sales. *Hours* measures working hours by employees at the store for each quarter. *No. of noncomplying stores in prior period* is the total number of stores in the franchise chain that did not comply with the group performance metrics in the prior quarter.

Store-Quarter Observations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1)Noncomply	1														
(2)P_noncomply	0.62***	1													
(3)Q_noncomply	0.87***	0.053	1												
(4)EBIT	0.00	0.02	-0.01	1											
(5)Poorness	0.02	0.04	0.01	-0.02	1										
(6)Cluster	-0.08***	-0.09**	-0.06**	-0.01	0.04	1									
(7)Sales index	-0.01	-0.03	-0.02	0.07***	-0.07***	0.09***	1								
(8)Population density	0.01	-0.03	0.02	0.00	0.25***	-0.02	-0.14***	1							
(9)Distance to headquarters	-0.00	0.05	-0.02	-0.05*	0.12***	0.11***	0.09***	-0.25***	1						
(10)Shop size	-0.10***	0.03	-0.13***	-0.05*	0.14***	-0.02	0.01	0.15***	-0.05*	1					
(11)Customer satisfaction	-0.10***	-0.01	-0.12***	0.10***	-0.05*	0.00	0.14***	-0.08***	0.10***	0.39***	1				
(12)Owned years	0.06**	-0.04	0.09***	0.11***	-0.03	0.01	0.00	-0.02	-0.07**	0.08***	0.09***	1			
(13)Invest	-0.03	-0.02	-0.02	-0.17***	0.08***	-0.01	0.11***	-0.03	0.015	0.11***	0.03	-0.04*	1		
(14)Hours	-0.12***	0.01	-0.14***	0.20***	0.09***	-0.00	0.04	0.23***	-0.11***	0.77***	0.42***	0.14***	-0.05*	1	
(15)No. of noncomplying shops in prior period	-0.02	0.09*	-0.04	-0.01	0.00	-0.01	-0.32***	-0.00	0.00	0.00	0.00	-0.08***	-0.02	0.03	1

*** p<0.01, ** p<0.05, * p<0.1

Table 3
Store Performance and Compliance

Table 3 Panel A reports the empirical results from OLS regression analyses of store performance on compliance behavior based on year-level data. *EBIT* measures store profitability and is calculated as revenue minus expenses, excluding tax and interest expenses. *Poorness* is measured as the percentage of households in the surrounding area a store is located (based on 4-digit postal codes) that live on the social minimum income. *Noncomply* is the total number of occasions that a store does not comply with the given group performance metrics. For further analyses we partition *Noncomply* into non-compliance attributed to price-related and quality-related group performance metrics. *P_noncomply* is the total number of occasions that a store does not comply with the given price-related group performance metrics. Similarly, *Q_noncomply* is the total number of occasions that a store does not comply with the given quality-related group performance metrics. *Population density* is measured as the natural log of the population per square kilometer of the area a store is located (based on 4-digit postal codes). We measure *Shop size* as the natural log of net sales per floor in square meters. *Owned years* is defined as the number of years a franchisee has worked as store manager for each respective individual store. *Distance to headquarters* is defined as the natural log of the distance of the focal store to the headquarters in kilometers. *Customer satisfaction* is a score that can range from 1 to 10. Local customers provided that score based on their evaluations of the shop they visited.

	EBIT	EBIT	EBIT
Poorness	-4,085	-1,135	-3,649
	(2,946)	(2,674)	(2,831)
Noncomply	-57,060**		
	(25,696)		
Poorness*Noncomply	9,117**		
	(3,907)		
P_noncomply		-5,497	
		(79,994)	
Poorness*P_noncomply		2,739	
		(9,570)	
Q_noncomply			-58,637**
			(24,877)
Poorness*Q_noncomply			9,348**
			(4,018)
Population density	14,461	16,176*	14,666*
	(8,855)	(8,647)	(8,888)
Shop size	-1,482	-4,921	-750.6
	(27,544)	(27,336)	(28,111)
Owned years	5,649***	6,159***	5,570**
	(2,164)	(2,147)	(2,190)
Distance to headquarters	3,719	3,395	4,358
	(6,168)	(6,042)	(6,166)
Customer satisfaction	49,593**	53,462***	49,282**
	(19,588)	(20,023)	(19,605)
Constant	-406,824*	-449,752**	-415,083*
	(223,490)	(217,181)	(221,068)
Observations	498	498	498
R-squared	0.047	0.030	0.046

