IS THE SEED OF REVOLUTION REPRESSION?

A quantitative study of the relationship between government repression and anti-government mass mobilization

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Essay/Thesis	15 credits
Program and/or course	Bachelor's Programme in Political Science/SK1523
Level:	Bachelor/First Cycle
Semester/year:	Spring/2023
Supervisor:	Elena Leuschner
Word Count:	9 736

Abstract

Throughout history, authoritarian regimes have used repression to avoid the opposition to flourish and to retain power. However, in the case of the protests for Mahsa Amini against the regime in Iran, it has been demonstrated that government repression instead, can be positively associated with anti-government mass mobilization. Previous research is divided into two groups of scholars. First group considers that anti-government mass mobilization will decrease as a result of repression, while the second group consider that mobilization will increase as a result of repression. The purpose of the paper is to examine if repression in authoritarian regimes will lead to an increase in anti-government mass mobilization. The research question "*Is repression positively associated with anti-government mass-mobilization*?" will be investigated through a time series cross-section analysis with data from MMAD covering 92 countries and their protest events between the years 2003-2019. The empirical findings from the main analysis and the first robustness test did not find evidence to support the hypothesis "*when authoritarian regimes increase their level of repression, it increases the likelihood of anti-government mass mobilization*". The result from the second robustness test presents a negative significant relationship between the dependent and independent variables which will give tentative evidence that the hypothesis is correct. Since two of the three empirical tests do not confirm the hypothesis, I reject the hypothesis for now. Future studies should focus on the different levels of repression and the mechanism that motivates the protesters to continue in the face of repression.

Keywords
government repression, anti-government mass mobilization, authoritarian regimes, protests

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1. Introduction

On September 16th, 2022, Mahsa Amini died due to severe injuries. Three days earlier she had been arrested by the Iranian regime and severely beaten after violating the Islamic dress code. The Iranian regime denies any crime but after her death, big protests against the regime flared up. In response to the demonstrations, the regime shut down the internet and social media to make it more difficult for the opposition to mobilize. The regime threatened with violence if the protests did not stop, and several women lost their lives by participating in the demonstrations. Even as the regime repressed the opposition to the extreme, mobilization has instead increased and at the time of writing, the protests are still ongoing (e.g., de Hoog, 2022; Strzyżyńska, 2022) Throughout history, authoritarian regimes have used repression to hinder the opposition from flourishing and to retain power. However, the 28th president of the United States, Woodrow Wilson once said, "The seed of revolution is repression" (7th annual message, 1919) and as in the case of Mahsa Amini and Iran, it has been demonstrated that government repression instead, can be positively associated with anti-government mass mobilization.

Previous research shows mixed results, and the discussion is still ongoing. The scholars are divided into two groups where the first group considers that mobilization will decrease due to repression (e.g., Tilly, 1978; Beissinger, 2007; Shadmehr & Boleslavsky, 2021).
The second group, on the other hand, considers that mobilization will increase due to repression (e.g., Hess & Martin, 2006; Brockett, 1993; Carr, 2002; Lichbach,1987). Today, we are currently in a negative democracy trend and autocracies in the world are increasing (Papada et al., 2023). New autocracies, strategies, and tools to repress have been developed. The opposition's assets to be able to mobilize more easily have also been developed such as the internet and social media (Burgess, 2018). Therefore, I aim to have another look at the relationship between government repression and anti-government protest occurrence in authoritarian regimes. Thus, the research question reads: *Is government repression positively associated with anti-government mass mobilization?*

The purpose of this paper is thus to examine whether an increase in government repression is associated with an increase in anti-government mass mobilization. According to the

theoretical framework, four mechanisms motivate protesters to continue in the face of repression. Firstly, the protester is already a target for the authoritarian regime. Secondly, when human rights are violated, feelings of injustice are created. Thirdly, when the government uses repression to solve issues, they undermine legitimacy. Lastly, if protesters fail to achieve their goal they may suffer from self-repression.

To examine this relationship, I will conduct a quantitative cross-national and time-series analysis with the dependent variable *anti-government mass mobilization* and the independent variable *government repression*. The dependent variable will be operationalized as a count variable "how many days until next protest". Therefore, a Poisson regression analysis will be conducted with data from Mass Mobilization in Autocracies Database (MMAD) covering 92 countries between the years 2003 to 2019. The empirical findings from the main analysis and the first robustness test did not find evidence to support the hypothesis. The empirical findings from the second robustness test show a negative significant relationship between the dependent and independent variables which will give tentative evidence that the hypothesis is correct. My analyzes thus demonstrate mixed results since two of the three empirical tests do not support the hypothesis. Therefore, the hypothesis is rejected in this study since it needs further investigation.

In the following sections, I will go through the previous literature. I will then present the theoretical framework and operationalize the variables followed by a presentation of the result which includes robustness tests. Finally, I will discuss the result, limitations, and possibilities for future research.

2. Literature Review

In this section, I will first define the different concepts of mass mobilization, authoritarian regimes, and repression to provide an understanding of how the concepts will be used in this paper. Secondly, I will present the previous research, what we already know and what we do not know, which will lead us to the research question.

2.1 Central Terms

2.1.1 Anti-government mass mobilization

Mass mobilization can be defined in many ways. As most of the research that studies both mass mobilization and repression has focused on the *social definition* (e.g., Hess & Martin, 2006, Chen & Moss, 2018), I will do likewise. The social definition is defined as a process that often starts with larger public gatherings such as demonstrations, often with a political aim. For example, to confront power structures in society (Darity et al.,2007). Mass mobilization and protest in authoritarian regimes can occur both for anti-government and pro-government purposes. However, in this paper, I will focus on mass mobilization for anti-government purposes.

2.1.2 Authoritarian regimes

This study will focus on authoritarian regimes since this is where most of the anti-government protests occur there. Authoritarianism is often defined as the opposite of democracy. The power belongs to a leader or a small elite group. The freedom to create an opposition against the regime or mass mobilize is often limited or non-existent within an autocracy (Britannica n.d). Scholars have in recent decades focused on the variety of non-democratic regimes and changes in the way these authoritarian states are controlled (e.g., Lührmann et al., 2018). The number of authoritarian regimes that uses democratic elements in their political system has increased, and liberalization, which used to be the first step towards democratization, has become a more common method for authoritarian regimes to use. In order to gain legitimacy, authoritarian regimes have started to accept mass mobilization as a liberalization tool (Chen & Moss, 2018; 667).

2.1.3 Repression in authoritarian regimes

Repression is an expression extensively utilized in research. In this study, we proceed according to Goldstein's (2001) definition of the concept. He considers repression to consist of different government actions which discriminate against civilians or organizations who represent a fundamental challenge to the existing regime, and they are victimized because of their political views (Goldstein, 2001). In this paper, it is therefore most appropriate to focus

on repression in authoritarian regimes, where it occurs. A regime's capacity to repress is one of the factors that shape the characters of collective action in an authoritarian regime. Compared to a democracy that aims to decrease the use of violence by state actors, autocracies do not shy away from using violence against civilians (Chen & Moss 2018; 669).

