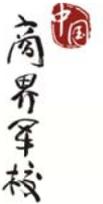


Working Paper No. 2015006



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Does Ownership Matter in the Selection of Service Providers?

Evidence from Nursing Home Consumer Surveys

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This Version: August 2013

Abstract

This study considers the role of ownership in consumer choice of service providers in mixed-ownership industries. Though several nonprofit theorists have assumed that consumers will choose nonprofit and government-owned over for-profit service providers due to relative incentives for exploiting informational advantages in each sector, recent research in consumer behavior is questioning this assumption. Using data from a consumer survey in the nursing home industry, we found that despite empirical evidence showing that nonprofit health care organizations were of higher quality, consumers who used ownership status in their search were more likely to choose for-profit organizations. We also found that consumers who searched more extensively were more likely to choose nonprofit organizations, perhaps because their information gathering resulted in favorable impressions of nonprofit nursing homes. Our findings provide little support to the contract failure hypothesis, lending more support to the contention that stereotypes about sector are influential in determining consumer behavior.

This study was supported by the Aspen Institute Grant NSRF 2005-1, “A Comparative Study of Organizational Structure, Behavior and Performance.”

In markets with asymmetric information, it has been well documented in the consumer behavior literature that during the buying process, consumers will conduct various pre-purchase information searches on merchandise or services before they make the buying decision (Beatty and Smith 1987; Murali, Laroche and Pons 2005) to mitigate exploitation. Due to the constraints of time, effort, preferences and information availability, consumers tend to rely on limited sources and can be influenced by symbolic factors as exemplified by fashion (Midgley 1983). They may also rely on signals that they believe are correlated with quality or value; one of these signals is organizational ownership. This kind of perceptual pattern is demonstrated by recent research that has found that consumers tend to associate nonprofit ownership with warmth and trustworthiness, and for-profit ownership as competent (Aaker, Vohs, and Mogilner 2010; Drevs, Tscheulin, and Lindenmeier forthcoming; Handy, Seto, Wakaruk, Mersey, Mejia, and Copeland 2010; Schlesinger, Mitchell, and Gray 2004a, 2004b).

It has been argued that organizations that are not motivated by profit, such as nonprofit or local government-owned organizations, are less likely to exploit asymmetric information than their for-profit counterparts, and thus provide higher levels of less observable quality (Ben-Ner, Karaca-Mandic, and Ren 2012; Hirth, Chernew, and Orzol 2000; Weisbrod and Schlesinger 1986). However, little is known empirically about the degree of influence organizational ownership has on consumers' choice of sellers, and the sparse empirical studies present an incomplete picture. While Ballou (2005) found consumers preferred nonprofit over for-profit nursing homes in Wisconsin, Noguchi and Shimizutani (2005) found no evidence consumers' preference for nonprofit over for-profit at-home care providers in Japan. These differences could be cultural or industry related, so additional research is needed in this area.

Malani and David (2008) argued that nonprofit status does not seem to be used as a signal of quality because most of the nonprofit child care centers, nursing homes and hospitals in their study did not advertize their nonprofit status in their marketing materials or website. In contrast, Schlesinger et al. (2004a) and Handy et al. (2010) found that the majority of consumers believed that nonprofit organizations were of higher quality and more trustworthy than their for-profit counterparts, and Holtmann and Ulmann's (1993) found that individuals who were more vulnerable to exploitation (i.e., those without a spouse, those expecting a long stay) chose nonprofit over for-profit nursing homes. These findings suggest that nonprofit, or by a similar argument government, status may be used by consumers in the selection of sellers by at least some consumers.

However, other research has suggested consumers are unaware of the ownership status of their service providers. For example, Mauser (1993, 1998) found that three-quarters of parents could not identify correctly the ownership of the day care center to which they send their children, and only 14% of parents cited organizational form as important in selection. Those who did use organizational form in selection were more likely to choose nonprofit organizations, and those who reported awareness of the problem of asymmetric information were more likely to choose religious nonprofits. It is unclear in Mauser's research whether consumers consider nonprofit status or religious affiliation, which is positively correlated with nonprofit status, as the factor protecting them from asymmetric information problems.

In summary, it is still not clear whether consumers use ownership as a selection criterion, whether they use religious ownership (rather than nonprofit status) as a selection criterion, or whether those who search more extensively end up in nonprofit organizations because of the other quality signals they discover during search. It is also possible that ownership is a noisy

signal of quality, and therefore not often used. In our paper, we are interested in whether and to what extent consumers respond to organizational ownership as a signal of service quality in the process of choosing their service provider. Specifically, we investigate the impact of ownership on consumer search, and test our hypotheses with data from the nursing home industry in Minnesota, where nonprofit, for-profit and local government homes have been competing against each other for customers for years in an environment with strict price controls. The strict regulatory environment means that consumers are better off searching for quality. A plethora of studies, many of them in the nursing home industry, have shown that the service quality in for-profit firms is often lower than in local government and nonprofit organizations (Amirkhanyan, Kim, and Lambright 2008; Ballou 2005; Ben-Ner, Karaca-Mandic, and Ren 2012; Luksetich, Edwards, and Carroll 2000). This would suggest that it would be rational to use ownership as a quality indicator.

