

Managing the Long-Term Care Market: The Constraints of Service Quality Improvement

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Abstract

It is often said that the market mechanism does not enhance service quality in the care market because there is information asymmetry between users and providers. This research investigates the three arguments for this proposition by using the data of Group Home providers' service quality performance index in the Japanese Long-Term Care Insurance (LTCI) market. The three argument models are

- a) The Contract Failure model that claims users perceive nonprofit providers as a sign of good service quality.
- b) The Medical Arms Race (MAR) model that argues the competition in the care market tends to lower the service quality.
- c) Suzuki and Satake's (2001) model that claims new entries in the care market do not contribute to improvement in the market's service quality.

Analyzing the quality performance by attributes, research has revealed that none of the three models was fully supported in the Japanese LTCI market. After testing the Contract Failure model, there was no significant difference in the service quality between for-profit and nonprofit providers but it reflected the market share of each type of provider. Regarding the MAR model, the service quality of the providers in competitive markets was significantly better than that of those in non-competitive markets. As for Suzuki and Satake's (2001) model, although new entry does not bring a more qualified service into the market for the initial year, new market entry providers improve the service quality more than old (existing) entry providers do.

Moreover, the research uncovered implications for each model. First, the service quality of nonprofit providers may appear better from the viewpoint of the care recipients, but this may be opposite to that of the family. Second, bridging the information gap prevents the market competition from MAR syndrome. This also creates an incentive for the providers in non-competitive markets to improve the service quality. Third, the weakness of new entry in service quality is care management rather than care service itself.

The research concluded that the market mechanism overall worked efficiently for the improvement of service quality in the Japanese LTCI market. This was attributed to the government's policies including a providers' third-party evaluation system that bridged the information asymmetry in the market.

[**Keywords**] contract failure, Medical Arms Race, long-term care, aged care, Group Home, service quality control, third-party evaluation, care market evaluation.

Introduction

As a result of the introduction of public long-term care insurance (LTCI) in 2000, the long-term care provision in

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Japan shifted from a “distribution system” to a “contract system.” Since then, all insured eligible people have been free to contract care services with any provider in the market.

This research aims to investigate whether or not the market mechanism works efficiently in the Japanese LTCI market. The “efficiency” of the market mechanism is here measured as the care service quality under a fixed-price condition in the market in which the price competition is regulated. Thus, this research examines if the market mechanism enhances service quality in the LTCI market.

For the market mechanism to enhance service quality, three conditions are required: a) users choose a provider based on the service quality; b) the competition among providers enhances the service quality; c) new market entries bring a more qualified service into the market. The ideal market condition is, in other words, that users prefer a more qualified service and providers compete with each other to attract users. In addition, new entries come into the market knowing what the competition is about. Under these conditions the market is successful in terms of improving the service quality.

Nevertheless, there are three models that disagree that these conditions in the care market can be achieved, because of information asymmetry between the users and providers. They are a) Contract Failure model; b) Medical Arms Race (MAR) model; and c) Suzuki and Satake’s (2000)¹⁾ model. This project specifically examines the validities of these models, examining the mandatory third-party evaluation (*gaibu hyouka*) of 1,093 Group Home¹ providers in the Kanto area.

Literature Review

This section discusses the details of the above-mentioned three constraint models of service quality improvement in the care market.

The Contract Failure Model: The Users May Not Choose a Provider Based on Its Service Quality

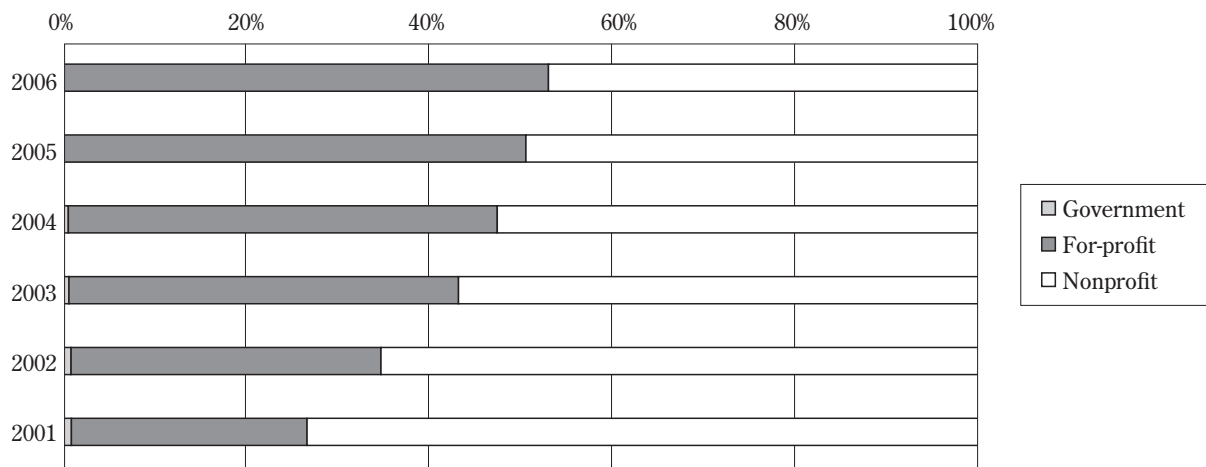
The Contract Failure model introduced by Hansmann (1980)²⁾ claims that in the care market users cannot choose a provider based on its service quality because there is information asymmetry between users and providers. Thus, the users see the ownership of providers as the signal of service quality; they choose nonprofit providers rather than for-profit providers which, they believe, tend to behave opportunistically (Hansmann, 1980; Hirth, 1999³⁾).

