# Mobilizing Dissent: The Role of Public Transportation in Non-Violent Movements

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**The Role of Public Transportation in Non-Violent Movements**

Bachelor Thesis Political Science

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Wordcount: 7070

Embargo statement: public

May 2024

# Contents

What is the effect of mobility on dissent? People all around the world travel to access workplace, healthcare and education. Public transport has been developed in order to facilitate these trips, although it has evolved into its own entity. It has become a space for repeated interactions, but also spontaneous discussions. Public transport has shaped opportunities of millions of people, allowing them to easily access remote areas or reach crucial parts of the city (Wellman, 2015).

On the other hand it can also be a tool to constrain people's movements and activities. The segregation system in the United States in the 20th century did not allow black Americans to use buses, or even certain roads (Wellman, 2015). The U.S. government used public transportation as a tool in containing certain citizens' activity, while at the same time maintaining the social hierarchy and limiting opportunities for development. Investing in highways instead of buses and railways was found to be directly benefiting the upper and middle class society, leaving the poor neighbourhoods unable to travel. In some cases, freeways were built directly through impoverished towns, as the governors were aware that their citizens did not have the influence and opportunity for mobilizing and organizing protests against the state's actions (Wellman, 2015).

As public transportation can limit citizens' opportunities, it could also significantly influence their ability of organizing collective action. As many scholars (Chan et al., 2021; Stephen and Chenoweth, 2008; Wood et al., 2021) suggest, civil movements require opportunity structures in order to be successful. Non-violent movements and the factors contributing to their success are studied extensively. Mobilization, level of democracy or economic development are amongst the leading aspects that might influence dissent (Davenport, 2007; Stephen and Chenoweth, 2008). Studying other preexisting structures is highly relevant for developing a more extensive framework on when social movements can succeed. At the same time,

dissidents who are aware of the mechanisms which can decide on their failure or success might have higher chances of making more informed choices.

While many scholars have researched the conditions that lead to success of social movements, there is little literature on the importance of citizens' mobility for dissent. There are many economic, political and cultural structures that need to be considered when forming collective action. Public transportation is crucial for the mobility that enables mass protests and collective action, especially during the times of unrest, when many restrictions can be imposed by the government to prevent mobilization (Chan et al., 2021). This paper focuses on developing a better understanding of the significance of density of public transportation in connection with non-violent movements. As many studies have theorized this connection before, focusing on case studies such as Hong Kong and Angola (Chan et al, 2021, Neto, 2020), this paper intends to form a universal framework. Through the use of OLS analysis, the results present a global perspective on the connection. This study provides a better understanding of the connection of public transport and non-violent movements worldwide, discovering whether mobility has a significant effect only in specific contexts or perhaps is influential regardless of other circumstances.

This paper is structured as follows: first section focuses on reviewing the literature on public transport and non-violent movements, providing important insight into the complicated dynamic between the two concepts. It is followed by the theory section, which elaborates on the mechanisms between mobility and dissent, providing two main explanations for the correlation of the variables, as well as a hypothesis. Following the theoretical framework, I outline the research design, explaining the choice of the variables and propose a statistical analysis. Next, I provide the empirical analysis and the discussion of the results. Finally, the conclusion discusses the main findings of the paper and explains the limitations of the study, along with recommendation for future research.

<u>Literature review</u>

Understanding what influences the success of non-violent movements has been a significant part of literature that analyses dissent (Stephen & Chenoweth 2008, Gleditsch & Rivera, 2017, Hess & Martin, 2006; Kalin et al., 2022). Stephen and Chenoweth (2008) have found non-violent movements to be successful in over half of the cases, whereas violent campaigns succeeding merely 26% of the time (p. 8). That is mainly due to the larger support and participation of the non-violent campaigns, as well as the ability of the movement to maintain international legitimacy. Hess and Martin (2006) provide some insight to the discussion, as the government cannot legitimately repress peaceful protests compared to the violent ones. However if it does happen, the repression might backfire and increase participation even further (Hess & Martin, 2006). Still, the success of non-violent campaigns is not certain, therefore many political scientists focus on trying to understand the factors that contribute to certain outcomes, specifically investigating what conditions, motivations and opportunities must be in place.

