

Privatisation of elderly care: Differences in non-contractible quality

Layal Chehadé (24545) and Karl Segersven (24152)

Abstract: The privatisation of social services has been a subject of debate in Sweden since the neo-liberalist reforms enabled it in the 1990s. The main topic of discussion is whether private providers save costs to an extent where it degrades quality in the pursuit of shareholder value. As social services are nonetheless heavily regulated, with intricate public procurement deals that govern the operation of the services, there should not be differences in contractible quality among private and public providers. It is therefore of interest to see whether there are differences in quality in non-contractible quality, such as perceived quality of the service. In this study we analyse data on resident reported quality from all Swedish nursing homes, and regress it on a dummy for private provision, and control for certain structural characteristics of the nursing homes and municipal differences. We arrive at the conclusion that there are indeed quality differences between publicly and privately provisioned nursing homes, in most cases to the detriment of privately provisioned nursing homes. Most of these differences concern resident reported staff quality, and this despite controlling for the number of staff per resident and staff education level. It is not within the scope of this study to dig further into what causes the lesser staff quality in privately provisioned nursing homes or to evaluate the cost-efficiency of privatisation.

Keywords: Outsourcing, Social services, Incomplete contracts, Elderly care, Privatisation

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Supervisor:	Karl Wärneryd
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Discussants:	Sofia Hänninger, Gabriel Nelsson Vedung
Examiner:	Johanna Wallenius

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1. Introduction

The move towards privatisation of public services in Sweden has increased greatly in the last decade. There have been many debates in the media about whether outsourcing of public services causes a focus on revenue rather than quality and on the other hand whether the private sector has incentives to organise more efficiently. Nevertheless, it is clear that outsourcing of the private sector is increasing regardless of political regimes. Due to the Covid-19 pandemic, the discussions about the quality in the elderly care has been central when evaluating the outcomes of the spread of the virus and mortality of the elderly. Recently, the Swedish government has decided to budget an additional 30 million SEK per year on the research on how the elderly care should be organised to have a higher quality and to be able to combat a crisis such as the pandemic (Spåre Gustafsson, 2021). Our study adds value to the debate about whether the quality of the elderly care is dependent on the type of organisation of the nursing homes, and more specifically if the difference would be attributed to non-contractible quality parameters. We will evaluate the perceived quality of the care by the residents and plot that against homes which are run publicly or privately. What we have found is that privately managed nursing homes perform worse in certain parameters – all of which have to do with staff service quality – while no conclusions can be drawn from other perceived quality parameters.

During recent years, there has been more data on the quality of elderly care due to an increase in privatisation and an increase in monitoring and collection of data from the National Board of Health and Welfare (NBHW). There is data on more objective parameters such as number of nurses per habitant, but also data collected from the elderly about their perceived quality. Previous studies about quality differences between private and public have used objective parameters, but there are no previous studies taking into account the perceived quality of residents since the data set of the perceived quality is relatively new. The data set collected regarding the perceived quality has been collected by the Swedish National Board of Health and Welfare every year since 2013. Since there are several studies studying the relation between public and private governmental services, but quite a few that study the hard-to-observe quality parameters, our objective of this paper is thus to study the perceived quality between the public and the private elderly care, and to try and explain the differences through using theory from the fields of game theory and contracting.

2. Background

In this section we will go through how the care of the elderly in Sweden is organised and the historical developments and characteristics of it. Consequently, we will go through how the outsourcing has come about and how it has affected the market. Lastly, the organisation and distribution between private and public managed nursing homes will be presented.

2.1 The elderly care in Sweden

Sweden, along with other Nordic countries, has a welfare state which has broad responsibilities. Social services such as education, health care, and elderly care is provided either by the government or the local authorities. The services, which are paid through the tax system, are distributed either at the levels of the state, the region or the municipality. The general view of the elderly care sector is that it should be the main responsibility of the government rather than the families. The image of the elderly care as a universal high-quality service for all citizens, regardless of which social groups they belong to and regardless to income, is an important building block of the Swedish welfare state (Szebehely and Trydegård, 2012). Hence, Sweden is one of the countries that spend most on social services, with around 35% of its GDP spent on social services including elderly care in the 1990s (Huber et al., 2009) (Blomqvist, 2004).

The elderly care in Sweden is provided by the government, the region and the municipality. The municipalities are responsible for the social services of the elderly care, which is divided into two branches: institutionalised care and home-based services (Blomqvist, 2004). Institutionalised, which is primarily nursing homes, is seen as the last option for the elderly, when a home-based service is not enough (Trydegård, 2000). Due to the data available and the interest of the media, we have chosen to focus our study on the institutionalised care which includes nursing homes. The regions are responsible for primary health care and hospital care. The highest level of authority, the government, controls legislation, policy declarations, state subsidies and supervision (Szebehely and Trydegård, 2012). The elderly care is hence affected by complex decision-making made on different levels and could be affected by changes in policy outside the control of the municipalities and the sector itself. In the context of the structure of the elderly care, it is essential to understand the dynamics between the municipalities and the central government. There are 290 municipalities in Sweden, organised within 21 regions. The municipalities have a high degree of autonomy from the central government since they are able to decide on tax rates, set budgets and set their own

goals and strategies. The autonomy of the municipalities implies that there can be a vast difference in quality, privatisation, and the organisation of the elderly care services.

2.2 The increase in outsourcing

One change of policy which the elderly care sector was affected by is the global wave of the New Public Management reforms made during the second half of the 1980s and the 1990s (Blomqvist, 2004). During the 1990s, a recession had hit the Swedish economy and the finances were constrained which meant that the central government had to consider ways to decrease the public spending, which made the introduction of a more liberal public sector reform appealing. Kjell-Olof Feldt, the Swedish Minister of Finance (1982-1990), suggested the introduction of “quasi-markets” in the social services sector. A quasi-market features a conventional competition market and a hierarchical bureaucracy, where government takes the role of a purchaser on behalf of the public and contracts with competing providers (Le Grand and Bartlett, 1993). The advantage of quasi-markets is that the public sector will use the mechanisms of a free market, enabling a cost efficiency as well as an increase in quality through competition.

In 1991 the new Conservative-led coalition government sped up the reforms which formally enabled some welfare services to be outsourced. The reforms made it possible for municipalities to decide if they would like to implement a quasi-market. It opened up for the possibility to implement a system which used a form contracting or a patient choice system. It is important to note that the privatisation and outsourcing of the market only concerns the privatisation of the production, which does not affect the regulation of the market or the financing of it. The elderly care is still regulated by the government and mostly financed through taxes (Blomqvist, 2005).

