Zaštita privatnosti u zemljama Zapadnog Balkana: tipologija građana prema njihovim stavovima

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Abstract:
This study examines which segments of population with similar attitudes towards privacy, data protection and surveillance exist in selected Western Balkan countries, and whether they can be differentiated by demographic characteristics and by country of residence. The data collected by survey were analyzed using factor analysis, k-means cluster analysis and chi-square test. The findings indicate that there are three groups of citizens with similar attitudes in selected Western Balkan countries: (1) pro-surveillance oriented citizens, (2) citizens concerned about being surveilled, and (3) citizens opting for better data protection. The identified groups of citizens differ in age, education, employment and country of residence. The results provide insights on how individuals form their attitudes on contemporary privacy, data protection and surveillance issues.

Keywords: privacy, data protection, surveillance, typology of citizens, Western Balkans
JEL classification: M38, D18, K49

Zaštita privatnosti u zemljama Zapadnog Balkana: tipologija građana prema njihovim stavovima

Sažetak:
U ovom se radu ispituje postoje li skupine građana sa sličnim stavovima o privatnosti, zaštiti podataka i nadzoru u odabranim zemljama Zapadnog Balkana i razlikuju li se ti stavovi s obzirom na demografska obilježja i zemlju porijekla ispitanika. Anketni podaci su analizirani uporabom faktorske analize, *k-means* klaster analize i hi-kvadrat testa. Rezultati ukazuju da postoje tri skupine građana sa sličnim stavovima: 1) građani koji zagovaraju nadzor, 2) građani zabrinuti zbog nadzora koji se nad njima provodi, i 3) građani koji zagovaraju bolju zaštitu podataka. Identificirane skupine razlikuju se prema dobi ispitanika, stupnju obrazovanja, statusu zaposlenja i zemlji porijekla. Rezultati istraživanja pružaju uvid o tome kako pojedinci formiraju svoj stav prema suvremenoj problematici privatnosti, zaštite podataka i nadzora u regiji.

Ključne riječi: privatnost, zaštita podataka, nadzor, tipologija građana, Zapadni Balkan
JEL klasifikacija: M38, D18, K49

1 Introduction

In the last twenty years, privacy and surveillance issues have aroused the interest of scholars and practitioners, mainly in the US and Western developed countries. Past research has contributed considerably to the development of a new theoretical framework. A boost in cross-sectoral and interdisciplinary analysis of these phenomena has been evidenced after the events of September 11, 2001 (Lyon, 2002) and to date serious research initiatives have been launched to provide better understanding of surveillance, privacy and security policy impacts, and political implications.[1] Data protection has also become one of the major concerns of modern society (Solove, 2008b) and big data flows, storage and mining have raised questions about information privacy and dataveillance (Clarke, 2006). Privacy exists as a concept at the interface of surveillance, security and data protection (Flaherty, 1989). Supported by rapid ICT development, the new surveillance society realm is spreading globally; however, despite efforts to provide plausible answers on how to deal with the new practices and processes in society, many of these issues remain underexplored.[2] This is in particular true for the third world countries, less developed economies, authoritarian or ex-totalitarian societies (Webster et al., 2011).

The motivation for this research stems from the lack of attitudinal studies that would help the understanding of how people behave in the new privacy and surveillance environment and what the appropriate policy answers would be. As Wirtz, Lwin and Williams (2007) noted, people's attitudes influence people's behavior, and different behavior requires different policy approaches. This research aims to fill the gap between the relative abundance of studies on privacy, surveillance and data protection in advanced countries and the scarcity of the relevant literature for less developed and transition countries. Finally, there is a paucity of research on citizens' attitudes towards surveillance, privacy and data protection in the contemporary sovereign states of ex-Yugoslavia, and there is still a lack of knowledge on the typology of citizens in Western Balkan countries as a region.