Stephen and Chenoweth (2008) have questioned whether international sanctions imposed on the state increase the likelihood of success of dissidents, as it weakens the government and creates a political opportunity for the citizens opposing the regime. Even though the results were not found to be significant, many other scholars have supported that thesis. Following the same logic, external state support will most likely increase government's power and decrease the chances of success of the protestors (Kalin et al., 2022). On the other side, if a great power provides support to a non-violent movements instead of supporting the regime, the chances of the success of the dissidents increase (Kalin et al., 2022). Additionally, the regime's willingness to use violence can improve the chances of success for peaceful movements, as it lowers the government's legitimacy and might lead to greater mobilization. Non-violent resistance are

more likely to provide loyalty shifts of military officials, which also contributes to higher likelihood of success. (Stephen & Chenoweth, 2008).

One factor that Stephen and Chenoweth (2008) found crucial in the success of social movements is the ability to mobilize citizens (p. 41). Larger crowds generate more pressure on the government, which is more likely to negotiate with peaceful protestors. Badillo (2012) found great mobilization one of the most important factor in the Arab Spring protests across the Middle East, as only mass protests were able to force the governments to acknowledge the plethora of existing issues. However, mobilization without organized, collective action, which facilitates achieving common goals, is not sufficient to put consistent pressure on the government (Siegel, 2011).

In order to form  collective action and mobilize people together, some precondition need to be in place. Most notably, the risk of defection or freeriding is more likely without repeated interactions and trust between the participants (Siegel, 2011). One of the factors that can contribute to building a long-lasting collective action is public transportation. Although it was never widely examined by the scholars, some movements were especially reliant on the urban commute. Badillo (2012) explained the importance of public transport during the Arab Spring, as it became a hub for exchange of information, gathering point and facilitated broad mobilization. Additionally, unlike many other spaces, it was not associated with any religion, gender or age, therefore public transportation became a universal and safe area for all the dissidents.

Besides public transport, space and networks have also been a topic discussed in relation to contentious politics by various scholars. Leitner, Sheppard and Sziarto (2008) discussed how geographical factors have affected the actions and mobilization of social movements. The area where people live contributes to the way social relations are established and maintained, including creating a power hierarchy (p. 160). In that situation, space becomes a part of people's

identity, even though it was designed by government that could be hostile to them and systematically constrain them through infrastructure (p. 161). That applies not only to static places, but also to people's mobility and the way they mobilize. Constraining or facilitating mobility can have a large impact on collective action, as activists intend to react quickly to urgent situations and are reliant on efficient mobility to promote their claims (p. 164).

Mobility can be an issue not only in case of sudden demonstrations, but also when planning and building dissent strategies. Nicholls (2009) suggests that greater distance between actors can have a negative influence on their cooperation. The more time needed for commuting between places, the more it reduces the time that can be spent on sharing ideas and engaging in collective action (p. 83). Additionally, Nicholls (2009) suggests that mobility issues can be compensated with more financial resources, however if certain activists do not have the means to obtain swift transportation they are excluded from many crucial events (p. 84). In that way, resource-poor organizations are facing geographical obstacles which are difficult to overcome. Many of them are constrained from expanding their activity and need to focus solely on the local level, which has a limited amount of potential participants (p. 84). If given the opportunity for a quick and affordable mode of transportation, far more activists would be able to mobilize together and expand their support to more distant places.

To overcome mobility constraints as well as facilitate mobilization, public transport needs to be available to all citizens. According to Wellman (2015), public transport equity is crucial in ensuring that minorities have the same life opportunities and are exposed to the broader social interactions. This case was exemplified by the racial segregation in the U.S., which clearly shows how little opportunities Afro-Americans had and were intentionally separated as a way of maintaining social hierarchy. Income level played another crucial role, as poorer Americans even though had access to the transportation, were simply not able to afford it. Wellman (2009) linked the issue of mobility to many other areas, such as education and healthcare, which were

not widely accessible due to the lack of transportation. However, the research fails to address how constrained mobility might affect social movements and mobilization.

The topic of the effect of public transport on dissent is explored by Neto (2020) through analysing Angola's collective transportation. Due to highly controlling regime, there is little space for citizens to mobilize without risking repression. One place that is accessible to the majority of the citizens and a forum for social interaction and displaying dissent is precisely public transportation. Neto (2020) explains how these spontaneous meetings are crucial in sharing information and initiating discussions that later inspire some to fight for change. Given that all of the passengers are form various paths of life that would not have met in other circumstances, it allows for exchanging vastly different perspectives while at the same time discovering issues they share. Even though these simple conversations are not dissent in themselves, they are often the starting point of mobilization and building collective action, ensuring that a wide group of people are sharing your struggles. However, despite an in-depth revision of the case of Angola, Neto does not test the applicability of his theory on a global scale.