However, this does not necessarily mean that the service quality of nonprofit providers is actually better than that of for-profits (Endo, 1995⁴⁾; Suzuki, 2002⁵⁾). There are three arguments for this proposition. First, due to the limitation of the ownership, nonprofits do not have the incentives to improve the cost-effectiveness and service quality as much as for-profits do (James and Rose-Ackerman, 1986)⁶⁾. Second, the incentive to improve the service quality is difficult to identify regardless of the ownership of providers if the market is protected from price competition (Tuckman and Chang, 1998⁷⁾; Nanbu, 2000⁸⁾). Third, the development of information technology which minimizes the information asymmetry may benefit the for-profit providers (Ben-Ner, 2002)⁹⁾.

Many empirical studies reflect this dispute. On one hand, Weisbrod (1998)¹⁰⁾ and Cohen and Spector (1996)¹¹⁾ investigated the long-term care market in the United States and concluded that the service quality of nonprofits was superior to that of for-profits. Gertler (1984)¹²⁾, who also surveyed the care market in the United States, claimed the opposite. However, Nyman (1988)¹³⁾ and O’Brien and Smith (1983)¹⁴⁾ concluded there was no significant difference. Endo (2006)¹⁵⁾ argued that these different outcomes stemmed from the absence of a clear definition of service quality.

Nevertheless, the hypothesis of “contract failure” may be true. Certainly, as Hansmann (1980) says, if the service quality of nonprofits is better than that of for-profits, the user’s “signal” would be correct. That means there is

Chart 1 The transition of market share by the type of provider (as of October in each year)



Source: Ministry of Health, Labour, and Welfare (MHLW) (2007)³⁹⁾ and Health and Welfare Statistics Association (2007; p. 189-191)⁴⁰⁾.

no “contract failure.” However, as seen above, the correlation between the provider’s ownership and the service quality is still not clear.

The solution to this “contract failure” is for the users to be able to access service quality information from the providers. Hirth (1999) points out that repeat purchasing helps users to grasp the provider’s service quality level. Although this may not be realistic in purchasing long-term care services, it is still important to fill the information gap between the users and providers as the information asymmetry is the condition of “contract failure.”

The LTCI market in Japan has been actively involved in filling the information gap. Implementing the LTCI in 2000, the Japanese government has shaped a standardized service quality measurement and built a database of the evaluation outcomes. The optional third-party evaluation system (*daisansha-hyoka*) in 2003, mandatory third-party evaluation system (*gaibu-hyoka seido*) for community services in 2005, and LTCI information disclosure scheme (*kaigo service johou koukai seido*) in 2007 are examples of the measurement². As for the database that makes the information available to the public, the Welfare and Medical Service Network (WAM-NET) system has been operating since 2001.

Nevertheless, the dispute over whether or not the ownership of providers affects service quality can be seen in Japan as well. Morozumi (2007)¹⁶⁾ surveyed Group Home providers for the elderly with dementia (hereafter, Group Home) in the Tokyo metropolitan area and Osaka city. She claimed that nonprofits provide better quality and users’ transfers than those of for-profits because of diversification. Suzuki (2002), on the other hand, surveyed at-home care providers in the Kanto area in 2001 and claimed that there was no significant difference between the ownerships of providers in service quality. Yet, 75 percent of the market share in that year was occupied by nonprofit. Suzuki (2002)¹⁷⁾ pointed out that this was “contract failure.” Six years after Suzuki’s claim, the market share of for-profits increased to nearly 50 percent of the market share. Sakurai (2008) analyzed the service quality of Group Home providers in Kyoto and Shiga prefectures and claimed that there was still no significant difference between nonprofits and for-profits in service quality; he implied that the difference of service quality between nonprofits and for-profits reflected the share market (Chart 1). This meant there was no “contract failure” in the Japanese LTCI market.

This paper on this model aimed to rectify two deficiencies in previous research. The first was about the quality and quantity of the data to be analyzed. The sample size of the survey by Suzuki (2002) and Morozumi (2007) was only a few hundred (Suzuki: 437; Morozumi: 108), though those sample sizes were acceptable for the research environment at the time. Sakurai’s (2008) research utilized the data in only two prefectures out of 47. The outcomes have left a question about the validity. The second aspect was about the investigation of the reasons for the dispute

over whether the ownership of providers influences the service quality or not. This paper analyzed the features of providers' ownership.

Medical Arms Race (MAR) Model: Competition May Not Enhance the Service Quality

The MAR model argues that the competition in the care market tends to lower the service quality. To be competitive in the market, providers spend money on advertising or renovation of building and equipment rather than improving the service quality itself (Hersch, 1984¹⁸⁾; Luft et al., 1986¹⁹⁾; Robinson, 1988²⁰⁾).

This model has been actively researched in the healthcare market in the United States and many providers have acknowledged the phenomenon. Defining competitiveness as market intensity³, Wilson and Jadow (1982)²¹⁾ claimed that the more competitive, the less technically efficient. According to Farley (1985)²²⁾, care tends to be expensive at hospitals in competitive markets. However, Robinson and Luft (1985)²³⁾ found it was the opposite. Zwanziger and Melnick (1988)²⁴⁾ claimed that the phenomenon was because of the over-prescription of the hospitals in competitive markets. Devers et al. (2003)²⁵⁾ and Berenson et al. (2006)²⁶⁾ argued that over-prescription was spreading from medical treatment to the amenity of hospitals.