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4
Compliance and Social Pressure

Table 4 reports the empirical results from Logit regression analyses of compliance behavior on group norms based on quarter-level data. *Noncomply* is a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the group performance metrics chosen for that quarter, and 0 otherwise. For further analyses we partition *Noncomply* into non-compliance attributed to price-related and quality-related group performance metrics. *P_noncomply* is defined as a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the price-related group performance metrics chosen for that quarter, and 0 otherwise. Similarly, *Q_noncomply* is defined as a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the quality-related group performance metrics chosen for that quarter, and 0 otherwise. *Poorness* is measured as the percentage of households in the surrounding area a store is located (based on 4-digit postal codes) that live on the social minimum income. *Cluster* is the number of complying stores that are located at a closer proximity than the closest located store which does not comply with the group performance metrics. *Population density* is measured as the natural log of the population per square kilometer of the area a store is located (based on 4-digit postal codes). *Distance to headquarters* is defined as the natural log of the distance of the focal store to the headquarters in kilometers. *No. of noncomplying stores in prior period* is the total number of stores in the franchise chain that did not comply with the group performance metrics in the prior quarter. *Customer satisfaction* is a score that can range from 1 to 10. Local customers provided that score based on their evaluations of the shop they visited. *Invest* is a proxy for the level of capital investment of each store and is defined as depreciation expense divided by sales and *Hours* measures working hours by employees at the store for each quarter.

	Noncomply	P_noncomply	Q_noncomply
Poorness	0.104**	0.002	0.121**
	(0.043)	(0.078)	(0.051)
Cluster	0.011	-0.084	0.036
	(0.022)	(0.083)	(0.023)
Poorness*Cluster	-0.006**	0.007	-0.008**
	(0.003)	(0.008)	(0.003)
Population density	0.135	0.018	0.159
	(0.148)	(0.253)	(0.174)
Distance to headquarters	0.113	0.368	-0.019
	(0.132)	(0.250)	(0.148)
No. of noncomplying stores in prior period	0.004	0.106**	-0.016
	(0.013)	(0.043)	(0.015)
Customer satisfaction	-0.313	-0.815	-0.342
	(0.323)	(0.560)	(0.368)
Invest	-32.41*	-22.23	-33.36
	(18.86)	(30.12)	(23.22)
Hours	-1.160***	0.646	-1.731***
	(0.357)	(0.601)	(0.430)
Constant	9.113***	-6.488	14.81***
	(3.402)	(5.739)	(4.057)
Observations	1,290	516	1,290

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5
Switchers

Panel A: Binary Logit Regression

Table 5 Panel A provides empirical results from Logit regression analyses of compliance behavior on group norms based on stores that exhibit changes in compliance behavior. These analyses are based on quarter-level data. *Switch_to_nc* is a binary variable coded as 1 if a store complied in the prior period but started to not comply in the current period, and 0 otherwise. *Switch_to_c* is a binary variable coded as 1 if a store did not comply in the prior period but stared to comply in the current period, and 0 otherwise. *Poorness* is measured as the percentage of households in the surrounding area a store is located (based on 4-digit postal codes) that live on the social minimum income. *Cluster* is the number of complying stores that are located at a closer proximity than the closest located store which does not comply with the group performance metrics. *Population density* is measured as the natural log of the population per square kilometer of the area a store is located (based on 4-digit postal codes). *Distance to headquarters* is defined as the natural log of the distance of the focal store to the headquarters in kilometers. *No. of noncomplying stores in prior period* is the total number of stores in the franchise chain that did not comply with the group performance metrics in the prior quarter. *Customer satisfaction* is a score that can range from 1 to 10. Local customers provided that score based on their evaluations of the shop they visited. *Invest* is a proxy for the level of capital investment of each store and is defined as depreciation expense divided by sales and *Hours* measures working hours by employees at the store for each quarter.