The observed countries, Croatia, Bosnia and Herzegovina, Serbia and FYR of Macedonia, are all transition economies and young democracies, in the process of EU accession, that used to be a part of former Yugoslavia. Ex-Yugoslavia was a socialist state with a political system quite different from rigid totalitarian regimes, however, with powerful mechanisms of social control. The analyzed countries have recently been undergoing many institutional changes but with different dynamics, at least as regards the accession

[1] For example, Surveillance Studies Network and its journal Surveillance & Society (http://www.surveillance-studies.net/); research projects under the EU 7th Framework Programme for Research in the domain of security (http://cordis.europa.eu/fp7/security/home_en.html), surveillance (http://cordis.europa.eu/projects/index.cfm?fuseaction=app.search&TXT=surveillance&FRM=1&STP=10&SIC=&PGA=&CCY=&PCY=&SRC=&LNG=en&REF=&Search=Search), and privacy (http://cordis.europa.eu/projects/index.cfm?fuseaction=app.search&FRM=1&STP=10&LNG=en&Search=Search&TXT=privacy&PROJACR=).

[2] For an overview of surveillance studies, see Lyon (2007).

path to the EU.[3] We posit that privacy protection in the observed countries is often weak due to the poor implementation of legislation and weak regulatory control practices. Furthermore, people seem to be used to providing personal information without questioning, and the public sector lacks awareness of the sensitivity of the data it collects;[4] this might be a cultural residual of the past socialist, i.e., collective mindset. In the last two decades, all countries in the region have witnessed the negative side-effects of market liberalization, and the institutional set-up did not follow the social changes. Private companies might (mis)use personal information for marketing purposes; the first instalments of closed circuit television (CCTV) cameras were reserved for the new rich or prestigious businesses such as banks; the regional popularity of reality shows has hit the records and social networks are widespread as the internet access rate is around the European average. Socio-economic transformation and emerging information and communication technologies (ICT) have radically changed the way of life in the region.

The purpose of this study is to explore individuals' concerns related to privacy, data protection and surveillance in four Western Balkan countries. It aims to categorize individuals into different groups according to their privacy concerns, concerns about data protection and surveillance. The study focuses on the following research questions: (1) Can individuals be segmented into distinct groups based on privacy concerns? (2) If so, are there differences in these groups based on demographics and/or their country of residence? This paper results from a research project that was conducted to investigate attitudes towards surveillance and privacy in selected Western Balkan countries.[5]

The paper is organized as follows. A brief theoretical review on privacy, data protection and surveillance is offered in the next section, followed by sections on the survey methodology applied and results of the empirical analysis. The last section concludes and indicates lines of future research.

2 Theoretical Background

The term privacy encompasses a large number of concepts and ideas (Yao, Rice and Wallis, 2007; Fuchs et al., 2012). While many definitions of privacy have been offered in the literature, there is no single accepted definition (Goodwin, 1991). One of the most used is Westin's (1967: 10) definition of privacy as "the right of the individual to decide what information about himself should be communicated to others and under what condition". Clarke noted that privacy has multiple dimensions: privacy of the person (body), privacy of personal behavior, privacy of personal communications, privacy of

[3] Croatia joined the EU on July 1, 2013; FYR of Macedonia has been a candidate country since 2005 and the negotiation process was opened in October 2009; Serbia was granted EU candidate status in March 2012 and the negotiation process was opened in January 2014, and Bosnia and Herzegovina is a potential candidate (http://ec.europa.eu/enlargement/countries/check-current-status/ index_en.htm).

[4] This evidence was collected in a qualitative research in Croatia, as presented in Budak, Anić and Rajh (2013).

[5] The project was financed by the Institute of Economics, Zagreb, Croatia. The authors are grateful for the Institute's support of their research initiative.

personal data, and privacy of personal experience.[6] Depending on the starting definition of privacy one could find various research concepts of privacy in the literature, from the narrowed definition of privacy as intimacy only (Inness, 1996) or secrecy (Raab and Goold, 2011) to more vague concepts. Our research supports the broader approach to privacy as an individual right, but as a social and political value as well (Solove, 2008a).