It is also important to note that legislation had not significantly changed in the state in a way that would affect primarily nonprofit or for-profit organization in this sample, as was the case for Noguchi and Shimizutani (2005), who admitted that a recently changed regulatory environment could have impacted their results. Also, we disentangle the effects ownership and religious affiliation by asking whether each were used as selection criteria, and we quizzed consumers to determine whether they were aware of ownership type. In addition, we analyzed whether consumers who search more extensively, or those who rely on the extensive search of others (using reputation as a search criterion), were more likely to choose nonprofit, local government or for-profit firms due to the information that they gather, controlling for whether they use ownership as a signal and several search constraints.

Theory and Hypotheses

THE MARKET FOR LEMONS

In a market where there is asymmetric information between the buyers and the sellers regarding the products they transact, how consumers make buying decisions is an important research question. Asymmetric information refers to a situation in which sellers have superior knowledge of the essential attributes of their product or service, such as its quality and effectiveness, than buyers. This offers sellers the opportunity to exploit their superior information by portraying the quality of their product or service as higher than it is in actuality. When consumers are aware of the asymmetric information problem, the market will reach an equilibrium where the average quality is lower than that which would prevail under complete information, and some consumers will not participate in the market at all (Akerlof 1970). Sellers who do not want to take advantage of the opportunities offered by asymmetric information by misrepresenting their products will likely be driven out of business by those who are taking advantage of those opportunities and who will sell what is perceived to be the same quality at lower prices, in the “bad money driving out good money” fashion. Exploitation of asymmetric information has been blamed for low quality in some segments of the child care industry (Mocan 2007), the used car industry (Bond 1982; Genesove 1993) and elsewhere including the financial crises that engulfed the world in 2008 (Bhattacharya, Chabakauri, and Nyborg 2012).

Only in markets where the asymmetric information is so severe that consumers are unable to gain any information regarding product or service quality will all producers of quality goods or services be forced out of business; in most markets, at least some consumers invest effort and have some success in attaining the information about product and service quality

(screening), and they are more likely to purchase from high quality firms. To attract these buyers, sellers will attempt to distinguish their products or services from those of other firms (signaling). Of course, by definition asymmetric information precludes straightforward representation of important elements of the product, hence signaling must involve elements that consumers regard as correlates of quality, in the same fashion as higher educational accomplishments may signal higher productivity in the classic signaling theory developed by Spence (1973). For example, in nursing homes, the cleanliness and the newness of the home may be used by consumers as a signal of quality (Shugarman and Brown 2006). However, low-quality nursing homes may invest in cleanliness or décor at the expense of less observable aspects of service quality. The actual equilibrium quality and price distribution in a particular market therefore depends on a large number of parameters that describe the signaling strategies by firms, the screening strategies by consumers, and the costs associated with these diverse strategies (Stiglitz and Weiss 1983).

A common screening tool used by consumers is the firm's reputation, serving as a quality signal to mitigate the effects of asymmetric information (Vlassopoulos 2006). Reputational effects occur when the better informed consumers transmit their private information to the less informed consumers. List (2006) found that reputational concerns lead sports-card sellers to provide higher-quality products, but only when quality can be easily *ex-post* evaluated. Schneider (2012) found that reputation does not stop automobile repair shops from performing unnecessary services, possibly because the necessity of the services performed is not *ex-post* observable. What is observable is whether the car runs, which would be the case whether or not the extra services were performed. Consumers therefore may be duped in this industry, so their recommendations may not accurately measure quality. In such industries where purchases are infrequent and asymmetric information is severe, the value of reputation to discipline the market

is limited. It therefore becomes pragmatic for consumers in markets with *ex-post* unobservable services to conduct more thorough searches, or rely on other potential quality screens such as organizational ownership.

OWNERSHIP AS A QUALITY SCREEN

A central theory of nonprofit organizations is that they are more trustworthy in markets where asymmetric information between firms and consumers is severe enough to noticeably damage consumers' welfare (Arrow 1963; Hansmann 1980; Hirth 1999). That is, according to Hansmann (1980), contract failure, or the inability to effectively monitor contracts where the incentives for one party differ from the incentives of another, will give rise to nonprofit organizations. According to Schlesinger, Gray and Bradley (1996), nonprofits are less likely to exploit asymmetric information or create negative externalities.

