IS NON-PROFIT STATUS A SIGNAL OF BETTER QUALITY?

MICRO-LEVEL EVIDENCE FROM JAPAN’S AT-HOME CARE INDUSTRY

by

Haruko Noguchi and Satoshi Shimizutani

November 2003

Economic and Social Research Institute
Cabinet Office
Tokyo, Japan
IS NON-PROFIT STATUS A SIGNAL OF BETTER QUALITY?

MICRO-LEVEL EVIDENCE FROM JAPAN’S AT-HOME CARE INDUSTRY

By

Haruko Noguchi
(Visiting Fellow, Economic and Social Research Institute, Cabinet Office)

and

Satoshi Shimizutani
(Economic and Social Research Institute, Cabinet Office)

November 2003

1 This research originated in a study on the Japan’s long-term care conducted by the Price Policy Division of the Cabinet Office (Cabinet Office 2002). We’d like to thank the seminar participants at ESRI. The views expressed in this paper do not necessarily represent those of the Economic and Social Research Institute or of the Japanese government. All errors are our own. Please address correspondence to: Haruko Noguchi, Faculty of Social Science, Toyo-Eiwa University (Address: 32 Miho-cho, Midori-ku, Yokohama, Kanagawa, 226-0015, Japan); and Satoshi Shimizutani, Cabinet Office (Address: 3-1-1, Kasumigaseki, Chiyoda-ku, Tokyo, Japan 100-8970).
Abstract

After the introduction of public long-term care insurance in 2000, for-profit facilities were allowed to enter the at-home care market in Japan, where nonprofits are dominant. However, according to a popular hypothesis called the “contract failure,” nonprofit centers are preferred over for-profit counterparts due to an asymmetry of information. If this is the case, a change in competition policy in the long-term care market would not work.

This study takes advantage of unique data to examine directly whether a choice in type of management is biased toward nonprofits, as the contract failure hypothesis predicts.

Our empirical findings are as follows. The share of users of for-profit providers occupies about 40 percent of the at-home care. In this sense, the entrance policy of proprietary firms after the introduction of public long-term care insurance has been welcomed.

Regarding the preference between nonprofit and for-profits, households with higher care levels or any acquaintance who is a medical doctor or a professional caregiver are inclined to choose nonprofits, which are associated with the entrance restriction that only nonprofits are incumbent in medical care and institutional care. In addition, nonprofits enjoy their acquired benefits as earlier participants in the market. In this sense, proprietary providers are disadvantageous.

On the contrary, households with more knowledge of suppliers tend to choose for-profits, which implies that this mitigating asymmetry of information might overcome the entrance limitations in other related markets, which makes the at-home market more competitive.
1. **Introduction**

Do consumers prefer nonprofit or for-profit service? This classical and frequently debated issue has held interest for both academics and policy-makers for a long time. After the introduction of public long-term care insurance in the spring of 2000, this became a critically pragmatic issue to be solved immediately in Japan since this historical “experiment” allowed for-profit enterprises to enter the at-home care market for the first time.

The government expected that the entry of for-profits always contributed toward making the market more competitive. However, we should keep in mind that this is not self-evident. If consumers have biased preferences toward nonprofit services, participants of for-profits have little effect on market competitiveness. This is clearly described by the “contract failure” hypothesis (Hansmann (1980)). If consumers cannot observe the quality of services in advance, they might tend to choose nonprofit services, since the “non-distributional constraints” nonprofits must obey prevent those from appealing to the opportunistic behavior; that is, making profits by lowering the quality of services. If consumers recognize this reality, they tend to choose nonprofits. The traditional solution to address the asymmetry of information is to allow only nonprofit enterprises to operate in the market.

Although more than three years have passed since the introduction of the new entry policy, there has been little research on consumer choice of nonprofits and for-profits in spite of this innovative institutional change. The Japanese at-home long-term care market is unusually suitable for testing the “contract failure” hypothesis because the output prices are regulated to be same for all types of providers by the government. The contents of services are also
heavily regulated and standardized across providers. Care users are able to select care services from any provider freely and equally, which exempts us from considering pricing behavior of those different types of providers.

This study takes advantage of a unique micro-level data set to test consumer preferences on the types of providers. Several previous studies, such as Shimizutani and Suzuki (2002) and Suzuki (2002), directly examined quality differences based on suppliers’ data. However, to our best knowledge, there has been no data to examine the hypothesis based on demand-side data\(^2\). Originally, micro-data from users should be utilized to examine the hypothesis because asymmetry of information motivates care users’ preferences toward nonprofits, regardless of the fact that the quality of service provided by nonprofits might be higher or lower than that of for-profits.