The internet has grown considerably during the past two decades and has triggered revolutionary changes in our lives, particularly with respect to its use as a tool for communication, entertainment and commerce. The academic literature recognizes privacy concern as a growing issue in the digital age (Lwin, Wirtz and Williams, 2007; Bandyopadhyay, 2009). Privacy problems have been a major concern among internet users since its inception (Caudill and Murphy, 2000; Udo, 2001; Metzger and Docter, 2003; Yao, Rice and Wallis, 2007). Despite previous assumptions that time and users' experience alone would dissolve these concerns, they are still strongly present and even growing among internet users (TRUSTe, 2013a; TRUSTe, 2013b). Privacy concern is a broad concept related to various kinds of intrusive behavior, where data protection is just one aspect of privacy protection involved in the collection and manipulation of personal information. Besides their influence on people's behavior, surveillance and privacy have important implications for political regulation, state power and civil society (Fuchs et al., 2012).

Surveillance can be defined as the monitoring of behavior, activities and other information exchange, for the purpose of influencing, managing, directing, or protecting. Surveillance mechanisms are more and more sophisticated which makes surveillance a powerful tool of social control and thus may inhibit creativity, freedom and self-development. Surveillance levels increase in modern societies and many people are concerned about the spread of surveillance, such as Solove (2006) who wrote about the chilling effect of surveillance on human behavior. On the other hand, the "nothing to hide argument" often reflects the opinion of the broader public who would not oppose government data mining and surveillance because they consider such activities to be directed at "wrongdoing" others.[7] Most of the people in the US would trade off their (individual) privacy for more (state) security, and there is a vivid debate on how wrong this argument is (Solove, 2007; Solove, 2011; Bennett, 2008). It would be interesting to see what has changed in people's attitudes and behavior compared to the late 1990s when people voluntarily participated in the new panopticon. Surveillance for the purpose of public safety has usually been welcomed because people feel safer in spaces monitored by video surveillance (Whitaker, 1999). However, citizens would oppose surveillance if they experienced state surveillance as a threat to democracy and political rights (Goold, 2010). The individual's perceptions on privacy violations and attitudes towards surveillance will be more negative the more individual information is seen as personal, intimate, sensitive,

[6] For definitions of privacy, see Roger Clarke's website http://www.rogerclarke.com/DV/Intro.html.

[7] "If you've got nothing to hide, you've got nothing to fear" was a popular slogan of the British government campaign when millions of surveillance cameras were installed at public places in the UK in the early 2000s.

biological, i.e., fitting into one of the 17 dimensions of individual information (Marx, 2007).

Our assumption is that public attitudes towards surveillance reflect citizens' opinion on the supervision of individual behavior through the collection and use of personal information to take control over their activity. Some empirical studies on public attitudes towards the use of CCTV in public spaces (Philips, 1999; Slobogin, 2002), as well as public attitudes towards providing personal data to the government (e.g., Singer, Van Hoewyk and Neugebauer, 2003) or to businesses (Taylor, 2003; Nam et al., 2006), perceived importance of privacy (Katz and Tassone, 1990) and privacy concerns (Okazaki, Li and Hirose, 2009) gave us useful guidelines for this study. As explained in Budak, Anić and Rajh (2013: 104), "our survey covers four principal groups of 'socially recognized privacy violations' and related activities within (1) information collection (surveillance); (2) information processing (insecurity, secondary use of information, exclusion); (3) information dissemination (breach of confidentiality); and (4) invasion (intrusion) (Solove, 2006)". Survey questions found in the available literature were all specifically designed to explore particular issues and could not be used as a standard survey tool for similar exploratory research. After consulting that literature, we developed a survey questionnaire based on the qualitative exploratory research that was tested in the Croatian environment and seen as added value to this research, as explained in detail in the methodology section below. Furthermore, the assessment of construct validity and reliability of developed scales, and the identification of distinctive segments of citizens with similar attitudes towards surveillance and privacy concern make further contributions to the literature on privacy concern and surveillance.