Although the most common nursing home is still public, the privatisation of the market has clearly increased. In 2019, 19% of the elderly who lived in nursing homes lived in privately managed ones. In 1992, only 2% of the municipalities used the contracting-out method, and in 2019, 31% of municipalities had chosen to outsource at least one nursing home (NBHW, 2019a). According to a study by Stolt and Winblad, the reasons for why a municipality chooses to allow outsourcing of the nursing homes is due to the constrained finances, population density or the municipalities political agenda (Stolt and Winblad, 2009). The results of the study showed that privately managed elderly care was largely found in areas with a dense population, and which were managed by a right-wing government. Another important reason for the outsourcing is to meet the demand needed from an aging population. In 2020, one fourth of the municipalities stated that they will not be able

to meet the demand of the nursing home places needed in five years, where the demand was highest in metropolitan areas (Boverket, 2019).

2.3 The organisation of public and private elderly care

As previously mentioned, the elderly care is financed through taxes, and it is the municipality who chooses to outsource the nursing home services or not. If the municipality chooses to outsource the service, there is a distinct process which needs to be followed. The Act on Public Procurement (2016:1145) specifies the process which the municipality needs to follow. The first step is that the municipality needs to prepare documents which specifies what is being contracted out, the quality requirements and the criteria for selecting the winning tender. The second step is to invite the interested parties to send in tenders which are evaluated by the criteria which the municipality has chosen. There are two ways to win the tender, as stipulated in The Act on Public Procurement (2016:1145), either by offering the lowest bid or by providing the most economically advantageous bid. The first option implies that all the general requirements mentioned in the documents are fulfilled and the lowest bid wins. The other option means that the tenders are given a quality score based on the bidder's description on how they will achieve good quality. The tender with the highest score and the lowest bid wins the contract and is obliged to follow the quality promised (Lundberg and Bergman, 2011).

The Act on Systems of Choice (LOV) came into force in 2009 and made it possible for the municipalities to implement a used choice system, which is a different mechanism than the public procurement described above. In 2021, 60% of the municipalities has chosen to incorporate the system in their elderly care, but the number of nursing homes which are available for the scheme are still limited (Sveriges Kommuner och Regioner, 2021). It implies that the end-user will be able to choose between different types of nursing homes, which the authorities have not yet contracted with. The municipality is still responsible for providing a certain quality, which translates into general requirements which every operator needs to fulfil in order to enter the quasi-market. All organisations that meet the requirements stipulated by the municipality are allowed to participate in the market as an operator. The main difference is that the competition will be based on the actual result, where the elderly themselves will be able to evaluate the quality, rather than the on the forecasted quality during the contracting situation (Forssell and Norén, 2013).

3. Literature review

3.1 Economic theory on contracting

The debate on the outsourcing of some of the governments functions and services have spurred many reports and studies. Some studies indicate that privately run organisations have higher incentives to use the resources efficiently but to also have a higher quality (Osborne and Gaebler, 1992). While others indicate that the primary incitement will be to lower the costs, with approximately ten to twenty percent, at the expense of quality (Le Grand and Bartlett, 1993) (Blank, 2000) (Slyke, 2003).

In order to shed light on whether there is a difference in perceived quality between public and private nursing homes we study economic theory. Firstly, we analyse game theory in order to answer why there are incentives to outsource and what the risks could be. Secondly, we use economic theories on incomplete contracts and competition to further explain what the risks are and how the risks could be mitigated. Finally, we provide a discussion of the empirical evidence and present a hypothesis.

3.1.1 Incentives to outsource

The reason why governments still choose to outsource or to privatise some functions and services is to give investment incentives for quality improvement and cost reduction. The way the government does so is by allocating decision rights which gives bargaining power to producers. This can be shown by the following game-theory model.

Suppose we have a buyer (B), which in this case is the municipality, and one seller (S). S can make an “investment”. The investment is costly ($a \geq 0$) and cannot be contracted, and the cost is borne by S . The investment will yield an innovation which may or may not be implemented and leads to either a quality improvement or a reduction in costs.

The following assumptions are made:

- Investment cost: a
- Seller’s cost of traded service: $c(a)$
- Buyer’s benefit of traded service: $b(a)$
- Assumption: $b(0) = c(0)$

The optimal investment will maximise the function: $b(a) - c(a) - a$, for either the seller or the buyer.

In the first stage of the model the allocation of decision rights will occur. In our example, this means that either it is a privately run or a publicly run nursing home. In the second stage, the seller will make the investment decision. In the third and final stage, the negotiation between the seller and the buyer will occur. During the third stage, the gains of the trade will be split equally between the two parties. In the third stage, if S has the authority, they will have the right to implement the investment or to refuse. Similarly, if B has the authority, they will have the right to implement or refuse. The implementation of the investment will only occur if it is efficient according to the stated function. The allocation of the decision rights will affect the allocation of surplus revenue.

In the case if the investment will lead to a *quality improvement*:

Suppose that $b'(a) > 0$, hence $b'' < 0$. This means that the buyer's benefit of the traded service will be positive and therefore B will never refuse to implement any innovation. If B has authority and S has no allocation rights and will not receive any surplus. Therefore, if B has authority, S will set $a = 0$, meaning there will not be any investment which will lead to quality improvement.

On the other hand, if S has authority, S can threaten to refuse implementation. S will be able to negotiate the transfer of half of the buyer's benefit: $t(a) = \frac{b(a)}{2}$. In the second stage, S will maximise the function $\frac{b(a)}{2} - a$. This would still lead to an underinvestment since the second derivative is negative ($b'' < 0$), but the outcome if S has authority will still lead to a greater quality improvement.

In the case if the investment will lead to a *cost reduction*:

Suppose that $c' < 0$ and $b' < 0$. Since both the cost and the buyer's benefit is negative, B might want to refuse implementation. If B has authority and S has no rights, then B will only implement the investment if S pays for it. The scope for trade will then be if the difference between buyer's benefit and the seller's cost is positive: $b(a) - c(a) > 0$. In this case S has to pay B the amount of $t(a) = (b(0) - b(a)) + \frac{(b(a) - c(a))}{2}$. The investment in the innovation will then maximise the following function: $-t(a) - c(a) - a = \frac{b(a) - c(a)}{2 - a}$. This means that S will only get half of the benefits with the cost reduction while bearing the full costs for the investment. Thus, the outcome

in the case when B has authority is an underinvestment in investments which leads to cost reductions.

In the case when S has authority, then S can implement the investment nonetheless B agrees or not. There are two scenarios, the first one being that the difference between the buyer's benefit and the seller's cost of the service is positive: $b(a) - c(a) > 0$. In this case, B will be unwilling to negotiate in the second stage. The innovation a will in that case maximise the function $-c(a) - a$. This means that there will be an overinvestment in the innovation which leads to a lower cost for the seller. The other scenario is if the seller's cost for the traded service outweighs the buyer's benefit if the investment is made: $b(a) - c(a) < 0$. In this scenario, B will pay S to not implement the investment. The payment from B to S is $t(a) = c(0) - c(a) + \frac{c(a)-b(a)}{2}$. Thus, S will maximise the function $t(a) - a$, which means that S will gain from overinvesting in projects which leads to cost reductions.

