Public attitudes toward health-care – self-interest or solidarity?

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Background Previously, the formation of public attitudes toward healthcare has been explained by three broad sets of factors – interests, ideologies and institutions, but the relative importance of these factors is poorly understood.

Objective To identify self-interest, ideological and institutional factors associated with public attitudes toward health-care.

Main outcome measure Attitudes toward government's responsibility providing health-care for the sick.

Data and methods Multilevel logistic regression models are used based on data from European Social Survey round 4 (2008-2009) and World Health Organisation's European Health for All 2008 database.

Results Among self-interest factors, we found that men, people with less than lower secondary education and people with fair and good health have lower support toward government's responsibility providing health-care compared to women, more educated people and people with very bad, bad and very good health, respectively. The U- curve relationship between health and public attitudes emerges most clearly in Switzerland, Cyprus, Czech Republic, Estonia, Croatia, Hungary, Poland, Portugal, Romania, and Slovakia. People who think that state should be strong, in fair society differences in people's standard of living should be small and government should take measures to reduce differences in income levels, show higher support to government's role providing health-care. Among institutional factors, people in countries with lower expenditures have higher odds for not supporting the role of a government in health-care. In U countries the direction of the relationship is opposite and also people in countries with higher share of public expenditures and higher share of out of pocket payments have higher odds for not supporting the role of the government.

Conclusions To some extent, the analysis support self-interest and institutional theories, but ideological beliefs have the most robust influence on the public attitudes toward health-care.

Keywords: health care, health, attitudes, ideology, self-interest, institions

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Introduction

This paper makes a theoretical and empirical contribution to understanding the factors associated with public attitudes toward health-care systems. attitudes are important in shaping healthcare policies and bringing legitimacy to the policymaking process, especially in times of increasing pressures (e.g., population ageing, higher demand of services) and frequent health-policy reforms which have occurred during last decades in Europe.¹ According to the theory of contingent consent,² particular healthcare policy is perceived as legitimate if citizens regard the policy in itself as valuable (substantial iustice). consider the and actual implementation of the policy by government as in accordance with the promise (procedural justice). Although authors³⁻⁵ several propose that the role of preferred government and satisfaction with healthcare corresponding to substantial and procedural justice, respectively - should be analyzed as two distinct but interrelated dimensions of public attitudes toward health-care systems, we focus only on first dimension. **Public** attitudes toward government responsibility in healthcare reflects deeper ideological provision commitments to a specific organization of healthcare making it more comparable across countries.⁶

Previously, the formation of public attitudes toward healthcare has been explained by three broad sets of factors – interests, ideologies and institutions, but the relative importance of these factors is poorly understood.

Self-interest theory, based on the rational choice theory, assumes that individual choices are driven by instrumental rationality and the aspiration of individual gain and power resources theory states that healthcare attitudes are

influenced by class interests. According to self-interest theory, individuals who are recipients or are at risk of becoming recipients of health-care services, are more likely to hold positive attitudes towards public healthcare than those who less likely receive those services. Although the self-interest hypothesis is not consistent across countries, the previous empirical research has shown that the elderly or pensioners, 5,10 female, 5,10 individuals with low income 4,5,10,11 and/or low education 10 are more supportive of public healthcare. Only limited publications have analysed interaction between health conditions and preferences of the role of government in providing healthcare. Wendt et al. 11 analysed three different health care provision types and found that individuals with poor health condition show higher support of state responsibility in universal coverage – controlled access* healthcare provision oriented** type of healthcare systems but not in low budget controlled access*** type.

According to ideological disposition theory, opinions about health-care are embedded within a broad and coherent system of ideological preferences. Two important ideologies, economic individualism and social equality, determine peoples' healthcare attitudes. Economic individualism assumes that each

^{*} Denmark, Great Britain, Ireland, Italy, Netherlands and Sweden. Characterized by lower level of healthcare expenditure, patients access to healthcare providers controlled by a low level of

out-patient healthcare and strong access regulation.

** Austria, Belgium, Germany, France,
Luxembourg. High costs and a high level of
healthcare provision, in particular in the out-patient
sector and easy access of patients to healthcare
providers regarding co-payments and access
regulation.

