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Vulnerable Consumers in the Deregulated Dutch Health System

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Abstract

Public service deregulation is favoured for motivating providers to offer consumers better price-quality services. Consequently, consumers are enabled to make informed choices and choose for the best service provider. However, recent publications reveal that consumers are not capable of exercising optimal choice behaviour. Despite these concerns, evidence is lacking on the extent to which potentially vulnerable consumers make use of the core element of deregulation—switching health plans. This article is meant to study whether potentially vulnerable consumers do indeed switch less health plans in the deregulated Dutch health insurance market than regular consumers. In order to answer this question, we extract questionnaire data from the LISS panel, covering the years 2009-2012. A total of 16,779 health insurance consumers were included in the sample. The average response rate was 78%. Logistic regression results show that consumers being chronically ill, 60 and older, and without Internet access, do indeed switch less often. Intriguingly, non-working consumers and those living equal to or below the poverty line, turn out to switch more often than regular consumers. As a result, we conclude that the vulnerable consumer in the Dutch health insurance market is described by the following characteristics: chronically ill, 60 and older, and without Internet access. This specific group tends to get locked-in and suffers disproportionately from suboptimal choice behaviour.

1. Introduction

As a result of large-scale deregulation and the pursuance of the choice-agenda in the European public service sectors [1] (Clifton and Díaz-Fuentes, 2010) there has been an international surge of interest for the outcomes of

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these reforms for ordinary citizens [2]-[6] (Clifton *et al*., 2011, 2012; Grosso and Van Ryzin, 2012; Florio, 2013; Jilke, 2015). Similarly in the Netherlands, where the health insurance sector was deregulated with the establishment of the Health Insurance Act (2003-2006). It resulted in formal freedom of choice for the consumer. This means that the insured holds the right to switch to a different health plan at the end of each calendar year.

In essence, deregulation aims to provide consumers a better price-quality offering by fostering competition between health plan providers. In turn, consumers are considered to make informed choices and to choose the best service provider [7] (European Commission, 2004). Although in practice, it turns out to be less straight forward than European policymakers imagined. Several recent publications show that the deregulation gains are primarily harvested by the "strongest" in society because the "potentially vulnerable"—including for example, low-skilled and the elderly—are not capable of exercising optimal choice behaviour [2] [6] (Clifton *et al*., 2011; Jilke, 2015). In the monopoly era, potentially vulnerable consumers could count on the standardisation tool of the government to guard them against suboptimal choice behaviour. However, in the current era, potentially vulnerable consumers have to rely on themselves to optimise their own health insurance needs. In addition, potentially vulnerable consumers are unable to fully withdraw from the health insurance markets because it is not desirable, too difficult or too costly [3] (Clifton *et al*., 2012). As a result, this consumer group risks to get locked-in and to suffer disproportionately from their suboptimal choice behaviour. Despite these concerns substantial evidence is lacking on the extent to which potentially vulnerable consumers make use of what is seen as a core element of the deregulation of services: the possibility to switch health plans [8] (Jilke, 2013).

By drawing on the insights of decision theory, we are able to expose the structural disadvantages that potentially vulnerable consumers face when exercising choice behaviour (Clifton, *et al*., 2011). Specifically, *information overload*, *choice overload* and the fear of making the wrong decision (*regret*) reinforce the tendency toward decision avoidance and maintaining the status quo [9]-[11] (Schwartz, 2005; Elbel and Schlesinger, 2006; Frank and Lamiraud, 2009). Especially potentially vulnerable consumers are expected to suffer from these psychological phenomena for three reasons. First, this group of consumers finds it harder than others to gather and process relevant information in order to exercise optimal choice behaviour [12] (Burden, 1998) because they have fewer evaluation capacities [8] (Jilke, 2013). Second, they face increased welfare risks of choosing a non-optimal service provider [12] (Burden, 1998). Third, the increasing complexity and information asymmetry as a result of international globalisation and the development to a knowledge economy exacerbates the two previously cited information- and welfare-related risks [13] (Hogg *et al*., 2007). The third risk is illustrated by a recent study examining consumer satisfaction levels [14] (Clifton *et al*., 2013). The authors contend that the increasing complexity in the public service sectors cause the elderly, low-skilled, and non-working service users to be worse off. This disadvantaged group is increasingly distanced from knowledge-sharing networks in which relevant information is shared about current and new social developments.

