

Satisfaction of the Citizens and Health Professionals Regarding Healthcare Services in the European Countries

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Abstract

Different regions of the European countries follow different kinds of models in healthcare services. Particularly two models are very popular among the countries (national health service (NHS), social health insurance model (SHI)). Therefore, citizens of those regions have different level of satisfaction toward health care. Even, the general citizens and the health professionals hold different perception regarding health care. So, both of these groups have different satisfaction level. To analyze, between-individuals and between-country differences in satisfaction level, I did multi-level analysis. I got data from European Social Survey (ESS) round 9 and Eurostat, 2018. I took 27 countries (those have data in both dataset). Results show that no significant differences between citizens and professionals toward healthcare were observed in this study though previous results indicate that health professional are less satisfied than the general citizens. Moreover, satisfaction level of the citizens varies in different parts of Europe. However, there were low number of health professionals in the study that can affect the result. Moreover, I did not include personal experience of the citizens in healthcare and the effect of healthcare models.

Key words: General citizens, Health professionals, Healthcare, Satisfaction, European countries

Introduction

The aim of the study is to assess the satisfaction of the citizens and the health professionals regarding health care services in the European countries. In most of the European countries and all member countries of the Organization for Economic Cooperation and Development (OECD), expenditure in health has been increasing rapidly in recent years exceeding the growth in overall health spending. As the health care expenditures are mostly publicly funded, they create pressure on public finances (Rothgang, 2022; Saastamoinen and Verho, 2013; Stadhouders, et al., 2019). Previous studies found that health care expenditure in OECD countries has been doubled in 45 years (from 1970 to 2016) of period and reached to 9.0 per cent from 4.6 per cent (Stadhouders, et al., 2019). At present, developed countries around the world on average spend 8.8 per cent of their GDP on health care services, which are regarded as valuable products (Rothgang, 2022). Moreover, technological innovations in the field of medicine are regarded as business products and their success is increasing their future demand. The increase in health care expenditures comes from multiple sources, such as an increase in ageing people in the population structure and work-force, changes in health seeking behavior, development of new expensive treatments and drugs, increase number of chronic patients, and increased coverage (European Commission, 2019; Robertson et al, 2011; Saastamoinen and Verho, 2013; Stadhouders, et al., 2019). Therefore, the governments and the authorities introduced several cost-containment policies, reforms and measures to reduce or slow down public expenditure in health. In this situation, providing quality health care services and satisfying the patients is a rather substantial task for the governments (Aiken et al., 2012).

The principal responsibility of health care is to serve the people with standard health care and develop their health status. The patients are regarded as the consumers of products (health care), and making them satisfied with the services is the ultimate goal in this business (Faezipour and Ferreira, 2013). Therefore, providing standard healthcare services is one of the most significant concepts in healthcare sector where everyone has the right to access a fair and effective service (Naseer et al., 2012; Xesfingi and Vozikis, 2016). Quality in the health care services has been assured by introducing insurance facilities, health care development programs, and different health care agendas. As the quality of health care services is the main aim to the health care providers, it is necessary to evaluate the quality from the perspective of citizens (Xesfingi and Vozikis, 2016). Health care service providers are responsible to assure health care services and benefits to the patients along with their satisfaction (Ferrand et al., 2016). Measuring the quality of health care services primarily depends on the structure of the health care sector, procedures of service provisions and outcomes of the services. In the

European countries, the health care systems are more or less universal; nonetheless, they vary on the ground of level of “patient-centeredness, timeliness, efficiency and equity” (Xesfingi and Vozikis, 2016).

Patients’ satisfaction is a large concept including their own views regarding health care and experience to the services. Particularly, patients’ satisfaction is a relative assessment to compare between expectation and experience to the health care (Naseer et al., 2012). Scholars had different thoughts regarding patients’ satisfaction. Some scholars found it as a feeling to represent attitudes toward health care. “Patient satisfaction is defined as patient-reported outcome measure while the structures and processes of care can be measured by patient-reported experiences” (Al-Abri and Al-Balushi, 2014). In fact, it is a useful indicator to measure the quality of health care services because it provides the information regarding the providers if they succeed to deliver desired services to the consumers (Naseer et al., 2012; Xesfingi and Vozikis, 2016, Yuan, 2021). In the field of health care sector measuring, satisfaction is important because patients’ health is positively associated with their satisfaction (Ferrand et al., 2016). Previous studies found that measuring patients’ satisfaction is associated with improving the quality of health care services. Moreover, measuring satisfaction helps to improve cost management, strategic plans and policies and meet patient’ expectations (Al-Abri and Al-Balushi, 2014; Kumah, 2019). In fact, patients act like as partners to develop quality health care services. Researchers found significant correlation between measuring patients’ satisfaction and getting services from the same service providers. Nevertheless, some researcher found opposite result; patients’ satisfaction is an unreliable indicator to assess quality of health care (Al-Abri and Al-Balushi, 2014).