2.2 What do we know and what do we not know?

One of the reasons why authoritarian regimes collapse is because of popular uprisings (Geddes et al.,2018;179). Therefore, mass mobilization is considered as a major threat to authoritarian regimes and something that needs to be taken care of. Repression is the most popular response for authoritarian regimes on mass mobilization and therefore, there is already a great collection of research in the field. However, there is still a discussion and uncertainty in the area, which divides the previous research into two different groups of scholars. This section will examine a summary of earlier researchers' empirical findings and whether there is a positive or negative association between government repression and anti-government mass mobilization.

On the one side, scholars find empirical evidence that authoritarian regimes that use repression as a tool can create too high costs for the protesters, which will rather decrease mobilizations (e.g., Tilly, 1978; Beissinger, 2007; Shadmehr & Boleslavsky, 2021).
In the following section, the empirical findings that support this statement will be presented. Firstly, it has been found that pro-democratic mobilizations are more likely to fail in countries with strong and stable authoritarian regimes. Highly stable regimes have better political and institutional resources to tolerate an opposition, although when they feel threatened by the opposition, they usually intensify the repression to uphold their stability (Ritter, 2014). Secondly, various factors such as social, economic, and politic, have been considered to have a bearing on whether the opposition will succeed or fail in challenging the incumbent regime. A variety of contextual factors such as strategies, tactics, external factors, economics, political, and social conditions, therefore, affect the outcoming of mobilization (Beissinger, 2007). Importance of good resources and organization such as access to weapons, money, and well-organized networks are important in order to succeed and achieve their goals. If these factors are being destroyed by different types of repressions, it is challenging to continue and

succeed since protesters are dependent on these factors (Tilly, 1978;133-138). Lastly, international pressure and how it affects the authoritarian regime's repression of the opposition has been investigated. It has been found that especially when states are highly repressive and face international pressure, this can lead to a spiral of repression where states will respond with even greater levels of violence and repression, which can make it too costly for the protesters (Shadmehr and Boleslavsky, 2021) To summarize, this side examines and gives a better understanding of why government repression can be negatively associated with anti-government mass mobilization.

On the other side, scholars have found empirical evidence that repression as a tool for authoritarian regimes can instead trigger the protesters and create backlash effects which will rather increase the mobilization (e.g., Hess & Martin, 2006; Brockett, 1993; Carr, 2002; Lichbach,1987). In the following section, the empirical findings that support this statement will be presented. Firstly, it has been found that the interaction between the state and the opposition and the cost and benefits of joining either actor, will determine whether the protesters will continue to protest after repression. A turning point seems to be when citizens gain more benefits to joining the anti-government movements and it is more costly to stay and support the regime. If the protesters find it more costly to live in the authoritarian regime and find more benefits in joining the opposition the anti-government mass mobilization will increase (Lichbach, 1987). Secondly, when repression is perceived as unfair or excessive it will occur a dynamic shift in favor of the anti-government movements. When the opposition's goals and demands become mainstream and the regime is seen as discredited the authoritarian regime has failed with their repression and instead, they have had backlash effects (Hess & Martin, 2006). Thirdly, authoritarian regimes that use violence against the population will never achieve their main goal and will instead risk losing legitimacy. Tactics that contain violence have in history always failed to achieve their main goal both political and military. When the regime uses violence against its population it often causes fear and easily escalates. Therefore, to use violence is only self-defeat and a risk of losing legitimacy (Carr, 2002; Hess & Martin, 2006). Lastly, the Repression/Popular-protest paradox refers to the fact that when regimes repress it often leads to more protest. Brockett (1993) considers that the relationship is not linear, but rather a cycle and goes in four different stages (incubation, mobilization, confrontation, and resolution). They often repeat the same four stages multiple times, and

every stage of protest gets more triggered by the repression from the regime, and this will lead to an increase in mass mobilization (Brockett, 1993). To summarize, this side examines and gives a better understanding of why government repression can be positively associated with anti-government mass mobilization.

As demonstrated above, there is still a discussion about whether repression, in general, increases mobilization or not. While the discussion is still ongoing, the game plan has changed appearance. The varieties of assets for mass mobilization have developed and phenomena such as the internet and social media have changed the game plan for the opposition radically (Burgess, 2018). We are also in a negative trend and instead of increasing democratization, new autocracies are created (Papada et al., 2023) and they are using different tools with liberal elements to repress their opponents and restrict human rights. However, in this writing moment, people in Iran continues to fight for Mahsa Amini and their human rights even in the face of repression. Therefore, I aim to have another look at the relationship between government repression and protest occurrence in authoritarian regimes.

Therefore, the following research question will be asked: *Is repression positively associated with anti-government mass mobilization?*

3. Theoretical Framework: What motivates the protesters to continue in the face of repression?

3.1 The Game Plan

The main focus in this theoretical framework will be on what motivates the protesters to continue in the face of repression. In this framework, I will assume a rational choice theory. To understand how people act, scholars have often applied the rational choice theory. This theory is based on the idea that people always want to maximize their own expected utility and weigh their costs and benefits against each other (Muller & Opp, 1986). To be able to understand this theoretical work it is also needed to go through the main components of the two actors we study. What are their goals, how do they act on the game plan, and what motivates the protesters to continue in the face of repression?

3.1.1 Actor 1: the authoritarian regime

Those in power in authoritarian regimes live in constant danger. The cost of losing power is high and their careers can end in either a natural death, or an overthrow of their regime (Geddes, 2018;72). The benefits to stay in power are therefore higher and it is important to keep or even expand their sovereignty to maximize their benefits. To get full sovereignty over a state, the population's support to the opposition needs to be at zero. Only then, the authoritarian regime will receive a monopoly of power over the state and maximize its benefits (Zhukov 2023;5).

The main threat to an authoritarian regime is therefore the opposition which wants to decrease the regime's power. To maximize the support from the population, authoritarian regimes need to make it costly for civilians to support the opposition and less costly to support the authoritarian regimes. This is where repression enters the picture. Autocratic regimes use repression to make it more costly for civilians to support the opposition. A variety of repression methods with elements such as censorship and violence and even to its extreme mass killings. However, when authoritarian regimes decide to repress their population, it always comes with a cost. Sometimes, regimes fail when they are trying to decrease mobilization. Regimes use different techniques to decrease mobilization and depending on how successful techniques are applied to control backlashes, it can instead create opportunities for the protesters to mobilize even more (Hess & Martin, 2006;249). Even if autocracies often, in the short term, win when they repress opposite forces, it can also destabilize the regime. The harder they repress the civilians, the harder they risk the movements to radicalize, destroy international legitimacy, and undermine their domestic control. Many authoritarian states allow some forms of collective actions, even if it is under limited restrictions. Particularly, single-party authoritarian regimes started to allow this to avoid too much repression. It has been shown that giving civilians some space to express their views will reduce mobilization and discontent. For instance, to let civilians participate in low-level-decisions making processes and give them some space to discuss (Chen & Moss, 2018)

3.1.2 Actor 2: anti-government protesters

When it comes to the crossroads of joining the opposition or staying at home, civilians will weigh the benefits and costs of participating and choose the option that provides the most

benefit (Muller & Opp,1986). In this study, I will focus directly on the anti-government protesters who have already joined the mobilization and who are now subjected to repression. Therefore, I will present four reasons why protesters will continue in the face of repression.