The game-theory model is explained to understand the duality between the incentives for private nursing homes to invest in quality elevating innovations or invest in innovations that will reduce costs. As can be seen from the model, in some cases outsourcing or giving authority to a private seller may increase the incentives to invest in projects that lead to quality improvements. According to the model, when the government has the authority there is little incentives to invest in innovations that lead to higher quality. On the other hand, there is a risk that outsourcing could lead to overinvestment in cost reductions and underinvestment in quality improving projects. One way to solve this problem between the government and the private parties is to formulate sound contracts that alter the incentives in favour of quality improving innovations.

3.1.2 Incomplete contracts

To understand the contracting relation between a local authority and a private party it might be helpful to view the situation from a principal-agent perspective. The municipality is in this case is a principal and the private party is the agent since the municipality delegates tasks through contracting to the private managed nursing homes (Pratt and Zeckhauser, 1985). Through the use of contracts, the private party will have to keep the promise of certain standards and qualities. However, there will still be an integral problem where the private party will have more information about how the private party is operated, something which the municipality will not be able to control (Williamson, 1975).

Even though the tendering process as well as the contract will mitigate some of the risks of asymmetric information, a contract is not a perfect tool to fully regulate the relationship between the agent and the principal (Slyke, 2003). According to a study by Hart and Moore, a perfect complete contract can never truly be written due to asymmetric information and uncertainty in the future. Furthermore, they state that it is even more difficult to contract on quality criteria which are hard to observe. Such qualities are especially found in “soft” services, such as the elderly care (Hart and Moore, 1999). The reason for them being hard to observe is because the information costs are higher, making it impossible, or at least, very costly to observe if the agent fulfils the quality criteria promised in a contract, which makes the contract incomplete (Williamson, 1985).

To further understand the relationship between unobservable criteria and quality, Holmstrom and Milgrom have developed a model based on non-contractible and contractible tasks (Holmstrom and Milgrom, 1991). Contractible tasks are tasks which are easy for the principal to observe. Such criteria in the elderly care could, for example, be a requirement on the number of employees per resident. Non-contractible tasks are tasks which have very high information costs and are hard to observe. According to Holmstrom’s and Milgrom’s model, if there are incentives to increase the quality on the contractible tasks, then there could be a crowding-out effect on the efforts to increase the quality in non-contractible tasks. The crowding-out effect happens even though there could be of value to invest in non-contractible tasks. That will entail that if the municipalities in their tendering process incentivise contracts with an observable, and thus contractible tasks, there will be a risk of a lower quality regarding non-contractible terms.

Similarly, Hart et al propose a model which is directly related to public-goods production which is referred to as the “incomplete-contracts model” (Hart et al., 1997). According to the model, a private company would invest in tasks which are non-contractible, or not observable, only to either increase the non-contractible quality or to reduce costs. In the model, it is not possible to reduce costs and increase quality, reducing costs would only lead to a decrease in quality. According to the tendering process which the municipalities must follow, the contract is won by the provider with the lowest cost or the most cost-efficient given the contractible quality. In this case, to win the bid a private provider would focus on cost-savings instead of increasing non-contractible quality, leading to a decrease in quality.

3.1.3 Competition

Studying competition theory can shed light on whether opening for outsourcing could lead to an increase in quality. According to a study by Manelli and Vincent, competition between different private sellers could lead to competition on price which will tend to reduce quality (Manelli and Vincent, 1995). This is the case if there is not a possibility for the consumer to choose and if reputational forces are constrained. In that case there will be a decrease in non-contractible quality which could lead to a reduction in costs. One solution which Gaynor and Town proposes is a health-care model where the competition in the tendering process is based on quality rather than price, since price should be fixed (Gaynor and Town, 2011).

In the tendering process between the municipalities and the private sector in Sweden, around 43% of won tenders are based on the lowest price while only 24% are won based on the best quality rather than the best price, and around 22% combine being the best price and the best quality (Health Navigator, 2013).

3.2 Prior empirical research

The differences in quality and price between the public and the private governmental services has been extensively studied. There are studies, among other areas, on educational systems, prisons, and health care. While there are numerous studies on the effects of price and contractible quality, there are fewer studies on the non-contractible quality and how that is affected by outsourcing the service (Bergman et al., 2016).

The empirical literature on the effect of introducing a system of school vouchers, where students can choose between private and public managed schools may have similar implication to our study. This debate has similarly to the debate about nursing homes been very popular during election periods in Sweden, where around 25% of Swedish upper secondary school students attend a privately managed school (Hinnerich Tyrefors and Vlachos, 2016). When the Swedish Institute for Evaluation of Labour Market and Education Policy (IFAU) studied the difference in student performance, they found that students in private schools have somewhat lower performance in national tests while at the same time given more generous marks compared to public managed schools (Hinnerich Tyrefors and Vlachos, 2016). Their conclusion is that private schools have an ability to adapt to the needs of their consumer base, meaning that if high marks is a factor which is important for the students or their parents, then they will usually grade them generously. One of the reasons for why empirical research on voucher schools cannot be directly used in the elderly

care is that the competition of consumers for the schools happens directly to the users, where students can choose where to study. That is not the same in the case of the elderly care, where the end user does not have a lot of influence on which nursing homes they are going to be placed at.

There have been numerous studies on the effect of outsourcing nursing homes in Sweden. Most of the studies done seem to show that when looking at quality indicators that the nursing homes report, the differences between the private and the public sector is marginal (NBHW, 2012).

One of the most relevant articles which relates to our study is done by Stolt et al and studies different parameters of quality, such as number of employees per resident, between the private and the public sector (Stolt et al., 2011). A common way to structure the parameters for quality within the health care, which Stolt et al uses, is based on a study by Donabedian. According to Donabedian, quality indicators can be grouped into three categories – namely *structure*, *process*, and *outcome*. *Structure* is defined as “the attributes of the settings in which care occurs” and refers to, for example, the number of employees or doctors in a nursing home (Donabedian, 1966). Quality in the *process* refers to “what is actually done in giving and receiving care”, examples of that are having routines for meals and exercise. *Outcome* refers to “the effects of care on the health status of patients”, which can be measured by measuring the general satisfaction of the patients or their health.

Stolt et al’s quality parameters are based on contractible terms, thus namely concerning *structure* and *process*, which are often considered during the tendering process and in the contract. Their conclusion is that the private sector seems to have a slightly higher quality relating to parameters focusing on service, even though that the employee per resident is lower than the public operated facilities. The private operators seem to have a superior service quality relating to, for example, food options and durations between meals. The results suggest that the private actors provide better service, while the structural quality indicators are higher for the public sector. Since the article has been published, there has been an increase in privately operated facilities as well as new and updated data sets. One interesting parameter which we think should be further studied is the difference in the perceived quality between the private and the public facilities. Even though that some quality parameters may tell us about the objective side of the quality outcomes, it might not affect the perceived quality of the residents. The measurement of the perceived quality is also a variable which is subjective and hard to observe, and it is also non-contractible and therefore adds value to our hypothesis.