Nonprofit organizations are thought to behave in these more trustworthy ways for several reasons. First, nonprofit organizations may be more trustworthy because the legally-enforceable prohibition on distribution of profits to owners and employees removes the incentive to take advantage of asymmetric information at consumers' expense; therefore, consumers may prefer nonprofit organizations to for-profit firms when it is difficult to verify the quality of services and products (Easley and O'Hara 1983; Glaeser and Shleifer 2001; Hansmann 1980; Weisbrod 1988). Second, nonprofit organizations may be run by administrators and key employees who are not motivated by profit maximization, but are dedicated to some objectives related to the organization's product and its consumers, and will not take advantage of asymmetric information (Roomkin and Weisbrod 1999; Rose-Ackerman 1996). Third, nonprofit organizations may be

controlled by a subset of consumers who are motivated to provide themselves the best product or service and therefore will not exploit informational advantages. If non-controlling consumers cannot be treated differently from controlling consumers because of strong public-goods elements of the product or service, all consumers can trust the organization (Ben-Ner and Van Hoomissen 1991; Hansmann 1980; Weisbrod 1988). Similar arguments apply to reliance on local government organizations, which are relatively close to their constituents and are controlled by local politicians, making them more similar to nonprofit organizations than to more distant bureaucratic state-owned firms.

These perspectives coalesce around the prediction that consumers will choose nonprofit and local government organizations to protect themselves against unscrupulous for-profit firms. Consumers aware of the asymmetric information problem will trust nonprofit organizations more than for-profit firms. Supporting this theory, Schlesinger et al. (1996) found that consumers who believed that American health care was beset with problems had more favorable impressions of nonprofit organizations than other consumers, and Mauser (1998) found that parents who thought it was difficult to observe quality in child care centers chose nonprofits. These studies suggest that some consumers seek out nonprofit organizations because the ownership status signals trustworthiness.

This prediction is too sweeping, Ortmann and Schlesinger (2003) have argued, because actual organizational choices by consumers depend on a large number of specific factors, such as consumer awareness of asymmetric information problems, consumer awareness of ownership differences is quality and value, the availability of reputational information, and the cost of search. Indeed, there are few markets completely dominated by nonprofit organizations. The few that do exist, however, are in industries where most of the revenues come from donations, and

making voluntary donations without receiving a service in exchange necessitates, Hansmann (1980) argued, the highest degree of trust.

The coexistence of for-profit, nonprofit and local government organizations in markets with severe asymmetric information is evidence that there are different factors at play.

Heterogeneity of consumer choice, at least at the time when particular organizations were formed (organizations may retain their form even if initial conditions change due to various inertia forces). Such heterogeneity may arise along several dimensions (Ortmann and Schlesinger 2003; see also Holtmann and Ullman 1993): (1) awareness of the asymmetric information problem, (2) awareness of the differential trustworthiness of different types of organization, (3) differential costs of search for information, or (4) differential costs of accessing different organizations. In addition, there might be heterogeneity among organizations, with some nonprofit organizations taking advantage of asymmetric information to pursue quantity or profit-related objectives, and some ethical for-profit firms eschewing this possibility.

We may divide consumers into two groups: those aware of the asymmetric information problem, and those who are not aware of the problem. Consumers who are unaware of asymmetric information will trust all firms equally and will use other criteria to make purchasing decisions. Those aware of asymmetric information will consist of two types: those who are concerned with the incentives for-profits have to exploit informational advantages and are therefore likely use ownership as a selection criterion, and those who do not have such concern and therefore will use other signals of quality such as reputation or will search more extensively for information based on their personal observation. Some consumers have a different view of differences among types of organization, assuming that for-profit firms are more competent than nonprofit or government organizations (Aaker et al. 2010; Dreves et al. forthcoming); such

consumers may be aware of the asymmetric information problem, in which case their choices depend on the relative strength of their competing beliefs. Anxiety also drives consumer decisions (Vohs, Baumeister and Chin 2007) —fears of certain types of organizations (e.g., the fear that for-profits will be exploitative or nonprofits will be incompetent) could cause consumers to rule out certain organizations before they search extensively, which suggests that extent of search is also related to ownership.