There are a few criticisms of the MAR model. Dranove, Shanley, and Simon (1992)²⁷⁾ claimed that the hospitals in competitive markets needed to respond to the needs of high-tech medical treatment, introducing the latest equipment. Thus, it was natural that the treatment at such hospitals cost more and was not a matter of inefficiency. Moreover, by defining "service quality" as mortality, and "market competitiveness" by the Herfindahl-Hirschman Index (HHI), Shortell and Hughes (1988)²⁸⁾ denied the correlation between service quality and market mechanism. Kessler and McClellan (1999)²⁹⁾ also denied the hypothesis of the MAR model, claiming that market competitiveness lowered the mortality rate. As for the research on nursing homes in the United States, Gertler and Waldman (1992)³⁰⁾ claimed that market mechanism enhanced the service quality; Nyman (1994)³¹⁾ criticized the policy that regulated nursing homes' capacity in order to avoid the MAR syndrome, claiming that the policy discouraged providers' efforts to be effective.

There is little research on this issue in the Japanese LTCI market. The notable exceptions are the theoretical research of Nanbu (2000) and the empirical study of Zhou and Suzuki (2004)³²⁾. Pointing out that there is no price competition in the market, Nanbu (2000) discussed the possibility that the market competition would lead the providers to compete for a better service quality, not just rent seeking and advertising. Zhou and Suzuki (2004) surveyed the long-term care providers in the Kanto area in September 2001, right after the Japanese LTCI was implemented, and claimed that there was little correlation between service quality and market competitiveness.

This paper investigated the relationship between service quality and market competitiveness many years after the implementation of the Japanese LTCI. If there is some relationship between them, the research also searched for the reasons behind the relationship.

Suzuki and Satake's (2001) Model: New Entries May Not Bring a More Qualified Service Into the Market

Suzuki and Satake's (2001) model claims that new entries in the care market do not contribute in improving the market's service quality. In general, new entries are expected to bring a more qualified service into the market, but in the case of the care market, they may spend resources on advertisement rather than service quality improvement. Suzuki and Satake (2001) point out that the advertisement cost out of the total cost of new entries is greater than that of old entries, surveying 445 at-home care providers in the Kanto area in 2000.

Nanbu (2000) presented a different view. He assumed that new entries entered the market with the break-even price (Ps), which was lower than that of existing providers (Pr). Thus, the excess profit (Pr-Ps) would possibly be

used for the improvement of service quality. In that case, however, Pr-Ps might still be spent on something other than service quality improvement (e.g., advertisement), as Suzuki and Satake (2001) argued. This competition on advertisements could also drag Pr up to balance with Ps.

However, Suzuki and Satake's (2001) model still needs to be validated. The model was investigated right after the implementation of the Japanese LTCL. The existing providers at the time were dominantly nonprofit, whereas the majority of new entries were for-profit, due to the market deregulation at the time. Also, as mentioned above, the government has made efforts to solve this problem, bridging the information gap between the users and providers. This paper on this model investigates whether new entries bring a more qualified service into the market today.

Data

The research collected detailed data on the following: 1) attributes (ownership, subsidiary business, timing of market entry); 2) capacity; 3) market environment (HHI); 4) outcome of the mandatory third-party service performance evaluation; and 5) service quality improvement⁴. The descriptive statistics of the major variables employed in this paper are outlined in Table 1.

Table 1. Descriptive statistics

	N	Min	Max	Mean	Std. Deviation
New entry dummy	1090	0.00	1.00	0.22	0.42
Subsidiary business dummy					
Day care	1078	0.00	1.00	0.78	0.29
Community at-home care	1078	0.00	1.00	0.02	0.14
At-home care	1078	0.00	1.00	0.01	0.12
Ownership (for-profit) dummy	1069	0.00	1.00	0.60	0.49
ln (Capacity)	1070	1.10	3.33	2.65	0.42
HHI	1076	0.01	1.00	0.22	0.25
New entry dummy 2005/2006	407	0.00	1.00	0.86	0.34
Total service quality score	1093	0.47	1.00	0.92	0.08
Total service quality score of principle component	1093	0.23	0.51	0.47	0.04
Improvement service quality score	409	-0.35	0.37	0.06	0.08
Improvement service quality score of principal component	409	-0.17	0.18	0.03	0.04

Note: The reason why the sample number of improvement scores is small is that many providers failed to disclose the evaluation outcome through WAM-NET within FY2005/2006, the initial year of the annual mandatory third-party evaluation system. The Ministry of Health, Labour, and Welfare, Japan later urged municipalities to instruct the providers to disclose the data within the fiscal year (MHLW, 2006)⁴²⁾.

The data source is the WAM-NET⁵ database for the Group Home providers of the fiscal year (FY) 2006/2007⁶. The sample was 1,093 Group Home providers⁷ in six prefectures in the Kanto area,⁸ which occupied 13 percent of all Group Home providers in Japan. Table 2 indicates the distribution of providers by ownership. Although the overall distribution of this research is similar to the national census, there are slightly more for-profits and fewer medical corporations in the investigated area. Public providers are not investigated in this research.