Firstly, if the regime decides to repress a leader or a group member of the opposition, the protesters who have already joined the opposition will assume that they are already on the regime's list of targets. They will rather continue to mobilize than become inactive, because then they will lose the aim of the mobilization from the beginning, and they will fail to achieve their goal. Instead, mobilization will increase, and opponents will become even more supportive and sometimes even violent. If the regime instead decides to target the mass public, everyone will be affected. In this case, no one is protected and sometimes, it can even be better to join the opposition if they can offer protection, which will lead to an increase in anti-government mass mobilization (Brockett, 1993;460-461).

Secondly, when the protesters who fight for anti-government aims are subjected to repression it can create a sense of injustice, frustration, and outrage. When the state is using violence or other forms of repression, may the protestors feel unfairly treated and that their human rights are being violated. These feelings can then fuel motivation to fight back against the regime and on the contrary, the protestants mobilize even more to show their now even greater anger against the regime. When human rights are violated, it can also cause sympathy and support from civilians who are not directly affected by the issue, which can increase the support for the anti-government protesters. All feelings together can create a sense of urgency in the state and all need to fight together against the big enemy, the authoritarian state, which can motivate more anti-government mobilization (Gurr,1971; Davenport et al, 2005; Sharp, 2012;).

Thirdly, repression as a tool can also undermine the legitimacy of the authoritarian state. When they repress, it can be seen as an indicator of weakness because they are incompetent to address the struggle of their citizens in a legitimate manner. This, in turn, can lead to a willingness of people and encourages them to be involved in more protests as they see that the state is destabilized (Gurr,1971; Davenport et al, 2005). The opposition is constantly waiting

for opportunities to grow and when the regime is out of balance and indicates weakness the chances of growth will increase.

Lastly, the cost for the opposition to continue to live in an authoritarian regime is quite high and if they do not continue to act for their goal, they need to pay this cost. Then the chance that they are subjected to self-repression will instead increase. When individuals identify themselves with a group such as the opposition group, they may be more willing to express their disagreement and motivate them to participate in protests, even in the face of repression and to override self-repression (Van Zomeren et al, 2008;847)

3.2 Summary and theoretical model

To summarize, the theoretical motives predict that repression as a tool for authoritarian regimes to decrease anti-government mass mobilization will rather set more fuel to the fire than extinguish it. This is expected to occur through four different motives and mechanisms. Firstly, the protester is already a target for the authoritarian regime. Secondly, when human rights are violated, feelings of injustice are created. Thirdly, when the government uses repression to solve issues, they undermine legitimacy. Lastly, if protesters fail to achieve their goal they may suffer from self-repression. Therefore, I argue that protests will continue and even increase after government repression.

Based on the theoretical arguments described above, a model of the mechanism has been created and presented, see Figure 1. The four green arrows in the figure present the four mechanisms that will lead to an increase in anti-government mass mobilization.

Figure 1: Illustration of expected relationship, an increase in government repression will lead to an increase in anti-government mass mobilization.
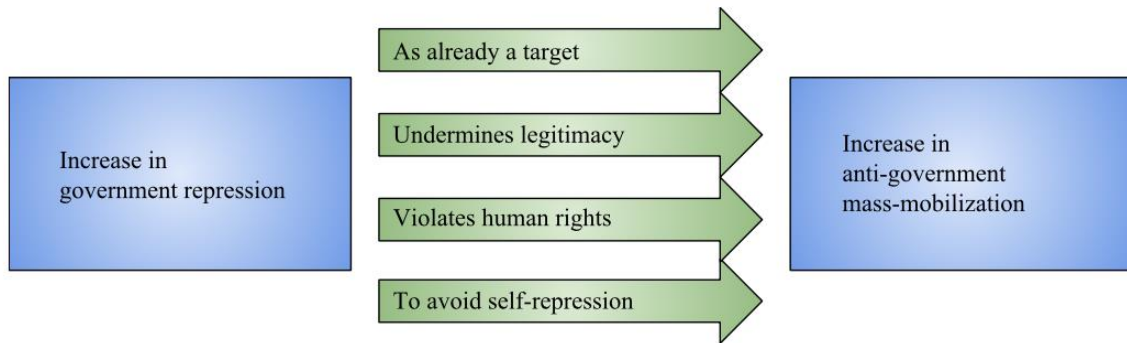
3.3 Hypothesis

According to Figure 1 an increase in repression will lead to an increase in anti-government mass mobilization through four mechanisms. With support from the theoretical framework, I present the hypothesis:

H: When authoritarian regimes increase their level of repression, it increases the likelihood of anti-government mass mobilization.

4. Method and data

4.1 Research Design and Data

To see if there is a positive association between an increase in government repression and an increase in anti-government mass mobilization, statistical analysis in STATA is applied in this study. A statistical design is advantageous when you want to examine whether one phenomenon affects another (Esaiasson et al., 2017;96).

To increase the chances of the generalizability of the study it is helpful to increase the number of cases studied. The data material used in this study originates from the Mass Mobilization Autocracies Database (MMAD). The data set is based on event-level data which tracks incidents of political protest in autocratic regimes. The incidents are retrieved from media reports from the Lexis-Nexus database. The database consists of event-level data which means that each time a political protest is mentioned in a news article, it is coded as a separate

report of a protest event. Each event provides information such as location, date, and number of participants (Weidmann et al.,2019)

MMAD's selection of authoritarian regimes consists of 92 countries between the years 2003-2019[1] and is based on a combination of sources to avoid interruption in the data. Between 2003 to 2015 they rely on Geddes, Wright, and Frantz's identification of autocracies. Between 2016-2018 they rely on "Regimes of the World" (Lührmann et al.,2018) where they selected all the countries classified as electoral or closed autocracies. Countries with less than one million inhabitants are excluded, and if countries no longer identify as autocracies they continue to code until the country has no longer been on the list for three years (Weidmann et al.,2019).

4.2 Operationalizations

4.2.1 Dependent variable: anti-government mass mobilization

As I want to examine if government repression is positively associated with anti-government mobilization, my dependent variable is anti-government mass mobilization. I will use MMAD's event data to operationalize anti-government mass mobilization by counting how many days passes until the next protest event occurs in the same country after a protest event has taken place.

MMAD's data looks at types of different mobilization in authoritarian regimes but I will filter the data for only anti-government protests. To be able to count as a mass mobilization they list some criteria. The first criterion implies that it needs to be an actual event or public gathering. The second implies that at least 25 people need to be involved. The third implies that the motivation needs to be identified and it must be of political nature in a broad sense. The last criterion implies that they do not code mass mobilization for another country's regime (Weidmann et al.,2019).

Figure 2 presents a histogram of the dependent variable days until next protest. The histogram shows that the distribution of the variable is highly skewed which is important to keep in mind later in the analysis.

