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«Big Brother's effect» in the Political Market

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Abstract

In previous studies it was discovered that human beings not only have a tendency to mimic the leader, but they do it to a greater extent of fidelity if the follower is observed by the leader at the moment of execution of his actions. Among the possible reasons for that there were listed the followings: mechanism to learn new skills, by-product of domain general learning, increase in liking, a way to boost social affiliation, social glue hypothesis, and finally, social-signalling hypothesis of imitation. Surveillance from the side of the leader can reinforce the effect of ethical guidance, if the follower is watched. Just the fact that the leader is «watching you» can deviate the utilities of the followers and significantly affect their behaviour as a consequence. We will test this hypothesis by estimating Ordered Logistic and Ordered Probit regressions with categorical dependent variable, responsible for the share of support group, loyal to the government in cabinet, independent variable (main variable of interest), capturing for the number of CCTV cameras per 1000 people in 45 different cities located in 45 different countries of the world, as well as group of control variables: facial recognition status (dummy variable), electoral democracy index, unemployment rate, world happiness and categorical variable «person of the leader», which reflects personal characteristics of the chief executive.

Keywords: CCTV cameras, mass surveillance, loyalty of voters

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1. Introduction

With the increasing role of spying security agencies, installation of digital cameras with the function of face recognition in public places, including transportation, metro, educational and healthcare institutions, shopping malls «Big Brother's effect» is able to deviate the utilities in mass significantly, and not exceptionally the utilities in the political market. It refers us to anti-utopias, such as «We» by Zamyatin and «1984» by Orwell, where Big Brother with his assistant service, Police of Thoughts watch you everywhere. And if Big Brother finds that a specific individual does not mimic him enough through the channel of ethical guidance, or that selected model of behaviour significantly deviates from the encouraged and commonly accepted one, the response will follow in the form of social sanctions, reputational harms, up to fabricated evidence and conviction, or even murder under the radically authoritarian regimes.

We will focus on the case of political market and voting-decision making. Through the channel of ethical guidance, the voters assign the values of the leader, who concentrates the main executive power, and in turn, it might be that «Big Brother's effect» reinforces its impact. Another possible channel of influence – chilling effects. The «watching eye» stimulates individuals to be cautious while choosing the model of behaviour, as the one should comply with the expectations of the leader and the majority group of society. As a consequence, such a constraint, caused by mass surveillance, according to our expectations, leads to following social norms, conformity and support of the regime in power.

2. Theoretical Framework

Bateson et. al. (2006) described an experiment, which took place in the psychology department of Newcastle University, United Kingdom. They apply a simple honour system for tea and coffee orders: people have to leave money in the box. Once during research experiment the department had modified the sign on the top of the price list. A picture with flowers was replaced by the photocopied picture of human eyes, gazing directly at clients, while they reading the menu. The result was the following: on the weeks with watching eyes, depicted on the top of the menu the staff tended to pay 2,76 more to enjoy caffeine, than in the case of picture with flowers. The researchers, who conducted this experiment were highly astonished by the magnitude of this effect. It testifies that even when displayed on the photo, watching eyes have a tendency to change people's behaviour.

PEN America (2015) surveyed almost 800 writers all over the world about their attitude towards surveillance. Surprisingly, the difference between democratic and non-democratic nations was not significant. As for the former, 75% of respondents were concerned about mass surveillance, whereas in the latter case 80% of respondents. Over 30% of writers, representing democratic nations claimed that they are self-censored, and more than half of respondents stated that mass surveillance undermined the credibility of the USA as a global defender of free expression.