Table 2. Distribution of providers by ownership

Ownership		This research	National census
For-profit providers	Stock corporations, limited private companies	646 (60.43%)	4,417 (52.9%)
Nonprofit providers	Social welfare associations	196 (18.33%)	1,826 (21.9%)
	Medical corporations	144 (13.47%)	1,554 (18.6%)
	Cooperative associations	0 (0%)	31 (0.4%)
	Civil corporations	1 (0.09%)	29 (0.3%)
	Specified NPOs	81 (7.48%)	453 (5.4%)
	Other organizations	1 (0.09%)	23 (0.3%)
Public providers	Local public organizations	0 (0%)	17 (0.2%)
	Social welfare corporations (excluding social welfare associations)	0 (0%)	0 (0%)
Sum		1,069 (100%)	8,350 (100%)

Note: The national census data is as of October, 2007 and quoted from MHLW (2007). The categorizations of ownership refer to Shimizutani and Suzuki (2002: 17)⁴¹⁾. There are 24 providers that miss the ownership information due to the broken link, and they are excluded from this table.

Table 3. The index of mandatory third-party evaluation

Index	Sub-index	Item
I Corporate philosophy	1) Publicity about the corporate philosophy (4 items)	a) Publicity b) Clear indication c) Staff member's task d) Education
II Life environment	2) Homely living space (4 items)	a) The atmosphere of entrance b) The atmosphere of common place c) The atmosphere of living room d) Customizing own room (bedroom)
	3) Customized living space (6 items)	a) Supportive devices b) Layout c) Noise proof and lighting d) Air infiltration e) Clock display f) Facilities
III Care service	4) Care management (7 items)	a) Care planning b) Sharing care plans among staff members c) Meeting users requests d) Reviewing care plan e) Care recording f) Communication g) Team building
	5) Basic care implementation (8 items)	a) Respecting users b) Friendly attitude c) Respecting user's past experiences d) Respecting user's life style e) Hearing user's request f) Respecting user's independence g) Respecting user's physical freedom h) Unlocking door policy

III Care service	6) ADL ¹⁷ support (10 items)	a) Hearing the meal request from users b) Eating utensils c) Customized cooking method d) Recording nutritious needs e) Enjoyable cuisine f) Customized elimination support g) Mental aspects in elimination support h) Customized bathing support i) Hair/facial treatment support j) Support for quiet sleep
	7) Life support (2 items)	a) Management of user's property b) Recreation
	8) Medical and health support (9 items)	a) Assisting medical consultation b) Collaboration with medical institutions c) Supporting user's routine health checkups d) Exercising e) Troubleshooting f) Assisting dental care g) Assisting medicine taking h) First aid i) Policy on infection disease
	9) Community life (1 item)	a) Interaction with local community
	10) Interaction with family (1 item)	a) Interaction with family
IV Managerial structure	11) Administrative procedures (10 items)	a) Locus of responsibility b) Hearing the voice of care staff members c) Sufficient number of staff members d) Staff training e) Stress control f) Application screening process g) Supporting for user's move-out h) Hygienic i) Item control j) Reporting and knowledge management
	12) Response to complaints (2 items)	a) Accepting external evaluator b) Setting complaint office
	13) Interaction between GH and family (3 items)	a) Hearing the voice of user's family b) Reporting to user's family c) Management of user's financial property
	14) Interaction between GH and community (4 items)	a) Interaction with local municipality b) Interaction with local residents c) Public relations d) Facility sharing

Note: Among the researched prefectures, Kanagawa added some local evaluation items, but they are excluded from this research.

Source: WAM-NET (www.wam-net.go.jp).

Performance Indicator of Service Quality

Quality of care service is not easy to define. There is no single absolute indicator. However, the Japanese mandatory third-party evaluation (Table 3) is the best indicator to investigate the above-mentioned three models. First, the evaluation covers the basic component of service quality. Denabedian (1987³³, 1988³⁴, 1992³⁵) suggests that three areas of care can be scrutinized to draw conclusions about the quality of care in a facility: *structure*, *process*, and *outcome*. They correspond to “administrative procedures,” “care management,” and “care implementation” in the mandatory third-party evaluation, respectively. As for *outcome*, it is especially difficult to measure in the field of long-term care for elderly. Many other service quality evaluation systems simply rely on the satisfaction of users for the measurement. The Japanese evaluation, however, measures *outcome* by the assessment of trained third-party, because many users (care recipients) today cannot always express their complaints adequately (Braithwaite, 2006)³⁶. The comparative studies in quality assurance for long-term care by Wiener et al. (2007)³⁷ point this out, saying “Japan appears to be the only country to have developed special approaches to assure the quality of care in facilities for people with dementia” (p. 8).

Second, the mandatory third-party evaluation covers the entire market regardless of provider ownership. Although there are many “qualified” indicators in the world, most of them evaluate only the care providers under the government control. These providers are usually very few because the dominant long-term care financing system in most countries is either means testing or sliding scale. In the country in which the dominant long-term care financing system is social insurance, on the other hand, all providers can basically be evaluated. According to the Organisation for Economic Co-operation and Development (2005)³⁸, however, only four (Japan, Germany, Austria, Luxemburg) out of 30 member countries applied for social insurance system. Moreover, even in Germany, there is no mandatory external service quality evaluation system for residential long-term care providers (Wiener et al., 2007).

