

Modern political views of Ukrainian population: statistical evaluation and analysis

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Abstract

In unstable socio-economical and political conditions, it is important to determine the reasons and prerequisites of the current situation in the country. With regard to this the objective of the current research is to determine changes in political views of the Ukrainian population on Ukraine's accession to the EU and NATO after the Revolution of Dignity by comparing the results of sample surveys opinion poll in July 2013 and March 2015. The data base of two conducted polls differed in the character of the formed sample. In case of temporal occupation of Crimea and intensifying situation in Donbas the quotas distribution was changed. A poll was conducted just on the territory, which is controlled by Ukraine while the data was extended to the whole region. This incompatibility was partly removed in a further analysis by taking into account the amount and structure of migrants in Ukraine with subsequent respondents' redistribution proportionally to the quota. Few design of sample had been examined before the optimal sample size and standard error was determined. The views on the political situation in the country were different in groups of respondents depending on such social and demographic characteristics as age, education, social group, region of residence, mother language as well as the degree of trust to government institutions.

Keywords: population opinion, optimal sample size, test of hypothesis

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1. Introduction

Each epoch of human development changes the life values and priorities. The main strategic goals of the third millennium that were set out in the "Millennium Declaration" are peace, security, development and human rights (*Millennium Development Goals...*, 2015). These goals mainly deal with Ukraine that has chosen the democratic way of development. The Revolution of Dignity in 2013-2014 was a powerful push to rebuild the foundations of democracy in Ukraine. This historic event is now forcing the authorities to listen to the "voice of people" as well as to consider people's opinion and attitudes to internal and external policies of the country.

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Within the social monitoring in Ukraine in the years of 2013 and 2015 the sociological survey of the adult population (aged 18 and older) on social and political preferences and attitudes to European integration of Ukraine was conducted. According to both surveys, more than half of respondents' demonstrated support for the European integration course of Ukraine, moreover, the proportion of supporters has grown from 56% in 2013 up to 64% in 2015. However, during the period between the two social polls there happened considerable social and political changes together with territorial and demographical losses. As a result of the annexation of the territory of the Crimea Republic and temporary occupation of Donetsk and Lugansk regions, as well as the death of civilians and military people, the population of Ukraine aged 18 and older declined by two million and two hundred thirty seven thousands people (from 37,382 thousands people in 2013 up to 35,145 thousands in 2015). In addition, there was a territorial redistribution of Donetsk and Lugansk regions residents that was caused by mass migration and foreign immigration from the combat zone and buffer zone. At the same time the numerical, gender and age structure of the population of these two regions that have located up to 1,047 thousand people, has changed dramatically. The half of the immigrants is children, women and older people (Libanova, 2015). Therefore, representativeness of the respondents' sample in the 2015 might be questionable on both volume and, mainly, on the structure.

The statistical problem here is to ensure regional representation of respondents by major demographic characteristics. An important methodological issue here is the comparability of the results of two surveys' based on volume and design of sample, content of questions as well as answers proposed in questionnaires. To resolve these issues we are used fundamental scientific and applied researches (see: Cochran, 1963; Currie and Delbosc, 2011; Stephan and McCarthy, 1958; King, 1985; Kish, 1985).

The article explains the procedure of sample forming for unbiased assessment of population's attitudes to European integration and joining the NATO. This paper also demonstrates the results of comparative statistical analysis of two sociological surveys, which can play a part of barometer of social moods Ukrainian population. In particularly, these surveys may reveal confidence in the government and non-governmental institutions and invariability Ukrainian's in European choice.

2. The procedure of sample forming and ensuring the accuracy of sample estimates

The information database included two sample surveys of Ukrainian adult population attitudes. The database was conducted by the Centre of Economic and Political Studies named

after Alexandr Razumkov. The first social poll was carried before the Revolution of Dignity (18.07-24.07.2013), while the second one was carried one year after it (06.03- 2.03 in 2015). Both samples were formed by the quota method based on the regional (region, type of settlement) and demographical (gender, age) characteristics. These observations differ by the structure of the sample which was changed under conditions of regional quotas due to the annexation of the Crimea and the war in Donbas region. However, the main samples' characteristics remained unchanged. The volume of sample in both situations consisted of 2,000 respondents, with the standard error for the proportion 2.3% and 0.95 probability level. For comparability of results of both surveys it is very important to keep the same sample of respondents by region of origin, since the results of survey in 2013 demonstrated significant differentiation of respondents' opinion from eastern, western and central Ukraine. Respondents from eastern and southern Ukraine were mostly against the association with the EU, while the respondents from Kyiv as well as from western and central regions had mostly diametrically opposite views.