The National Board of Health and Welfare published a report in 2012 that concluded that even though the differences in quality between the private and the public managed nursing homes were small, they differed (NBHW, 2012). Similar to the study of Stolt et al, the NBHW observed that the public run homes have higher quality regarding structural indications such as number of employees, the education of the employees and the quality of the facilities. On the other hand, privately run nursing homes had a higher quality regarding the process metrics such as making risk assessment, offering food choices and nightly fast routines. An interesting observation from this report is that the elderly seemed to perceive the quality of home assistance to be higher when the employees' education was higher.

Another study which relates to our research was published by Bergman et al in 2016 and studies non-contractible quality in the Swedish elderly care, using data published in 2009 (Bergman et al., 2016). Bergman and his colleagues also take an interest in studying the non-observable quality differences between privately and publicly managed nursing homes in order to understand how the contracting process affects the quality. In order to study a hard-to-measure quality, Bergman et al chose to study the mortality rates as the non-contractible between private and public run nursing homes. Their approach was to do a differences-in-differences study between homes which has recently become privatised. Their result, contrary to their hypothesis, is that non-contractible quality, as measured by mortality rates, increases when nursing homes are privatised. Our study will fill the research gap by on one hand incorporating the data on the residents' perceived quality as the non-contractible parameter and on the other hand use updated data from ten years forward.

3.3 Hypothesis

Since the bidding process is largely based on the competition on price rather than quality it seems likely that the outsourcing of nursing homes will lead to investments focusing on reduction of costs at the expense of an increase in non-contractible quality. The conclusion drawn from the game-theory model, the incomplete contracts model by Holmstrom and Milgrom and Hart et al, as well as the competition theory.

Non-contractible and non-observable tasks in the elderly care could be, as previously mentioned, the perceived safety, the employees' capability, and the level of trust which the patients have towards to staff, which all affect the perceived quality. The elderly's perceived quality, which is measured by different parameters, is a good measure for non-contractible quality since it would require high informational costs to constantly observe and measure the mentioned parameters. The

hypothesis is therefore that the perceived quality of the care will be lower in privately managed nursing homes due to the incentives to invest in contractible terms and reduce costs related to non-contractible tasks.

4. Methodology and data

In this section we start by presenting the data sets used in this study, followed by a presentation of summary statistics, and conclude with presenting the model that will be used in the analysis of the data.

4.1 Data

The data used in this study consists of two data sets which measure quality at nursing homes. Both data sets are ordered and provided by the National Board of Health and Welfare (NBHW) and refer to the situation in 2019. The first data set “What do the elderly think about the elderly care, 2019?” consists of data on the quality indicator *outcome* (NBHW, 2019b). The second data set “A study of nursing homes and municipal healthcare” includes objectively measured data which relate to the quality indicators *structure* and *process* (NBHW, 2019). In addition to these two data sets, we have included demographic variables for illustrative purposes, provided by Statistics Sweden.

The *outcome* data set has been produced every year since 2013 with the aim to get a broader picture of the quality of Swedish elderly care. The survey was sent out to all inhabitants in Swedish nursing homes, asking them about their opinion on the quality of care they receive in terms of several characteristics, such as what they think of the food, the possibilities for outdoor activities, and their overall satisfaction. In total, 50% of the population responded to the questionnaire. As the number of respondents is lower in this data set, there is potentially some selection bias involved, with for example larger nursing homes being more likely to have lower respondent frequency than smaller ones. Further, there may be issues with representability, as for example residents with dementia are more likely not to be able to answer the survey, and because in many cases it is not the elderly themselves who have responded but rather their relatives. Nevertheless, we deem that despite these issues, it is enough to give an indication of the quality of the respective nursing homes. A full list of quality indicators with explanations is provided in Table 4.1. The results are presented as the percentage of residents who give a positive answer.

Table 4.1. Description of variables from outcome data set

Variable	Description
General satisfaction	How satisfied they are with the nursing home as a whole
Perceived health status	How they perceive their general state of health
Perceived anxiety	How anxious or worried they feel
Perceived mobility	How their mobility indoors is
Ability to choose preferred nursing home	Whether they got a spot at their preferred nursing home
Satisfaction with personal apartment	How satisfied they are with their personal room or apartment
Satisfaction with common spaces	How satisfied they are with the common spaces at the nursing home
Satisfaction with outdoor spaces	How satisfied they are with the outdoor spaces around the nursing home
Perceived food tastiness	How tasty they perceive the food to be
Satisfaction with meals	Whether meals are a nice moment of their day
Staff attentiveness	Whether they perceive the staff to have enough time to attend to their needs
Communication of temporary changes	Whether the staff inform them of temporary changes beforehand
Influence over timing of help	Whether they can influence when they receive aid
Staff conduct	How good staff conduct is
Staff consideration	Whether the staff take into consideration their opinions and wishes on how aid is given
Safety	How safe or unsafe does it feel at the nursing home
Trust	Whether they can trust the staff at the nursing home
Satisfaction with activities	How satisfied they are with the activities offered at the nursing home
Ability to visit outdoors	How good the ability to visit outdoors is
Loneliness	If they ever feel lonely
Ability to meet nurse	How easy it is to meet a nurse if needed
Ability to meet doctor	How easy it is to meet a doctor if needed
Ability to contact staff	How easy it is to get in contact with staff if needed
Ability to give feedback	If they know where to turn to if they want to give feedback or express their concerns at the nursing home

Source: NBHW, 2019b

The *structure* and *process* data set has been produced every year since 2007 with the aim to provide legislators and nursing home providers the tools to continuously monitor, analyse, and develop social services on a local, regional, and national level. The data set has been compiled by having management from individual nursing homes answer a set of questions that indicate a varied set of quality factors for the nursing home in question. As mentioned, this data set mainly covers the *structure* and *process* parameters, with questions considering factors such as the number of employees per resident, access to training facilities, routines for meals. A total of 91% of Swedish nursing homes participated in this study. The variables specified in Table 4.2, which have deemed to be the most pertinent, will be included in this study. A list of all variables included in the data set can be found in Appendix A.

Table 4.2. Description of variables from structure and process data set

Control variable	Explanation
Staff per accommodation	Number of staff per apartment on weekdays
Nurses per accommodation	Number of nurses per apartment on weekdays
Staff education level	Ratio of staff with adequate education on weekdays
Size of nursing home	Number of apartments in nursing home
Access to outdoors	Residents have access to the outdoors when they wish
Access to training location	Residents have access to a training location
Access to activities	Residents have access to activities more than three times per week
Routine for meals	There is a routine in place for all daily meals

Source: NBHW, 2019

To be able to perform the regressions, the two data sets have had to be combined. The matching process, however, results in losing data from certain nursing homes as there is a certain inconsistency between the two data sets. Tests indicate that the size of the nursing home is the main explanatory factor for whether the data is missing, with larger nursing homes more likely to be included than smaller ones. Summary data for the amount of nursing homes in the different data sets is described in Table 4.3.