	Switch_to_nc	Switch_to_c
Poorness	0.136***	0.028
	(0.044)	(0.051)
Cluster	0.014	0.005
	(0.023)	(0.013)
Poorness*Cluster	-0.006**	-0.001
	(0.003)	(0.001)
Population density	0.080	0.093
	(0.157)	(0.166)
Distance to headquarters	0.109	0.070
	(0.140)	(0.143)
No. of noncomplying stores in prior period	0.005	0.066***
	(0.013)	(0.014)
Customer satisfaction	-0.394	-0.474
	(0.339)	(0.358)
Invest	-27.08	-6.945
	(19.71)	(20.14)
Hours	-1.028***	-0.892**
	(0.378)	(0.404)
Constant	8.451**	6.415*
	(3.566)	(3.722)
Observations	1,290	1,290

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Panel B: Multinomial Logit Regression

Table 5 Panel B provides empirical results from Multinomial Logit regression analyses of compliance behavior on group norms based on stores that exhibit changes in compliance behavior. These analyses are based on quarter-level data. *Switcher* is a categorical variable coded as 0 if a store switched to noncompliance from compliance, coded as 1 if a store does not switch (i.e. either remains complying or non-complying), and coded as 2 if a store switched to compliance from noncompliance. The comparison group for this analysis are stores that did not exhibit switching behaviors, i.e. stores that are coded as 1 for the *Switcher* variable. Both columns report the relative risk ratios. All other variables are defined as in Table 5 Panel A.

	Switcher = 0	Switcher = 2
Poorness	1.149***	1.041
	(0.051)	(0.054)
Cluster	1.015	1.005
	(0.023)	(0.013)
Poorness*Cluster	0.994**	0.999
	(0.003)	(0.001)
Population density	1.090	1.105
	(0.172)	(0.183)
Distance to headquarters	1.121	1.082
	(0.158)	(0.155)
No. of noncomplying stores in prior period	1.009	1.069***
	(0.013)	(0.014)
Customer satisfaction	0.650	0.605
	(0.222)	(0.218)
Invest	0.000	0.000
	(0.000)	(0.002)
Hours	0.336***	0.378**
	(0.128)	(0.154)
Constant	9,761**	1,492*
	(34,986)	(5589)
Observations	1,290	1,290

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6
Economic Spillover Effect of Noncompliance on the Network

Panel A

Table 6 Panel A provides empirical results of OLS regression analyses regarding the economic spillover effect of stores' compliance behavior in the network. These analyses are based on quarter-level data. *Sales index* is measured as sales in quarter t divided by sales in quarter t-4. *Noncomply* is a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the group performance metrics chosen for that quarter, and 0 otherwise. For further analyses we partition *Noncomply* into non-compliance attributed to price-related and quality-related group performance metrics. *P_noncomply* is defined as a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the price-related group performance metrics chosen for that quarter, and 0 otherwise. Similarly, *Q_noncomply* is defined as a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the quality-related group performance metrics chosen for that quarter, and 0 otherwise. *Noncomply_others* is defined as follows: $Noncomply\_others_i = \sum_{j=1,i\neq j}^{300}(1/distance\_j) * Noncomply\_j$ where $distance_j$ is the distance from the focal store, i, to another store, j, in the network. *P-noncomply_others* and *Q_noncomply_others* for further analyses are defined similarly. Note that we use lagged values by one period for all variables based on *Noncomply, P_noncomply*, and *Q_noncomply* in these analyses. *Population density* is measured as the natural log of the population per square kilometer of the area a store is located (based on 4-digit postal codes). *Shop size* is measured as the natural log of net sales per floor in square meters. *Owned years* is defined as the number of years a franchisee has worked as store manager for each respective individual store. *Distance to headquarters* is defined as the natural log of the distance of the focal store to the headquarters in kilometers. *Customer satisfaction* is a score that can range from 1 to 10. Local customers provided that score based on their evaluations of the shop they visited.