This paper proceeds as follows. Section 2 overviews previous studies, mainly conducted in the United States. Section 3 describes the data set used in this study. Section 4 presents the empirical specifications employed in this study and discusses the results. Section 5 draws policy implications from our empirical findings and concludes.

2. **Review of Previous Studies**

Contrary to the little research that has been done in Japan, there are plenty of studies on consumer behavior of nonprofits and for-profits. The representative is the “contract failure” approach proposed by Hansmann (1980), from which most of following studies originated.

\(^2\) The Cabinet Office (2002) tackled this problem by employing a similar methodology to this paper. However, the small sample size seriously hampered the results.
Hansmann’s discussion starts with the two key concepts: asymmetry of information and non-distributional constraints. As emphasized by Akerlof (1970), quality uncertainty based on asymmetry of information between sellers and buyers is inevitable. Due to this asymmetry, consumers are not able to observe the quality of services in advance. This is especially crucial in the service sector.

If this is the case, which type of providers do consumers choose to purchase services?
Suppose there are two types of providers: for-profits and nonprofits. The nonprofit sector is prohibited from distributing net earnings. On the contrary, for-profits must make profits to distribute them to stockholders, which sometimes invites opportunistic behavior to decrease costs by lowering the quality of services. This mechanism motivates consumers to choose to purchase services from nonprofits rather than from for-profits.

Apart from the contract failure hypothesis, a similar situation can occur under different behavioral characteristics of different types of providers. For-profits are assumed to maximize their profits, while nonprofit managers benefit from both profits and quality of services. Newhouse (1970) discusses that managers in the not-for-profit sector have fewer incentives to lower the quality provided, since their performance is judged by quality, or because they desire to show professional excellence or technical virtuosity by stressing quality.

There is a large literature on nonprofit wage premiums and quality differentials between nonprofits and for-profits (see Noguchi and Shimizutani (2002) for previous studies on those gaps between for-profits and nonprofits in the United States and Japan). While some studies proceed by modeling the contract failure hypothesis (Easley and O’Hara (1983, 1988), Chillemi and Gui (1991), Hirth (1999)), there is relatively little empirical literature that
directly examines consumer choice among different types of providers.

The original message of the contract failure hypothesis is that a consumer chooses nonprofit services because they believe that nonprofit suppliers provide higher quality services, which is not necessarily related to the reality of whether or not they actually do provide a higher quality of services. In other words, asymmetry of information motivates consumers to choose nonprofits and the disadvantage of for-profits disappears once quality of services is observed *ex post*, such as in repeated contracts.

Among those studies, Holtmann and Ullmann (1993) use a simple method to describe the choice problem and perform empirical tests using the U.S. National Nursing Home Survey. In what follows, we describe the choice problem following their framework.

We assume that a consumer purchases services from nonprofits ($Q_n$) and for-profits ($Q_p$). Since a consumer cannot judge the quality of services in advance, the quality is generally uncertain. For simplicity, we assume that the quality of nonprofit services is certain and this is not the case with for-profits. Thus, we define the actual unit of for-profit services as $Q^*_p = zQ_p$ where $z$ is a random variable with $E(z) = z$.

A consumer maximizes his utility $EU(Q_n, Q^*_p)$ under the budget constraints $p_nQ_n + p_pQ_p = Y$ and $Q_n \geq 0$ and $Q_p \geq 0$. The utility function is assumed to be increasing and concave in $Q_n$, $Q_p$, $z$.

We set up the Lagrangian as follows with $\lambda$ as the Lagrange multiplier

$$L = EU(Q_n, Q^*_p) + \lambda \left( Y - p_nQ_n - p_pQ_p \right) ; Q_n \geq 0 \text{ and } Q_p \geq 0.$$  \hfill (1)
The first order conditions are

\[
\frac{\partial L}{\partial Q_n} = E(\frac{\partial U}{\partial Q_n}) - \lambda p_n \leq 0
\]
\[
(\frac{\partial L}{\partial Q_n}) Q_n = 0
\]
\[
\frac{\partial L}{\partial Q_p} = E[(\frac{\partial U}{\partial Q_p}) z] - \lambda p_p \leq 0
\]
\[
(\frac{\partial L}{\partial Q_p}) Q_p = 0
\]
\[
\frac{\partial L}{\partial \lambda} = Y - p_n Q_n - p_p Q_p = 0
\]