Perspective of the patients and health care providers differ from each other (Xesfingi and Vozikis, 2016). Previous studies found that general public are little more satisfied that the doctors because the doctors are more critical about the reforms of health care (Wendt and Naumann, 2018). Previously, standard of health care services was recognized only from the views of the health practitioners and the professionals rather than the patients. In recent times, patients’ opinion has been taken into account to measure the quality of the healthcare services. Therefore, patients’ experiences and satisfaction are regarded as a significant indicator to measure the quality healthcare (Kumah, 2019).

In this study, general peoples’ satisfaction toward health care services will be measured and compared with the health professionals’ satisfaction toward health care services. While patients’ satisfaction only focuses on the people who are the direct consumers of health care services, public satisfaction regarding health care services is a comprehensive indicator to assess the health care system of

particular countries. Moreover, general citizens' satisfaction toward health care services helps to evaluate the sustainability and the efficiency of healthcare reforms (Zhang et al., 2020). In fact, at present, sustainability to health care services is the core concern in health sector. With the increase of health care demands and decreasing the resources, future generation need to be focused along with serving the present generation (Faezipour and Ferreira, 2013). However, there are several reasons to include the general public to assess their satisfaction toward health care system such as they represent all the population, the consumers of health care and the non-consumers. Then, there will be a possibility to get information of experiences of all kinds of people regardless a particular section of consumers. Moreover, it enhances the chances of getting information along with several factors such as socio-cultural affairs. Overall, it allows to understand the general people's trust on health care system (Zhang et al., 2020).

However, there are number of factors that influence satisfaction of individuals toward health care system. Previous studies found that socio-economic status of individuals positively related to their satisfaction toward health care system. Higher income people are more satisfied with the health services. Conversely, some researchers found that low-income people are more contented with nursing care. Moreover, less educated people are less satisfied with health care. Additionally, self-assessed health is positively correlated with satisfaction toward health care, meaning that people having poor health are less satisfied (Batbaatar et al., 2017). Even, gender difference is associated with measuring satisfaction toward health care. Women are less satisfied regarding health care as they are meticulous about time and advice given the doctors (Wendt and Naumann, 2018). Additionally, public health expenditure is another factor that influence satisfaction of the citizens toward health care system. Researchers found that the wealthy countries can afford expenses in health care system including regulation, provision and funding, even in the expensive specialized treatment. Therefore, the citizens of high-income countries are more satisfied toward health care system than the low-income countries (Xesfingi and Vozikis, 2016).

Health Care Typology

Wendt and his colleagues proposed typology of health care system developed by Rothgang and his colleagues. This typology of health care system has three different types of dimensions: "financing, service provision, and regulation" provided by "state, societal, or private actors," Based on three types dimensions and their providers, Wendt et al. (2009) classified health care system into 27 distinct types (Böhm et al., 2013; Wendt et al., 2009). Among these 27 types of health care system, three categories are picked up based on similar kind of dimension in providing health care: "state healthcare systems,

societal healthcare systems and private healthcare systems” (Wendt et al., 2009). Alike, OECD distinguished the Western developed countries into three similar types of health care system: national health service (NHS), social health insurance model (SHI) and private health insurance model (PHI) (Böhm et al., 2013; Rothgang, 2022). Different regions of Europe Follow different healthcare models. For instance, Northern and Southern Europe follow national health service (NHS) model, and West and Centre Europe accept social health insurance model (SHI) model (Rothgang, 2022).