^{***} Spain, Portugal, Finland. Very low level of healthcare expenditure and patients' access to providers restricted by high private out-of-pocket payments and strong access regulation. Access to in-patient healthcare is particularly low.

individual is responsible for his or her own welfare thus leading to low support of state role in providing healthcare, while social equality assumes solidaristic belief that all citizens have basic social rights, leading high support of state role. According to Missinne et al.⁵. individuals egalitarian beliefs were the greatest supporters of public health-care provision. Ideological preferences and self-interest motives can operate in interaction. For example, Missine et al.⁵ found that among individuals with egalitarian beliefs, the support for state responsibility were higher for individuals in poor health compared to good health.

According institutional to theory welfare regimes influence belief systems, including individuals beliefs about which type of welfare state is regarded desirable. how much redistribution considered to be other "logics legitimate, and appropriateness". 14 According Kikuzawa et al. 10, public attitudes toward government intervention in healthcare seems to cluster around the historical organization of healthcare, as individuals living under Centralized (the state directly provides healthcare and has much control) or National Health Service Model (the state directly provides healthcare but complete state control is absent) systems of healthcare more supportive are government involvement in healthcare compared to those living in Insurance Model countries (the state is limited to maintenance of the system). Thus, it is possible that individuals through socialization process come to view the current government involvement healthcare as the way things should be. So, these findings support the path dependency and health-care trajectories hypothesis historical which is in focus in institutionalism tradition of institutional theory. 11 However focusing on institutional characteristics rather than on a general welfare or healthcare typology, seems more appropriate in the more recent studies.^{4,5,11} Using the terms from the

model of production process of healthcare services, 4 institutional characteristics used includes monetary inputs like total health expenditure (per capita and in percent of GDP). As expenditure increases can be necessary for safeguarding the functioning of the healthcare system, public healthcare expenditure (per capita and in %) function as a measure for the role of the state in healthcare financing, and share of private out-of-pocket payment as a measure of the degree of 'risk privatization'. There is evidence that higher public health-care expenditure and high level of out-of-pocket payments are related to a higher support of a strong role of the state in healthcare.^{4,11} Institutional characteristics used includes real inputs like number of general (GPs), practitioners pharmacists, specialists, nurses and midwives (per 100 000 inhabitants) as indicators of healthcare provision. Previous research suggests that the higher rate of GPs^{4,11} and pharmacists¹¹ are associated with higher satisfaction with healthcare system but no associations have been found with the role of state. Institutional characteristics used also includes institutional set-ups like institutional regulations with regard to patients' access to healthcare. Latter is measured by 'access regulation index'15 which captures whether patients have to register with a GP, and whether patients have free access to specialist, free choice of a specialist by accepting additional copayment or need a referral by a GP when visiting a specialist. According to Wendt et al.^{4,11} studies, institutional regulations to patients' access to healthcare have not been related to public attitudes toward et al. 11 health-care systems. Wendt consider historical institutionalism tradition of institutional theory to be particularly suited to analyzing the relationship between institutional structures and individuals attitudes because in addition to institutional characteristics. the effects of interests and ideologies are also considered.

Data and methods

We use European Social Survey (ESS) round 4 (2008–2009) data. 16 ESS round 4 was one of the richest in terms of number of countries in the survey. All 29 countries are included in the analyses. Public attitudes toward government responsibility in healthcare provision was measured with a question 'People have different views on what the responsibilities of governments should or should not be to ensure adequate health care for the sick'. 0 means it should not be governments' responsibility at all and 10 means it should be entirely governments' responsibility. Analyses of distribution showed, that response about the support to the role of government do not have normal distribution and methods requiring normal distribution cannot be used for analyses therefore. In this paper we are mainly interested in who are those who do not support government actions. We split the variable 'Health care for the sick is governments' responsibility' into two groups. The first group (points 0-5) includes those who do not to support government's role in health care and the second is a group of supporters of government responsibility (6-10). All together the first group includes 6.4% individual in the database, but the distribution is quite unequal in different countries (Figure 1), ranging from 20% in Romania to 3% in Spain and Finland.