Although there is no comprehensive and integrated theoretical framework that would consolidate various streams of research into one model – indicating a missing link in the literature on attitudinal studies of privacy and surveillance – scholars point out the need to conduct more empirical studies in the research area (Zureik, 2004). Past research has identified different typologies of individuals regarding their attitudes towards privacy, data protection and surveillance (Haggerty and Gazso, 2005; Gandy, 2003; Wirtz, Lwin and Williams, 2007; Sheehan, 2002; Budak, Anić and Rajh, 2012; 2013). Budak, Anić and Rajh (2013) identified three groups of individuals in Croatia: "pro-surveillance" oriented citizens, citizens concerned about being surveilled, and citizens concerned about data and privacy protection. They also found that the identified groups of citizens differ in demographics. Similarly, Haggerty and Gazso (2005) differentiate individuals concerned about increasing surveillance and pro-surveillance oriented citizens. With respect to the privacy concern, Gandy (2003) identified a highly concerned group of "privacy fundamentalists", moderates who form "the pragmatic majority", and "the unconcerned". Studies on the internet privacy concern distinguished citizens who show less concern from those who show more concern (Wirtz, Lwin and Williams, 2007). A European survey on data protection and electronic ID differentiates between "digital natives" and "digital initiates" (European Commission, 2011). There is no typology of individuals based on privacy, data protection and surveillance in the Western Balkan region. Inspired

by the past research we argue that there are distinctive groups of individuals with different attitudes towards privacy, data protection and surveillance in Western Balkan countries, and that among those groups of citizens there are differences in demographics and country of residence.

3 Methodology

The qualitative research prior to the construction of the survey questionnaire and pilot testing of the survey tool was conducted in Croatia in 2011 (Budak, Anić and Rajh, 2013). Identical questionnaires translated into national languages were employed in Bosnia and Herzegovina, Serbia and FYR of Macedonia in 2012. The interviews were conducted in each country by telephone and operated by professional market research agencies under the authors' supervision. The public opinion survey was conducted on a large net sample of 2,006 citizens (around 500 citizens per country). In all observed countries the survey was conducted among the adult population aged 18 to 70, on a nationally representative sample regarding regional distribution. Demographic variables about the respondents included questions about gender, age, household size, education, employment and country of residence. The sample statistics are presented in Table 1.

Table 1 **Summary Statistics of Sampled Respondents, n = 2006**

Respondent profile	**Sample**
1 Gender (in %)	
1.1 Male	49.7
1.2 Female	50.3
2 Age (in %)	
2.1 18-24	33.3
2.2 25-34	14.0
2.3 35-44	14.4
2.4 45-54	14.5
2.5 55-64	14.4
2.6 65-70	9.5
3 Average number of people in a household	3.7
4 Educational level (in %)	
4.1 Primary school	14.2
4.2 Secondary school	59.9
4.3 University and higher education	25.9
4.4 No answer	0.1
5 Employment status (in %)	
5.1 Employed	42.2
5.2 Unemployed	57.7
5.3 No answer	0.1
6 Country (in %)	
6.1 Bosnia and Herzegovina	24.9
6.2 Croatia	25.2
6.3 FYR of Macedonia	24.9
6.4 Serbia	24.9

The questionnaire included 43 questions in the form of a statement and each item was measured by Likert-scaled items ranging from 1 (strongly disagree) to 5 (strongly agree).[8] The questions assessed public opinions and attitudes on the effectiveness of CCTV and other surveillance tools, evaluation of privacy protection policies, views on legislation and government regulations, data collection conducted by private companies and institutions, data storage and security, data usage, data disclosure and dissemination done by private companies and institutions, as well as citizens' privacy concern and patterns of behavior in various situations.

Regarding the data analysis procedure, the first stage of data analysis included techniques for scale reliability and validity assessment. Within this stage, Cronbach's alpha coefficients, exploratory and confirmatory factor analyses were used. The second stage of data analysis included k-means cluster analysis which was employed to determine the specific groups within the population with similar attitudes. The third stage of data analysis was oriented towards identifying the differences among the groups of respondents. The differences were tested using the chi-square test.