Table 1 Typologies of healthcare System

Health System Type	Dimensions (Regulation, Financing and Provision)	Characteristics	Country
State healthcare systems/ national health service (NHS)	State	<ul style="list-style-type: none"> • Universal coverage • Tax funded • Public ownership of health infrastructures, 	Northern and Southern Europe
Societal healthcare systems/social health insurance model (SHI)	Societal	<ul style="list-style-type: none"> • Universal coverage • combination of public fund, non-profit organizations or private firms • Funded by contribution to social insurance 	West and Centre Europe
Private healthcare systems/ private health insurance model (PHI)	Private	<ul style="list-style-type: none"> • Funded by private insurance • Health care provision privately owned 	USA

(Böhm et al., 2013; Rothgang, 2022)

In this study, I included the European countries because they have different models in their health care system. Therefore, I wanted to understand if there is any variance in satisfaction among the

citizens in European countries as these countries have different models in providing health care service.

Research Question

In this study, I will evaluate comparative satisfaction of general citizens and the professionals in the European countries. I tend to assess if there are any differences regarding satisfaction of the general public and the professionals. The research question of the study is “does the degree of satisfaction of citizens and health professional toward health care system differ across countries in Europe?”.

Hypothesis

In this study, hypothesis 1 states that general people are more satisfied toward health care system than health professionals. The second hypothesis is citizens of different regions of Europe have distinct level of satisfaction. Hypothesis 3 suggests that citizens with higher socio-economic status have higher satisfaction toward health care system. Hypothesis 4 suggests countries that expend more in health care have more satisfied citizens toward health care system.

Data and Variables

The data for this study was obtained from the European Social Survey (ESS), Round 9 (2018). The ESS is a cross-national survey and from its establishment in 2001, it is conducting surveys across Europe covering a range of topics related to social attitudes, behaviors, and values. Round 9 of the ESS was conducted between 30-08-2018 and 27-01-2020. The sample size for Round 9 was 49,519 respondents nested in 29 countries. The dataset of ESS round 9 has 572 variables. The respondents participated in face-to-face interview (ESS, 2018). In this study, I am using ESS round 9 (2018) as in the latest round (round 10), all the participant counties did not provide data yet.

One country level variable ‘Health care expenditure by financing scheme’ was derived from ‘Eurostat (2018)’ that provides statistical data on Europe. In 2018, It has data on health care expenditure on 27 countries in Europe similar to ESS except Montenegro and Serbia. So, I excluded Montenegro and Serbia from ESS dataset, and worked with the rest 27 European countries (Eurostat, 2018). After excluding Montenegro (1,200 observations) and Serbia (2,043 observations), 46,276 observations remain. From the variables, categories ‘Refusal’, Don’t know’, and ‘No answer’ were excluded as missing values. Moreover, category ‘other’ of education variable was also excluded because there

were few numbers of observations. There were 13,372 missing values. So, after excluding missing values, there were 36,147 observations.

Dependent Variable

The dependent variable in the study was taken from the question ‘state of health services in their home country nowadays’. The scale ranges from 0 (‘extremely bad’) to 10 (‘extremely good’). As there are 11 categories, I count it as a continuous variable.

Independent Variable

The explanatory variable is the occupation of the respondents. Here, I differentiate the general citizens and the health professionals. According to the Finnish Classification of Occupations 2010 (based on ISCO-08), In ISCO-08, there are dedicated profession for health care workers. I took “Health professionals” (code 22; eg, medical doctors) and “Health associate professionals” (code 32; eg, nurses) and “Personal care workers in health services” (code 532; eg, health care assistants [practical nurses; assistant nurses]). Moreover, according to European industry standard classification system NACE (Nomenclature des Activités Économiques dans la Communauté Européenne) revision 2, I include code 86 eg, ‘Human health activities’ and code 88 eg, Social work activities (Aalto-Korte et al., 2021). In the dataset, finally I found 88.60 percent of general citizens and 11.40 percent of health professionals (Table 2).

I took household income decile (Household's total net income, all sources) as continuous variable as there are 10 categories representing decile from 1-10 grade. Moreover, I include educational level of the respondents. In ESS dataset, there was 8 categories of education level. I recode it as 4 categories (dropped category ‘other’) and count it as categorical variable. Here, 22.52 percent respondent studied in lower secondary or less, and the highest 37.94 percent in upper secondary. However, 13.36 percent respondents got vocational education, and 26.18 tertiary education (Table2). I included only education level and household net income as the determinants of socio-economic status.

One country level variable (derived from Eurostat, 2018) is ‘Health care expenditure by financing scheme’. In Eurostat, the currency unit is Purchasing power standard (PPS). It is an artificial currency that refers to purchasing capacity of similar goods or services across borders. However, Switzerland was the highest expending country (4834.25 PPS per inhabitant in 2018) while Bulgaria expended the least (1232.44 PPS per inhabitant in 2018). The average expending was 2830.189 PPS in 2018.