Table 4.3. Number of observations in each data set

	Private	Public	Total
Structure and process data set	350	1728	2078
Outcome data set	353	1522	1875
Combined data set	311	1361	1672

Subsequently, we compare 311 privately run nursing homes situated in 97 municipalities¹ with 1361 publicly run nursing homes in 293 municipalities.

Lastly, according to the study by Stolt and Winblad, privatization of the elderly care is correlated with several demographic variables within municipalities (Stolt and Winblad, 2009). The demographic variables specified in Table 4.4, the same which were included in Stolt and Winblad's study, are included to demonstrate the differences, but also to test the robustness of our primary method, which will be explained in the section below.

¹ Larger municipalities are divided into districts which are treated as stand-alone municipalities in this study.

Table 4.4. Description of municipal demographic variables

Variable	Description	Source
Financial results	Average per capita municipal net income or net loss excluding extraordinary costs for the last three years	Statistics Sweden 2017-2019
Population density	Population density in municipality	Statistics Sweden 2019
Right-wing representation	Proportion of right-wing parties in municipal council (M, KD, L, C)	Statistics Sweden 2019
Left-wing representation	Proportion of left-wing parties in municipal council (S, V)	Statistics Sweden 2019
Median Income	Median salary in municipality	Statistics Sweden 2019

4.2 Summary statistics

Summary statistics for all variables used in the study are provided in the tables below. T-tests are used to test for statistical significance.

Table 4.5. Summary statistics for the outcome data set

Variable	Public	Private	Difference in means
General satisfaction	81.76	79.55	-2.22***
Perceived health status	27.60	29.54	1.93**
Perceived anxiety	39.94	40.26	0.32
Perceived mobility	16.40	17.35	0.96
Ability to choose preferred nursing home	87.01	83.88	-3.13***
Satisfaction with personal apartment	74.09	72.96	-1.13
Satisfaction with common spaces	64.18	61.77	-2.40**
Satisfaction with outdoor spaces	66.26	64.44	-1.82
Perceived food tastiness	74.62	74.04	-0.58
Satisfaction with meals	69.22	67.18	-2.04**
Staff attentiveness	73.89	69.32	-4.57***
Communication of temporary changes	48.38	45.22	-3.17***
Influence over timing of help	61.48	57.32	-4.16***
Staff conduct	93.56	92.34	-1.23***
Staff consideration	79.40	77.44	-1.95**

Safety	88.40	85.80	-2.60***
Trust	85.61	82.08	-3.52***
Satisfaction with activities	62.39	64.52	2.13*
Ability to visit outdoors	58.09	58.43	0.35
Loneliness	34.99	35.64	0.65
Ability to meet nurse	75.38	77.36	1.98**
Ability to meet doctor	55.05	54.76	-0.29
Ability to contact staff	84.24	80.66	-3.58***
Ability to give feedback	46.03	51.28	5.25***

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

Results measured as a percentage of residents who gave a favourable answer. A higher number is always objectively better.

As demonstrated in Table 4.5, without any controls considered, there are quite substantial differences between privately and publicly provisioned nursing homes regarding the perceived quality.

Table 4.6. Summary statistics for the structure and process data set

Variable	Public	Private	Difference in means
Staff per apartment	0.30	0.28	-0.02***
Nurses per apartment	0.05	0.05	0.00
Staff education level (%)	81.41	78.90	-2.51**
Size of nursing home	42.06	50.86	8.79***
Access to outdoors (%)	0.79	0.97	0.18***
Access to training location (%)	0.46	0.62	0.16***
Access to activities (%)	0.88	0.98	0.10***
Routine for meals (%)	0.32	0.76	0.44***
Plan for meals (%)	77.99	90.34	12.35***
Plan for execution of care (%)	90.50	96.26	5.76***

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

As demonstrated in Table 4.6, there are quite large differences in nursing home characteristics. Publicly run nursing homes are generally smaller than public ones, and publicly run homes have generally lower results regarding the *structure* and *process* quality parameters, such as access to activities, etc. This is in line with Stolt et al's previous study on quality differences. Key structure parameters such as staff per resident and staff education level are slightly lower in privately provisioned nursing homes, but the difference is not economically significant.

Table 4.7. Summary statistics for municipal demographics

Variable	Public	Private	Difference in means
Financial results	1665.26	1962.29	297.03
Population density	326.93	1217.41	890.48***
Right-wing representation	40.24	46.09	5.85***
Left-wing representation	36.71	32.02	-4.68***
Median Income	287 026.40	310 627.70	23 601.30***

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

As demonstrated in Table 4.7, and in line with Stolt and Winblad's findings, privately run nursing homes are disproportionally located in municipalities with high population density, high right-wing representation and low left-wing representation in the municipal council, and a high median income among the population. While privately managed nursing homes are disproportionally located in municipalities with strong financial performance, the difference is not statistically significant.

4.3 Method

The present study is designed as an observational cross-sectional study based on data from the two aforementioned data sets. To study differences in perceived quality between privately and publicly managed nursing homes, we will regress perceived quality indicators from the *outcome* data set on the mode of provision. This is interesting because these quality parameters are non-contractible in most cases, and this aspect is one of the main topics of discussion when outsourcing social services. To avoid fishing, all quality indicators provided are included in the analysis.

As demonstrated in the summary statistics in Table 4.6, there are structural characteristics that differ between nursing homes that are not necessarily influenced by the mode of provision but still influence the perceived quality, such as the size of the nursing home. These variables are therefore controlled for. Perhaps even more importantly, there are large differences in municipality characteristics, as demonstrated by the summary statistics in Table 4.7. To account for the differences in these municipality characteristics, and to account for other potential discrepancies between municipalities, municipality fixed effects will be included in the regression.

We thus use linear regression to model the relationship between the different quality indicators and the type of provision and the structural indicators. The *outcome* quality indicator is the dependent variable. Independent variables in this model are a dummy for the mode of provision, controls for structural factors (such as number of staff per resident), and municipal fixed effects. Several such linear regressions, one for each indicator, will be performed to see differences in all the different quality indicators.

$$\text{Perceived quality} = \text{private} + \text{municipal fixed effects} + \text{nursing home characteristics}$$

5. Results

In this segment, we start by assessing the robustness of the method of choice, followed by a presentation of the results of the regressions performed.

To test the robustness of our method, we have compared the effect of privatisation on resident reported trust in staff depending on which control variables we include. The results of this test are presented in Table 5.1. First, we only regress the private dummy on the resident reported trust in staff quality variable (Column 1), then we include municipal fixed effects (Column 2), and lastly we include both municipal fixed effects and nursing home specific control variables (Column 3). Robustness checks for other variables can be found in Appendix B.