4 Results and Discussion

4.1 Scale Validation

In the first step, the initial measurement instrument of 43 items was tested by using exploratory factor analysis in order to explore the underlying structure among analyzed variables and to identify sets of variables that are highly interrelated, i.e., factors. Principal components analysis was employed to extract the factors. The Kaiser-Guttman rule was used to determine the number of factors to extract. The first run of exploratory factor analysis indicated that there were 16 items with low factor loadings so these items were excluded from further analysis. In the second run, the exploratory factor analysis indicated six distinct factors, explaining 57.8 percent of the total variance, with the factor loadings above 0.50, which is considered sufficient (Bagozzi and Yi, 1988). Factors were labelled according to dominant items, as follows: Factor 1: Perceived surveillance effectiveness; Factor 2: Cautious about being surveilled; Factor 3: Concern about personal data manipulation; Factor 4: Concern about CCTV privacy intrusion; Factor 5: Confidence in privacy protection procedures; and Factor 6: Need for surveillance enforcement (Table 2).

[8] The questionnaire is available from the authors upon request.

Table 2 **Factor Analysis Results and Factor Loadings**

Factors and items	**Factor loadings**
Factor 1: Perceived surveillance effectiveness	
i15 CCTV cameras in public spaces (streets, squares, stadiums) prevent crime.	0.76
i17 CCTV cameras prevent hooligans and vandalism (at stadiums, in public transport, graffiti drawing, etc.).	0.75
i18 CCTV cameras in shops, banks, post offices... are needed to prevent theft.	0.58
i32 Enforced surveillance of people effectively prevents terrorism.	0.72
i34 Enforced surveillance of people effectively prevents crime.	0.75
i35 Enforced surveillance of people effectively prevents corruption.	0.69
Factor 2: Cautious about being surveilled	
i36 I am careful when talking over the telephone because one can never know whether they are being wiretapped.	0.92
i37 I am careful when talking over my cell phone because one can never know whether they are being wiretapped.	0.92
i38 I am careful when talking in public places because one can never know whether they are being wiretapped.	0.85
i39 I am careful when writing e-mails because I am not sure whether some third person could access my messages.	0.66
Factor 3: Concern about personal data manipulation	
i13 Information I send over the internet (e-mail, Facebook and other) could be misused.	0.73
i26 I never tell anybody my passwords, PINs and codes.	0.59
i27 Usage of computers and ICT increases the possibility of personal data manipulation.	0.76
i28 I am concerned about the volume of personal information and data stored on computers that might be misused.	0.66
Factor 4: Concern about CCTV privacy intrusion	
i14 CCTV cameras in public spaces (streets, squares, stadiums) threaten the privacy of citizens.	0.77
i16 CCTV cameras in public spaces should be prohibited because they threaten civil rights and liberties.	0.78
i19 CCTV cameras in public spaces (streets, squares, stadiums) threaten the privacy of shoppers and employees.	0.74
i21 I feel uncomfortable in spaces under CCTV camera supervision.	0.65
Factor 5: Confidence in privacy protection procedures	
i3 The privacy of citizens (in my country) is more respected and protected today than ten years ago.	0.58
i5 Banks are safeguarding confident information about their clients.	0.65
i6 Government institutions keep confidentiality and privacy of the data on citizens and firms they handle.	0.78
i7 Government institutions ensure data protection against fraud and misuse.	0.75
i10 Privacy protection and use of personal data (in my country) are adequately ensured by existing legislation.	0.66
Factor 6: Need for surveillance enforcement	
i23 School officials should be entitled to search students and their belongings for items not permitted in school.	0.57
i24 Police should have unrestricted access to any data on every citizen.	0.74
i25 Police and national security services should be entitled to surveil and wiretap all persons they rate as suspicious without any special warrant (e.g., permission of the court).	0.80

The standard procedure to test the reliability of scales is using Cronbach alpha coefficients. Values for Cronbach alphas, if deleted, were calculated for each item and the items that decreased the Cronbach alpha coefficients of respective scales were deleted from further analysis (Table 3).