Despite all the positive aspects of public transport, Neto (2020) acknowledges that transportation policies are set in place by governments with clear goals, such as controlling territory. As previously mentioned by Wellman (2009), mobility can be constrained in order to divide the society and categorize it. Similarly, Neto (2020) identified public transport's ability to be a weapon to channel the movement in certain areas. Especially when state's regime is authoritarian, they are more likely to be willing to control all the movements of people, including restricting public transport. However, controlling public transport has in certain cases backfired, as it is now a perfect ground for informal assemblies against the regime (Neto, 2020). Being able to control the schedule and location of buses and train lines gives the regime a certain power, although that power cannot influence the daily interactions happening inside the

vehicles (Neto, 2020). Not only that, blocking of roads and strikes of transportation employee's has seemed to become a powerful weapon in the hands of the citizens (Neto, 2020). Due to the government's inability to completely block public transportation as it would result in major economic loses, public transportation can be used both as a forum or a weapon on popular dissent.

Similar conclusions were made by Chan, Ma and Zhou (2021) that explored the case of Hong Kong where public transport acts as a crucial tool for both activists and government. Social movements, that realize the power of mobility, might cause major disturbances that hampers the movement of goods and people, which can contribute to major political and economic issues. On the other hand, social movements were found to rely on public transport for engagement in political events (Chan et al, 2021). Even with road blockages set by the government, the dense net of railways could still deliver thousands of people to the protests. The Hong Kong government is well aware of the great significance of public transport in dissent strategies, therefore it employed its' pre-emptive suspension. The authors manged to present multiple mechanisms, although they did not employ their framework to explain the phenomena on a more universal level.

The relationship between public transport and non-violent movements was emphasized by the lockdown during the pandemic of COVID-19. Wood et al. (2022) conclude that even though restriction of public transportation influence citizen's grievances, it most importantly constraints the opportunity for mobilization. This significant rise of the costs of collective action outweigh people's desire to protest. Similarly to Neto (2020), Wood et al. (2022) point out to the possibility of restricting public transport schedules to decrease mobilization in vulnerable moments of the regime, effectively using it as a weapon.

Given the broad literature on space, mobility and public transport, there are many findings regarding the connection between movement and dissent. While to success of non-violent

movements is highly reliant on mobilization, public transportation was never quantitively examined in relation to mobilization. Most authors, such as Neto (2020) or Chan et al. (2021), focus on theory building and case studies, which does not allow for generalizing their findings. The theories build by the scholars clearly examine the importance of public transport in relation to mobilization and consequently success of non-violent movements. However, that leaves a significant gap in the literature, as the relation was never examined on a global scale. Therefore, this paper will explore the following research question: *What is the effect of public transport on non-violent movements?*

Theoretical framework

The following section provides conceptualization of the main terms, as well as elaborates on all the existing mechanisms linking public transport and movement's success.

The term 'public transport' is understood as a system of vehicles that operates on a fixed route and schedule, as well as it is accessible to the public. It can be both short and long distance and includes buses, trains, trams and metro. Usually it is a more affordable and efficient alternative to individual transportation, such as cars.

Non-violent movement, also known as non-violent resistance, is a method of waging conflict using social, psychological, economic and political means, that does not include violent methods (Stephen & Chenoweth, 2008, p. 9). It is civilian based and can uses multiple different forms, such as peaceful demonstrations, labour strikes, economic boycotts, acts of non-cooperation or non-violent interventions. The aims can vary, usually focus on mobilizing the citizens for or against certain policies, delegitimizing the government or even removing it from power, although it does not necessarily need to focus on the state. These acts are considered to be outside of the traditional political channels, as they take different form than lobbying or legislation. Through large-scale defiance and non-cooperation, the dissidents are pressuring the

adversary to accommodate their needs. As it does not threaten the life of the adversary, the negotiations are more likely to be successful through a peaceful agreement or policy change (Stephen and Chenoweth, 2008, p. 10)

Public transport has been seen as a significant part of mobilization by many scholars. This section will elaborate on all the mechanism on the way public transport allows for mobilization, which increases the chances of the campaign's success. Most notably, public transport is an efficient mobilization tool, especially in case of resource-poor movements (Neto, 2020).