This research thus utilizes the outcome of the mandatory third-party evaluation. This evaluation system was introduced in FY2005/2006⁹ to the Group Home market to enhance the service quality of Group Home. The 14 indices in four categories are as follows. I. Corporate philosophy: 1) publicity about the corporate philosophy; II. Life environment: 2) homely living space, 3) customized living space; III. Care service: 4) care management, 5) basic care implementation, 6) ADL support, 7) life support, 8) medical and health support, 9) community life, 10) interaction with family; IV. Management structure: 11) administrative procedures, 12) response to complaints, 13) interaction between Group Home and family, 14) interaction between Group Home and community.

Analysis

In what follows, the above-mentioned three models are investigated.

Contract Failure Model

The Contract Failure model claimed that the users in the care market do not choose a care provider based on the service quality due to the information asymmetry between users and providers. Specifically, according to Hansmann (1980), users tend to choose a nonprofit provider because they assume that nonprofit service quality is better than that of for-profit. This argument has provoked controversy among researchers. Therefore, the first part of this section investigates the assumption of nonprofits’ superiority and the syndrome of contract failure. Then, the latter part of the section further discusses the cause of the disputes in previous literature by describing the implication of the examination.

Table 4. Comparison of service quality by ownership of the providers

		For-profit	Nonprofit	Simple	Controlled
1	Publicity about the corporate philosophy	0.87 (0.19)	0.88 (0.19)		
2	Homely living space	0.94 (0.14)	0.94 (0.13)		
3	Customized living space	0.95 (0.11)	0.95 (0.10)		
4	Care management	0.90 (0.16)	0.91 (0.15)		
5	Basic care implementation	0.95 (0.10)	0.96 (0.08)	N**	N*
6	ADL support	0.95 (0.08)	0.95 (0.09)		
7	Life support	0.91 (0.19)	0.92 (0.18)		
8	Medical and health support	0.92 (0.11)	0.93 (0.10)	N*	N*
9	Community life	0.95 (0.22)	0.94 (0.23)		
10	Interaction with family	0.98 (0.13)	0.99 (0.08)		
11	Administrative procedures	0.89 (0.13)	0.92 (0.11)	N**	N**
12	Response to complaints	0.95 (0.15)	0.95 (0.15)		
13	Interaction between GH and family	0.94 (0.16)	0.92 (0.17)	F**	F*
14	Interaction between GH and community	0.77 (0.26)	0.80 (0.24)	N*	
	Total score (average score of all indices)	0.92 (0.08)	0.93 (0.07)		
	Score of the principal component	0.47 (0.04)	0.47 (0.04)		
	Improvement score (average improvement score of all indices)	0.05 (0.08)	0.06 (0.08)		
	Improvement score of the principal component	0.03 (0.02)	0.03 (0.02)		

Note: The number in bracket indicates the standardized deviation.

* means 5% significant level.

** means 1% significant level.

Simple Comparison between For-profits and Nonprofits

Table 4 employs the 14 indices seen in Table 4 to present the mean scores by ownership of two types of providers (for-profit and nonprofit). This study prepared two sets of scores to measure the quality of care service. The “total score” is simply the average achievement rate of all 14 indices. The “total improvement score” is the subtraction of the “total score” in FY2005/2006 (note) from that in FY2006/2007. Thus, the numbers above 0 mean improvement and those below 0 indicate decline: the size of the number is the degree. The “principal component score” and “principal component improvement score” are estimated by principal component analysis, in which each index was evaluated with different weights. The column (simple) next to these numbers indicates the significance of the difference by means of the independent-samples t test. “F” indicates that the score of for-profits is significantly higher than that of nonprofits, while “N” refers to the reverse. The column “controlled” will be explained later in this section.

First, we look at the overall difference between for-profits and nonprofits. For-profit providers and nonprofit providers have an average achievement score of 0.92 and 0.93, respectively. The score of nonprofit providers is slightly higher than that of for-profit ones, but the difference is not statistically significant. That is also the case for the principal component score. In addition, because the improvement scores are similar, the outcome does not seem to be temporal. There is, thus, no significant difference in service quality between for-profits and nonprofits.

Table 5. The distribution by ownership of the providers

		For-profits	Nonprofits
Sample		646	423
Market environment	Herfindahl Index of the market (average)	0.2186	0.2133
Subsidiary business	Day service	63 (10%)	21 (5%)
	Community At-home care service	18 (3%)	3 (1%)
	At-home care service	14 (2%)	1 (0%)
Timing of market entry	New entry	167 (26%)	75 (18%)
Size	Capacity (average)	15.70	14.95

Table 6. The influence of other variables

Dependent variable		Total score	Score of the principal component
		Std. coefficients (p value)	Std. coefficients (p value)
Market environment	Herfindahl-Hirschman Index	-0.092 (0.003**)	-0.090 (0.004**)
Subsidiary business	Day service dummy (1=yes, 0=otherwise)	0.071 (0.038*)	0.071 (0.037*)
	Community at-home care service dummy (1=yes, 0=otherwise)	-0.016 (0.673)	-0.017 (0.653)
	At-home care service dummy (1=yes, 0=otherwise)	-0.038 (0.309)	-0.040 (0.284)
Timing of market entry	New entry dummy (1=new, 0=otherwise)	-0.093 (0.003**)	-0.093 (0.003**)
Size	ln (capacity)	-0.045 (0.139)	-0.044 (0.152)
Ownership	Ownership dummy (1=for-profit, 0=nonprofit)	-0.031 (0.319)	-0.037 (0.236)
Adj. R2		0.016	0.016

Controlled Comparison

However, this simple comparison could be misleading because providers' other variables were not controlled. This research thus investigated the providers' following variables: 1) HHI as market environment; 2) subsidiary business; 3) timing of market entry (whether or not the providers newly entered the market)¹⁰. Table 5 illustrates the distribution of these variables by ownership. For-profit providers appear to accommodate more users, have day service as a subsidiary business, and have more new entries.