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[1] See Table 8 in Appendix for a list of the selection of countries.

Figure 2: Histogram of the dependent variable days until next protest
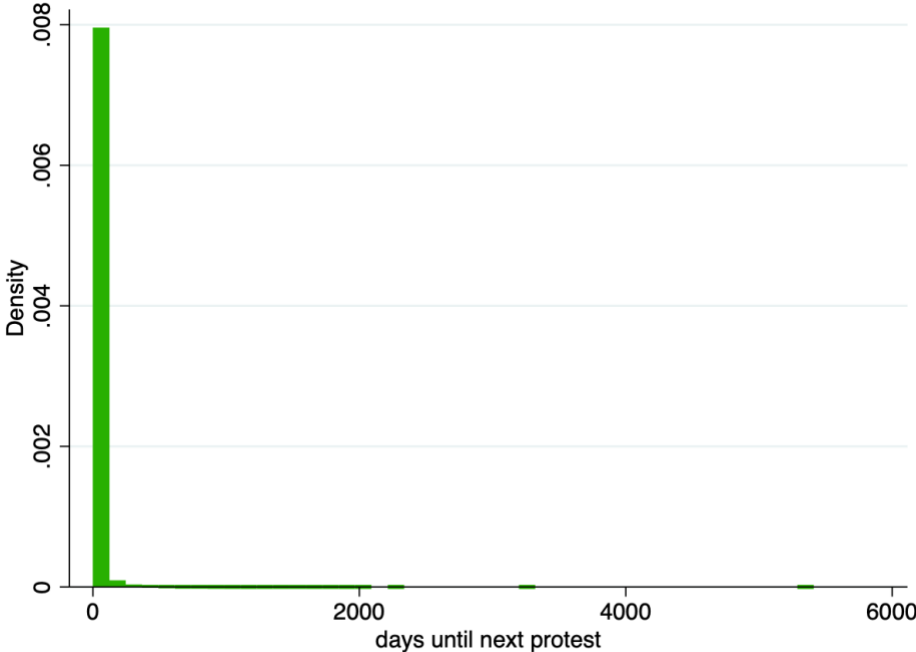
4.2.2 Independent variable

In this study, I aim to examine how repression from the government will affect anti-government mobilization. Therefore, my independent variable is government repression. To be able to measure government repression, I use a dataset that effectively captures the variable and comes as close as possible to reality. I will therefore use MMAD's "Level of official security forces engagement". With the help of this data, it is possible to examine the level and changes in the authoritarian regime's use of repression. Their measurement scale is structured from NA to 3, divided into five groups of repression (Weidmann et al.,2019). However, both level NA and level 0 indicate that there is no presence of repression in the event. As I focus on the level of repression in this study, I decided to combine them under scale level 0 to create a preferable scale. Consequently, according to Table 1, there are four levels of government repression. Having four different levels simplifies it to see the analysis of different levels of government repression that can impact differently on anti-government mass mobilization. To illustrate an example, if the report identifies police officers who just persuade the protesters to go home rather than physically intervene, the level of security forces engagement will be ranked as number 1 (Weidmann et al.,2019).

Figure 3 presents a histogram of the independent variable government repression, which shows the distribution of the variable. The histogram shows that there is a wide range of different government repression levels in the event data.

Table 1: Scale of the independent variable government repression

Scale	Definition
0 =	Explicit report of no presence or no report level of official security forces
1 =	Reports of presence
2 =	Reports of physical intervention (includes crowd dispersal, arrest, and beating but excludes lethal intervention)
3 =	Reports of lethal intervention

Figure 3: Histogram of the independent variable government repression
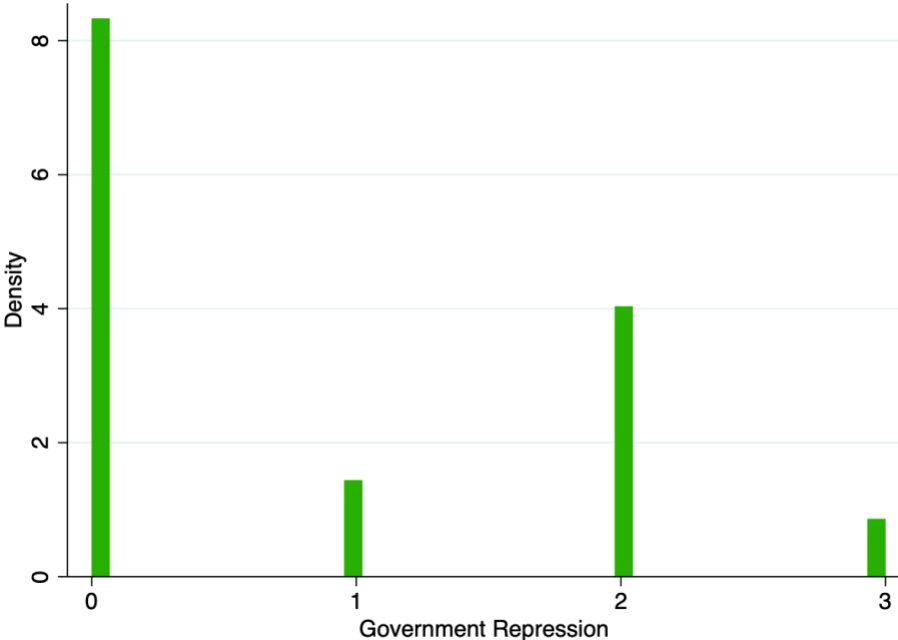
4.2.3 Control variables

When studying the association between the dependent and independent variables, it is also important to control for various underlying factors that affect both variables. The control variables will be retrieved from the Varieties of Democracy (V-dem) dataset (Papada et al.,2023) except from "Number of participants" which will be retrieved from the same dataset as the dependent and independent variable (Weidmann et al.,2019)

Number of participants and **Regime opposition group size** can affect government repression. Previous studies have shown that larger protests are associated with higher levels of repression (Davenport et al.,2005). When the number of participants or the regime opposition group size increases, the anti-government threat also increases, and more resources are needed to repress a bigger group of people. An increase in participants and regime opposition group size can also increase the anti-government mass mobilization events. When they increase, the chances for the protesters to succeed will also increase, and therefore will the mobilization increase (Chenoweth & Stephan, 2008).

The relationship between **GDP per capita**, the dependent and independent variable due to previous research is complex. Higher GDP per capita is often associated with civil liberties and people being satisfied with their life situation which will reduce the probability of government repression (Besley & Persson, 2009) and decrease the anti-government mobilization. However, authoritarian governments can also prioritize economic growth instead of civil liberties. For example, rapid economic growth can encourage leaders to use repression to be able to control the anti-government mobilization to be able to stay focused on the economy (Joyce 1979, 89; Gurr 1986,45). When civil liberties are violated a feeling of injustice can be created and anti-government mass mobilization can be affected and increased (Gurr,1971; Davenport et al, 2005; Sharp, 2012).