From theory, we suggest that these groups of consumers will vary in their likelihood of choosing a particular ownership form in four primary ways. First, consumers who use ownership as a selection criterion are both aware of the problem of asymmetric information and the incentives to abuse it are more likely to choose nonprofit or local government organizations (unless they stereotype nonprofits in an unfavorable way). Second, consumers unaware of the impact of ownership on trustworthiness will search more extensively, or will rely on information shared with them about the outcomes of other consumers' searches (reputation), to avoid the potential welfare-reducing effects of choosing an exploitative firm. They will end up in nonprofit or local government organizations because observable quality that takes some search to uncover (e.g., nurse hours per patient day), is higher in nonprofit nursing homes than in their for-profit counterparts (Luksetich et al. 2000). Furthermore, less observable quality uncovered by extensive search is indeed higher in nonprofit and local government organizations than in their for-profit counterparts (Ben-Ner et al. 2012). Third, consumers for whom the potential welfare-reducing effects of asymmetric information are greatest, especially because they have limited ability to verify service quality as a service occurs, will likely search more extensively and thus be more likely to choose nonprofit and local government organizations over their for-profit counterparts. From these conclusions, we make the following hypotheses:

H1: The use of ownership as a selection criterion will be positively related to the choice of nonprofit or local government service provision.

H2: Consumers who use ownership as a selection criterion and are more vulnerable to the effects of asymmetric information will be more likely to choose nonprofit or local government service provision.

H3: The use of reputation as a search criterion will be positively related to nonprofit or local government service provision.

H4: The extent and depth of search will be positively related to the choice of nonprofit or local government service provision.

Methods

We conduct this analysis in the nursing home industry where nonprofit, for-profit and local government organizations all compete to provide services to the same group of consumers—elderly adults and their families. We choose the industry because the extent of asymmetric information that could be abused is particularly high. Nursing homes provide a complex and multi-dimensional service, caring for residents who are typically frail and vulnerable individuals who often enter a nursing home under the duress of a medical event that necessitates removal from their own homes, often after first receiving intensive care in a hospital.

Residents and their families, who generally make decisions on behalf of the residents, are commonly in a position of informational disadvantage for reasons of limited cognitive capacity (residents) and distance and infrequency of contact (families). Residents and family members generally know far less than the nursing home staff about the type of care optimal in their situation, and they may never know whether they have received high quality care. Asymmetric information is therefore not only a problem *ex-ante*, but also a problem *ex-post*. In markets with *ex-post* information asymmetry, reputation does an inadequate job disciplining the market (List 2006), as organizations seeking profit could skimp on unobservable quality while investing in observable quality signals. Market discipline in nursing homes is also weak because when family members learn negative information about their choice of nursing home, they often do not want to leave the home to move to another because such a move would be traumatic for the resident. In addition, residents are often reluctant to complain to staff because they fear retaliation, and many residents, due to their health conditions, lack some ability to communicate even if they would like to. Since the nursing home industry is deficient in the elements of exit and voice, and contains *ex-post* asymmetric information, other signals of the trustworthiness of a home may be necessary for consumers to make adequate choices, making this industry a particularly interesting one in which to study ownership's role in service selection.

In our model we will differentiate among three types of organization: for-profit organizations, nonprofit organizations and local government organizations. We regard local government organizations as similar to nonprofit organizations. Local government organizations have a much more direct link to their formal principals, the local citizenry, than higher-level government organizations. They usually face the nondistribution constraint just like nonprofit organizations (unlike most higher-level government organizations, which are budgeted), and are

constituted to deal with specific local problems with the supply of some services. Like nonprofit organizations, local government organizations are therefore likely to have fewer incentives to take the advantage of asymmetric information, and serve the interests of consumers. The similarity of quality of care in nonprofit and local government nursing homes is evident in studies about nursing homes in Texas (Knox, Blankmeyer, and Stutzman, 2006) and Minnesota (Ben-Ner et al. 2012). (However, Ballou (2005) found that state government nursing homes are least favored among the three types by consumers.)

DATA

In Minnesota (as of 2006), consumers can choose among approximately 369 nursing homes, of which 221 are nonprofit (NP), 99 are for-profit (FP) and 49 are local-government (LG) owned. We surveyed all nursing home administrators, and received responses from 27 FP, 74 NP and 20 LG homes, for a response rate of about 30 percent. We asked all respondent administrators to allow us to survey the primary contact family member of all residents (the consumers), and received collaboration from 6 FP, 22 NP and 6 LG homes. Surveys were received from 99, 397 and 110 consumers, which correspond to response rates of 33%, 30% and 29%, respectively, in FP, NP and LG nursing homes. Statistical tests we performed suggest that selection on observables is not a problem (available upon request).

Because we wish to reduce recall bias, we limit our sample to consumers who made their nursing home selection within the last three years (excluding 186 observations). We also exclude two nursing homes (excluding 19 observations), which although included in our original dataset because they were Medicare and Medicaid certified, proved not to be subject to nursing home regulation due to factors related to the current residents of the homes (one was a surgery

recovery center, and the other an assisted living center). This resulted in a final sample size of 406 consumers from 5 FP, 21 NP and 6 LG nursing homes. Actual estimation numbers vary due to missing data.