Therefore,

If \( Q_p = 0 \) and \( Q_n > 0 \), \( E(\frac{\partial U}{\partial Q_n}) / p_n > E[(\frac{\partial U}{\partial Q_p}) z] / p_p \)

If \( Q_p > 0 \) and \( Q_n > 0 \), \( E(\frac{\partial U}{\partial Q_n}) / p_n = E[(\frac{\partial U}{\partial Q_p}) z] / p_p \)

If \( Q_p > 0 \) and \( Q_n = 0 \), \( E(\frac{\partial U}{\partial Q_n}) / p_n < E[(\frac{\partial U}{\partial Q_p}) z] / p_p \)

Considering that price is regulated to be same in the Japanese long-term care market (\( p_p = p_n \)), the choice of nonprofit or for-profit centers depends on the expected utility from using nonprofits \( E(\frac{\partial U}{\partial Q_n}) \) and that from proprietary services \( E[(\frac{\partial U}{\partial Q_p}) z] \). We should note that \( E[(\frac{\partial U}{\partial Q_p}) z] = z E[\frac{\partial U}{\partial Q_p}] + \text{cov}(z, \frac{\partial U}{\partial Q_p}) \), where, by the concavity assumption, the second term in the right hand side is negative.

Holtmann and Ullmann (1993) posit that this term can be viewed as the marginal risk premium associated with for-profit care. In this case, uncertainty in the quality of services provided by for-profit sector diminishes the expected utility and thus motivates consumers to choose nonprofit services. In other words, if the average quality is same between for-profits
and nonprofits, the left hand side is always greater than the right if the amount of purchase is same.

Those conditions show that if for-profit care facilities survive in the market, it should be the case that (1) the average quality is greater for for-profits than for nonprofits, and/or (2) uncertainty of quality disappears if the average quality is the same between the two types of management.

Thus, we must address two issues. The first one is which type of provider offers higher quality of services in reality. Previous studies in Japan indicate that this is inclusive (Shimizutani and Suzuki (2002)). Although our survey (explained in the next section) does not contain any information from suppliers on the quality of services, we do have results on their subjective evaluation on the care they receive.

Figure 1 describes the results on the quality of services from our survey described in the next section. The quality of for-profit services is not clearly worse than that of nonprofit centers, though the share of those who responded “uncertain” is much higher for for-profits. Figure 2 summarizes the results on reasons why the provider was chosen. The share of those who chose the provider by public reputation of higher quality is greater for for-profit users than for its counterparts. The share of those who chose nonprofits due to anxiety of using proprietary centers is very small, which implies that there is little prejudgment for opportunistic behavior in for-profits. Those results indicate that quality of services is not evidently better in either type of management.

We then come to the second issue: which type of provider is preferred by consumers. To
address this issue, we take advantage of our unique micro-level data set in the next section.

3. **Data**

The data set used in this study is the micro-level data from “Survey on Long-term Care Users.” This survey was performed twice, in 2001 and 2002.

The first survey was conducted from November to December, 2001, by the Price Policy Division of the Cabinet Office. The sample comes from a research company that collected data from 136,349 households from all areas of Japan. Those households were randomly chosen based on Japan’s household registration system; the distribution resembles the census data.

A care receiver is any elderly person who needs care in daily life. In other words, a care receiver need not be approved by local governments to be entitled to use public insurance. In addition, a care receiver in this survey is any person who lives at home together with family members; those living in institutions separate from family members are excluded from the sample. Among all samples, we screened households with a care receiver and chose samples with only one receiver randomly\(^3\). We mailed our questionnaires to 1,300 households, and received responses from 1,005 households (for a response rate of 77.1 percent).

The second survey was implemented by the Economic and Social Research Institute in October and November in 2002. The notable merit of this survey was to perform a similar survey on the same households in the 2001 survey. Of the 1005 households, we obtained

---

\(^3\) The screening results show that households with one care receiver occupy 71.1 percent of all, those with two receivers occupies 26.9 percent, and the remaining are households with more than two receivers.
responses from 822. Among those, 617 still lived at home with family member to receive at-
home care\textsuperscript{4}. Following the same method, we screened new households with one care receiver
and added 457 households to the sample. Thus, the sample size in 2002 is 1074 households.

The respondent is the main caregiver in individual households. The questionnaire covers a
variety of items, including care use over several years, health conditions of caregivers and
receivers, and household demographics.