The main individual level variable we are interested in is subjective health. We use it as an indicator of self-interest. We assume that people with worse health might be more interested that the government takes the lead in organizing health services in a country. Subjective health is measured in ESS with a question 'How is your health in general? Would you say it is ...1 very good, 2 good, 3 fair, 4 bad, 5 very bad'. Preliminary analyses demonstrated that people with bad and very bad health are quite similar to each other in terms of supporting government's

role. Thus, we merged these two groups into one group for analyses.

We also use other indicators of selfinterest: gender – several surveys report that women support more social welfare support; educational level, subject's household income. We expect economically better coping persons and people with higher incomes might feel free to seek help from private sources, and support less government action in health However, education is controversial indicator. More educated might support more state activities because they have more egalitarian views about the arrangement of society, but more educated might support also less government's role because they have better position in society and are therefore less dependent on state action. We also add age to analyses to control the hypothesis that older people will support more health related activities, because their need for health care is increasing. The age is analysed in two subgroups: people under age 60 and 60+.

Household income question was worded as follows: 'Which of the descriptions ... comes closest to how you feel about your household's income nowadays?' Four answer categories were used: 1 living comfortably on present income, 2 coping on present income, 3 difficult on present income, 4 very difficult on present income.

Three individual level political leaning or ideological indicators are added to model to control for well-known influence of political orientation:

- For a society to be fair, differences in people's standard of living should be small: 1 agree strongly, 5 disagree strongly;
- The government should take measures to reduce differences in income levels: 1 agree strongly, 5 disagree strongly;
- Please listen to each description and tell me how much each person is or is not like you. It is important

to her/him that the government ensures her/his safety against all threats. She/he wants the state to be strong so it can defend its citizens. Values categories 1 very much like me up to 6 not like me at all.

We use also individual and country level indicators which express satisfaction with current health care service in society with a question: 'Please say what you think overall about the state of health services in [country] nowadays?' in a scale 0 extremely bad, 10 extremely good. We assume that higher satisfaction with healthcare will legitimize the existing system, and strengthens path dependency concerning whether healthcare system is more public or private financed. Average country level satisfaction is used as a macro level indicator to evaluate the quality of health care.

The second satisfaction variable reflects satisfaction with current government in a country, and is measured on the scale 0 extremely dissatisfied to 10 extremely satisfied.

Macro level indicators are reflecting the particularities of institutional set up of healthcare systems in countries. Indicators about the total amount of health care expenditures in a country (Total health care expenditure, PPP in U.S dollars per capita), private households' out of pocket payments on health as % of total health expenditure, public expenditure as % from total expenditure per capita were included. All these variables were derived from World Health Organisation European Health for All database for year 2008.¹⁷ Average satisfaction with health care in a country for year 2008 was calculated based on European Social Survey data.

We run multilevel mixed-effect logistic regression models in two groups – (1) all countries combined and (2) group of countries where health and attitudes toward governments responsibility providing

health-care have U curve relationship - in Stata 14.

Results

Descriptive and correlational analysis

The average share of people not supporting government actions in health-care is rather small 6.5%, but has large variability ranging from 13-20% in Romania, Switzerland, Turkey and Czech Republic to below 4% in Spain, the Netherlands and Scandinavian countries (Figure 1).

[Figure 1 about here]

There is clear U- curve relationship between health and public attitudes toward government responsibility in health-care provision (Figure 2). People with bad, very bad, but also with very good health would like to see the role of government stronger. U shape relationship between health and expected role of government is not typical for all countries. It emerges clearly, but not always on statistically significant level, in 10 countries out of 29. These countries are Switzerland, Cyprus, Czech Republic, Estonia. Croatia, Hungary, Poland. Romania, Portugal, and Slovakia. Correlation analyses show that U shape countries tend to have lower total and public health-care expenditures per person. and they belong mostly to the group of countries where people support less the role of government in health-care (Figure 3). Particularity of U shape countries is also an egalitarian group of people with good health verv who support government's role providing health-care.

[Figure 2 about here]

As the analyses by countries (ICC) revealed large differences by countries, the next step is to investigate the relationship with multilevel analyses using random intercept by country.

The role of institutions?