Finally, we control for the variable **Internet censorship effort**. Censorship is one of the external factors that can affect the level of anti-government mass mobilization. Media plays an important role for the protesters when it comes to organizing and spreading their message further. If the regime censors the media the possibility to organize a protest will decrease and the level of anti-government mass mobilization (Shultziner & Goldberg, 2019:25-26). If an

authoritarian regime does not want to ban political movements or use repression, they instead censor the internet to make it harder for the mobilization to increase (Chen & Moss, 2018;670).

Table 2 summarizes important statistics about the variables that will be included in the analysis. The number of observations for each variable does not vary much. All variables have over 17.000 observations although there is some disappearance in the dependent variable "**Days until next protest**" which can be explained by the fact that it is a count variable that leaves a missing value behind for the last observation in each country. "**Regime Opposition Size**" observations also vary and can be explained by some missing values.

The standard deviation varies a lot between the variables. "**Days until next protest"** and "**Participants"** have higher numbers of standard deviation which indicates that values in the dataset are relatively far from the mean value and that there may be a large amount of variability in the values of the two variables. The remaining variables have low numbers of standard deviation which indicates that the values in the dataset are close to the mean and there may be a small amount of variability in the values of the variables.

When controlling for the variables "**Regime opposition group size"** and **"Internet censorship effort"** it is important to beware of that V-dem has converted the ordinal scale to interval by the measurement model. Therefore, negative numbers also occur in the scale for example, the mean number for the internet censor effort (Papada et al., 2023).

Table 2: Descriptive statistics over all variables which will be used in the analysis.

Variable	Obs	Mean	Std. dev.	Min	Max	Database
Days until next protest	17.247	19.95941	101.7702	0	5411	MMAD (2019)
Government Repression	17.325	.8318615	1.005618	0	3	MMAD (2019)

Regime Opp.Size	17.248	.8502692	1.223531	-3.816	3.06	V-dem (2023)
GDP per capita	17.325	9.751955	8.755412	.552	91.794	V-dem (2023)
Censor Internet	17.325	-.4275992	1.175434	-4.014	2.156	V-dem (2023)
Participants	17.325	3170.131	36314.88	0	2000000	V-dem (2023)

4.3 Model specification

This study starts with the bivariate relationship, and it is therefore suitable to use a regression analysis. If this result shows statistical significance, it is not certain that this significance is due to the independent variable but may instead appear by other factors. To avoid this problem with so-called spuriousness, I will also use the model to do a multiple regression where I check for underlying variables that can affect both the dependent variables and independent (Esaiasson 2017:97).

To be able to examine if government repression can be positively associated with anti-government mass mobilization in authoritarian regimes it will be appropriate to look at this relationship over time and in several authoritarian countries. Therefore, the research model TSCS, also called time-series cross-section will be applied in this study. Since my dependent variable is a count variable "how many days until the next event" it will also be preferable to use a Poisson model (Allison, 2009).

According to the research, there are some limitations to using TSCS. TSCS can create unobserved heterogeneity which can affect the estimated coefficient and standard errors, which can cause incorrect conclusions about the relationship between the variables (Stock & Watson, 2020). To avoid such problems, I will include country fixed effects, year fixed effects, and clustered standard errors to increase the reliability of the study. Fixed effects are used to control for heterogeneity in the study. For example, in the panel data that tracks the same countries over time, a fixed model would estimate the coefficients based on changes in the dependent and independent variables within each country rather than comparing the differences between each country over time (Allison, 2009). Clustered standard errors are added to the analysis to adjust the standard errors of your estimates to reflect the fact that the

errors within each cluster (in this analysis within each country) may be correlated or independent. This will produce more reliable estimates of standard errors which can affect the result (Cameron et al.,2008).

To improve the accuracy of the findings and address the issue of reversed causality some variables will be lagged by one year in the analysis. GDP per capita, regime opposition group size, and internet censorship effort are all variables who is measured on a yearly level. Therefore, they can sometimes create a simultaneity bias, which occurs when two or more variables are mutually determined at the same time period and may lead to misleading results. To avoid this problem these variables will be lagged by one year in every analysis (Jakobsen & Mehmetoglu 2017:253-254).

5. Result

In the following sections, I will present the results of the analysis. Firstly, a scatterplot and a matrix will be presented to get a better view and understanding of the variables and their relationship to each other. Secondly, the Poisson regression analysis with three different models will be presented to explain the relationship between the dependent and independent variable. Lastly, two different robustness tests for the relationship between the dependent and independent variable will be presented. According to my theoretical framework, I aspect to see a negative relationship between the dependent and independent variables in the results.

Figure 4 shows the distribution of countries' different levels of repression and the days until next protest events occur. By looking at the scatterplot we can already see an indicative result. The figure shows that when the repression level is at zero the days until the next protest is high. When the repression increases to level one, the days until the next protest decrease which is consistent with the hypothesis that repression is positively associated with anti-government mass mobilization. Although, when the repression increases to levels two and three the days until the next protest increases which indicates more of a u-curve relationship which will not support the hypothesis.

Figure 5 presents a correlation matrix that shows how the variables are interrelated. The correlation between the dependent "Days until next protest" and the independent

"Government repression" is positive which indicates that when the government represses the number of days until the next protest slightly increases. The dependent variable is also positive correlated with the variables "GDP per capita" and "Censor Internet". Although, the variables "Regime opposition size" and "Participants" show a negative correlation with the dependent variable, which indicates that the number of days until the next protest will decrease when these variables increase. Except for the dependent variable, the independent variable also has a positive correlation with Regime opposition size", which indicates that when government repression increases, the regime opposition size increases. Further, the independent is negative correlated with "GDP per capita", "Censor internet" ,and "Participants" which indicates that when repression increases these variables will also increase.

However, I would particularly stress that both the figure and table do not provide systematic evidence. Therefore, I will continue with a more rigorous regression analysis where I can control for a series of confounders.

Figure 4: Scatterplot with dependent variable on the x-axis and independent on the y-axis.
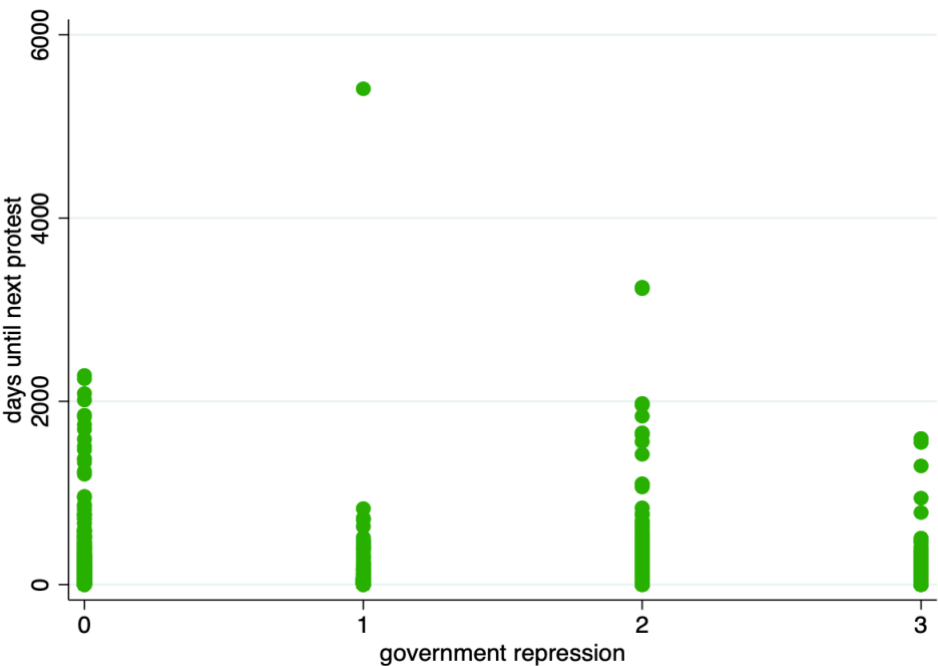
Figure 5: Correlation matrix over the variables which will be used in the analysis.