Control Variable

As I tended to study the satisfaction of the citizens and health professionals toward health care, I included two control variables to observe if they influence the outcome. One control variable derived from the question ‘Hampered in daily activities by illness/disability /infirmity/mental’. There are 3 categories, ‘Yes a lot’, ‘Yes to some extent’, and ‘No’. Majority of the respondents answered ‘No’ (72.09%). Only 6.28% respondents answered ‘Yes, a lot’, and the rest answered ‘Yes to some extent’. The other control variable is gender. Here, I found 47.04% males and 52.96% females.

Table 2 Descriptive Statistics

Variables	Frequency	Mean	Standard Deviation	Percentage
Satisfaction on Health care	36,147	5.663	2.491	
Healthcare expenditure	36,147	2830.189	1094.159	
Household income decile	36,147	5.291	2.787	
Occupation				
General citizens	32,027			88.60
Health professionals	4,120			11.40
Gender				
Male	17,004			47.04
Female	19,143			52.96
Education				
Lower secondary or less	8,139			22.52
Upper secondary	13,714			37.94
Vocational	4,830			13.36
Tertiary	9,464			26.18
Hamper Health for sickness				
Yes a lot	2,271			6.28
Yes to some extent	7,816			21.62
No	26,060			72.09

Method

First, I measure if there is any variation among the general citizens and the health professionals across the countries. Afterward, I did multi-level analysis because it analyzes variables from different level, micro level and macro level. In fact, multi-level analysis is a method that is suitable for nested data (Bosker and Snijders, 2011). In the study, I wanted to analyze the satisfaction of general citizens and the health professionals across Europe. Here, the citizens and the health professionals are nested in countries in Europe. Therefore, I assume a dependency in the satisfaction scores of general citizens and the health professionals within countries. So, I wanted to check whether the means of the countries on average satisfaction differ between the countries. As Hox and Wijnngaards-de Meij (2014) did, I ran a model without any predictors. To understand the level of dependency on the

dependent variable in the data, the intra-class correlation (ICC) can be calculated. ICC gives the expected correlation between two random units within one class and the variance in the second level. If the value of ICC is high, the dependency in the data is strong (Hox and Wijnngaards-de Meij, 2014; Wolf and Best, 2013). In fact, the primary reason for calculating the ICC is to understand the degree of similarity or agreement between observations that are nested within groups. This information can be used to determine whether the observed differences between groups are statistically significant or not (McGraw and Wong, 1996). Here, I found 22.4% of the variation were located at the country level. Later, I used both ‘random intercept’, and ‘random intercept and random slope model’. ‘Random intercept’, and ‘Random intercept and random slope’ enable us to understand the variation (Santa-Martinez, 2021). After doing likelihood ratio test (LR=7.65; p=0.022), I determined ‘random intercept and random slope model’ fits well for the study. Lastly, I did cross level interaction to see the impact of occupation on the satisfaction on health care system depending on health care expenditure in different countries.

Results

Descriptive results

Satisfaction among the citizens and health professionals in Europe is displayed in Table 3 and 4. Table 3 shows that there is no noticeable difference between general citizens and health professionals regarding their satisfaction toward health care. Both of the groups have almost similar kind of satisfaction. But, the citizens of different regions of Europe show different satisfaction level (Table 4). Here, I classified the European countries into four categories: Western, Eastern, Southern and Northern Europe (United Nations, 2023). Both the citizens and health professionals of the Eastern and Southern Europe have lower satisfaction toward health care. In contrast, the Northern (except Ireland and Latvia) and the Western European countries show higher satisfaction level among the citizens and health professionals (Table 4).