State regulation imposes a *uniform price* that is linked to patient condition and home location rather than features of the home, so choosing a price-quality combination is not feasible. For example, if a for-profit home and a nonprofit home are across the street from one another, the for-profit home won't be able to advertise their quality of care with a higher price to attract high-end consumers. Therefore, price will not be a mechanism to sort consumers. From these surveys we have information about the actual ownership type of the home in which the patient is enrolled (FP, NP and LG), what the ownership type the family thinks the home is, how many homes the respondents visited before making a choice, how closely they observed different aspects of the home (differentiating along the easy-to-observe—hard-to-observe spectrum) and how important these aspects were in the decision, what reasons were considered in the decision and how important they were (including recommendations, referrals, reputation, services offered, and knowledge of ownership), as well as information about the resident (including their ability to communicate) and the respondent (including age and education).

ANALYSIS

We used a multinomial logistic analysis to estimate how several factors impact the family member's choice of a FP, NP or LG nursing home. Hypothesis tests are conducted with standard errors that are robust to the clustered nature of the data. The dependent variable is the ownership type of the organization, obtained from the Minnesota Departments of Health and Human Services regulatory records. These regulatory records also contained nursing home size, chain

status and location for each nursing home in the state. The latter data are used to calculate the number of for-profits, the number of nonprofits, and the number of local government nursing homes located in the consumer's county; these variables are used to control for the availability of service provision from each ownership form to the consumer. All other variables come from the survey discussed above and are explained in Table 1.

Results and Discussion

Table 2 provides descriptive statistics of search criteria used by respondents (family members) when choosing the home and the extent of search, their educational level and resident's ability to communicate about their condition, and the distribution of respondents across NP, FP and LG homes. This table uses all data available to us, prior to the deletions that we make to conduct our analysis. The statistics are provided separately for searchers – family members that visited at least two homes before selecting one, and non-searchers. Surprisingly few family members considered ownership as an important search criterion; it had a mean of only 1.9 (on a four-point scale), corresponding roughly to “a little important”. Twelve percent of family members considered ownership “very important” in their selection of a nursing home, and another 19% reported that it was “somewhat important”. Our results are somewhat consistent with those of Mauser (1998), who found that 14% of parents reported that ownership was important in their selection of a child care center, and Permut (1982), who found that 68% of New Haven residents would not care if a nursing home for a relative was FP or NP. In our survey, selection by ownership had the lowest response among all search criteria listed (see Table 2). Instead, family members considered the reputation and services offered at the home to be their most important search criteria. Many family members also reported to be constrained by location.

Nearly half of the family members chose a home without searching; they either visited no homes or they visited only the home they chose. These family members could have been constrained by location, the need for particular services not widely offered, religion, time, or they may have had prior knowledge about a particular nursing home. It is also possible that they were unaware of the asymmetric information problem. Table 2 shows that the family members who did not search were not more likely to be constrained by location, religion, or services than family members who searched. They were also not more likely to use ownership as a quality signal ($t = -0.66$, statistically insignificant).

Table 3 reports the results of the multinomial logistic analysis of choice of ownership type. Contrary to Hypothesis 1, we found that family members who used ownership as a selection criterion were more likely to choose FP than NP ownership (Model 1 of Part I in Table 3, $p < .01$, two-tailed test) after controlling for search based on religious affiliation. Family members who used ownership as a selection criterion appeared to be indifferent to FP or LG nursing homes (Model 1 of Part II). It appears that the family members were more trusting of FP entities than their NP counterparts, or that the families stereotyped FP as more competent than NP, as found in the experiments conducted by Aaker et al. (2010). However, the FP nursing homes in this sample may not be representative of the corporations broadly construed, since most of the FP homes in the sample were locally owned. Mauser (1993, 1998) found that religious nonprofits were favored over for-profits, but she didn't control for the use of religion as a selection criterion. Those findings, together with our descriptive statistics, suggest that religion is a far more popular search criterion than ownership, and our regression results suggest that consumers may put more trust in religious affiliation than ownership. It is important to note that removing religion as a selection criteria from the model substantially reduces, but does not

eliminate, the preference of FP over NP ($\beta = -.10, p = .09$, regression not reported). This may be because consumers were unaware of how the incentives to abuse asymmetric information vary by ownership type, or had an incomplete understanding of what ownership means. Schlesinger et al. (2004b) and Handy et al. (2010) also found indications of ignorance in consumers of ownership status, but Schlesinger et al. (2004b) found that those who correctly identified the legal meaning of being NP were more likely to have positive views of NP organizations. Handy et al. (2010) found that university students were more likely to volunteer at a nonprofit, than a for-profit, facility.