Table 6 shows the outcomes of regression analysis with the service quality's "total score" and "principal component score" as dependent variables, respectively. The ownership dummy does not scientifically affect both "total score" and "score of the principal component" (total score: p value=0.319>0.05; score of the principal component: p value=0.236>0.5). This means, against Hansmann's (1980) argument, there is still no significant difference in the service quality between for-profits and nonprofits.

The difference in the service quality by ownership appears to be reasonable. The comparison of for-profits and nonprofits in service quality indicates the difference in market share, which represents the users' choice, as seen in Chart 1. As a result, no contract failure syndrome was found in the market.

It is, nevertheless, hard to conclude that the users in the market chose a provider based on its service quality. The variables related to the users' choice other than the ownership, of course, need to be controlled. More importantly, many of the users in FY2006/2007 might not be able to even choose a provider due to the excess of demand over supply in the market. In fact, almost all Group Home providers in the market were fully occupied through the year¹¹. As seen in Table 5, more for-profits entered the market. Many users chose for-profits simply because they were the only available Group Home providers. It may, therefore, be necessary to wait until the market provides sufficient supply over demand before drawing conclusions that "contract failure" exists.

Implication: The Reason for the Disputes in Past Literature

This study examines the controversy of this Contract Failure model in previous literature looking at the feature of service quality by ownership. The last column of Table 4 shows the difference in the service quality between for-profits and nonprofits with other variables controlled by regression analysis with each index as a dependent variable.

The result is characteristic. Whereas nonprofits are superior in the indices for care service itself, including "Basic care implementation," "Medical and health support," and "Administrative procedure," for-profits excel in relations with families. The reason for this is that the family represents the voice of the users who tend to be very dependent¹²; for-profits are more sensitive to the voice of users.

These characteristic differences between for-profits and nonprofits are the cause of the disputes in previous literature: depending on the viewpoint, both ownerships could perform better. Morozumi (2007), for example, preferred the nonprofits, assessing their service quality from care recipients' viewpoint only. Suzuki (2002), on the other hand, claimed that the for-profits were possibly superior, including the aspect of information disclosure¹³ to the index of service quality.

MAR Model

The MAR is the argument that market competitiveness lowers service quality. This section first presents the measurement of market competitiveness, and then compares the service quality between providers in competitive markets and those in non-competitive markets. Lastly, the section discusses the implication of the outcome.

This research measured the market competitiveness by the HHI. The HHI is probably the most used measurement of market competitiveness in economic research, but had never been applied in the study of the Japanese LTCI market until this paper. The HHI in this research was estimated as follows. First, the market share of each provider was defined as providers' capacity divided by the whole capacity in the municipality¹⁴. This is because the occupancy rate of Group Home was nearly 100 percent in the fiscal year (see note 11 for the detail) and the service fee in the market was uniformly regulated. Second, the HHI formula was applied.

$$H = \sum_{i=1}^N S_i^2$$

For example, in a market with two providers that each has a 50 percent market share, the HHI equals $0.5^2 + 0.5^2 = 0.5$.

Although the negative correlation between the service quality and the HHI has already been shown in Table 6, this section further investigates the impact categorizing the providers into two groups: the HHI 0.1 or below as the competitive market and the HHI 0.18 or above as the non-competitive market¹⁵.

Comparison between "Competitive" and "Non-competitive"

Table 7 illustrates the distribution of the variables of each market. The competitive market has more new providers. The capacity of the providers in competitive market is greater.

Table 7. The distribution by market competitiveness of the providers

		Competitive	Non-competitive
Sample		435	426
Ownership	For-profit	256 (59%)	252 (59%)
Subsidiary business	Day service	32 (7%)	44 (10%)
	Community At-home care service	9 (2%)	12 (3%)
	At-home care service	9 (2%)	6 (1%)
Timing of market entry	New entry	119 (27%)	73 (17%)
Size	Capacity (average)	16.1	14.7

Table 8 suggests the mean scores of service quality indices by providers' market competitiveness. The "principal component score" and "principal component improvement score" are estimated by different weights based on principal component analysis. In the "simple" column, both markets are compared by the Independent-Samples t test. In the "controlled" column, on the other hand, the comparison is weighted by the variables seen in Table, by regression analysis. "C" indicates that the score of the providers in the competitive market is significantly higher than that of nonprofits, while "N" refers to the reverse.

The outcome shows that the overall service quality of "provider in the competitive market" (hereafter "competitive") is significantly better than "provider in the non-competitive market" (hereafter "non-competitive"). The total score is 0.94 for competitive and 0.91 for non-competitive. The score of competitive is higher than that of non-competitive and the difference is statistically significant. This is also the case for the "score of the principal component." The result, therefore, fails to support the hypothesis of the MAR model.

The MAR model suggested that the market competition lowers the service quality. Some critics of the MAR model argued that there also is little incentive to improve the service quality in the non-competitive market, but they were not correct. The improvement score describes the transformation of the service quality of the providers for the two years that the data are available for (FY2005/2006 and FY2006/2007). The scores of competitive and non-competitive are 0.04 and 0.07, respectively. Both numbers are positive, which indicates the improvement of the service quality. This is also the case for the improvement score of principal component.