	Days until next protest	Government Repression	Regime Opp. Size	GDP per. capita	Censor Internet	Number of Participants
Days until next protest	1.0000					
Government Repression	0.0229	1.0000				
Regime Opp. size	-0.0386	0.0492	1.0000			
GDP per capita	0.0023	-0.0481	-0.1790	1.0000		
Censor Internet	0.0080	-0.0804	0.0956	0.0642	1.0000	
Participants	-0.0065	-0.0010	0.0165	-0.0094	-0.0265	1.0000

5.1 Poisson regression analysis

To examine the relationship between the dependent and the independent variable, a Poisson regression analysis will be conducted in three different models. In the first model, I run a bivariate analysis with the dependent and independent variable, including clustered standard errors to identify if there is any bivariate relationship and if so, how it appears. In model two, I examine the relationship between the dependent and independent variable including clustered standard errors with the control variables to identify if they have an impact on the relationship. In the third model, I will use all the variables as in the second model but further expose the variables for harder controls such as country fixed effects, year fixed effects, and clustered standard errors. The main focus will be on model three as it presents the final result of the analysis.

Before analyzing the models, it is important to know how to interpret the coefficient in a Poisson model. If the dependent variable is a count variable and the log of the expected count

is a function of the independent variable then we can interpret the coefficient as follows: for one unit change in the independent variable, the difference in the logs of expected counts would be expected to either increase or decrease by the coefficient, given that all other variables are holding constant.

Table 3: The relationship between government repression and days until next protest

	(Model 1) Days until next protest event	(Model 2) Days until next protest event	(Model 3) Days until next protest event
Government Repression	-0.0149 (-0.42)	-0.0112 (-0.31)	-0.0112 (-0.31)
Regime Opp. Size		-0.553** (-2.98)	-0.553** (-2.98)
GDP capita		-0.0380 (-1.18)	-0.0382 (-1.24)
Censor Internet		-0.262 (-1.50)	-0.263 (-1.51)
Participants		0.00000123 (-0.83)	0.000000122 (-0.83)
Intercept	4.748*** (21.85)	5.222**** (8.64)	
N	17247	17087	17085
Country fixed effect	NO	NO	YES
Year fixed effect	NO	NO	YES
Clustered standards	YES	YES	YES

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Model 1 consists of a Poisson regression analysis with a bivariate relationship between the dependent and the independent variables including clustered standard errors. The value of the coefficient between the variables is measured to -0.0149 which indicates that for one unit increase in the independent variable *government repression*, the dependent variable *days until next protest eventt* would be expected to decrease by 0.0149 units, given that the other variables are held constant in the model. Model 2 consists of a Poisson regression analysis with the dependent and independent variable including clustered standards errors and control for four control variables. After including the control variables, the value of the coefficient between the dependent and independent variable stays negative but decrease slightly to a value of -0.0112. This indicates that for one unit increase in the independent variable *government repression* the dependent variable *days until next protest event* would be expected to decrease by 0.0112 units, given that the other variables are held constant in the model. Although, the p-value in models 1 and 2 is bigger than 0.05 which indicates that the results are insignificant and the probability that the effect is a result of chance is too great to draw any conclusions.

Model 3 consists of a Poisson regression with the same variables as in the second model including control for country fixed effects, year fixed effects, and cluster standard errors. After including these controls, the value of the coefficient between the independent and dependent variables remains negative and at the same value of -0.0112 as in model two. The number of observations in the models decreases slightly from 17247 to 17085. This is probably because some of the control variables are lagged for one-year and therefore will some observations in each country disappear. However, the result is still insignificant because the p-value is above 0.05 which indicates that the probability that the effect is a result of chance is too great to draw any conclusion.

In the appendix, table 7 depicts the results when the control variables are included one by one. The table presents four new models which will give a better understanding of how the control variables separately affect the relationship between the independent and dependent variables.

To summarize, the result indicates that there is a negative relationship between the independent variable government repression, and the dependent variable days until the next

protest. In other words, as the level of government repression increases, the number of days until the next protest tends to decrease, which is also consistent with the hypothesis that when authoritarian regimes increase their level of repression, it increases the likelihood of anti-government mass mobilization. However, the result is insignificant in all three models, and we cannot exclude that the relationship may have occurred by chance and therefore we cannot draw any conclusions regarding the result and the hypothesis need to be rejected. In the following section, I will test the result further with robustness tests.

5.2 Robustness test

To add confidence to the empirical findings, robustness tests are added to the analysis. Both the dependent and independent variable will be subjected to each robustness test to further test the relationship between them.

Table 4: The relationship between each level of government repression separately and days until next protest

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	(Model 5) Days until next protest event
Government Repression 1	0.0218 (0.14)
Government Repression 2	0.0604 (0.71)
Government Repression 3	-0.236 (-1.49)
Regime Opp. Size	-0.553** (-3.06)
GDP capita	-0.0377 (-1.24)
Censor Internet	-0.260 (-1.49)
Participants	-0.00000127 (-0.79)

```
----------------------------------------------------------------
N                         17085
Country fixed effect        YES
Year fixed effect           YES
Clustered standards         YES
----------------------------------------------------------------
```

t statistics in parentheses
* $p<0.05$, ** $p<0.01$, *** $p<0.001$

Table 4 presents model 5 where the independent variable government repression has been recoded into four different binary variables. Level zero of government repression is not included in the table since it presents the reference level, and the other level variables are the change to the reference level. Therefore, it is possible in this model to examine the relationship between each level of government repression and the dependent variable days until next protest.

The result shows that the independent variables government repression level 1 and level 2 have a positive relationship with the dependent variable days until next protest. While the independent variable government repression level 3 has a negative relationship with the dependent variable days until next protest. This result may indicate that a higher level of repression will lead to a decrease in days until next protest. However, the results presented above are all insignificant and we cannot exclude that the relationship may have occurred by chance. Therefore, we cannot draw any conclusions regarding the relationship and hypothesis.