For the purpose of comparability of frame the respondents' census was specified. Not only current place of residency, but also a region of residence before the military conflict should be included to the number of restrictive features. According to the UN, the vast majority of immigrants (74.6%) was placed on the territory of five eastern districts, including almost half (47.6%) in settlements controlled by Ukraine (Libanova, 2015). In addition, 10.6% of persons (110.6 thousands people) immigrated to Kyiv and Kyiv region. Generally these seven regions received 85.2% of all IDPs from Donbass. It is clear that such massive interregional migration changed the composition of the residence population of regions recipients. At the time of the survey forced migrants from Donbas accounted for almost half the population of the five eastern districts and 4.7% of Kyiv and Kyiv region.

Furthermore, the analysis is complicated by incomplete registration of internally relocated persons. Mostly people register their immigration only for social assistance, which is typical for some specific groups of population such as preschool and school-age children, their mothers and pensioners, but not for all population. In case of unclear definition of frame structure, the application of quota sampling in its original form appears not justified (Cochran, 1963; King, 1985; Stephan, 1950; Stephan and McCarthy, 1958). Moreover quota method is even more biased compared to stratified, so it's not entirely correct to calculate for quota sampling data the random sampling error (Currie and Delbosc, 2011; Cochran, 1963). In this situation the quota method can be used only at the last stage of the multi-stage sample (Currie and Delbosc, 2011; King, 1985).

A few options of sample forming by the share of respondents supporting European integration will be considered in this paper. Within the studied period, the share of EU integration supporters increased by 7.9 percentage points and reached 64%, which indicates a change in population's attitudes. The optimal size of sample for quota selection was 2,000 persons with percentage limiting error for 3.6% and the probability 0.95 (Table 1). However, if the simple random sampling with the same probability was used, the standard error reducing up to 3.0 % and the number of questioned respondents should have been increased to 2.4 thousands. If the amount of sample remained the same, then stratified sampling will give percentage limiting error at the level of 1.52% or the standard error at the level 0.97%.

Parameters	Sampling		
	Quota	Simple random	Stratified
St. error, %	2.30	1.92	0.97
Percentage lim. error, %	3.60	3.00	1.52
Sample size, persons	2,000	2,400	2,400

Note: $p = 64\%$ for each sampling.

Table 1. Parameters of the sample of Ukrainian respondent's by different mode selection.

Source: the authors' own calculations based on data from the State Statistics Service of Ukraine and sociological research of the Centre of Economic and Political Studies named after Alexandr Razumkov, Kyiv, 2012 and 2015.

The squares of two standard errors: for stratified sampling $\mu^2(D)$ and simple random sampling μ^2 have been compared for the design effect evaluation (Kish and Verma, 1986; Kish, 1985):

$$deff = \frac{\mu^2(D)}{\mu^2}. \quad (1)$$

The design effect for stratified sampling is considerably higher than for simple random sampling: $deff = 0.256 < 1$, and the confidence of results for stratified sampling is 3.9 times more than for simple random: $\gamma = \frac{1}{deff} = 3.9$. Instead, as a result of quota sampling the accuracy of estimates decreased ($\gamma = 0.699$).

The confidence limits for proportion of respondents that support European integration of Ukraine considering design effect are determined as:

$$p \pm t \sqrt{deff} \sqrt{\frac{pq}{n}}. \quad (2)$$

If the sample of respondents was formed by stratified sampling with taking into account the design effect, then the confidence limits for the proportion of respondents that support European integration of Ukraine should be $64\% \pm 0.97\%$.

Therefore, if the actual age-sex structure of the eastern regions population will be determined, then the most accurate results for the same sample size could be provided using stratified sampling.

3. Comparative analyses of political views of Ukrainian population

The majority of citizens of Ukraine once again confirmed the stability in the European choice of the country. Despite a slow and complex process of reforms implementation and sometimes negative consequences of socio-economic and political changes, the determination of Ukrainian people only intensified. Over the last two years the share of EU integration supporters in Ukraine increased by 7.9 percentage points. However, one third of the adult population still wants to remain in the Commonwealth of Independent States (CIS), actually under the protection or control of neighboring Russia. This applies particularly to the eastern and southern regions with a high concentration of ethnic Russians or natives of Russia. The regional differences of population attitudes led to socio-political and military confrontation between the East and the rest of Ukraine. The question is whether the war really has changed those attitudes of Donbass population, which has led to significant loss of life, destruction of economic potential and social infrastructure in the region.