Table 1 describes the summary statistics of our dataset. We pool the 2001 and 2002 survey to
make the sample size large, at 285. Among that sample, the number of households that use
for-profit home-help services is 104 (36.5 percent). If we compare the average between
nonprofits and for-profits, users of for-profits have larger amounts of annual income and total
assets. Care levels are heavier for users of nonprofit providers. We should note that the share
of those who have changed providers is much higher for users of for-profits than for those of
nonprofits. In addition, the share of those who began to use the provider before 2000 is much
higher for users of nonprofits.

4. \textbf{Estimation and Results}

Based on the discussion in Section 2, we employ the following specification to address
the choice problem in this study.

\[ Z_i^* = X_i'\gamma + u_i \]

\[ Z_i = 1 \quad \text{if} \quad Z_i^* \geq 0 \quad \text{or} \quad -u_i \leq X_i'\gamma \]

\textsuperscript{4} Out of the gap (205 households), 75 samples entered “any” type of institution, 68 samples died, and 29
were hospitalized.
\[ Z_i = 0 \quad \text{if} \quad Z_i^* < 0 \quad \text{or} \quad -u_i > X_i\gamma \]

where \( Z_i^* \) is the tendency to choose for-profit providers, which is unobservable. However, we observe \( Z_i \), which is a dichotomous variable that takes 1 if a user actually chooses for-profit facility. \( X_i \) refers to characteristics of users that might affect sector allocation, including gender, age, care levels, annual income, assets, relationships between care givers and receivers, and the dummy variable for using the provider before 2000. \( \gamma \) is the tendency to choose for-profits. \( X_i \) also contains several variables to proxy the asymmetry of information. Number of family members is included, since more members tend to monitor outside caregivers more intensively. Those who have a doctor or a professional care for a family member or relatives are also supposed to have more information on the quality of care. Naturally, any households that have changed providers are also expected to have more information on providers. \( u_i \) is an error term following \( N(0, \sigma_u^2) \).

Table 2 shows the results. The first column reports the results on the random effect probit model. We notice that households with higher assets tend to use for-profit services. On the contrary, households with higher care levels are inclined to choose nonprofits. As regards family size, larger households unexpectedly choose nonprofits rather than for-profits. Households with any acquaintance who is a medical doctor or a professional caregiver tend to choose nonprofits. Households that have changed providers are inclined to choose for-profits. Moreover, households that have begun to use the provider before 2000 tend to choose nonprofits.

Although the coefficients on assets and care levels are not statistically significant, those observations are in general true for the results based on the fix-effect probit model.
The significant coefficients on the dummy for changing providers indicate that households with more knowledge of suppliers and less asymmetry of information tend to choose for-profits, which is consistent with what we discussed above. On the other hand, the coefficients on the any acquaintance who is a medical doctor or a professional caregiver may be explained by the fact that providers of institutional care and medical care are still limited to nonprofit organizations, and those people prefer to select the same type of providers. This is also consistent with the fact that households with higher care-levels are inclined to choose nonprofits, since nonprofits providers usually operate both in institutional care and at-home care, and users might be relieved in case they cannot give care at home due to accidents or emergencies. Moreover, we found that nonprofits enjoy their acquired benefits as earlier participants in the market. Those factors that are advantageous for nonprofits are closely related with the entry policy that favors nonprofits.

5. **Conclusion**

This study takes advantage of some unique data to examine directly whether choice of types of management are biased toward nonprofits, as the contract failure hypothesis predicts.

Our empirical findings are as follows. The share of users of for-profit providers occupies about 40 percent in the at-home care. In this sense, the entrance policy of proprietary firms after the introduction of the public long-term care insurance has been welcomed by those who need it.

As regards the preference between nonprofit and for-profits, households with higher care
levels or any acquaintance who is a medical doctor or a professional caregiver are inclined to choose nonprofits, which are associated with the fact that only nonprofits are incumbent in medical care and institutional care. In addition, nonprofits enjoy their acquired benefits as earlier participants in the market. In this sense, proprietary providers are disadvantageous.