Table 3 **Reliability Analysis – Cronbach Alpha Coefficients**

Factor	**Cronbach alpha**
Perceived surveillance effectiveness	0.83
Cautious about being surveilled	0.87
Concern about personal data manipulation	0.64
Concern about CCTV privacy intrusion	0.75
Confidence in privacy protection procedures	0.75
Need for surveillance enforcement	0.63

Next we proceeded with the confirmatory factor analysis to test the convergent and discriminant validity of measures and to detect the unidimensionality of each construct. The values of fit indices obtained from the six-factor model represent a substantial improvement over the values obtained from the one-factor model. The results of the confirmatory factor analysis indicate an acceptable level of convergent and discriminant validity as well as unidimensionality (Table 4).

Table 4 **Confirmatory Factor Analysis Results**

Fit indices	**Six-factor model**	**One-factor model**
Goodness-of-fit index (GFI)	0.932	0.567
Adjusted goodness-of-fit index (AGFI)	0.916	0.492
Normed fit index (NFI)	0.902	0.329
Non-normed fit index (NNFI)	0.905	0.275
Comparative fit index (CFI)	0.917	0.333
RMSEA	0.053	0.181
Chi-square (df), p-level	1724.69 (284), 0.000	11836.07 (284), 0.000

4.2 Typology of Citizens

The next step in the analysis was the classification of citizens according to their attitudes towards surveillance and privacy issues. We employed k-means cluster analysis and the Hartigan index as a criterion for determining the number of clusters in a data set. Mean values were calculated for each factor and its items, and these mean values were taken as inputs in the k-means cluster analysis. The k-means cluster analysis generated three homogeneous segments of citizens (Table 5). The total sample was evenly distributed among three segments and the differences between the groups in the analyzed factors were significant at the 0.01 level. The groups were labelled according to the cluster means, as follows: Segment 1: Pro-surveillance oriented citizens; Segment 2: Citizens concerned about being surveilled; Segment 3: Citizens opting for better data protection.

Table 5 **K-means Cluster Analysis with Mean Values**						
Factors		**Segment 1 Pro-surveillance oriented citizens (37.0%)**	**Segment 2 Citizens concerned about being surveilled (31.2%)**	**Segment 3 Citizens opting for better data protection (31.9%)**	**Total sample (100%, n = 2006)**	**ANOVA**
F1	Perceived surveillance effectiveness	4.07	2.96	3.72	3.61	F = 367.65 p = 0.000
F2	Cautious about being surveilled	3.93	3.04	1.76	2.96	F = 1349.86 p = 0.000
F3	Concern about personal data manipulation	4.14	4.09	4.02	4.09	F = 4.54 p = 0.011
F4	Concern about CCTV privacy intrusion	2.29	2.97	1.83	2.35	F = 277.89 p = 0.000
F5	Confidence in privacy protection procedures	3.48	2.72	3.09	3.12	F = 166.64 p = 0.000
F6	Need for surveillance enforcement	3.98	2.41	3.44	3.32	F = 628.97 p = 0.000

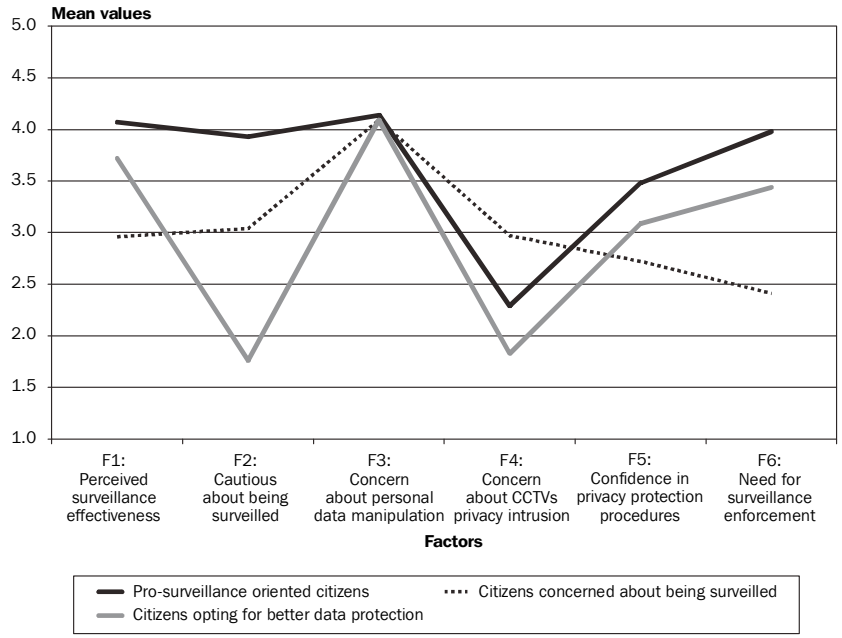
Note: Items were measured on a scale ranging from 1 (strongly disagree) to 5 (strongly agree).