	Sales index	Sales index	Sales index
$Noncomply_{t-1}$	-0.021***		
	(0.007)		
$Noncomply\_others_{t-1}$	-0.009		
	(0.008)		
$P\_noncomply_{t-1}$		-0.040***	
		(0.011)	
$P\_noncomply\_others_{t-1}$		0.091***	
		(0.020)	
$Q\_noncomply_{t-1}$			-0.017**
			(0.008)
$Q\_noncomply\_others_{t-1}$			-0.026***
			(0.010)
Population density	-0.010***	-0.014***	-0.009***
	(0.002)	(0.003)	(0.002)
Shop size	-0.006	-0.001	-0.006
	(0.008)	(0.010)	(0.008)
Owned years	-0.001*	-0.002*	-0.001*
	(0.001)	(0.001)	(0.001)
Distance to headquarters	0.006***	0.008***	0.005***
	(0.002)	(0.002)	(0.002)
Customer satisfaction	0.032***	0.035***	0.032***
	(0.006)	(0.008)	(0.006)
Constant	0.880***	0.810***	0.884***
	(0.066)	(0.090)	(0.067)
Observations	1,524	762	1,524
R-squared	0.059	0.109	0.060

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Panel B

Table 6 Panel B provides empirical results of OLS regression analyses regarding the economic spillover effect of stores' compliance behavior in the network. These analyses are based on quarter-level data. *Sales index* is measured as sales in quarter t divided by sales in quarter t-4. *Noncomply* is a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the group performance metrics chosen for that quarter, and 0 otherwise. For further analyses we partition *Noncomply* into non-compliance attributed to price-related and quality-related group performance metrics. *P_noncomply* is defined as a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the price-related group performance metrics chosen for that quarter, and 0 otherwise. Similarly, *Q_noncomply* is defined as a binary variable that is coded as 1 if the respective individual store did not comply with at least one of the quality-related group performance metrics chosen for that quarter, and 0 otherwise. *Noncomply_others_near* is defined as follows: $Noncomply\_others\_near_i = \sum_{j=1,i\neq j}^{n}(1/distance\_j) * Noncomply\_j$ where n equals the number of stores that are located at a closer distance from the focal store than the mean of all mutual distances between individual stores. Similarly, *Noncomply_others_far* is defined as: $\text{Noncomply\_others\_far}_i = \sum_{j=1,i\neq j}^{n}(1/distance\_j) * Noncomply\_j$ where n equals the number of stores that are located at a distance further away from the focal store than the mean of all mutual distances between individual stores. $Distance_j$ is defined as the distance from the focal store, i, to another store, j, in the network.Note that we use lagged values by one period for all variables based on *Noncomply*, *P_noncomply*, and *Q_noncomply* in these analyses. All other variables are defined as in Table 6 Panel A.