Hypothesis 2 states that consumers more vulnerable to the effects of the exploitation of asymmetric information by the organization will be more likely to choose nonprofit or local government organizations if they understand the implications of ownership on quality. In nursing homes, we regard the more vulnerable consumers as the nursing home residents who are less able to communicate, and hence are less able to voice concerns that they have about their treatment (see Table 1 for a description of this variable). Model 2 in Table 3 shows that the interaction term of using ownership as a search criterion and ability to communicate is negative when predicting the choice of NP over FP ownership (Part I, $p < .10$, two-tailed test), and negative when predicting the choice of LG over FP (Part II, $p < .05$, two-tailed test), indicating that of those who use ownership as a search criterion, those less able to communicate are more likely to choose nonprofit homes. Hypothesis 2 is therefore supported.

Model 3 in Table 3 considers the hypotheses three and four--consumers who search more extensively ultimately choose a nonprofit or local government organization, rather than a for-profit firm, possibly because the results of their search indicate that these organizations are of higher quality. This is measured three ways: (1) as prior knowledge accumulated by oneself or

others (reputation, hypothesis three), (2) the number of homes that they searched before making a decision (extent of search, hypothesis four), and (3) the depth of the search when visiting the home, such as the cleanliness and décor of the lobby or resident areas (depth of search, hypothesis 4). We found that when consumers used reputation as a search criterion, they were indifferent between nonprofit and for-profit homes (Part I), and more likely to choose LG over FP homes (Part II, $p < .05$, two-tailed test). When family members searched more expansively by visiting more nursing homes, they were more likely to choose nonprofit over for-profit homes (Part I, $p < .10$, two-tailed test), but the results for the choice of LG over FP were insignificant (Part II).

We examined the depth of search by asking whether the family member considered the location/décor of the lobby (shallow search) or the less accessible resident areas (more in depth search) when visiting the home. We expected that family members who search the resident areas more thoroughly will obtain better quality information upon which to make their decision, and thus will be more likely to choose NP or LG over FP due to the results of their search. As expected, we found that family members who searched the resident areas were more likely to choose NP over FP service provision (Part I, $p < 0.05$, two-tailed test), but the results for LG over NP were insignificant (Part II). When considering all of our measures of the extent of search on the choice of ownership type, we found no support for Hypothesis 3 and support for Hypothesis 4 regarding the NP over FP choice but not the LG over FP choice.

In addition to asking whether the family members used ownership type in the selection of the home, we asked the family members to identify the nursing home as FP, NP or government owned. Of the 612 surveys received, 158 family members skipped the question, many indicating in the margin that they did not know the ownership type. 163 family members answered the

question incorrectly. If we assume that those who skipped the question were unaware of the ownership type and those who correctly reported the ownership type knew the ownership type, we found that 47% of our sample knew whether the nursing home taking care of their family member was FP, NP or LG owned. This is further evidence that many family members were unaware of ownership type, and thus probably did not use ownership as a search criterion and were likely unaware of the differential incentives to produce a quality service by ownership. Those who knew the ownership type of the home were more likely to be in the FP sector, which could be because they knew the owner of the home. This is consistent with the finding that those who use ownership type in selection chose the FP sector, and may be a reflection of something rather unique to Minnesota and our sample especially—that most of the FP homes were locally owned.

In summary, the results discussed above and presented in Table 3 suggest that ownership is not used as a selection criterion by most family members; in fact, more than half of family members were unaware of the ownership type of the facility that they chose. The ownership signal was used by some family members, but since those who used ownership type as a selection criterion did not necessarily choose NP or LG organizations, Hypothesis 1 is rejected. In other words, our results fail to support Hausmann's (1980) contract failure theory. Consumers are probably largely unaware of the link between ownership and quality, although it's covered by some widely circulated media such as *The U.S.A. Today*, which reported that Federal Medicaid/Medicare data of 16,000 nursing homes show that FP nursing homes are of lower quality than NP nursing homes (Appleby, Sternberg, and Gillum 2008).

Despite the lack of consumer awareness of ownership status in nursing homes, our results do not imply that ownership was inconsequential. Family members who searched more diligently

were more likely to choose NP homes over FP homes, though the same results were not found for the choice of LG over FP homes. It may be because our sample of LG homes is smaller, and thus the effect is more difficult to detect. We leave it to future research to explore the choice between NP and LG homes.