Potentially vulnerable consumers are defined as "those who are at a disadvantage in exchange relationships where that disadvantage is attributable to characteristics that are largely not controllable by them at the time of the transaction" [15] (Andreasen and Manning, 1990, p. 13). In the last three decades, four attempts have been made to identify underlying dimensions and indicators of the potentially vulnerable consumer. This is shown in **Table 1**. In short, twelve dimensions of potentially vulnerable consumers are identified in the literature: age, education, income, health, ethnicity, labour, urbanisation, mental attitude, gender, social situation, financial situation, and Internet access. To measure these twelve dimensions, nineteen indicators are developed. In general, the focus has been on five dimensions of potentially vulnerable consumers, namely: age, education, income, health, and labour [16] (OECD, 2008). Only a very recent study in the European telephony market [6] (Jilke, 2015) uses the concept of potentially vulnerable consumers to examine the difference in switching behaviour compared to regular consumers. In his study, Jilke incorporates five underlying dimensions of EU-25 consumers in the deregulated telephony markets: education, age, income (proxy: house ownership), prosperity (proxy: work situation) and urbanisation. He contends that the inclusion of more dimensions was not possible due to data limitations.

Considering that (1) no study has examined the switching behaviour of potentially vulnerable consumers in the health insurance context, and (2) we are able—on the basis of LISS panel data—to incorporate eight of the twelve underlying dimensions of the concept of potentially vulnerable consumers in our study, we decided to further elaborate on the switching behaviour of potentially vulnerable consumers in the Dutch health insurance market. The hypothesis tested in this study is whether potentially vulnerable consumers switch health plans less often than younger, higher educated, higher income, not chronically ill, working, male, urban residential consumers with Internet access.

Table 1. An overview of the identified dimensions and indicators of the potentially vulnerable consumer concept.

Dimensions & indicators	[15] Andreasen and Manning (1990)	[12] Burden (1998)	[16] OECD (2008)	[17] European Parliament (2012)
Age	X (children & the elderly)	X (children & the elderly)	X (children & the elderly)	X
Education	X (unskilled)	X (people without an educational qualification)		X
Income	X (structurally poor)	X (low income)	X (low income)	
Health	X (physically disabled)	X (disabling, long-term illness)	X (disabled/incapacitated)	X (mentally, physically or psychologically disabled)
Ethnicity	X (minorities)	X (minorities)		
Labour		X (non-working)	X (non-working)	
Urbanisation			X (rural residents)	
Mental attitude				X (naivety)
Gender				X
Social situation				X
Financial situation				X (debt)
Internet access				X

2. Methods

2.1. Source

The questionnaire data used in our study are derived from the Longitudinal Internet Studies for the Social sciences (LISS) panel. This panel is managed and surveyed by the Institute for Data Collection and Research of Tilburg University (CentERdata). This institute ensures the representativeness of the panel in conjunction with the Dutch Central Bureau of Statistics (CBS). Together, they invite members of the Dutch population to participate in the panel. It consists of approximately 5,000 households. Registration is based on an invitation-only policy. The participants agreed upon the analysis.

Specifically, for this study randomised survey data from the Health Questionnaire (2008-2012) have been used. The average response rate is 78%. In addition, socio-demographic characteristics are drawn from the dataset Background Variables (2007-2011).

2.2. Sample

A total of 16,779 respondents were included in the sample, excluding invalid and missing values list wise. As can be observed in **Table 2**, 11.1% of the respondents switched health plans.

To construct the switching variable, we linked together information about the name of the health plan in two subsequent years. For example, the respondent has switched on 1 January 2009 when the name of the health plan has changed from 1 January 2008 to 1 January 2009. This operationalisation process is repeated to determine the number of health plan switchers on 1 January 2010, 2011, and 2012. Respondents younger than 18 years old are omitted from the dataset, since Dutch citizens are only obliged to take out health insurance from the age of 18. In **Figure 1**, the frequency distribution of the percentage of switchers can be observed in the period 2009-2012. The model percentage and the official percentage of switchers structurally differ, due to the fact that health plan switching within the same provider is not accounted for in the official percentage. Keeping this difference in mind, the same gradient can be observed in the figure across the model and official figures which adds to the reliability of our dataset.

Table 2. Characteristics of the consumers in the Dutch health system (*n* = 16,779).