Comparing the results of two surveys, it is important to take into account different territorial representation of the Crimea as well as temporarily occupied territory of the Donetsk and Lugansk regions that has not been taken into account in the 2015 survey. Results of the study confirm the polarization of population's opinion on a "west-east" basis (Table 2).

Region	Percent of respondent's who for integration to EU		Structural location by 2013- 2015, pp.
	2013	2015	
Central	56.35	72.58	16.23
Northern	47.70	66.15	18.45
Southern	43.81	46.45	2.64

Western	80.93	90.40	9.47
Eastern	36.50	42.00	5.50
City of Kyiv	74.77	83.78	9.01
Overall	56.09	63.99	7.90

Table 2. Distribution of the Ukrainian respondent's thoughts of the expediency of joining the EU, depending on the region of residence in 2013 and 2015, %.

Source: the authors' own calculations based on data of sociological research of the Centre of Economic and Political Studies named after Alexandr Razumkov, Kyiv, 2012 and 2015.

The vast majority of people living in the Western region support Ukraine's joining the EU in both years. Moreover, the percentage of those people increased from 80.9% in 2013 up to 90.4% in 2015, which is understandable because people living in this region are connected with neighboring states not only by geographical proximity but also by historical and ethnical traditions, family ties and employment. In spite of significant changes in the political environment of the country, the vast majority of respondents from the Eastern region are against the association with the EU. They believe in the best economic and political partnership with neighboring Russia. The most stable were the political preferences of the Southern region: the percentage of people supporting the integration increased only by 2.6 pp. At the same time three quarters of the residents of Kyiv show support to the European Association of Ukraine, as evidenced by the mass action of the national vote. These actions were the very beginning of the Revolution of Dignity. For last 3 years the percentage of people supporting EU integration increased by 9 pp. in Kyiv and in the Western region (9.5 pp). This percentage goes up in all regions, mostly in the Northern – by 18.4 pp. and in the Central – by 16.2 pp.

The principle of equal gender and age representation remains the same during both surveys. The significant differences in the respondents' opinion depending on the gender factor were not observed in both 2013 and 2015 (Table 3). According to the latest survey the share of European integration supporters was higher for men by 4 percentage points than for women. The differentiation in the political views of the respondents is much more influenced by respondent's age, education, and particularly native language (C-Cramer = 0.3). The influence of socio-demographical characteristics on the political views of Ukrainian population is proved to be considerable in all cases.

Characteristics	χ^2 - test		$\chi^2(0.05)$	C-Cramer	
	2013	2015		2013	2015
Age	55.28	27.28	6.00	0.18	0.13
Education level	46.18	26.97	6.00	0.17	0.12
Mother tongue	123.20	156.50	7.80	0.27	0.30

Table 3. The Chi-squared test for differentiation of Ukrainian respondent's opinions based on age, education level and mother tongue.

Source: the authors' own calculations based on data of sociological research of the Centre of Economic and Political Studies named after Alexandr Razumkov, Kyiv, 2012 and 2015.

Age group, years	Percent of respondent's who for integration to EU		Structural location by 2013-2015, pp.	Proportion of age-group respondent's	
	2013	2015		2013	2015
18-34	66.70	72.00	5.30	38.10	34.03
35-54	57.62	64.12	6.50	35.48	36.48
55 and above	44,30	56.52	12.20	26.42	29.49
Total	56.09	63.99	7.90	100.00	100.00

Table 4. Distribution of the Ukrainian respondent's thoughts of the expediency of joining the EU, depending on age in 2013 and 2015, %.

Source: the authors' own calculations based on data of sociological research of the Centre of Economic and Political Studies named after Alexandr Razumkov, Kyiv, 2012 and 2015.

The results of two surveys (Table 4) show that people in the young and middle age group are more actively in favor of EU membership than older people. For 2013-2015 the proportion of EU supporters among young people has increased by 5.3 pp. and in 2015 it accounted for 72%. Similar changes have happened in middle-aged group of respondents. The significant changes in favor of European integration have also taken place in the views of the older generation aged 55 and older (+12.2 p. points). It proves that during the period of 2013-2015 the age differentiation of population attitudes significantly decreased. Moreover, it is more likely that the main joining factor for Ukrainian population's perception is expectations

of relieving the socio-economic crisis and a common tragedy – the war in Donbas than actual feeling of real positive changes in the country.