Before starting with multilevel analyses we look simple macro level distribution of different institutional indicators. Correlation analyses show that opposition to government actions in health-care is not related to any institutional variables on macro level in cross-country analyses. On individual level, correlations show that people who support more government action tend to live in countries where total expenditures on healthcare PPP\$ per capita, out-of-pocket payments on health as % of total health expenditure are bigger, people are more satisfied with healthcare services, and share of public expenditures from total expenditures are smaller.

Multilevel analysis in all countries

Mixed-effect logistic regression models results (Table 1) for all countries show that people with good and fair health tend to be supportive about the role government in health-care than people with (very) bad and very good health. Among other self-interest indicators, education is influencing the attitudes about the role of a government. People with less than lower secondary education have significantly higher odds for not supporting government's role providing health-care compared to people with lower secondary, upper secondary, post-secondary nontertiary and tertiary education. On 90% of confidence level, men have 1.09 higher odds for not supporting government's role providing health-care compared to women. Age and income level are not influencing the attitudes towards government role providing health-care in all countries database.

Not surprisingly, government's role is less supported by those who generally do not believe that government should ensure safety, reduce differences between income levels, or do not believe that for fair society the differences in income levels should be small. Also, people who are more satisfied with the government and less satisfied with their health-care system, have higher odds for not supporting government's role providing health-care.

Among institutional factors, only total health expenditures level are influencing the attitudes about the role of a government. People in countries with lower expenditures have higher odds for not supporting the role of a government in health-care. Private households' out of pocket payments on health as % of total health expenditure, public health expenditure as % from total expenditure per capita and country average satisfaction with the health-care are not influencing people attitudes.

According to AIC and BIC, people ideological and system satisfaction indicators are most influential explaining their attitude toward governments role providing health-care.

U shape countries

Mixed generalised linear model results (Table 2) show that in U shape countries people with very bad or bad and very good health have similar elevated expectations about the role of government, and people with good and fair health tend to be less supportive about the role of government in health-care. The particular pattern between health groups' attitudes remains significant even after contribution of other individual and macro level variables. Model 4 shows that odds for not supporting government's role providing health-care are 1.4-1.6 times higher for people with fair or good health comparing to people with (very) bad health.

Table 1. All countries (N=29) multilevel model for **government should not take** the responsibility in health care (1=government responsibility; 2= not government responsibility)

	Model 1 M			del 2	Model 3		Model 4	
	OR	p	OR	p	OR	p	OR	p
Intercept	0.045	0	0.010	0	0.010	0	0.106	0.323
Subjective health: (very) bad health	Ref.		Ref.		Ref.		Ref.	
Fair health	1.254	0.001	1.164	0.028	1.239	0.001	1.239	0.001
Good health	1.310	0.011	1.115	0.265	1.245	0.023	1.248	0.022
Very good health	1.214	0.024	1.006	0.941	1.158	0.101	1.163	0.090
Government should be strong/ensure			1.297	0	1.302	0	1.304	0
safety (1=important6 not important)								
For fair society, differences in standard			1.241	0	1.254	0	1.254	0
of living should be small (1=agree								
strongly5=disagree strongly)								
Government should reduce differences			1.229	0	1.248	0	1.248	0
in income levels (1=agree								
strongly5=disagree strongly)								
Satisfaction with the national			1.051	0.005	1.051	0.007	1.051	0.006
government (0=extremely								
dissatisfied10=extremely satisfied)								
State of health services in country			0.968	0.025	0.965	0.012	0.966	0.014
nowadays (0=extremely								
bad10=extremely good)								
Age: >60 years					Ref.		Ref.	
<60 years					0.931	0.476	0.930	0.46
Gender: women					Ref.	0.044	Ref.	0.06
Men					1.090	0.066	1.090	0.06
Feeling about household's income					Ref.		Ref.	
nowadays: living comfortably					1 110	0.200	1 105	0.22
Coping on present income					1.112	0.308	1.105	0.334
Difficult on present income					1.214	0.102	1.204	0.110
Very difficult on present income					1.172	0.303	1.163	0.330
Education: less than lower secondary					Ref.	0.050	Ref.	0.050
Lower secondary					0.842	0.050	0.842	0.053
Upper secondary					0.787	0.018	0.787	0.018
Post-secondary non-tertiary					0.585	0	0.585	0
Tertiary					0.689	0.005	0.688	0.005
Total health care expenditure (PPP in							0.999	0.009
U.S dollars per capita)							0.077	0.200
Private households' out of pocket							0.977	0.300
payments on health as % of total health								
expenditure							0.002	0.422
Public expenditure as % from total							0.982	0.437
expenditure per capita							1.049	0.66
Average satisfaction with health care							1.048	0.664
in a country AIC	22722		21002		21054		21054	
	22733		21993 -740		21954 -39		21954 0	
Change(AIC) BIC	22777		-740 22081		-39 22122		0 22157	
1311	/////							