On average, citizens in the Western Balkans show the highest concern about personal data manipulation (mean = 4.09), have positive perceptions on effectiveness of surveillance (mean = 3.61) and agree on the need to enforce surveillance (mean = 3.32). Respondents mainly disagree with statements on surveillance cameras having disturbing effects on their privacy. They are not concerned about CCTV privacy intrusion (mean = 2.35) and are neither concerned nor relaxed about being surveilled (mean = 2.96). The relatively low level of people's concern about CCTV privacy intrusion and about being surveilled may stem from the low level of surveillance-associated risk awareness among the general population, contrasted to the higher awareness of personal data manipulation risks. In order to line up the interpretation and discussion of results obtained for factors and clusters, findings are matched into one presentation as shown in Figure 1.

Cluster analysis identified three groups of citizens: pro-surveillance oriented citizens, citizens concerned about being surveilled, and citizens opting for better data protection. Pro-surveillance oriented citizens (Figure 1, black line) have the highest perceptions that surveillance is an effective tool to prevent crime and accordingly they strongly advocate more surveillance and empowerment of police and other authorities. In line with the views of surveillance effectiveness, these respondents do not show much concern about being under CCTV video monitoring. This group is rather confident about the procedures of privacy and data protection and its level of trust in government usage and storing of data is the highest in the whole sample. However, these respondents have much less confidence in how the new technologies are safeguarding their data and personal information. They believe phone calls are wiretapped and mails intercepted so

"one should be aware that somebody is listening". This might be due to the general apprehension of ICT and computer usage or raised awareness on how data could be misused and manipulated in cyberspace.

Figure 1 **K-means Cluster Analysis Results**



Notes: Items were measured on a scale ranging from 1 (strongly disagree) to 5 (strongly agree).
Differences are significant at $p < 0.01$ level.

Citizens concerned about being surveilled (Figure 1, dotted line) think that CCTVs as video surveillance tools do not effectively prevent crime and vandalism, nor that effective surveillance of people would stop criminal activity, terrorism or corruption. On the contrary, this group has the highest concern about CCTV privacy intrusion and the lowest trust in privacy protection procedures. Consequently, these citizens express significant concern about personal data manipulation, being at the same time aware of potential threats in personal communication via the internet, social networks, or phone calls. This segment of respondents opposes any enhanced surveillance or strengthening powers of official authorities, such as police or other security services.

The third group of citizens opts primarily for better data protection (Figure 1, gray line). These respondents give less importance to surveillance, considering it might be effective in certain circumstances. The fact that they have the lowest level of concern about CCTVs in the whole sample, supports the validity of the "nothing to hide" argument for this group of citizens. Their primary concern is about personal data manipulation. According to their common opinion on effective privacy protection procedures and regulations, it seems that their views in favor of slightly enforced surveillance call for better implementation of regulation.

4.3 Differences among Groups of Citizens

The chi-square test was used to determine differences between identified groups of citizens in terms of gender, age, education, employment status and country of residence. The chi-square test results are presented in Table 6.