In the municipality Chongqing, located in the Southwest of China (over 15 million population), the ratio of CCTV cameras to the number of residents is 1 to 5,9, which makes it the most surveilled city on Earth. Wakefield (2021) interviewed Chinese journalist Hu Liu, a resident of Chongquing, who claimed that: «Once you leave home and step into the lift, you are captured by a camera. There are cameras everywhere. When I leave home to go somewhere, I call a taxi, the taxi company uploads the data to the government. I may then go to a cafe to meet few friends and the authorities know my location through the camera in the cafe». Secondly, technologies such as electronic checkpoints and cellular apps are widely applied in the Xinjiang region, the homeland of ethnic minority, Uighur Muslims. Daily surveillance and digital algorithms led to numerous arrests, trials, convictions, escorted by indoctrination in so-called re-education centres. According to UN report, over 1 million people are currently placed there, (Boghosian, 2021). Besides the gaze of CCTV cameras, over one million of trained paramilitary members, belonging to Han Chinese ethnic group, organize military corps with heavy artillery, tanks and armoured vehicles, which forms another dimension of «watching eyes». On the other hand, CCTV cameras detect whether they follow all the instructions properly, because if not, their families might be in danger.

Stoycheff (2016) conducted an experiment regarding the effect of government monitoring on online expression in the situation when real opinion of the respondents gets into conflict with the one of the majority. The post on fake

Facebook page about US airstrikes against ISIS terrorists in Iraq was shown to 225 respondents. It was written in a way that the author didn't take any of the positions. Respondents were asked whether they would be willing to like, comment or share this post, but they were informed that there is no guarantee that NSA would not be monitoring them. The answers happened to be a pure demonstration of thespiral-of-silence effect. Spiral-of-silence effect means that people would avoid discussions on policy issues publicly, whenever they know that their position does not correspond with the widely shared one. As a result of this experiment, the more respondents expected that their position deviated from the mainstream one, the more conformist and self-censored were their answers.

Analysing the impact of surveillance on the loyalty of support group, the first channel of interest – chilling effects. This concept was presented by Schauer (1978). According to him, certain actions of the state can chill or deter individuals from exercising their freedoms or involvement in legal activities. The theory was extended by Solove (2008), whose focus was on government surveillance, related to online activities and specific instruments of the government, such as criminal sanction and legal punishment, which have chilling effects, and therefore deter people from specific engagements on the internet. He finds that surveillance of online activities, specifically, information gathering creates an environment of self-censorship and conformity, because individuals face uncertainty regarding how their personal information will be used in the future. They have concerns about the risks of potential harms, such as stigmatization and labelling by the state as deviant, criminal or non-conformist, as well as victimization by identity fraud. Moreover, individuals have fear that personal information can be leaked by a third-party, including the state, what can put them in an embarrassing situation. e hH

The second channel, crucial for the analysis of surveillance effect on the loyalty of support group – tendency to imitate the leader, or as in our case, specific form of this tendency – the tendency to follow the model of behaviour, expected by the leader or by the regime in general, as well as assigning the values of the leader through the channel of ethical guidance. Krishnan-Barman et. al. (2019) conducted an experiment and demonstrated that human beings not only have a tendency to mimic the leader, but they do it to a greater extent of fidelity if the follower is observed by the leader at the moment of execution of his actions. In the process of the experiment the pairs of adult followers and leaders had to move blocks from one place to another in a specific order. The authors had focused on two main aspects: the height of trajectory, reached by the leader and when the follower performed his turn, whether the eyes of the leader were opened or closed. The maximum heights, accomplished by the leader and follower during both observed and unobserved were used as indicators of the levels of imitation within a pair. Correlation coefficients between them were calculated and subjected to a T-test, in order to verify the significance. As a result, Krishnan-Barman et. al. (2019) came to the conclusion that the participants tended to mimic more significantly in the cases when they had known that they were watched by their leader-partners, in comparison with the situations when the leader could not observe them.