	Sales index	Sales index	Sales index
$Noncomply_{t-1}$	-0.021***		
	(0.007)		
$Noncomply\_others\_near_{t-1}$	-0.008		
	(0.009)		
$Noncomply\_others\_far_{-1}$	-0.016		
	(0.043)		
$P\_noncomply_{t-1}$		-0.039***	
		(0.011)	
$P\_noncomply\_others\_near_{t-1}$		0.075***	
		(0.027)	
$P\_noncomply\_others\_far_{t-1}$		0.273**	
		(0.122)	
$Q\_noncomply_{t-1}$			-0.017**
			(0.008)
$Q\_noncomply\_others\_near_{t-1}$			-0.025**
			(0.010)
$Q\_noncomply\_others\_far_{t-1}$			-0.044
			(0.058)
Population Density	-0.011***	-0.013***	-0.009***
	(0.002)	(0.003)	(0.002)
Shop size	-0.006	-0.001	-0.007
	(0.008)	(0.010)	(0.008)
Owned years	-0.001*	-0.001	-0.001*
	(0.001)	(0.001)	(0.001)
Distance to headquarters	0.006***	0.008***	0.005***
	(0.002)	(0.002)	(0.002)
Customer satisfaction	0.033***	0.034***	0.033***
	(0.006)	(0.008)	(0.006)
Constant	0.880***	0.814***	0.885***
	(0.066)	(0.091)	(0.066)
Observations	1,524	762	1,524
R-squared	0.058	0.112	0.059

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7
Cluster and Area Poorness: Correlation Table

	(1)	(2)	(3)	(4)
(1) Poorness	1			
(2) Cluster	0.04	1		
(3) Cluster_Poorness_Mean	0.14***	-0.04	1	
(4) Cluster_Poorness_Std	0.16***	0.11***	0.38***	1

* p<0.05, ** p<0.01, *** p<0.001

Appendix A

1) Description of Group Performance Measures of the Overall Franchise System
Number of total occurrences of noncompliance for each measure in brackets

Year	Quarter	Measure 1	Measure 2
2010	1	A (12)	B (20)
	2	C (29)	D (25)
	3	E	D
	4	E (12)	D (7)
2011	1	F (18)	
	2	C (13)	G (6)
	3	D (12)	B (28)
	4	H (3)	I (5)
Total occurrences of noncompliance		190	

2) Explanation of group performance measures:

A = Is the chicken supplied by a designated C1000 supplier or a local supplier?
B = Compliance with hygienic regulation
C = Sales of the C1000 house brand
D = Whether or not out of 1,200 specified products, actual prices charged deviate more than 1% from the pre-specified price level
E = Compliance with formal safety regulation?
F = Has the shop participated in a joint program to promote C1000?
G = Does the shop actually use the materials the firm offers to advertise and display goods?
H = Did the shop participate in the 'freshness campaign'
I = Does the shop meet the standards in terms of the 'out of stock" compliance

3) Separation of group measures into different types

Price-related: D
Quality-related: A, B, C, E, F, G, H, I

Appendix B
Variable Definitions

Variables	Description
Poorness	Percentage of Households in the area (based on 4-digit postal codes) that live on social minimum
Noncomply	Coded as 1 if the respective individual store did not comply with at least one of the group performance metrics chosen for that quarter, and 0 otherwise
P_noncomply	Coded as 1 if the respective individual store did not comply with at least one of the price-related group performance metrics chosen for that quarter, and 0 otherwise
Q_noncomply	Coded as 1 if the respective individual store did not comply with at least one of the quality-related group performance metrics chosen for that quarter, and 0 otherwise
Cluster	Number of complying stores that are located at a closer proximity than the closest located store which does not comply with the group performance metrics
EBIT	Revenue minus expenses, excluding tax and interest
Sales index	Sales in quarter t divided by sales in quarter t-4
Distance to headquarter	Distance to headquarter in kilometers
Shop size	Net sales floor in square meters
Customer Satisfaction	Customer satisfaction is a score that can range from 1 to 10. Local customers provided that score based on their evaluations of the shop they visited.
Owned years	Number of years a franchisee has worked as store manager for each respective individual store
Invest	Depreciation expense divided by sales
Hours	Working hours by employee
Population Density	Population per square kilometer
No. of noncomplying stores in prior period	Total number of stores in the franchise chain that did not comply with the group performance metrics in the prior quarter.