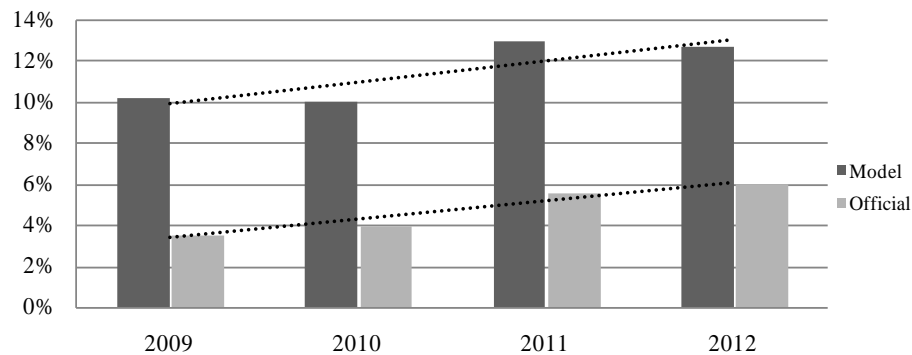| 2009-2012	Frequency	Valid percent	Cumulative percent
Outcome variable			
Switching health plans	16,779		
No	14,916	88.9	88.9
Yes	1863	11.1	100
Predictors			
Gender	16,779		
Male	7901	47.1	47.1
Female	8878	52.9	100
Labour	16,779		
Working	9006	53.7	53.7
Non-working	7773	46.3	100
Health	16,779		
Not chronically ill	11,482	68.4	68.4
Chronically ill	5297	31.6	100
Age	16,779		
Younger than 60	11,212	66.8	66.8
60 to 73	4380	26.1	92.9
74 and older	1187	7.1	100
Education	16,779		
Higher education	5210	31.1	31.1
Secondary education	10,139	60.4	91.5
Primary education	1430	8.5	100
Urbanisation	16,779		
Urban resident	14,246	84.9	84.9
Rural resident	2533	15.1	100
Income	16,779		
Moderate or high income	14,340	85.5	85.5
Low income	2439	14.5	100
Internet access	16,779		
Yes	15,340	91.4	91.4
No	1439	8.6	100

Figure 1. Health plan switching. **Source:** The official health plan switching figures are based on reports from Vektis [20]-[22] (2009, 2011, 2012).

Out of the 16,779 respondents 47.1% are males compared to 52.9% females. In addition, 53.7% of the respondents indicated that they worked against 46.3% that did not. Out of the respondents, 68.4% were not chronically ill, whereas 31.6% indicated that they suffered from a chronic disease. Concerning age, 66.8% reported to be younger than 60, 26.1% mentioned to belong in the age range of 60 to 73, while 7.1% reported to be 74 years or older. The latter two age categories are constructed to accommodate for sources that contend that consumers are potentially vulnerable from the age of 60 [6] (Jilke, 2015) and from the age of 74 [14] (Clifton *et al.*, 2013). Out of the 16,779 respondents 31.1% successfully completed higher education, 60.4% obtained a secondary education degree, and 8.5% only finished primary education. Out of the 16,779 respondents 84.9% of the respondents resided in an urban environment, compared to 15.1% that were located in the periphery. Out of the 16,779 respondents 85.5% of the respondents were living equal to or above the poverty line, whereas 15.1% had an income below the poverty line. The poverty line is set on 60% of the gross median household income [18] (Eurostat, 2000) and corrected for the number of household members by taking the square root scale [19] (OECD, 2014). Finally, 91.4% of the respondents indicated to have access to the Internet and the remaining 8.6% did not have access to the Internet. Overall, the sample was representative of the Dutch population obliged to take out health insurance.

2.3. Data-Analysis

Binary logistic regression analysis was performed with SPSS 22 to detect differences between potentially vulnerable consumers and regular consumers in the Dutch health insurance market. It is a multivariate technique and particularly suited to predict the chance of health plans witching, given the predictor values which model the potentially vulnerable consumer concept. Maximum Likelihood is used in this technique to find the function that will maximize the ability to predict the probability of Y based on what we know about X. The Likelihood ratio test is a test of the significance of the difference between the likelihood ratio (-2LL) for the researcher's model with predictors (called model chi square) minus the Likelihood ratio for the baseline model with only a constant in it. Significance at the 0.5 level or lower means the researcher's model with the predictors is significantly different from the one with the constant only. It measures the improvement in fit that the explanatory variables make compared to the null model. Chi square is used to assess the significance of this ratio.

3. Results

Table 3 presents the results of a regression analysis. It was carried out to detect if potentially vulnerable consumers do indeed switch less often than regular consumers. To this end, **Table 3** shows a good model fit for our regression model. From this model, it can be derived that over the years 2009, 2010, 2011, and 2012:
- non-working people switch **more** often;
- chronically ill people switch **less** often;
- the elderly (60 and older) switch **less** often;
- people living equal to or below the poverty line switch **more** often;
- people without Internet access switch **less** often.

No relationships have been found between health plan switching and three potentially vulnerable consumer

Table 3. Regression analysis on health plan switching of potentially vulnerable consumers.