OR, odds ratio; p, significance; bold, p≤0.05; Ref., reference group; AIC, Akaike Information Criterion; BIC, Bayesian Information Criterion.

Table 2. U shape countries (N=10) multilevel model for **government should not take** the responsibility in health care (1=government responsibility; 2= not government responsibility)

	Model 1		Model 2		Model 3		Model 4	
	OR	р	OR	p	OR	р	OR	p
Intercept	0.058	0	0.012	0	0.012	0	0	0.031
Subjective health: (very) bad health	Ref.		Ref.		Ref.		Ref.	
Fair health	1.450	0.001	1.347	0.012	1.407	0.003	1.406	0.003
Good health	1.784	0	1.493	0	1.592	0	1.592	0
Very good health	1.287	0.011	1.046	0.645	1.122	0.276	1.121	0.270
Government should be strong/ensure			1.249	0	1.248	0	1.246	0
safety (1=important6 not important)								
For fair society, differences in standard			1.239	0.010	1.243	0.010	1.244	0.011
of living should be small (1=agree								
strongly5=disagree strongly)								
Government should reduce differences			1.257	0.001	1.259	0.001	1.259	0.001
in income levels (1=agree								
strongly5=disagree strongly)								
Satisfaction with the national			1.070	0.042	1.071	0.049	1.072	0.047
government (0=extremely								
dissatisfied10=extremely satisfied)								
State of health services in country			0.983	0.312	0.987	0.283	0.982	0.275
nowadays (0=extremely								
bad10=extremely good)								
Age: >60 years					Ref.		Ref.	
<60 years					0.987	0.911	0.987	0.908
Gender: women					Ref.	0.4.6	Ref.	0.4.64
Men					1.132	0.163	1.132	0.161
Feeling about household's income					Ref.		Ref.	
nowadays: living comfortably					1 000	0.062	1 000	0.045
Coping on present income					1.006	0.962	1.008	0.947
Difficult on present income					1.052	0.777	1.059	0.750
Very difficult on present income					1.232	0.386	1.240	0.363
Education: less than lower secondary					Ref.	0.122	Ref.	0.124
Lower secondary					0.788	0.122	0.796	0.134
Upper secondary					0.837	0.322	0.842	0.321
Post-secondary non-tertiary					0.629 0.819	0.008	0.638	0.011
Tertiary Total health core armonditure (PPR in					0.819	0.363	0.826 1.001	0.369
Total health care expenditure (PPP in U.S dollars per capita)							1.001	0.029
Private households' out of pocket							1 400	0.075
-							1.400	0.073
payments on health as % of total health expenditure								
Public expenditure as % from total							1.344	0.060
expenditure per capita							1.544	0.000
Average satisfaction with health care							0.549	0.078
in a country							0.347	0.076
AIC	9485		9165		9149		9142	
Change(AIC)	-1067		-320		-16		-7	
BIC	9523		9233		9218		9211	
Change(BIC)	-1045		-290		-15		-7	

OR, odds ratio; p, significance; bold, p≤0.05; Ref., reference group; AIC, Akaike Information Criterion; BIC, Bayesian Information

Among other self-interest indicators, only education show some influence to the attitudes regarding government's responsibility providing health-care. More specifically, people with less than lower secondary education have 1.6 times higher odds for not supporting government's role providing health-care compared to people post-secondary with non-tertiary education. According to our multilevel analysis, age, gender and income level do not influence people attitudes regarding responsibility government's providing health-care in U shape countries.