Table 5.1. Robustness demonstration of method

Estimation results of effects of privatisation on resident-reported trust in staff

	(1)	(2)	(3)
Estimate	-3.523***	-2.137**	-2.343**
	(0.742)	(0.977)	(1.085)
Municipal fixed effects		YES	YES
Control variables			YES

Robust standard errors in parentheses

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

Control variables are nursing home specific, namely staff per resident, nurses per resident, staff education level, size of nursing home, outdoor access, access to exercise, number of activities per week, routine for meals, plan for meals, and plan for execution of care. Results should be interpreted as the difference in means of the percentage of favourable answers within nursing homes. Negative values favour public elderly care.

The coefficient for the difference between public and private provision is smaller when controlling for municipal differences. This suggests that there are differences between municipalities, and that private and public nursing homes are disproportionally located within the country. When controlling for nursing home specific variables, the coefficient is slightly higher, but the difference is quite small. This suggests that differences in nursing home characteristics are not enough to explain the difference between the modes of provision. The results are significant throughout the test. The results of this test suggest that our method is sound, as changing the variables that are being controlled for does not significantly alter the coefficient of the independent variable of interest.

Table 5.2. Results from main regression

	Quality indicator	Coefficient	Std. Err.
(1)	General satisfaction	-2.349*	(1.211)
(2)	Perceived health status	0.265	(1.136)
(3)	Perceived anxiety	-0.120	(1.178)
(4)	Perceived mobility	1.188	(1.054)
(5)	Ability to choose preferred nursing home	-3.199***	(1.208)
(6)	Satisfaction with personal apartment	-0.142	(1.168)
(7)	Satisfaction with common spaces	0.847	(1.484)
(8)	Satisfaction with outdoor spaces	-3.138	(1.920)
(9)	Perceived food tastiness	1.519	(1.378)
(10)	Satisfaction with meals	-0.748	(1.450)
(11)	Staff attentiveness	-2.910**	(1.483)
(12)	Communication of temporary changes	-0.547	(1.691)
(13)	Influence over timing of help	-3.432**	(1.560)
(14)	Staff conduct	-0.674	(0.653)
(15)	Staff consideration	0.0664	(1.296)
(16)	Perceived safety	-1.260	(0.917)
(17)	Trust in staff	-2.343**	(1.085)
(18)	Satisfaction with activities	2.315	(1.731)
(19)	Ability to visit outdoors	-0.569	(1.711)
(20)	Perceived loneliness	0.438	(1.301)
(21)	Ability to meet nurse	0.695	(1.294)
(22)	Ability to meet doctor	-0.155	(1.554)
(23)	Ability to contact staff	-1.235	(1.161)
(24)	Ability to give feedback	5.214***	(1.426)

Robust standard errors in parentheses

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

All regressions are performed using standard OLS, with municipal fixed effects and nursing home-specific control variables included. Results should be interpreted as the difference in means of the percentage of favourable answers within nursing homes. Negative values favour public elderly care.

Presented in Table 5.2 are the coefficients for the private/public dummy when regressed with the quality indicator as the dependent variable. As demonstrated, there are statistically significant differences between public and private nursing homes in several indicators. Four out of 24 quality indicators favour publicly run nursing homes, while one indicator favours privately run homes. The results show that residents at privately run nursing homes report not being placed in the home that they chose more often than those who live in publicly run nursing homes. Staff attentiveness, influence over timing of help and trust in staff is lower in privately run homes, significant at the 5% level. Further, residents at privately managed nursing homes report generally lower satisfaction, though only significant at the 10% level. Key quality indicators such as perceived access to nurses, doctors, or staff are not significantly different between publicly and privately managed nursing homes. The only parameter that favours private nursing homes is the ability to give feedback and express one's opinion, which is generally higher in privately managed facilities, significant at the 1% level. When no controls were included, there were significant differences in 15 out of 24 parameters. That the significant differences drop to five when including controls confirms further that there are large differences between nursing home quality within the country.

The benefit of using fixed effects is that we can include all unobservable variation between municipalities. There are 98 municipalities that have a mixed model with both privately run and publicly run nursing homes, 8 municipalities that only have privately run nursing homes, and 198 municipalities only have publicly run nursing homes. By using fixed effects, only municipalities where both public and private nursing homes are represented are included in the regression, that is only 98 municipalities in this case. As there are many municipalities that are therefore not included in this study, we have performed the same regressions but using municipal control variables instead, namely those specified by Stolt and Winblad as affecting quality, and the results are similar as when using fixed effects. The specific results can be found in Appendix B. This suggests that despite only comparing the municipalities that include both public and private nursing homes, the results are robust.

6. Discussion of results and potential issues

In this segment, the results are discussed in accordance with the hypothesis, followed by an analysis of how the results compare to the literature presented in the literature section. The segment is concluded by providing a discussion on potential issues with the results and the study in general.

6.1 Implications of the results

The results observed from the data support the hypothesis partially. Privately provisioned nursing homes perform worse than their publicly provisioned counterparts in a number of non-contractible quality parameters, mainly when it comes to the quality of the staff. The results are consistent even after controlling for municipality characteristics and nursing home characteristics which are proven to affect the quality. However, there are several key non-contractible parameters that do not differ between the two modes of provision.

As previously mentioned, the main differences in perceived quality can be attributed to the staff. Staff attentiveness, influence over timing of help, and trust in staff is generally lower in privately provisioned homes. Other staff parameters, namely staff conduct; staff consideration; and the ability to meet nurses, doctors, and general staff, cannot conclusively be deemed to be higher in neither publicly nor privately provisioned nursing homes. Nevertheless, the differences in some of the parameters, especially the trust in staff, is interesting to look at more closely. In our regression, we have controlled for the privately run sector's slightly lower number of staff per patient, as well as the slightly lower proportion of staff with adequate education. Thus, the difference cannot be attributed to the differences in these underlying parameters. However, according to the 2012 report by the National Board of Health and Welfare which studied home assistance services, the satisfaction in the home assistance was correlated with the education level of the staff (NBHW, 2012). Given that staff costs account for 80% of the cost of elderly care, it is perhaps not surprising that this is an area where private providers would seek savings (Stolt and Jansson, 2006). There may thus be additional unobserved variables that affect staff performance and education that in turn affect the perceived quality of the staff, such as quality of internal education and staff seniority.

Moreover, residents in privately managed nursing homes report not being able to choose their nursing home more often than those who live in publicly managed nursing homes. This is interesting, as while the selection of residents into nursing homes depends on the municipality, the most common selection method is to take the subject's wishes into consideration, but that the selection is nevertheless made by the municipality, taking into account in which nursing homes there are available places. There is no indication that there would be a disproportionate selection into private or public nursing homes. Speculating, the result might indicate that the elderly's perception of privately run nursing homes is generally lower, or that the occupancy is generally lower in privately run nursing homes. Regardless, whether or not the elderly have been able to choose their nursing home has an effect on the perceived quality, as there are no longer any

statistically significant differences between publicly and privately run nursing homes when controlling for whether or not the elderly were able to choose the nursing home in which they live. The results from this can be found in the Appendix C. Hence, it seems that the underlying issue is the mode of provision, and that the results still hold despite this caveat.