The literature in the field of Psychology and Cognition finds various explanations for that: mechanism to learn new skills, by-product of domain general learning, increase in liking, a way to boost social affiliation, and lastly, social glue hypothesis. We will focus on the last one, as the authors of the experiment, described above. The social glue hypothesis was elaborated by Lakin et. al. (2003) and underlies the core of STORM model, proposed by Wang et. al. (2012). The seminal theory states that it is possible to create affiliations through imitation, and such affiliations emerge as a lucky-side effect of imitation, whereas according to STORM model – the main purpose of imitation performance is a willingness to affiliate. It goes in line with Lakin et. al. (2003), who discovered that being imitated leads to an increase in liking. At the same time according to Kuhn et. al. (2010), the opposite is also true: observing antimimicry (the model of behaviour opposite to an imitation) can elicit conflict-related processing, and therewith lead to a negative effect.

Hamilton (2015) discovered that from a neurocognitive point of view the process of imitation passes two stages: 1) visuomotor stream 2) selection and control. We will omit the former one, because we are interested in a particular form of imitation - the tendency to follow the model of behaviour, expected by the leader or by the regime. In the second stage in order to make optimal decision individuals compare their own views and preferences with bits of information they possess regarding the model of behaviour expected from them. Control mechanism required to select which imitative or non-imitative actions to actually perform. Brass et. al. (2005) found that performing the imitation-inhibition task engaged medial prefrontal cortex, a region of the brain previously associated with the theory of mind. Focusing on socio-political life, the complexity of the mechanism of selection and control would depend on the environment: institutional framework, power distance, the personality of the leader and tenure of the regime in power, wellbeing of citizens and satisfaction with the regime in power, and finally, the level of surveillance. If individuals have confidence that they are not watched, they may keep on following their initial models of behaviour, but if they know that they are watched extensively, for example in Chongqing municipality of China, it may be necessary to consider imitation to a lower or greater extent, both due to the positive effects of mimicry and negative effects of antimimicry, fixed in the literature. If individuals are far-sighted enough, they should take into consideration possible long-term effects of imitative or non-imitative behaviour they perform, as stigmatization or labelling by the state as deviant/criminal are long term effects. Because imitation leads to affiliation, or to put it differently, as in the STORM model, affiliation is the main aim of imitation, and imitation leads to an increase in liking, benefits in various forms are also possible.

3. Methods

The question this research will be answering is:
Is there any evidence that mass surveillance has a positive impact on loyalty of voters?
The hypothesis developed after a preliminary review of the literature are the following:
One unit increase in the number of CCTV cameras per 1000 people does not increase the log odds of being in a higher level of regime supports group size, holding all the other variables constant (coefficients of variable "CCTV cameras per 1000 people" in the regressions, provided in Equation 1 and Equation 2 are not positive or not statistically significant at 10% level)

$$H_0: \beta_{11} \leq 0 \,, p > 0{,}1 \qquad H_1: \beta_{11} > 0 \,, p < 0{,}1$$

The effect of mass surveillance on the loyalty of voters will be estimated by Equation 1 in the case of ordered logistic regression, and by Equation 2 in the case of ordered probit regression:

Equation 1: $$log_e\left(\frac{\pi_{i1}}{\pi_{im}}\right) = \beta_{1j}x_{i1} + \beta_{2j}x_{i2} + \beta_{3j}x_{i3} + \beta_{4j}\log(x_{i4}) + \beta_{5j}x_{i5} + \beta_{6jn}x_{i6n}$$

$$for\ j = 1, \dots, m-1$$

Equation 2:

$$\pi_{i1} = \Phi(\beta_{1j}x_{i1} + \beta_{2j}x_{i2} + \beta_{3j}x_{i3} + \beta_{4j}\log(x_{i4}) + \beta_{5j}x_{i5} + \beta_{6jn}x_{i6n}))$$
$$for\ j = 1, \ldots, m-1$$

Where:

$log_e\left(\frac{\pi_{i1}}{\pi_{im}}\right)$ – log odds of being in a higher level of regime supports groups size

π_{i1}– conditional probability of being in a higher level of regime supports groups size (ordered probit regression)

j – categories of response variable

m – qualitative values, reflecting the categories of the dependent variable

n - categories of variable

ø(x) – cumulative distribution function in probit model, which push es the probabilities to be between 0 and 1