People ideological beliefs and satisfaction with the government influence their attitudes. But it seems that the level of satisfaction with the health-care system do not influence people attitudes.

Among institutional indicators, total health expenditures level are influencing about the role attitudes of a government. People in countries with higher expenditures have higher odds for not supporting the role of a government in health care. On 90% of confidence level, private households' out of pocket payments on health as % of total health expenditure. public health expenditure as % from total expenditure per capita and country average satisfaction with the health-care are influencing people attitudes. People in countries with higher share of public expenditures and higher share of out of pocket payments have 1.3-1.4 times higher odds for not supporting the role of the government, respectively. Also, people in countries with lower average health-care system satisfaction level have higher odds for not supporting the role of the government.

According to Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC), people health status is most influential variable explaining their attitude towards government role in U shape countries.

Discussion

Analyses showed quite limited influence of institutional factors on attitudes about the role of government in health-care. At the same time unexplained role of countries is quite essential – the attitudes are dependent on countries where people live in. Countries play essential role in these models. To know more about these differences, figure 3 demonstrates the changes in country coefficients after adding the individual variables into the model. The reference country is Ukraine. Taking into account socio-economical composition of population and general attitudes about the role of government countries more government friendly in health care. The only exceptions are Greece, Latvia and Spain where support to government role, compared with Ukraine, worsened after taking into account individual level variables. The biggest change occurred in countries with already stronger support to government, and mostly these countries become even more government oriented.

[Figure 3 about here]

Conclusions

Only small share of people living in European countries do not support the government's role providing health-care, the share is highest in Romania, Switzerland, Turkey and Czech Republic. We analysed three types of factors – self-interest, ideological and institutional – in explaining the public attitudes about reluctance about government responsibility in health-care provision.

Our analysis indicate some support to self-interest theory. In line with previous results^{5,10} and based on all countries data, men were less supportive towards government's role providing health-care than women. Also, health status is influencing people's attitudes. But despite

linear, a U- curve relationship exists between health and public attitudes toward government responsibility in health-care provision. People with (very) bad, but also with very good health show stronger support towards government's role than people with good or fair health. This U shape relationship between health and expected role of government emerges most clearly in Switzerland, Cyprus, Czech Republic, Estonia, Croatia, Hungary, Poland, Portugal, Romania and Slovakia and in this group of countries people health status is more influential than ideological and institutional factors explaining their attitude towards government role. The motives of people with very good health can only partly explained with ideological leaning variables, and need to be studied more in future. Contrary to self-interest hypothesis and some previous results. 10 people with less than lower secondary education were less supportive towards government's role providing health-care than more educated people.

Ideological disposition theory is supported by our analysis. People who think that state should be strong, in fair society differences in people's standard of living should be small and government should take measures to reduce differences in income levels, show higher support to government's role providing health-care.

Institutional theory is some extent supported by our analysis. Based on all countries data and being in line with previous results, 4,11 people in countries with lower expenditures have higher odds for not supporting the role of a government health-care supporting the in path dependency and health-care trajectories hypothesis. However, in U countries the direction of the relationship is opposite. Based on U countries data, on 90% of confidence level, also people in countries with higher share of public expenditures and higher share of out of pocket payments have higher odds for not supporting the role of the government.

Based on all countries data, individual dissatisfaction with health-care services and satisfaction with government leaded to the lower support on governments' role providing healthcare. Based on U countries data, people in countries with lower average health-care system satisfaction level have higher odds for not supporting the role of the government.

Finally the selection of countries into analyses and into a survey seems to influence the results essentially while analysing government role in health-care. Support or opposition to the role of government in health-care is not simply explainable with health conditions and self-benefit strategy. Although indicators of self-interest emerged, they are quite easily also explained with higher vulnerability of some groups. individual factors, especially political leaning variables produced the most robust result. For our regret macro level variables were very volatile and dependent on selection of countries.

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Figure 2. Subjective health (1-very good, 2-good, 3-fair, 4- (very) bad) and average value with confidence interval (CI) for health care is government's responsibility (all countries together; 1-no, 2-yes)

Figure 3. Support to the role of a government in health care (country variable coefficient in logistic regression model, 1= no stat. sig. difference from Ukraine, model 1 only comparison of countries)