Table 3 Satisfaction on Health care among the citizens and health professionals

Satisfaction on Health care	Observations	Mean	Standard Deviation
General citizens	32,027	5.648	2.499
Health Professionals	4,120	5.780	2.437
N= 36,147			

Table 4 Satisfaction on Health care among the citizens and health professionals (in 27 European countries)

Countries	Regional location	Healthcare Model	Number of respondents		Mean satisfaction toward health care		Standard deviation	
			Citizens	HP	Citizens	HP	Citizens	HP
Austria	Western	SHI	1,781	219	7.26	6.86	2.00	2.17
Belgium	Europe	SHI	1,413	191	7.27	6.92	1.58	1.79
Switzerland		SHI	930	200	7.06	6.93	2.01	2.10
Germany		SHI	1,794	249	5.91	5.39	2.23	2.38
France		SHI	1,484	266	6.19	5.91	2.14	2.04
Netherlands		SHI	1,098	257	6.59	6.28	1.84	1.77
Czechia		Eastern	SHI	1,496	82	6.28	6.44	1.98
Bulgaria	Europe	Not Classified	1,648	129	3.54	3.68	2.42	2.56
Hungary		SHI	910	61	3.70	4.08	2.54	2.60
Poland		SHI	840	56	4.18	4.48	2.23	2.68
Slovakia		SHI	756	58	3.53	3.69	2.43	2.26
Ireland		Northern	NHS	1,341	223	4.16	3.91	2.49
Iceland	Europe	NHS	658	113	5.34	5.05	2.09	2.24
Denmark		NHS	1,120	192	6.68	5.99	1.99	2.23
Estonia		SHI	1,700	130	5.24	5.37	2.22	2.45
Finland		NHS	1,328	286	7.34	7.22	1.76	1.73
United Kingdom		NHS	1,478	313	5.74	5.44	2.38	2.33
Lithuania		Not classified	1,396	122	5.20	5.39	2.29	2.35
Latvia		Not classified	707	71	3.96	3.41	2.57	2.26
Norway		NHS	1,040	238	7.33	7.09	1.73	1.88
Sweden		NHS	1,149	236	5.75	5.74	2.04	2.12
Croatia		Southern Europe	Not classified	1,249	72	5.22	5.29	2.62
Italy	NHS		1,356	90	5.70	6.16	2.30	2.27
Portugal	NHS		731	87	4.94	4.99	2.47	2.56
Slovenia	SHI		970	67	4.87	4.88	2.43	2.57
Spain	NHS		1,058	89	5.90	6.16	2.34	2.24
*Cyprus		Not classified	596	23	4.18	4.74	2.47	2.60
N= 36,147								

* According to UN, Cyprus is categorized as Western Asian country

Results from multi-level analysis are shown in Table 5. In multi-level analysis, the model did not show any evidence of statistically significance between general citizens and health professionals regarding their satisfaction toward health care. The reason behind insignificant association may be there are too few respondents as health professionals. There is an association between education level and being satisfied with health care. We found that individuals having lower secondary or less education level are more likely to be satisfied than the individuals having tertiary education. But upper secondary and vocationally educated people are less likely to be satisfied with health care than tertiary educated individuals. That means lower educated people have more satisfaction toward health care than tertiary educated people while secondary or more and vocationally educated people have less satisfaction. Respondents' household income is positively associated with their satisfaction toward health care. To be precise, the individuals having more net household income are more likely to be satisfied regarding health care. Additionally, there is a statistically significant association between gender difference and satisfaction toward health care. Table 4 shows that women are less satisfied than men with health care. Moreover, citizens' health is significantly associated with their satisfaction. I found that individuals who have problem in their daily activities because of being sick a lot and to some extent both groups are less satisfied with health care than the individuals who have no problem in their daily activities due to their sickness.

Table 5 Mixed-effects ML regression (Random Intercept Random Slope Model)

Variables	Coefficient	Std. err	P> z
Individual level Variable			
Citizens/Health professionals	-.026	.055	0.63
Education			
Lower secondary and less	.141	.037	0.000
Upper secondary	-.16	.031	0.000
Vocational	-.192	.04	0.000
Household income	.011	.005	0.018
Gender			
Female	-.253	.024	0.000
Sickness			
Yes a lot	-.516	.049	0.000
Yes to some extent	-.229	.029	0.000
Country level Variable			
Healthcare expenditure	.001	.000	0.000
Constant	3.34	.392	0.000

Random-Effect Parameters	Estimate	Std. err
Between country variance	.582	.161
Within Individual variance	4.81	.036

In country level, we found that there is positive association between healthcare expenditure and satisfaction of individuals toward health care. It shows that more the countries expend in health care per citizen, the more they likely to be satisfied with health care services.

Cross-level interaction

To see the impact of satisfaction of general citizens and health professionals on health care system depending on healthcare expenditure, I did cross level interaction.