As with all studies, ours is not without limitations. The largest limitation is perhaps that our sample is constrained to Minnesota nursing homes, which was done to minimize confounding environmental variables, but limits its external validity. Within Minnesota, our sample is skewed towards rural nursing homes (especially for the government-owned homes), and most of the for-profit homes are locally owned and operated, so perhaps relationships within the community limit the exploitation of asymmetric information. We used several control variables, including the number of nursing homes of each ownership type in the county of the chosen home, chain status, and home size, to minimize the impact of our unrepresentative sample on our results. We urge future research to test the difference between locally owned and chain-based for-profit homes, as well as stand-alone vs. chain-based nonprofit homes. We also suggest similar studies in markets that have a different ownership mix, as the ownership structure of competitors in a market shapes the behavior of organizations. In markets dominated by nonprofit organizations, such as Minnesota's, for-profit organizations produce a higher quality of care (Grabowski and Hirth 2003), leading to smaller differences between organizations. This could have increased the noisiness of the ownership signal in our data, lessening its adoption. Another limitation of our study is that the survey respondents are recalling information from the past, so there is measurement error in our variables. This is likely to decrease the probability of finding significant results. Our third limitation is our relatively small for-profit and local

government samples, so we urge caution into the interpretation of for-profit and local government comparisons.

Conclusion

In conclusion, we believe that the market for nursing home care has a severe amount of asymmetric information that can be circumvented to some extent via pre-selection search. Although nursing home care is often of low quality (Vladeck 1980; GAO 2005, 2007), careful searches are often not conducted prior to nursing home selection, suggesting that the problem of asymmetric information, and the likelihood that it could occur in their neighborhoods, may not be understood by many families. Many families trust that all licensed facilities are safe and meet basic quality standards, so do not search based on these qualities (Kane and Kane 2001), despite repeated findings of low quality in the industry. For those who are aware of the potential to receive suboptimal care, family members often have little time in which to make the decision (Shugarman and Brown 2006), and many are constrained by location or the need for specific services that are not offered everywhere. Given these constraints, it is important to use signals that are easily attainable in the decision making process, but it appears that most families are missing one such signal—organizational ownership. Families also infrequently check the online databases prepared to help them assess objective quality standards (Shugarman and Brown 2006), another important quality signal. These facts lead us to believe that many families are unaware of the severity of the asymmetric information problems in nursing homes.

Regarding the contract failure hypothesis, we found little support for the contention that consumers support the existence of nonprofits because they use ownership as a quality signal in search, though some consumers, particularly those with vulnerable family members, use the

ownership signal. Overall, few families used ownership as a search criterion, and those who did were slightly more likely to choose for-profit organizations than nonprofit organizations, except in the case that their family member was unable to exercise voice to avoid poor treatment. Our results are more consistent with the argument that nonprofits are supported by consumers because of non-profit quality revealed during search. Family members who searched more extensively tended to choose nonprofit. We did not find similar results with respect to comparisons between for-profit and local government nursing homes. Future research should consider how local government organizations differ from both nonprofit and for-profit organizations both in observable quality and consumer perceptions.

Does this finding undermine the hypothesis that nonprofit organizations (and especially local government organizations) are more trustworthy than for-profit firms? We believe that the answer to this question is “no”. The patterns of our results are consistent with nonprofits providing better quality, and results from Schlesinger et al. (2004b) suggest that people do view nonprofits as more trustworthy and Aaker et al. (2010) suggest nonprofits are more likely to be viewed as “warm”. Our results are therefore more consistent with those of Aaker et al. (2010)—nonprofit ownership is stereotyped, undeservedly in this case, in a negative way. We suggest future research to consider these stereotypes among family members more explicitly.

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TABLE 1
VARIABLE DESCRIPTIONS FROM THE CUSTOMER SURVEY

Variable	Survey Language
<i>Selection criteria</i>	
<i>[1 (not at all important) to 4 (very important)] Leading Question: How important were each of the following reasons for choosing this facility?</i>	
Ownership	Knowledge of ownership type (for-profit, non-profit, government owned)
Recommendation from friend/family	Recommendation from friend/relative
Proximity to home/work	The facility is near my home/work
Reputation	Reputation
Services offered	Services offered
Religion	Religious Affiliation
<i>Importance when choosing facility</i>	
<i>[1(not at all) to 5(extreme)] Leading Question: How important were each of the following attributes when selecting a facility for your loved one?</i>	
Cleanliness/decoration of lobby	Cleanliness of lobby and attractiveness of lobby
Cleanliness/decoration of resident areas	Cleanliness and attractiveness of resident rooms, lounges, dining rooms and other common areas
<i>Characteristics/actions of consumers</i>	
Number of homes visited	How many facilities did you (and those involved in choosing a facility) did you visit before deciding on this facility?
Consumer education	Bachelor's degree or higher
Resident ability to communicate (1-4 scale)	Please answer the following questions about your family member who lives at the nursing home: Ability to communicate with you about the quality of care he/she is receiving.