Table 6 **Demographic Differences and Pearson Chi-Square Test**

Demographics	**Segment 1: Pro-surveillance oriented citizens (n = 742)**	**Segment 2: Citizens concerned about being surveilled (n = 625)**	**Segment 3: Citizens opting for better data protection (n = 639)**
Gender (Pearson chi-square: 3.69, df = 2, p = 0.158) (in %)			
Male	47.8	52.8	48.7
Female	52.2	47.2	51.3
Age (Pearson chi-square: 58.61, df = 10, p = 0.000) (in %)			
18-24	39.5	36.6	23.0
25-34	13.2	14.2	14.6
35-44	12.8	15.0	15.7
45-54	12.3	15.4	16.1
55-64	13.9	11.4	17.8
65-70	8.4	7.4	12.8
Education (Pearson chi-square: 30.31, df = 4, p = 0.000) (in %)			
Primary school or less	18.7	11.7	11.4
Secondary school	60.7	58.4	60.5
Higher education	20.6	29.9	28.1
Employment status (Pearson chi-square: 21.60, df = 2, p = 0.000) (in %)			
Employed	36.2	48.6	43.1
Unemployed	63.8	51.4	56.9
Country (Pearson chi-square: 219.62, df = 6, p = 0.000) (in %)			
Bosnia and Herzegovina	10.7	27.8	39.6
Croatia	24.0	21.8	29.1
FYR of Macedonia	35.9	20.8	16.3
Serbia	29.5	29.6	15.0

The chi-square test results show that significant differences exist in age, education, employment status and country of residence ($p < 0.01$) among the groups of citizens. However, there are no significant gender differences among the groups.

Younger individuals prevail in Segments 1 and 2, while older citizens prevail in Segment 3. Accordingly, younger individuals tend to be more "pro-surveillance" oriented and at the same time more concerned about being surveilled. On the other hand, older citizens seem to be more concerned about data protection.

The groups of citizens also differ significantly in education level. In the overall sample, the largest share of highly educated citizens is found in Segments 2 and 3. The highest percentage of citizens with primary school or less is found in Segment 1. Accordingly, citizens with higher education are more concerned about data and privacy protection and

about being surveilled. Those with primary school or less are more "pro-surveillance" oriented. With a higher level of education, individuals become more concerned about data and privacy protection. People with a higher education level have more knowledge about the potential risks of increasing surveillance and manipulation of data.

The highest percentage of employed citizens is found in Segments 2 and 3, while the highest percentage of unemployed citizens is found in Segment 1. Accordingly, employed citizens are more concerned about data and privacy protection and about being surveilled, while unemployed citizens are more "pro-surveillance" oriented.

The groups of citizens also differ significantly in country of residence. Citizens from Bosnia and Herzegovina prevail in Segment 3 and are mostly concerned about data protection. Respondents from FYR of Macedonia prevail in Segment 1 and are more "pro-surveillance" oriented. As for the population in Serbia, the share of citizens concerned about being surveilled closely corresponds to the share of citizens arguing for more surveillance, whilst the preoccupation with data protection in Serbia is the lowest in the region. Results for Croatia indicate that the highest proportion of Croatian population falls into Segment 3, i.e., opting for better data protection.

5 Concluding Remarks

This study explored differences in individuals' attitudes related to privacy concern, data protection and surveillance in four Western Balkan countries. The developed typology of citizens reveals that public attitudes differ on the regional level if compared to similar national studies (Budak, Anić and Rajh, 2012; 2013). This is understandable because country of residence stands as the most significant determinant of clustering citizens across the region. This important finding suggests that the effects of institutional changes each nation has undergone during the last two decades prevail over the common ex-Yugoslavia social heritage, although one cannot be sure on the level of uniformity of public attitudes in the former state due to the lack of comparable research. However, this leaves open research issues for further discussion and investigation.

As expected, awareness on surveillance and data protection risks increases as respondents have higher level of education. Unemployed persons might be less in touch with ICT and other features of modern life and their lower exposure might explain the lower concern about being surveilled. An interesting finding is related to the young population's preferences for more enforced surveillance. Since young citizens' views and attitudes indicate the future trends it is worth further investigation. Other lines for future research would certainly be in-depth country analyses that would enable deriving national-specific policy recommendations. Since the survey provides a kind of a "snapshot" of citizens' attitudes at one point in time, we recognize this as a limitation of our research and new insights could be attained by regularly surveying citizens' attitudes towards privacy, data protection and surveillance.

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