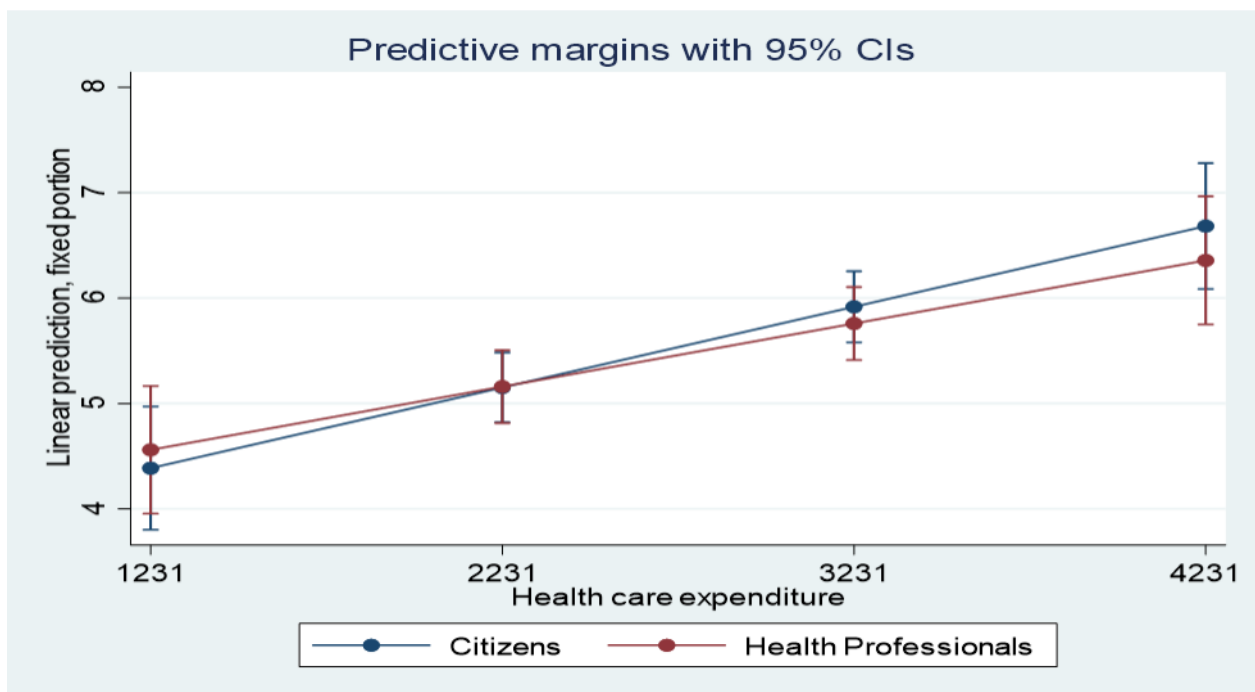


Figure 1. Interaction between healthcare satisfaction and healthcare expenditure for general citizens and health professionals

Figure 1 shows the association between general citizens and health professionals' satisfaction on health care system and healthcare expenditure. It shows that the association between healthcare satisfaction and health expenditure is not significantly different between health professionals and citizens.

Discussion and Conclusion

Different regions of European countries follow different types of health care provision model uniquely characterized; therefore, access to health care is different to the citizens. As discussed earlier that the Northern and Southern Europe follow ‘state healthcare systems’ or ‘national health service (NHS)’, and the West and Centre Europe follow ‘societal healthcare systems’ or ‘social health insurance model (SHI)’ (Böhm et al., 2013; Rothgang, 2022). So, these countries have different policies to provide their health care services. In fact, the welfare states faced a challenge of mobility of resources and ‘world system competition’. Therefore, those countries aimed to ensure more efficient health care for the citizens with the same healthcare expenses or the same efficiency with low costs. For instance, in Western Europe, National health services was found to be more efficient than social security systems to reduce infant mortality (Elola et al., 1995). Moreover, due to economic crisis in Europe since 2008, many countries cut health care expenditure and took different initiatives. For example, Austria, Latvia, Poland, and Slovenia negotiated with drug companies to reduce costs, and Denmark, Greece, Latvia, Portugal, and Slovenia modified their hospital services. Even, Cyprus, Greece, Ireland, Lithuania, Portugal, Romania reduced the salary of health professionals. Moreover, in some countries, citizens were deprived of the benefit packages “(eg, in-vitro fertilization and physiotherapy in the Netherlands)”. Particularly, the Czech Republic, Denmark, Estonia, Finland, France, Greece, Ireland, Italy, Latvia, the Netherlands, Portugal, Romania, and Slovenia reduced the coverage increasing the charges to get some healthcare services (Karanikolos et al., 2013). In fact, these healthcare provision models and policies may influence the perception of the citizens toward healthcare system. Wendt et al. (2010) did country-specific analysis to measure satisfaction of the citizens. Residents of Southern European countries “(Greece, Italy, Portugal and Spain)” following NHS model are more satisfied though this model in those countries is “characterized by lower health expenditure (per capita), lower level of public funding (per capita), higher private co-payments, and lower density of GPs (per 1,000 population)”. Similarly, citizens of Scandinavian countries (NHS model) also show satisfaction toward countries’ health care. In this study, the result supports that the citizens in the Northern and Western Europe are more satisfied.