During the period of 2013-2015 the differences in political views of Ukrainian population based on their education level decrease as well (Table 5).

Education	Percent of respondent's who for integration to EU		Structural location by 2013-2015, pp.
	2013	2015	
Unfinished secondary	31.21	46.43	15.22
General and specialized secondary	52.20	57.01	4.81
High or unfinished high	66.71	68.61	1.90
Total	56.09	63.99	7.90

Table 5. Distribution of the Ukrainian respondent's thoughts of the expediency of joining the EU, depending on education in 2013 and 2015, %.

Source: the authors' own calculations based on data of sociological research of the Centre of Economic and Political Studies named after Alexandr Razumkov, Kyiv, 2012 and 2015.

In 2013 only a third part of Ukrainian population with incomplete secondary education supported the idea of European integration. However, in 2 years the share of EU supporter with incomplete secondary education increased significantly, by 15.2 percentage points. The survey demonstrated that, the respondents with higher education level demonstrate the higher percentage of those who choose European direction for Ukraine.

Both surveys prove that the main factor that separates the citizens of Ukraine in choosing between the EU and the Soviet direction is geographical, historical, and ethnic closeness to Russian Federation. Another indicator that influenced the population's opinion is native language of Ukrainian residents. According to the results of survey (Table 6) the European integration choice was made by more than two thirds of respondents whose native language is Ukrainian.

Native language	Percent of respondent's who for integration to EU		Structural location by 2013-2015, pp. (+/-)
	2013	2015	
Ukrainian	67.40	69.47	2.07

Russian	37.20	34.91	-2.29
Other	40.13	44.44	4.11
Total	56.09	63.99	7.90

Table 6. Distribution of the Ukrainian respondent's thoughts of the expediency of joining the EU, depending on native language in 2013 and 2015, %.

Source: the authors' own calculations based on data of sociological research of the Centre of Economic and Political Studies named after Alexandr Razumkov, Kyiv, 2012 and 2015.

For period of 2013-2015 determination of their views has increased. Instead, the share of EU supporters in the total amount of respondents whose native language is Russian is slightly more than a third. The share of such respondents decreased by 2.3 pp. and in 2015 it accounts for 34.9%. The most notable improvements occurred in the views of respondents from "other" mother tongue group (+4.1 p. points). This group includes national minorities and Crimean Tatars, who moved to the mainland of Ukraine from the occupied Crimea.

In the context of last three years events the question about Ukrainian non-block status becomes more popular. The perspective of Ukraine's joining the NATO was observed during the Orange Revolution, in 2004. However, after the further changing of political authorities this idea was declined. Nowadays, because of aggression in the East and Crimea occupation, more and more people refuse the idea of Ukraine's being a non-block country. Considering this, in the 2015 Y the poll included few more questions about NATO-Ukraine relationship. The differentiation of opinions based on age appeared to be very distinctive. For example, the respondents aged 18 - 34 mostly supports Ukrainian cooperation with the NATO (63.1%). The oldest age group feels rather critical about Ukraine's joining the NATO. The share of respondents, supporting this idea is twice less than those who are against it. Overall, the vast majority of people in Ukraine have changed their attitude to the NATO since 2004 when the level of supporting was not more than 30-35%.

The trust of population to the governmental institutions changed dramatically in last two years. The research showed that the only institution that still has trust of respondents is the church: the level of trust in both years is higher than 70%. People in Ukraine are quite confident in the Media of Ukraine. However, the share of respondents that trusts them decreased from 65.5% (2013) to 56.4% (2015). The most significant change in the level of trust was towards the Media of Russia. The level of trust to this institution dropped from in 51% to 7.7%. Overall the result of this research demonstrates negative attitudes towards governmental institutions.

Conclusion

The Social Monitoring aims at investigating political attitudes, opinions and preferences of the population of Ukraine not for a pure interest. The results of social monitoring should be taken into account by current government during the process of domestic and foreign policy formation. As recently Ukraine has not held any referendums on crucial issues, it is very important to take into account such sociological surveys that would help to find out a social climate and to determine the level of political tension in the country. Therefore it is crucial that data of such surveys should be not only representative in scope and structure of the sample, but also comparable in time. From a statistical point of view, there are two design of sampling most acceptable for Ukraine – stratified sampling that gives the smallest error, or multi-stage sample with a quota sampling at the last stage.

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