On the contrary, households with more knowledge of suppliers tend to choose for-profits, which implies that mitigating asymmetry of information might overcome the limitation of entrance in other related markets, which makes the at-home market more competitive.
References


Figure 1 Subjective Evaluation on Quality of Services

2002 Survey

For-profits

Nonprofits

2001 Survey

Nonprofits

For-profits

Very high
Better
Worse
Very low
Uncertain

 (%)
Figure 2 Reasons to Use the Provider

2002 Survey

Recommended by Care Manager
Recommended by Gov. Official
Recommended by Friends
Began to use before 2000
Rumor that quality is high
Anxiety toward using for-profits
Prefer Medical Cooperation

2001 Survey

Recommended by Care Manager
Recommended by Gov. Official
Recommended by Friends
Began to use before 2000
Rumor that quality is high
Anxiety toward using for-profits
Prefer Medical Cooperation
### Table 1 Basic Statistics

<table>
<thead>
<tr>
<th></th>
<th>Total N. Obs.</th>
<th>Total Mean</th>
<th>Total S.D.</th>
<th>Nonprofit Users N. Obs.</th>
<th>Nonprofit Mean</th>
<th>Nonprofit S.D.</th>
<th>For-profit Users N. Obs.</th>
<th>For-profit Mean</th>
<th>For-profit S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>For-profit Dummy</td>
<td>285</td>
<td>0.365</td>
<td>0.482</td>
<td>181</td>
<td>0</td>
<td>0</td>
<td>104</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Annual Income (ten thousand yen)</td>
<td>265</td>
<td>737.359</td>
<td>425.869</td>
<td>168</td>
<td>726.191</td>
<td>419.900</td>
<td>97</td>
<td>756.701</td>
<td>437.537</td>
</tr>
<tr>
<td>Total Assets (ten thousand yen)</td>
<td>248</td>
<td>4659.476</td>
<td>4250.737</td>
<td>155</td>
<td>4100.645</td>
<td>3805.396</td>
<td>93</td>
<td>5590.860</td>
<td>4782.014</td>
</tr>
<tr>
<td>Care Level (support)</td>
<td>285</td>
<td>0.046</td>
<td>0.209</td>
<td>181</td>
<td>0.033</td>
<td>0.180</td>
<td>104</td>
<td>0.067</td>
<td>0.252</td>
</tr>
<tr>
<td>Care Level 1</td>
<td>285</td>
<td>0.204</td>
<td>0.403</td>
<td>181</td>
<td>0.149</td>
<td>0.357</td>
<td>104</td>
<td>0.298</td>
<td>0.460</td>
</tr>
<tr>
<td>Care Level 2</td>
<td>285</td>
<td>0.172</td>
<td>0.378</td>
<td>181</td>
<td>0.166</td>
<td>0.373</td>
<td>104</td>
<td>0.183</td>
<td>0.388</td>
</tr>
<tr>
<td>Care Level 3</td>
<td>285</td>
<td>0.147</td>
<td>0.355</td>
<td>181</td>
<td>0.149</td>
<td>0.357</td>
<td>104</td>
<td>0.144</td>
<td>0.353</td>
</tr>
<tr>
<td>Care Level 4</td>
<td>285</td>
<td>0.172</td>
<td>0.378</td>
<td>181</td>
<td>0.204</td>
<td>0.404</td>
<td>104</td>
<td>0.115</td>
<td>0.321</td>
</tr>
<tr>
<td>Care Level 5</td>
<td>285</td>
<td>0.189</td>
<td>0.393</td>
<td>181</td>
<td>0.221</td>
<td>0.416</td>
<td>104</td>
<td>0.135</td>
<td>0.343</td>
</tr>
<tr>
<td>Relationship (spouse)</td>
<td>285</td>
<td>0.095</td>
<td>0.293</td>
<td>181</td>
<td>0.110</td>
<td>0.314</td>
<td>104</td>
<td>0.067</td>
<td>0.252</td>
</tr>
<tr>
<td>Relationship (own parent)</td>
<td>285</td>
<td>0.439</td>
<td>0.497</td>
<td>181</td>
<td>0.403</td>
<td>0.492</td>
<td>104</td>
<td>0.500</td>
<td>0.502</td>
</tr>
<tr>
<td>Relationship (spouse's parent)</td>
<td>285</td>
<td>0.449</td>
<td>0.498</td>
<td>181</td>
<td>0.475</td>
<td>0.501</td>
<td>104</td>
<td>0.404</td>
<td>0.493</td>
</tr>
<tr>
<td>Sex</td>
<td>283</td>
<td>0.707</td>
<td>0.456</td>
<td>180</td>
<td>0.694</td>
<td>0.462</td>
<td>103</td>
<td>0.728</td>
<td>0.447</td>
</tr>
<tr>
<td>Age</td>
<td>284</td>
<td>84.433</td>
<td>7.155</td>
<td>181</td>
<td>84.000</td>
<td>7.256</td>
<td>103</td>
<td>85.194</td>
<td>6.945</td>
</tr>
<tr>
<td>Number of Family Members</td>
<td>283</td>
<td>3.919</td>
<td>1.531</td>
<td>181</td>
<td>4.099</td>
<td>1.585</td>
<td>102</td>
<td>3.598</td>
<td>1.381</td>
</tr>
<tr>
<td>Acquaintances (Doctor or Professional Caregiver)</td>
<td>285</td>
<td>0.316</td>
<td>0.466</td>
<td>181</td>
<td>0.331</td>
<td>0.472</td>
<td>104</td>
<td>0.288</td>
<td>0.455</td>
</tr>
<tr>
<td>Dummy for Changing Providers</td>
<td>285</td>
<td>0.130</td>
<td>0.337</td>
<td>181</td>
<td>0.072</td>
<td>0.259</td>
<td>104</td>
<td>0.231</td>
<td>0.423</td>
</tr>
<tr>
<td>Dummy for Use before 2000</td>
<td>285</td>
<td>0.130</td>
<td>0.337</td>
<td>181</td>
<td>0.072</td>
<td>0.259</td>
<td>104</td>
<td>0.231</td>
<td>0.423</td>
</tr>
</tbody>
</table>
Table 2 Estimation Results