Implication

"Competitive" (the providers in competitive market) appears to excel especially in the indices related to public relations such as "publicity about the corporate philosophy," "community life," and "interaction between GH and family." However, the strength also reaches the categories of *life environment* and *care service*. This paper is the first empirical study of MAR with the HHI and a comprehensive service quality evaluation in the long-term care market. The outcome indicates that the mandatory third-party evaluation that makes the provider's service quality information available to the public is very useful to prevent MAR syndrome, which is caused by the information gap between users and providers.

The minimized information gap also creates incentive for "non-competitive" (the providers in non-competitive market) to enhance the service quality. As seen in Table 8, the average improvement score of non-competitive is even higher than that of competitive. As a result, the mandatory third-party evaluation enhances the service quality of the market.

Table 8. The comparison of service quality by market competitiveness of the providers

		Competitive	Non-competitive	Simple	Controlled
1	Publicity about the corporate philosophy	0.91 (0.16)	0.85 (0.20)	C**	C*
2	Homely living space	0.95 (0.13)	0.93 (0.15)	C**	
3	Customized living space	0.97 (0.09)	0.95 (0.12)	C**	
4	Care management	0.93 (0.13)	0.89 (0.16)	C**	C*
5	Basic care implementation	0.97 (0.10)	0.94 (0.07)	C**	
6	ADL support	0.96 (0.07)	0.95 (0.08)	C*	
7	Life support	0.94 (0.16)	0.90 (0.20)	C**	
8	Medical and health support	0.94 (0.09)	0.91 (0.11)	C**	
9	Community life	0.96 (0.19)	0.94 (0.24)		C*
10	Interaction with family	0.99 (0.10)	0.99 (0.12)		
11	Administrative procedures	0.92 (0.11)	0.89 (0.14)	C**	
12	Response to complaints	0.96 (0.14)	0.95 (0.15)		
13	Interaction between GH and family	0.95 (0.14)	0.92 (0.18)	C**	C*
14	Interaction between GH and community	0.81 (0.24)	0.75 (0.26)	C**	
	Total score (average score of all indices)	0.94 (0.07)	0.91 (0.07)	C**	C**
	Score of the principal component	0.48 (0.19)	0.46 (0.04)	C**	C**
	Improvement score (average improvement score of all indices)	0.04 (0.08)	0.07 (0.08)	N**	
	Improvement score of the principal component	0.02 (0.01)	0.04 (0.02)	N**	

Note: The number in brackets indicates the standardized deviation.

* means 5% significant level.

** means 1% significant level.

Suzuki and Satake's (2001) Model

Suzuki and Satake's (2001) model assumed that new entries do not enhance the service quality in the care market. To investigate the validity, this research defined the providers that were first evaluated in FY2006/2007 as new entries and the providers first evaluated prior to FY2006/2007 as old ones. This section presents the comparison between them and the implication from the model.

Comparison between New and Old Entries

Table 9 illustrates the distribution of the variables of new and old entries. New entry tends to enter a more competitive market. Old entry is likely to have day care service as a subsidiary business.

Table 10 indicates the mean scores of service quality indices by the timing of market entry of the providers. The "principal component score" and "principal component improvement score" are estimated by different weights based on principal component analysis. In the "simple" column, both types of providers are compared by the Independent-Samples t test. In the "controlled" column, on the other hand, the comparison is weighted by the variables seen in Table, by regression analysis. "N" indicates that the score of the new entries is significantly higher than that of nonprofits, whereas "O" refers to the reverse.

The total score in Table 10 is 0.91 for new entries and 0.93 for old entries. The score of old entries is slightly

Table 9. The distribution by market entry of the providers

		New	Old
Sample		241	849
Subsidiary business	Day service	10 (4%)	74 (9%)
Market environment	Community at-home care service	3 (1%)	12 (1%)
	At-home care service	0 (0%)	4 (0%)
	Herfindahl-Hirschman Index	0.17	0.23
Size	Capacity (average)	15.1	15.5
Ownership (for-profit dummy)		164 (68%)	481 (57%)

Table 10. Comparison of service quality by market entry of the providers

		New	Old	Simple	Controlled
1	Publicity about the corporate philosophy	0.86 (0.19)	0.88 (0.19)		
2	Homely living space	0.93 (0.15)	0.94 (0.13)		
3	Customized living space	0.87 (0.13)	0.92 (0.10)	O*	O**
4	Care management	0.95 (0.18)	0.95 (0.15)	O*	O**
5	Basic care implementation	0.95 (0.10)	0.95 (0.09)		
6	ADL support	0.95 (0.08)	0.95 (0.08)		
7	Life support	0.92 (0.19)	0.92 (0.19)		
8	Medical and health support	0.90 (0.12)	0.93 (0.10)	O**	O**
9	Community life	0.95 (0.23)	0.95 (0.23)		
10	Interaction with family	0.99 (0.11)	0.99 (0.12)		
11	Administrative procedures	0.89 (0.13)	0.90 (0.13)		
12	Response to complaints	0.93 (0.17)	0.95 (0.14)	O*	O**
13	Interaction between GH and family	0.90 (0.19)	0.94 (0.15)		O**
14	Interaction between GH and community	0.75 (0.27)	0.79 (0.25)		O*
	Total score (average score of all indices)	0.91 (0.09)	0.93 (0.07)	O**	O**
	Score of the principal component	0.46 (0.05)	0.47 (0.04)	O**	O**
	Improvement score (average improvement score of all indices)	-	0.06 (0.03)	-	-
	Improvement score of the principal component	-	0.02 (0.01)	-	-

Note: The number in brackets indicates the standardized deviation.