Scholars suggested that perception toward health care system relies on two different things, citizens take healthcare as a valuable product, and the provision of health services and management work properly (Wendt and Naumann, 2018). Besides institutional structure of the state, citizens’ experience in getting health care services matters. For instance, the number of physicians for patients, amount of time spending by the physicians and doctor-patient relationship, all the factors influence the patients’

satisfaction (Wendt et al., 2010). These can be the reasons why satisfaction level toward health care varies to the citizens. In fact, satisfaction toward health care between general people and health care professionals differ as their perception varies. Wendt and Naumann (2018) found that 53% doctors stand for fundamental change in health policies and few of them are really dissatisfied with health care system. But, result of this study shows that there is no difference between citizens and health professionals being satisfied. The reason can be that I did not include any variable that explain personal experience of the citizens.

There is an association between citizens' socio-economic status and satisfaction toward healthcare though the relation is found inverse in some researches. In some studies, socio-economic status is positively related to the satisfaction of the citizens (Batbaatar et al., 2017; Malat, 2001) while some researcher also found negative relation (Batbaatar et al., 2017). In this study, I mentioned earlier that I took only 'education' and 'household net income' as the determinants of socio-economic status. I found that the people with lower education have higher satisfaction than the people with tertiary education, and high earners have more satisfaction toward health care. According to Wendt and Naumann (2018), individuals who have higher income spend more money on healthcare in form of taxes or insurance contribution; therefore, they have more expectation toward health care services. Accordingly, higher income people are less satisfied to the health care system. Moreover, low educated people are more satisfied than the higher educated people. In fact, this study shows similar result that lower educated people were more satisfied to the health care system but contrary to previous results high earners had more healthcare satisfaction.

Satisfaction of the citizens toward healthcare is influenced by how much the government spend in health care for the citizens (Fenton et al., 2012; Xesfingi and Vozikis, 2016). Those countries spend more in healthcare can afford the finances of specialized treatment, regulate well the provision of healthcare services, and satisfy the citizens (Xesfingi and Vozikis, 2016). The result of this study also shows that the citizens of high spending countries in health care are more satisfied.

However, the main finding of this study is that the general citizens and the health professionals have similar kind of satisfaction toward healthcare. The reason can be that I did not analyze the personal experiences of the patients, how they are facilitated in getting healthcare services and healthcare infrastructure. Moreover, citizens of different regions of Europe have different satisfaction level though I did not analyze why this differ. European countries follow different kind of models in healthcare. Moreover, there were several reforms in health care in European countries in recent past that can affect the satisfaction level of the citizens. So, I hope there will further research to analyze

different perception of general citizens and health professionals toward healthcare satisfaction due to different healthcare models and reforms in Europe.

This study had some limitations. In ESS, there are only few respondents who are health professionals. Moreover, I only show different satisfaction level of the citizens and health professionals, but did not analyze different healthcare models that the different European countries follow. Additionally, I only analyze household net income and education to determine socio-economic status of the citizens. There were other determinants such as occupation, employment status and housing that I could include. Additionally, multi-level analysis has some limitations too. Sufficient sample size is necessary to estimate accurately. One of the major restriction is the higher-level sample size (Maas & Hox, 2005). Multi-level analysis assumes that the residuals at each level are normally distributed. Violation of this assumption can lead to biased estimates and inaccurate results (Hox, 2010; Raudenbush & Bryk, 2002). In this study, there is omitted variable bias as well. In fact, there may be some factors such as patient queue in the hospitals, time spent by the doctors with the patients, out of pocket expenditure of the individuals and so on that might affect the result.

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