Table 5: The relationship between government repression and days until next protest (logged)

	(Model 6) Logged Days until next protest event
Government Repression	-0.0617*** (-3.64)
Regime Opp. Size	-0.328** (-3.20)
GDP capita	0.00274 (0.12)
Censor Internet	0.00201 (0.03)
Participants	-0.000000134 (-0.53)
Intercept	1.838*** (8.35)
N	17087
Country fixed effect	YES
Year fixed effect	YES
Clustered standards	YES

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t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

To avoid high skewness, the dependent variable is logged to achieve a normal distribution. To be able to log the dependent variable, the variable's values have been increased by +1 since it is not possible to log a zero value. Further, an OLS regression model has been conducted since it is not possible to use a logged variable with a Poisson model. When interpreting the coefficient in the relationship between the variables it is important to know that the coefficient represents the proportional change in the dependent variable associated with a one-unit increase in the independent variable. Table 5 presents model 6 and the result of the logged variable, which indicates that the coefficient value of -0.0617 means that a one-

unit increase in the independent variable is associated with a 6.17% decrease in the dependent variable. This indicates that a one-unit increase in government repression will lead to a decrease in days until next protest, which supports the hypothesis that when authoritarian regimes increase their level of repression, it increases the likelihood of anti-government mass mobilization. The result is significant since the p-value is lower than 0.05 and the effect may be with 95 percent probability not a result of chance. However, there are reasons to interpret the result with caution. Despite having the dependent variable logged, it is still skewed. Using a skewed variable in a regression analysis it can inflate the standard errors of the coefficient estimates, which can create heteroscedasticity and produce inefficient standard errors. This can lead to incorrect conclusions about the significance of the variable, and the result should therefore be read with caution. However, with information from Figure 3 which present a histogram of the dependent variable, we already know that the variation in the variable is very big, and the result may differ depending on which model is running. Therefore, this model will give tentative evidence that the hypothesis is correct, but it is needed to be interpreted with caution.

To summarize, the result from the first robustness tests presented both a negative and a positive relationship but the result was insignificant. The result from the second robustness test shows a negative significant relationship between the dependent and independent variable, which will give tentative evidence that the hypothesis is correct, but considering the circumstances, it is vital to interpret this with caution.

6. Conclusion & discussion

This study has aimed to examine if repression in authoritarian regimes will lead to an increase in anti-government mass mobilization. Previous studies illustrate that there is still a discussion and uncertainty in the field, which divides the research into two groups of scholars. On the one side, scholars find empirical evidence that authoritarian regimes that use repression as a tool can create too high costs for the protesters which will decrease anti-government mobilization (e.g., Tilly, 1978; Beissinger, 2007; Shadmehr & Boleslavsky, 2021). On the other side, scholars find empirical evidence that repression as a tool for authoritarian regimes can instead trigger the protesters and increase anti-government mobilization (e.g., Hess & Martin, 2006; Brockett, 1993; Carr, 2002; Lichbach,1987). Due to

this uncertainty in the field and due to recent developments of autocratization the research question "*Is repression positively associated with anti-government mass-mobilization?*" has been investigated.

Since the dependent variable has been operationalized as a count variable a Poisson regression model has been used. The results are shown in the different models.
In the first model, a bivariate analysis was performed between the dependent and independent variables including clustered standard errors which showed a weak negative insignificant relationship. In the second model, the bivariate analysis was developed to control for four different control variables including clustered standard errors. The control variables seemed to have no major impact on the relationship analysis since the relationship only change with a slight reduction but still stays negative and insignificant. In the third model, the dependent, independent, and control variables are exposed for country fixed effects, year fixed effects, and clustered standard errors. The third model result shows that the relationship remains at the same negative weak insignificant level as in the second model. To add confidence to the empirical finding, I conducted two robustness. The result from the first robustness test with the four new binary independent variables showed both negative and positive relationships but the result was insignificant. The result from the second robustness test with the dependent variable logged shows a negative significant relationship between the dependent and independent variable which will give tentative evidence that the hypothesis is correct, but considering the circumstances, it is needed to be interpreted with caution.

To summarize the result, the empirical findings from the main analysis and the first robustness test did not find evidence to support the hypothesis that when authoritarian regimes increase their level of repression, it increases the likelihood of anti-government mass mobilization. The empirical findings from the second robustness test show a negative significant relationship between the independent and dependent variable which will give tentative evidence that the hypothesis is correct. My analyzes thus presents mixed results, illustrating the importance to conduct further research. Since two of three empirical tests do not support the hypothesis, I reject the hypothesis for now, while noting that the large variation among the observations that might drive the null results could offer further interesting pathways for research.

Regarding the limitations of the research, some areas can be discussed. Firstly, the data retrieved from MMAD collects protests at the event level from different media sources. When identifying protest events through news sources, there is a risk that events for various reasons are not reported or noticed, a so-called news reporting bias (Hellmeier et al.,2018). To increase the validity of the result, similar studies with data from other sources should be conducted. Another limitation of the dataset is that it only included data from the years 2003-2019 which can affect and decrease the generalizing of the result. It is also important to point out that the data set does not provide any information about the relationship of the protest events to each other. If the next protest that occurs in the data is unrelated with the past protest that was repressed it hinders inference on whether repression is associated with protest activity. Secondly, the operationalization and the reliability of the study can be discussed. I choose to operationalize the dependent variable anti-government mass mobilization as a count variable and more specifically "how many days until next protest". There can be some problems with operationalizing the dependent variable as a count variable since the variable can be highly skewed. For example, in the research, some countries only have a few observations between 2003-2019, which creates high values for the dependent variable and may create uncertainty if the repression is the cause of no protests or if there are other reasons for their behavior. Likewise, it is also worth mentioning that also the independent variable could have been operationalized differently. In this paper, I focus on the repression that is directed against protest events and that has been reported by the new articles. Hence, the repression that takes place outside the event is not included, for example, repression in forms of censorship or persecution. Lastly, it is important to beware of the risk of some endogeneity in the empirical findings. Even if methods are used in the analysis to eliminate the risks for reverse causality and unrelated year and country trends, these methods can still fail to address all risks.

Finally, what has this study contributed to the research? The study did not find evidence in line with the hypothesis, but the study has given us new learnings and ideas about the research area that future studies can benefit from. Firstly, the result from the first robustness test where the independent variable government repression was recoded into four different binary variables to examine the relation between the different levels of government repression. The model showed that the relationship between government repression and anti-government

mass mobilization was different depending on the level of government repression. The higher the repression level the higher decrease in days until next protest. Future research could investigate more on the different repression levels and the relationship with anti-government mass mobilization. Lastly, it would be interesting to investigate the mechanisms discussed in the theoretical framework that formed the basis of the hypothesis. Future research could do an analysis to check if these mechanisms affect anti-government mass mobilization and what really motivates the protesters to continue in the face of repression.