π_{i1}– number of CCTV cameras per 1000 people

π_{i2}– facial recognition status (dummy variable)

π_{i3}– electoral democracy index

π_{i4}– unemployment rate

π_{i5}– world happiness index

π_{i6n}– person of the leader

The choice of Ordered Logit and Ordered Probit models is conditioned by the limited dependent variable (regime support groups size), which reflects loyalty to the government in the cabinet. The variable was extracted from the V-Dem dataset version 10, downloaded from the website of the V-Dem Institute (University of Gothenburg). To be more precise, this variable shows what is the share of domestic adult (18+) population in percent that belongs to the current political regime's supporting groups. It is a categorical variable with five various responses: Large (more than 30%), Moderate (15-30%), Small (5-15%), Very Small (1-5%), Extremely Small (less than 1%), (Coppedge et. al., 2020a).

The main variable of our interest – CCTV cameras per 1000 people. The data on it was shared by Comparitech – website, providing information, tools, reviews and comparisons to help the readers all over the world to improve their cyber security and privacy online. Our sample includes 45 observations: big cities of 45 different countries, from different continents: from Beijing to London, from Moscow to Los Angeles, from Sydney to Buenos Aires. The

countries, included in our sample vary in terms of culture, well-being, type of political regime, personal characteristics of the chief executive – other factors, which expected to have explanatory power in the share of the population, loyal to the government in power. Therefore, we will control for these factors, as well as for the facial recognition status of the cameras.
The presence of facial recognition status significantly affects the degree of being watched. Having facial recognition function in use takes «watching eye» to the next level. Therefore, it is reasonable to control for it. Facial recognition status is a dummy variable, which is equal to 1 if it is in use and 0 otherwise. The data was collected on https://surfshark.com.

In order to control for the type of political regime and level of institutional development we will rely on the variable - Electoral democracy index from V-Dem dataset version 10. To be more precise, this index captures the following democratic principles: 1) responsiveness of the rulers to the citizens, guaranteed by the fair electoral competition without frauds and systematic irregularities observed; 2) elections determine the chief executive composition of the country; 3) free operation of the political and civil society groups and organizations; 4) mass media are independent, have the freedom of expressions, and can present alternative views on different issues, including politics. The values are in the range between 0 and 1, (Coppedge et. al., 2020a).
We will control for the unemployment rate as well, as it is a highly important social indicator, which may have some explanatory power for the size and loyalty of the support groups of the regimes, and therefore should not be omitted. We will use the logarithmic form of unemployment rates for the correct specification of the model. The data on unemployment rates was extracted from https://tradingeconomics.com/.

Moreover, we will control for well-being of citizens, relying on the World Happiness Index, which focuses on a wide area of dimensions: social, economic, political, as well as security issues, infrastructure, education, health, nutrition and emotions. Alternatively, we could use GDP per capita for this purpose, but in this case, the control would be limited to the effect of economic prosperity only. In contrast, the World Happiness Index is a more versatile indicator, which allows to capture for the effect of well-being as a whole on the share of support group, loyal to the government in power. The variable is scaled from 0 to 10, where 0 reflects the worst possible life and 10 the best possible life. The

data was collected from https://countryeconomy.com/.
Finally, we will control for the personality features of key leadership figure (head of the state, head of the government), because according to the reviewed literature, it can enhance the effect of mass surveillance on loyalty of voters. We will rely on the variable «Person of the Leader» from the V-Dem dataset version 10. It reflects leadership skills and personal characteristics of the chief executive: father or mother of the nation, exceptionally heroic, moral, pious, or wise, or any other extraordinary attribute valued by the society, (Coppedge et. al., 2020a). It is a categorical variable with the following responses: not at all, to a small extent, to some extent but it is not the most important component, to large extent but not exclusively, almost exclusively.