<table>
<thead>
<tr>
<th></th>
<th>Random Effect Model</th>
<th>Fixed Effect Model</th>
<th>Marginal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficients</td>
<td>S.D.</td>
<td>Coefficients</td>
</tr>
<tr>
<td>Annual Income (ten thousand yen)</td>
<td>-1.209</td>
<td>0.963</td>
<td>0.178</td>
</tr>
<tr>
<td>Total Assets (ten thousand yen)</td>
<td>1.074</td>
<td>0.581</td>
<td>0.065</td>
</tr>
<tr>
<td>Care Level (support)</td>
<td>5.370</td>
<td>3.026 **</td>
<td>0.642</td>
</tr>
<tr>
<td>Care Level 1</td>
<td>1.150</td>
<td>1.327</td>
<td>0.509</td>
</tr>
<tr>
<td>Care Level 2</td>
<td>0.400</td>
<td>1.629</td>
<td>-0.105</td>
</tr>
<tr>
<td>Care Level 3</td>
<td>1.345</td>
<td>1.737</td>
<td>0.049</td>
</tr>
<tr>
<td>Care Level 4</td>
<td>-4.752</td>
<td>2.553 **</td>
<td>-0.387</td>
</tr>
<tr>
<td>Care Level 5</td>
<td>-4.002</td>
<td>1.976 ***</td>
<td>-0.597</td>
</tr>
<tr>
<td>Relationship (spouse)</td>
<td>-3.136</td>
<td>2.737</td>
<td>-0.908</td>
</tr>
<tr>
<td>Relationship (own parent)</td>
<td>3.916</td>
<td>2.886</td>
<td>0.089</td>
</tr>
<tr>
<td>Relationship (spouse's parent)</td>
<td>1.580</td>
<td>2.441</td>
<td>0.008</td>
</tr>
<tr>
<td>Sex</td>
<td>-1.912</td>
<td>1.341</td>
<td>-0.216</td>
</tr>
<tr>
<td>Age</td>
<td>-0.024</td>
<td>0.065</td>
<td>0.011</td>
</tr>
<tr>
<td>Number of Family Members</td>
<td>-1.574</td>
<td>0.729 ***</td>
<td>-0.187</td>
</tr>
<tr>
<td>Acquaintances (Doctor or Professional Caregiver)</td>
<td>-2.528</td>
<td>1.188 ***</td>
<td>-0.309</td>
</tr>
<tr>
<td>Dummy for Changing Providers</td>
<td>4.191</td>
<td>1.985 ***</td>
<td>0.642</td>
</tr>
<tr>
<td>Dummy for Use before 2000</td>
<td>-1.859</td>
<td>0.974 **</td>
<td>-1.024</td>
</tr>
<tr>
<td>Constant</td>
<td>4.005</td>
<td>7.250</td>
<td>-1.595</td>
</tr>
</tbody>
</table>

Number of Observations. 223 223
Log Likelihood -105.122 -115.309
Pseudo R squared 0.214