TABLE 2
DESCRIPTIVE STATISTICS

Variable	Total Sample		Searcher		Non-Searcher	
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)
<i>Selection Criteria: 1 (not at all important) to 4 (very important)</i>						
Ownership	584	1.90 (1.08)	313	1.93 (1.06)	271	1.87 (1.11)
Recommendation from friend/family	584	2.65 (1.23)	313	2.73 (1.20)	271	2.56 (1.26)
Proximity to home/work	584	3.13 (1.19)	313	3.12 (1.15)	271	3.15 (1.24)
Reputation	584	3.42 (0.97)	313	3.57 (0.81)	271	3.24 (1.10)
Services offered	584	3.33 (1.04)	313	3.49 (0.92)	271	3.15 (1.13)
Religion	584	2.18 (1.22)	313	2.15 (1.18)	271	2.22 (1.26)
<i>Characteristics/actions of consumers</i>						
Number of homes visited	579	1.73 (1.87)	295	3.11 (1.67)	284	0.30 (0.36)
Consumer education (college and above)	593	0.38 (0.48)	318	0.44 (0.50)	275	0.30 (0.46)
Resident ability to communicate (1-4 scale)	592	2.96 (1.08)	317	2.79 (1.13)	275	3.17 (0.99)
<i>Ownership</i>						
For-profit	97	15.85%	52	15.85%	45	15.85%
Nonprofit	408	66.67%	223	68.0%	185	65.14%
Local Government	107	17.48%	53	16.16%	54	19.01%

TABLE 3
CHOICE OF NONPROFIT AND LOCAL GOVERNMENT VS. FOR-PROFIT OWNERSHIP

	Part I. Nonprofit vs. For-profit Ownership			Part II. Local Government vs. For-profit Ownership		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Ownership as search criterion (For-profit Omitted)	-0.45*** (0.17)	-0.002 (0.31)	-0.01 (0.58)	-0.08 (0.15)	0.59** (0.29)	4.28 (3.43)
Location as search criterion	-0.08 (0.32)	-0.08 (0.33)	-0.06 (0.39)	-0.15 (0.24)	-0.16 (0.24)	-0.89* (0.49)
Services offered as search criterion	0.12 (0.14)	0.13 (0.14)	-0.23** (0.09)	-0.04 (0.09)	-0.01 (0.09)	1.13 (1.13)
Religion as search criterion	0.91*** (0.31)	0.92*** (0.32)	0.83*** (0.32)	0.59*** (0.23)	0.60** (0.23)	0.57 (0.83)
Family influence in choice of home	-0.03 (0.18)	-0.03 (0.18)	-0.29 (0.23)	0.47** (0.19)	0.45** (0.19)	1.49 (1.75)
Resident's ability to communicate	-0.02 (0.14)	0.23 (0.22)	0.53 (0.40)	0.26* (0.14)	0.61** (0.24)	4.53 (3.75)
Consumer age	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)	0.03** (0.01)	0.04** (0.01)	-0.13** (0.06)
Consumer education	0.52*** (0.18)	0.49** (0.20)	0.48** (0.22)	0.06 (0.22)	0.05 (0.23)	-0.42 (0.56)
Number of for-profit homes in the county	-0.50 (0.45)	-0.50 (0.46)	-0.70 (0.47)	-3.11 (2.10)	-3.09 (2.10)	-6.53*** (1.93)

Number of government homes in the county	0.54 (0.78)	0.54 (0.78)	0.56 (0.80)	11.61 (9.80)	11.54 (9.82)	24.63*** (5.50)
Number of nonprofit homes in the county	0.76 (0.62)	0.77 (0.62)	0.91 (0.71)	-7.48 (7.45)	-7.42 (7.47)	-17.76*** (3.89)
Home size	0.03 (0.04)	0.03 (0.03)	0.03 (0.03)	-0.14 (0.20)	-0.14 (0.20)	-0.36*** (0.10)
Chain ownership	-0.04 (2.42)	-0.06 (2.43)	-0.04 (2.43)	-39.57** (18.13)	-39.44** (18.15)	-68.91*** (12.40)
Ownership * Resident ability to communicate		-0.14* (0.08)	-0.16 (0.15)		-0.21** (0.10)	-1.25 (0.97)
Number of homes visited			0.26* (0.15)			-0.14 (0.52)
Reputation			-0.01 (0.10)			0.17** (0.08)
Cleanliness/ decoration of lobby			-0.59 (0.38)			-0.06 (1.10)
Cleanliness/ decoration of resident areas			0.85** (0.35)			-1.30 (1.69)
Constant	-4.57 (3.39)	-5.43 (3.65)	-5.31 (4.28)	14.25 (20.89)	12.66 (21.10)	36.98** (18.50)
<i>N</i>	358	358	334	358	358	334
<i>pseudo R-sq</i>	0.65	0.65	0.71	0.65	0.65	0.71
<i>Log likelihood</i>	-99.35	-99.11	-75.96	-99.35	-99.11	-75.96