6.2 Contribution to the literature

The study has been able to contribute to the research of Holmstrom and Milgrom as well as Hart et al, who in their papers proposed models for how non-contractable tasks relate to the quality provided by private actors. Our results are thus in line with Holmstrom and Milgrom's theory, which states that when there are contractible and non-contractible tasks, more effort is put into improving the contractible tasks at the expense of the non-contractible. The results also relate to the game-theory model, indicating that there is a risk that private actors overinvest in cost-reducing projects rather than quality enhancing, but in order to properly evaluate that, we would have to study the cost differences between private and public actors, which is outside the scope of this study.

According to Stolt et al, privately provisioned nursing homes perform better with regards to contractible tasks, while our results indicate that privately provisioned nursing homes perform less well with regards to non-contractible tasks (Stolt et al., 2011). Our results do not necessarily contradict their findings, since our study focuses on the perceived quality, or non-observable quality, in comparison to their study which only studies the results which the nursing homes themselves report. It could be argued that it is in line with our hypothesis, that the private nursing homes choose to invest in contractible tasks rather than non-contractable, leading to higher quality in the contractable tasks compared to public nursing homes.

Our results are the opposite of Bergman et al's study that finds that there is an advantage when nursing homes are privatised when measuring the mortality rates. The differences could lie in the different approaches between a differences-in-difference method that studies the differences when nursing homes become privatised, versus our research which is an observational cross-sectional study comparing similar nursing homes with different modes of provision. Moreover, Bergman et al studies the differences in mortality rates which is very different from studying the perceived quality of the residents. A selective bias from the part of the private nursing homes would have a higher effect on the mortality rate compared to the perceived quality. On the other hand, the depiction of private nursing homes and the discussions about it in the media could influence the

perceived quality of the residents, which would not have affected the mortality rates. Nevertheless, the result of this study nuances the discussion about whether non-contractible quality differs between the two modes of provision.

6.3 Potential issues

Despite controlling for municipality and nursing home differences, we cannot rule out the possibility of other factors explaining the differences in perceived quality, such as cherry picking of certain types of residents. Nursing homes are not allowed to reject residents if they have space, but there could be other, less conspicuous ways in which for instance private homes would discourage seriously ill or otherwise “difficult” patients who would perhaps be less trusting or less happy. According to the study of Stolt and Winblad, there is no difference in the proportion of elderly over 85 years between public and private homes. It would suggest that there is no such disproportionate selection, if the proportion of elderly over 85 years old is used as an approximation of residents in need of extensive care (Stolt and Winblad, 2009). Further, it may be so that there are underlying factors that determine which nursing homes are outsourced and which are not. For example, it may be that poorly performing nursing homes are outsourced to a larger extent in an attempt to increase quality. According to the same study as above, there is no explicit empirical evidence that would suggest this, and that it is rather a mix of politics and demographic variables that govern these questions, variables which we have controlled for. Lastly, it may be that private providers are less likely to abstain from contracts on accommodations that require more work put into them to preserve quality. This is however not likely given our current results, as this would suggest the opposite result. It is however not possible to rule out the possibility of these, or some other, still unknown, contributing factors to the differences observed between private and public nursing homes.

Overall, the results do suggest that privately provisioned nursing homes perform worse when regarding perceived quality, especially regarding staff performance. The results are not incontestable, as in several parameters there is no observable difference. However, the results do partially support the hypothesis that privately provisioned nursing homes to some extent deprioritise non-contractible quality, in this case the perceived quality from the point of view of the residents. As the literature mentioned describes, there could be some advantages of outsourcing but when regarding incomplete contracts and non-contractible tasks, then there is a risk that a shift to a privatised service leads to lower quality.

7. Conclusion and future research

This paper has attempted to contribute to the debate on whether the forces to outsource public services could lead to a decrease in quality. In order to contribute to the debate, we have evaluated whether there are any perceived quality differences between the privately and publicly managed nursing homes. Our results suggest that there tends to be a decrease in non-contractible quality parameters, such as the perceived quality of the nursing home. Even though the differences are marginal, they do reinforce our hypothesis, as well as give more depth to previous research done by Stolt et al. and Bergman et al. which study the same subject but with different methods (Stolt et al., 2011).

Our work contributes to the literature regarding incentives used when contracting on non-contractible and contractible tasks. Since the previous studies by Stolt et al already conclude that there is a difference between private and public managed nursing homes, our study adds to their literature by studying the non-contractible quality. Our study has aimed to add a depth to the debate between the two sides that wish to privatise even more, versus those who seek to keep the services managed by the state, by adding a discussion about how and with what terms the organisation of the outsourcing should happen. It seems that when we weigh in the non-observable quality, we may reach another conclusion to the question by understanding the terms of the competition in the contracting and tendering process. These findings and discussions could lay important groundwork for future policymaking on how the tendering process should be in organised order to maximise the advantages of outsourcing a service but at the same time keeping a high quality.

For future research, it would be interesting to study the tendering process itself and to comprehend if using different quality metrics could lead to differences in quality between the private nursing homes. For example, it would have been interesting to study processes which had a fixed price and competed on quality and compare that to processes which competed on price. It has not been possible to conduct such a study yet since the data from the tendering process is not linked to each nursing home. In case that changes in the future, it would be interesting to study if the differences in quality between the nursing homes is based on the difference in the contracting rather than the organisation of the resources.

Moreover, it would add value to study the effect of relationships and reputations between the private nursing homes and the municipalities. According to a study by Hart, one solution to keeping high quality between a principal and the agent is through building long-term relationships (Hart,

2003). This will be especially important to study when more and more municipalities implement the The Act on the Systems of Choice, where the elderly will be able to freely choose which nursing home to attend. Our study does not take into consideration the model of free choice, as the number of nursing homes that are available to choose from today is considerably low. However, as the number of municipalities that have introduced the system have started to grow and is projected to increase in the future, we believe that it will alter the way quality will be affected since the competition for residents will take place after the contract is made with the municipality, instead of during the tendering process.

Finally, one interesting aspect of the outsourcing is that it is largely implemented for the municipalities to save costs. However, there has been some research questioning if it really does save costs due to the added costs of the tendering process itself. Our study does not include an analysis of the cost savings, but to answer the question about whether outsourcing is efficient from a wider economic standpoint, we would have to take into consideration the quality in relation to the costs savings.

Our study does not attempt to answer whether privatisation of social services is a good organisational model, as there are many other variables to consider. However, we hope that this study has provided nuance and insight into a highly relevant and increasingly important political subject, that not only includes elderly care but the organisation of social services in general.