4. Results

The results of all the estimated models, including ordered logistic regression, ordered logistic regression with robust standard errors, ordered probit regression and ordered probit regression with robust standard errors are presented in Table 1.

Table 1 The effect of CCTV mass surveillance on the size of regime support group

Variable	Ordered logit	Ordered logit (robust)	Ordered probit	Ordered probit (robust)
CCTV cameras per 1000 people	0.123**	0.123***	0.069**	0.069***
Facial recognition status	-0.646	-0.646	-0.408	-0.408
Electoral democracy index	9.451***	9.451***	5.433***	5.433***
Unemployment rate (log)	-1.428*	-1.428**	-0.747*	-0.747**
World Happiness Index	-1.764**	-1.764*	-0.962**	-0.962**
Person of the leader:				
To small extent	0.669	0.669	0.281	0.281
To some extent but it is not crucial	0.494	0.494	0.332	0.332
To a large extent but not exclusively	-0.965	-0.965	-0.367	-0.367
Almost exclusively	2.790	2.790	1.735*	1.735*
Cut-off values:				
Cut 1	-11.944**	-11.944*	-6.159**	-6.159**
Cut 2	-9.704*	-9.704	-5.045*	-5.045*
Cut 3	-7.680	-7.680	-3.941	-3.941
	Legend: * p < 0.1; ** p < 0.05; *** p < 0.01;			

Source: Own compilation, 2022

The main variable of our interest, the number of CCTV cameras per 1000 people is positive and statistically significant at least at the 5% level (when robust standard errors applied, at 1%) in all the estimated models. Therefore, we can reject hypothesis in favor of alternative hypothesis (). In line with the methods applied, the results demonstrate only the direction of effect, but not the magnitude. The coefficients on the key variable of our interest should be interpreted as follows: for one unit increase in CCTV cameras per 1000 people, we expect 0,123 increase in the log-odds/ 0,069 increase in probit likelihood of being in a higher level of regime support groups size (more than 30% of the adult domestic population are in favour of the regime in power) holding all other variables constant. It testifies to the presence of a «Big Brother's effect» in the political market.

An approximate likelihood-ratio test was conducted for testing parallel regression assumption, necessary for the application of our models. Both in the case of ordered logistic and ordered probit regressions this assumption was not violated (p-values of chi-square values are 0,66 and 0,63 respectively).

5. Discussion and Recommendations

The empirical results show that indeed, CCTV cameras' mass surveillance on average has a positive effect on loyalty to the government in power. It may push citizens to follow the model of behaviour, expected by the regime, or personally by the chief executive, and in turn, reshape the preferences of voters in the political market. The effect comes from the two main channels: chilling effects, discovered by Schauer (1978), as well as a tendency to mimic the leader to a greater extent of fidelity while being watched, as it was demonstrated in the experiment, conducted by Krishnan-Barman et. al. (2019). When we focus on the political market, as in this study, the second channel takes a slightly different form. Individuals rather imitate not the leader himself, but a commonly accepted model of behaviour, expected and encouraged by the regime. In this study we did not intend and did not find it feasible to separate these two effects, but rather analysed them together as components of the total effect of mass surveillance.

The results contribute to the mass surveillance and voting behaviour areas of studies and go in line with its fundamental theoretical literature, such as

Schauer (1978), Solove (2008), literature in the field of Psychology and Cognition, such as Lakin et. al. (2003), Wang et. al. (2012), Hamilton (2015), as well as experiments, conducted by Bateson et. al. (2006), Stoycheff (2016), Krishnan-Barman et. al. (2019), the survey of PEN America (2015).

As we did not demonstrate the magnitude of the effect, we highly encourage future studies to focus on values of interest of specific variables, and by using margins to obtain predicted probabilities, that would facilitate the interpretation of results and make them more precise. Moreover, having the data on CCTV cameras available, it would be reasonable to use it for more detailed analyses of the effect of mass surveillance on political markets of specific regions and countries of the world.

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