2009-2012		
	HEALTH PLANSWITCHING	
	B(SE)	**Exp(B)**
Female (*Ref*: male)	−0.059 (0.050)	0.943
Non-working (*Ref*: working)	0.166 (0.061)	1.180[***]
Chronically ill (*Ref*: not chronically ill)	−0.273 (0.057)	0.761[***]
Age (*Ref*: 18 to 59)		
60 to 73	−0.593 (0.072)	0.553[***]
74 and older	−0.613 (0.125)	0.542[***]
Education (*Ref*: higher education)		
Secundary education	−0.073 (0.055)	0.929
Primary education	−0.148 (0.106)	0.862
Rural resident (*Ref*: urban resident)	0.026 (0.069)	1.027
Low income (*Ref*: moderate or high income)	0.198 (0.071)	1.218[***]
No Internet access (*Ref*: Internet access)	−0.211 (0.107)	0.810[*]
Constant	−1.837 (0.053)	0.159[***]
Correctly predicted	88.9%	
N	16,779	

Note: Model $\chi^2(10) = 14,444$, $p < 0.001$, [*]$p < 0.05$, [**]$p < 0.01$, [***]$p < 0.001$.

characteristics, namely gender, education, and urbanisation. These results partially confirm our hypothesis: potentially vulnerable consumers switch health plans less often than younger, not chronically ill consumers with Internet access, but the results also partially reject our hypothesis: potentially vulnerable consumers do not switch health plans less often than higher educated, higher income, working, male, urban residential consumers.

4. Discussion

On the one hand, our findings indicate that three dimensions of the potentially vulnerable consumer concept are prevalent in the Dutch health insurance market. More precisely, the results suggest that elderly consumers, those suffering from a chronic disease and those without Internet access are indeed vulnerable because they structurally switch less often. As a result, we confirm that this specific group tends to get locked-in and suffers disproportionately from suboptimal choice behaviour.

Several explanations can be given to explain our findings. First, old and chronically ill health insurance consumers switch less often because the health insurers are engaged in cross-selling practices [23] (Van Kleef *et al.*, 2014). Cross-selling refers to the practice of health insurers to automatically cancel the supplementary insurance or ask for a surcharge when the consumer cancels its basic health insurance policy [24] (Bes *et al.*, 2012). Considering that half of the chronically ill and old health insurance consumers perceive that switching means that they cannot hold on to the favourable conditions of their current supplementary insurance, they feel locked-in [25] (Duijmelinck and Van de Ven, 2011). As a consequence, they are less inclined to switch and health insurers experience less incentives to accommodate for the preferences of the chronically ill and old [23] (Van Kleef *et al.*, 2014). Secondly, consumers without Internet access switch less often because they are more distanced from knowledge-sharing networks. This bears the risk of alienation from relevant information and discussions about new social developments. Ultimately, this can lead to an increasing fear of making the wrong switching decision (regret). There by actively maintaining the status quo.

On the other hand, our findings also suggest that non-working health insurance consumers and those living equal to or below the poverty line, are less vulnerable than expected because they switch more often. As a result, we reject that this specific group tends to get locked-in. This group does not suffer disproportionately from suboptimal choice behaviour.

These contradictory findings can be explained as follows. First, non-working consumers switch more often because they have more leisure time in which they can reflect on their current health insurance plan. Moreover, it might be that the opportunity cost of non-working people is less than those of working people. This means that it is more costly for working people to engage in a switching procedure than for non-working people. Secondly, people living equal to or below the poverty line switch more often because this group is characterised by a relatively high percentage of adolescents (above the age of 18) who live independently and exhibit higher switching rates [22] (Vektis, 2012). Moreover, it can be argued that this low income group is motivated to switch more often because they have more to gain by taking out the most cost-effective health insurance offers.

As does every empirical study, the current study suffers from limitations that need to be taken into account when considering the results. First, the indicators used in this study are collected with a maximum time lapse of 4 months. It is not unthinkable that during this period, some of our respondents—for instance—lost their jobs and as a result need to be considered as non-working instead of working. At the same time, our sample of 16,779 respondents should be robust enough to guard against undue influence on the results.

Secondly, the necessary caution needs to be exercised when imposing our consumer switching findings on other deregulated service sectors such as energy or telecommunication. Each deregulated service sector is idiosyncratic and needs to be examined in its own right. To illustrate, the study mentioned in the introduction about the switching behaviour of potentially vulnerable consumers in the European telephony sector found that: old consumers, rural residents, low-skilled consumers, and female consumers, switched less often from service provider [6] (Jilke, 2015). In contrast, our analysis only confirms that elderly consumers switch less in the Dutch health system. In turn, no relationships have been found for urbanisation, education, and gender. This seems to suggest that the defining characteristics of vulnerable consumers differ substantially across deregulated service contexts.

5. Conclusion

In conclusion, it has been shown that the vulnerable consumer in the Dutch health insurance market is significantly more often chronically ill, 60 and older, and without internet access. These consumers tend to switch less than the remaining consumers. In contrast, non-working health insurance consumers and those living equal to or below the poverty line switch more often. It is recommended that policymakers develop instruments to increase the choice of the health insurer by especially elderly consumers [26] (Duijmelinck and Van de Ven, 2015). The utilization of internet among elderly should be promoted as well. The same recommendation applies for the chronically ill.

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