* means 5% significant level.

** means 1% significant level.

higher than that of new entries and the difference is statistically significant. This is also the case for the principal component score. The outcomes thus support the hypothesis of Suzuki and Satake's (2001) model.

Suzuki and Satake (2001) also suggest that new entries spend their "excess profit" not for the improvement of the service quality, but on something else like advertising. To investigate the validity of this explanation, Table 11 presents the transformation of the service quality of the "old" providers for which data is available for both years (FY2006/2007 and FY2005/2006). Moreover, among them, this study redefines the providers that entered the

Table 11. Comparison of service quality improvement by market entry of the providers

	New	Old	Simple	Controlled
Improvement score (average improvement score of all indices)	0.06 (0.03)	0.02 (0.02)	N**	N**
Improvement score of the principal component	0.03 (0.02)	0.01 (0.01)	N**	N**

Note: The number in brackets indicates the standardized deviation.

* means 5% significant level.

** means 1% significant level.

market in FY2005/2006 as “new” entries and the rest as “old” entries, so that the improvement of new and old entries can be compared. As Nanbu (2000) suggested, however, Table 11 shows that new entries improved the service quality better than old ones.

The results, thus, demonstrate that new entries do not bring a competitive service quality into the market. They, however, improve the service quality, spending the possible excess profit on it.

Implications

The score of each index in Table 10 describes the features by the timing of market entry. It appears that the old entries perform better in the indices in the category¹⁶ of *management structure* such as “response to complaints,” “interaction between Group Home and family,” and “interaction between Group Home and community.” On the other hand, in the category of *care service*, there is, with the exception of “medical and health support,” very little difference between new and old entries. This implies that the experience is more important in the management aspect of long-term care.

Conclusion

This paper investigated the validation of the three constraint models of service quality improvement in the care market, analyzing the service quality data of 1,093 Group Home providers in the long-term care market in Japan.

This paper presented three major findings. First, there was no nonprofit superiority in the service quality in the market. The preference in service quality might vary depending on the viewpoint—care recipients might prefer the care service of nonprofit, whereas the family may chose the family-interaction of for-profit. However, the overall difference in service quality between for-profit and nonprofit was not statistically significant. Second, the disclosure system of providers’ service quality information bridged the care information gap between the users and the providers, which led the market competition to enhance the service quality. Third, although new market entries were inferior to old entries (existing provider) in service quality, the improvement of new entries in the following year was greater than that of old entries. The challenge of new entries was rather managerial structure of care than care service itself.

This paper investigated the constraint models of service quality improvement using the service quality data of care providers. Further research for these models may add the aspect of financial efficiency or the preference of potential users.

Note

- 1 Group Home is a community-based nursing home facility for the elderly with dementia.
- 2 They are described as “certified evaluators” in Figure 1.

- 3 The competitiveness intensity was measured by (referral radius) \times (hospital density) \times (hospital density) \times (population density) (Wilson and Jadow, 1982; p.477).
- 4 The service quality improvement indicates the transformation of the total service quality score of the providers that the data is available for both years (FY 2006/2007 and the previous year) calculated by the subtraction of the service quality in FY2005/2006 from that in FY2006/2007. Thus, the numbers above 0 mean improvement and those below 0 indicate decline.
- 5 WAM-NET is a search engine of long-term care providers run by the Social Welfare and Medicaid Agency.
- 6 The data of FY 2007/2008, the latest fiscal year in which this research was conducted, were not available in a uniform way as the evaluation criteria in many prefectures were modified during the fiscal year.
- 7 That was all Group Home providers in the market at the time.
- 8 Tokyo metropolitan was not included in this research because its service quality evaluation was exceptionally different from that of other prefectures.
- 9 There was a two-year trial period prior to the introduction: the providers that had already entered the market before 2005 had to disclose the evaluation outcome at least once within the trial period.
- 10 The providers that participated in the mandatory third-party evaluation for the first time in FY2006/2007 are defined as new entries.
- 11 According to the census of Ministry of Health, Labour and Welfare (MHLW), the average number of Group Home users (excluding short-term users) in Japan in FY2006/2007 was 11,9433.3 per month (MHLW, 2008, p.95)⁴³⁾, whereas the capacity of whole Group Home providers (as of Oct. 2006) was 123,580 (MHLW, 2007). These make about 97 percent occupancy rate through the year.
- 12 According to the survey by MHLW (2007), 73 percent of Group Home users are not capable of ADL care level (*youkaigo*) 2 or above.
- 13 This includes issuing newsletter for the members (user's family).
- 14 Because Group Home is categorized as a community care service (MHLW, 2006), it can be assumed that the market of Group Home providers indicates the municipality.
- 15 According to Parkin and Bade (2006)⁴⁴⁾, HHI 0.18 or above indicates concentration (i.e., low competition), whereas HHI 0.1 or below means un-concentration (i.e., high competition).
- 16 There are four categories for the indices as seen in Table 3.
- 17 Activity for Daily Life.

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