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Appendix

Table 6: Selection of countries from MMAD database (Weidmann, 2019)

Country	Start	End
Afghanistan	2009-08-20	2019-12-31
Algeria	2003-01-01	2019-12-31
Angola	2003-01-01	2019-12-31
Armenia	2003-01-01	2019-12-31
Azerbaijan	2003-01-01	2019-12-31
Bahrain	2003-01-01	2019-12-31
Bangladesh	2007-01-11	2008-12-29
Bangladesh	2013-01-01	2019-12-31
Belarus	2003-01-01	2019-12-31
Benin	2019-01-01	2019-12-31
Bolivia	2019-01-01	2019-12-31
Botswana	2003-01-01	2015-12-31
Burkina Faso	2003-01-01	2015-12-31
Burkina Faso	2019-01-01	2019-12-31
Burundi	2003-01-01	2003-04-30
Burundi	2013-01-01	2019-12-31
Cambodia	2003-01-01	2019-12-31
Cameroon	2003-01-01	2019-12-31
Central African Republic	2003-03-15	2019-12-31
Chad	2003-01-01	2019-12-31
China	2003-01-01	2019-12-31
Congo	2003-01-01	2019-12-31
Cuba	2003-01-01	2019-12-31
Democratic Republic of the Congo	2003-01-01	2019-12-31
Egypt	2003-01-01	2012-06-30

Egypt	2013-01-01	2019-12-31
Equatorial Guinea	2013-01-01	2019-12-31
Eritrea	2003-01-01	2019-12-31
Eswatini	2003-01-01	2019-12-31
Ethiopia	2003-01-01	2019-12-31
Gabon	2003-01-01	2019-12-31
Gambia	2003-01-01	2019-12-31
Georgia	2003-01-01	2003-11-23
Guinea	2003-01-01	2010-01-16
Guinea	2013-01-01	2019-12-31
Guinea-Bissau	2003-01-01	2003-09-14
Guinea-Bissau	2013-01-01	2014-12-31
Guinea-Bissau	2018-01-01	2019-12-31
Haiti	2003-01-01	2004-02-29
Haiti	2013-01-01	2019-12-31
Honduras	2016-01-01	2019-12-31
Hungary	2019-01-01	2019-12-31
Iran	2003-01-01	2019-12-31
Iraq	2009-01-01	2011-12-31
Iraq	2017-01-01	2019-12-31
Ivory Coast	2003-01-01	2019-12-31
Jordan	2003-01-01	2019-12-31
Kazakhstan	2003-01-01	2019-12-31
Kenya	2003-01-01	2003-12-31
Kenya	2013-01-01	2019-12-31
Kuwait	2003-01-01	2019-12-31
Kyrgyzstan	2003-01-01	2019-12-31
Laos	2003-01-01	2019-12-31
Lebanon	2009-01-01	2011-12-31
Lebanon	2018-01-01	2019-12-31

Lesotho	2017-01-01	2017-12-31
Liberia	2003-01-01	2003-08-11
Libya	2003-01-01	2012-12-31
Libya	2019-01-01	2019-12-31
Macedonia	2013-01-01	2016-12-31
Madagascar	2009-03-17	2019-12-31
Malawi	2019-01-19	2019-12-31
Malaysia	2003-01-01	2013-12-31
Mali	2013-01-19	2019-12-31
Mali	2019-01-19	2019-12-31
Mauritania	2003-01-01	2019-12-31
Morocco	2003-01-01	2019-12-31
Mozambique	2003-01-01	2019-12-31
Myanmar	2003-01-01	2019-12-31
Namibia	2003-01-01	2015-12-31
Nepal	2003-01-01	2006-04-24
Nicaragua	2013-01-01	2019-12-31
Niger	2009-06-26	2011-03-12
Niger	2019-01-01	2019-12-31
Nigeria	2019-01-01	2019-12-31
North Korea	2003-01-01	2019-12-31
Oman	2003-01-01	2019-12-31
Pakistan	2003-01-01	2008-08-18
Pakistan	2013-01-01	2019-12-31
Papa New Guinea	2016-01-01	2019-12-31
Philippines	2019-01-01	2019-12-31
Qatar	2016-01-01	2019-12-31
Russia	2003-01-01	2019-12-31
Rwanda	2003-01-01	2019-12-31
Saudi Arabia	2003-01-01	2019-12-31
Serbia	2016-01-01	2019-12-31

Singapore	2003-01-01	2019-12-31
Somalia	2012-01-01	2019-12-31
South Sudan	2011-07-09	2019-12-31
Sri Lanka	2013-01-01	2015-12-31
Sudan	2003-01-01	2019-12-31
Syria	2003-01-01	2019-12-31
Tajikistan	2003-01-01	2019-12-31
Tanzania	2003-01-01	2019-12-31
Thailand	2006-09-19	2007-12-23
Thailand	2013-01-01	2019-12-31
Togo	2003-01-01	2019-12-31
Tunisia	2003-01-01	2012-12-31
Turkey	2013-01-01	2019-12-31
Turkmenistan	2003-01-01	2019-12-31
Uganda	2003-01-01	2019-12-31
Ukraine	2012-01-01	2019-12-31
United Arab Emirates	2003-01-01	2019-12-31
Uzbekistan	2003-01-01	2019-12-31
Venezuela	2005-12-04	2019-12-31
Vietnam	2003-01-01	2019-12-31
Yemen	2003-01-01	2014-12-31
Yemen	2019-01-01	2019-12-31
Zambia	2003-01-01	2019-12-31
Zimbabwe	2003-01-01	2019-12-31

Table 7: The effect of the control variables separately on the relationship between the dependent and independent variable.

	(1) Days until next protest	(2.1) Days until next protest	(2.2) Days until next protest	(2.3) Days until next protest	(2.4) Days until next protest	(3) Days until next protest
Government Repression	-0.0149 (-0.42)	-0.00698 (-0.19)	-0.0107 (-0.30)	-0.0101 (-0.28)	-0.00861 (-0.24)	-0.0112 (-0.31)
Regime Opp.Size		-0.469*** (-2.51)				-0.553** (-2.98)
GDP capita			-0.0388*** (-1.09)			-0.0379 (-1.24)
Censor Internet				-0.106*** (-0.63)		-0.262 (-1.52)
Participants					-6.64e-08 (0.08)	-0.00000122 (-0.83)
Intercept	4.748*** (21.85)	4.646*** (21.98)	5.101*** (4.38)	4.400*** (25.29)	4.400*** (25.95)	
N	17247	17087	17160	17160	17160	17085
Country fixed effect	NO	NO	NO	NO	NO	YES
Year fixed effect	NO	NO	NO	NO	NO	YES
Clustered standards	YES	YES	YES	YES	YES	YES

t statistics in parentheses
* $p<0.05$, ** $p<0.01$, *** $p<0.001$

Table 7 above presents each individual control variable and how each of them has controlled for the relationship. As the analysis is designed to check the relationship between the government repression and days until the next protest event these models will not be discussed to the same extent as model 1,2 and 3. However, to be able to examine how each control variable affected the relationship between the dependent and independent variable it will be helpful to develop these analyses. The developed models 2.1-2.4 presents the relation between the control variables and the dependent variable days until the next protest. The model shows that every variable has a negative relationship with the dependent variable, in

other words when the control variables increase the days until the next protest event decreases. However, the control variables do not affect the original relationship between the dependent and independent variable that much since the coefficient both increases and decreases very slightly from the original coefficient between the dependent and independent variable.