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Appendices

Appendix A. Full list of variables included in the structure and process data set

Control variable	Explanation	Included in study
Staff per accommodation - weekday	Number of staff per apartment on weekdays	Yes
Staff per accommodation – weekend	Number of staff per apartment on weekends	No
Nurses per accommodation - weekday	Number of nurses per apartment on weekdays	Yes
Nurses per accommodation - weekend	Number of nurses per apartment on weekends	No
Staff education level - weekday	Ratio of staff with adequate education on weekdays	Yes
Staff education level - weekend	Ratio of staff with adequate education on weekends	No
Size of nursing home	Number of apartments in nursing home	Yes
Access to outdoors	Residents have access to the outdoors when they wish	Yes
Access to training location	Residents have access to a training location	Yes
Access to activities	Residents have access to activities more than three times per week	Yes
Routine for meals	There is a routine in place for all daily meals	Yes
Finnish	Access to service in Finnish	No
Mäenkieli	Access to service in Mäenkieli	No
Sami	Access to service in Sami	No
Resident council	Nursing home invites all residents to a resident council	No
Interval for resident council	How often resident council is organised	No
Plan for care	Share of residents with plan for care	No
Contribute to plan for care	Share of residents who have contributed to their plan for care	No
Safety measure	Share of residents who have documentation over safety measures imposed on them	No
Plan for meals	Share of residents who have a documentation over their meal preferences	No
Routine for violence	If the nursing home has a routine for the event that the resident is a victim of violence by a relative	No
Routine for medicine addiction	If the nursing home has a routine for if the resident is addicted to medicines	No
Routine for alcohol addiction	If the nursing home has a routine for If the resident is addicted to alcohol	No
Routine for collaboration with relatives	If the nursing home has routine for collaboration with relatives	No
Access to weights	If the nursing home has access to weightlifting	No
Accessibility – environment	If the nursing home has distinct colours, light, and shapes which help to find one's way around	No
Accessibility – no cul-de-sac	If it is easy to move around without hitting a dead end	No
Accessibility – contrasts	If there are clear contrasts between for example door handles and the background	No
Accessibility – floors	If the floors are the same colour everywhere	No
General accessibility	If the interiors are designed so that it supports the individuals living there	No

Routine for general care	If there is a routine for how residents' general care is organised	No
Routine for medicinal care	If there is a routine for how residents' medicinal care (performed by doctor) is organised	No
Routine for medicines	If there is a routine for how the residents should be helped with medicines	No
Routine for medicines - nurse	If there is a routine for how the residents should be helped with medicines by a nurse	No

Appendix B. Robustness checks for other variables

Estimation results of effects of privatisation on perceived quality indicators

	(1)	(2)	(3)	(4)
Ability to choose preferred nursing home	-3.131***	-3.020***	-3.199***	-3,707***
Safety	-2.599***	-1.148	-1.260	-1,743**
Satisfaction with outdoor spaces	-1.821	-2.802	-3.138	-4,079**
Satisfaction with personal apartment	-1.129	-0.462	-0.142	-0,453
Satisfaction with meals	-2.041**	-0.515	-0.748	-2,044*
Satisfaction with common spaces	-2.405**	-0.0657	0.847	-1,418
Ability to meet nurse	1.984**	1.055	0.695	1,734
Ability to meet doctor	-0.287	-0.285	-0.155	1,549
Perceived mobility	0.959	1.979**	1.188	1,117
Staff attentiveness	-4.569***	-2.924**	-2.910**	-3,948***
Staff consideration	-1.953**	-0.599	0.0664	-0,796
Staff conduct	-1.225***	-0.512	-0.674	-1,229**
Influence over timing of help	-4.157***	-2.828**	-3.432**	-3,346***
General satisfaction	-2.217***	-1.715	-2.349*	-2,456**
Ability to visit outdoors	0.348	-0.0358	-0.569	0,551
Ability to give feedback	5.248***	4.936***	5.214***	5,457***
Communication of temporary changes	-3.165***	-1.212	-0.547	-1,198
Perceived food tastiness	-0.585	2.008	1.519	-0,164
Ability to contact staff	-3.580***	-1.132	-1.235	-1,799*
Perceived health status	1.935***	0.281	0.265	1,578*
Trust	-3.523***	-2.137**	-2.343**	-3,169***
Loneliness	0.649	-0.500	0.438	0,967
Perceived anxiety	0.317	-0.792	-0.120	0,41
Satisfaction with activities	2.132*	2.840*	0.00448	1,109
Municipal fixed effects		YES	YES	
Control variables			YES	YES
Municipal control variables				YES
Number of observations	1649	1649	1453	1429

Robust standard errors in parentheses

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

Control variables are nursing home specific, namely staff per resident, staff education level, size of nursing home, outdoor access, access to exercise, number of activities per week, and

routine for meals. Municipal control variables are municipality financial results, population density, left-wing and right-wing representation in municipal council, and median municipal income. Values should be interpreted as the difference in means of the percentage of residents who gave a favourable answer. Negative values favour public elderly care.

Appendix C. Results with controls for “Ability to choose preferred nursing home”

	Quality indicator	Coefficient	Std. Err.
(1)	General satisfaction	-1.534	(1.178)
(2)	Perceived health status	0.275	(1.147)
(3)	Perceived anxiety	0.516	(1.156)
(4)	Perceived mobility	0.981	(0.984)
(5)	Ability to choose preferred nursing home	x	x
(6)	Satisfaction with personal apartment	1.391	(1.057)
(7)	Satisfaction with common spaces	2.102	(1.415)
(8)	Satisfaction with outdoor spaces	-1.907	(1.886)
(9)	Perceived food tastiness	2.452*	(1.393)
(10)	Satisfaction with meals	0.222	(1.389)
(11)	Staff attentiveness	-2.098	(1.468)
(12)	Communication of temporary changes	-0.571	(1.636)
(13)	Influence over timing of help	-2.520	(1.531)
(14)	Staff conduct	-0.295	(0.662)
(15)	Staff consideration	0.919	(1.257)
(16)	Perceived safety	-0.487	(0.892)
(17)	Trust in staff	-1.461	(1.068)
(18)	Satisfaction with activities	2.872*	(1.728)
(19)	Ability to visit outdoors	-0.0617	(1.661)
(20)	Perceived loneliness	0.881	(1.364)
(21)	Ability to meet nurse	0.614	(1.260)
(22)	Ability to meet doctor	0.309	(1.568)
(23)	Ability to contact staff	-1.338	(1.132)
(24)	Ability to give feedback	5.680***	(1.452)

Robust standard errors in parentheses

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

All regressions are performed using standard OLS, with municipal fixed effects and nursing home-specific control variables, as well as a control for “Ability to choose preferred nursing home” included. Values should be interpreted as the difference in means of the percentage of residents who gave a favourable answer. Negative values favour public elderly care.