Mobility is crucial for every day of people's life and allows them to travel, meet various people and have access to healthcare or education (Nicholls, 2009). Similarly, in order for people to mobilize in central points of the city, accessible public transport is necessary for citizens to be able to protest. It allows for transporting far more people than individual modes of transportation such as cars, but might also be cheaper and transport people from greater distances. That is especially important in case of road blockades, that are set by the government to limit participation (Chan et al., 2021, p. 556). In the case of social movement in Hong Kong in 2014, access to rail transportation appeared to be crucial for increasing participation given that individual modes of transportation were not accessible (Chan et al, 2021, p. 556). A dense net of public transportation naturally becomes a mean for citizens from all different parts of the city or even the country to reach the location of the demonstration. Additionally, contrary to other repressive measures, blocking mobility by the government might easily backfire (Neto, 2020). People use transportation mainly for reaching places such as workplace, therefore impeding their travel might have serious consequences to the economy (Neto, 2020). Through significantly easier transportation to the protest location and state's inability to restrict public transportation, the mobilization costs are much lower for individuals. Consequently, mass mobilization creates greater pressure on the government and increases the chances of dissidents' success.

This argument can be illustrated by the example of restricted public transportation during the lockdown of COVID-19. The costs of restricting public transportation were temporarily lower for the government, as many citizens were working remotely, therefore it was not causing major damage to the economy. At the same time, the mobilization costs have significantly risen for the citizens, as public transportation was no longer easily accessible. For citizens that were not highly motivated to protest, the need to act on their grievances was not high enough to put extra effort into reaching the location with all the restrictions in place (Wood et. Al, 2022).

Many non-violent campaigns might struggle with the collective action problem, as individual might prefer to accommodate their personal needs instead of pursuing a joint effort which would lead to an optimal result. In case of non-violent resistance, non-participation of some individuals will impede large-scale mobilization, which is necessary for a success of the movement. That is why there is a need for already existing mechanisms that allow for mitigating the collective action problem. Most notably, strong networks between participants encourages, or even pressures participation (Siegel, 2011). However, repeated interactions between potential participants foster trust and mutual understanding, which is crucial for avoiding the collective action problem (Siegel, 2011). That is why, spaces that allow for building such connections are invaluable for effective, large-scale mobilization.

An example of such space is public transport, as it unconsciously plays a role in the early stages of mobilization. Not only it allows for gathering to openly protest against the government or other actors, but it also allows for reaching meeting points for activists gatherings, conferences, classes or even churches (Leitner et al., 2008). Moving through space leads to spreading of ideas as well. According to Leitner et al. (2008), leaders of similar initiatives can strengthen their movements through exchange of information and reaching a broader audience (p. 165). Thus, accessible public transport impacts not only the movement of people, but also spread of

ideas and objects, which as a long-term result increases mobilization (Leitner et al., 2008, p. 165).

Mobilization under a highly repressive and controlling regime is not easy to execute (Neto, 2020). In some authoritarian regimes, where citizens do not have the right to assembly, public transportation becomes one of the only spaces for discussing current events without the fear of surveillance (Neto, 2020, p. 96). As seen on the example of Angola, buses and trains become a micro-world with a 'sample' of people of various age, employment and social status. Many of them continue to travel the same route every day, which allows for repeated interactions between them and gradual build of trust. Neto (2020) points out how meeting people outside of one's standard circles might be a great opportunity for exchange of opinions and better understanding of one another (p. 97). Moreover, citizens start looking beyond their differences and acknowledge their shared struggles, which creates opportunities for building collective action. Such gradual, natural build of trust and understanding creates ideal ground for mobilization, as citizens are already interconnected and aware of the shared struggle.

Given that public transportation is not inherently a space for contentious politics, it is less likely to be under tight control of the government (Neto, 2020, p. 98). It is rather a reflection of the problems of the entire society, where frustration might spread quickly through daily conversations. Even though it is not an active, collective mobilization, it constitutes an important part in creating an opportunity for mobilization (Neto, 2020, p. 97). Having the space for exchange of information and expressing one's political views is the first step to building solidarity among citizens (Neto, 2020, p. 97). Creating a stronger network has been found crucial, as individuals are easily influenced by each other and stronger relations between dissidents have an influence on the success of the social movement (Siegel, 2011). The tight-knit communities are also less likely to experience freeriding and more likely to multiply individual anger (Siegel, 2011). Consequently, if such non-violent movement is met with

repression from the government, the mobilization will only increase, which results in higher chances of success (Siegel, 2011).

Such opportunity of informal mobilization can be illustrated by the role public transport has played during Arab Spring (Badillo, 2012). Even before the mass protests, the grievances were exchanged on a daily basis when going to work or school, in all various modes of public transport. With the start of the demonstrations, stations and public transport vehicles became an easily identifiable gathering space. As the Arab Spring was not to be associated with religion, it also provided a neutral grounds for conversation, unlike mosques that unite only the religious community (Badillo, 2012). Public transport can strengthen the spirit of the collective action, right from the start by exchange of views, up until to mass mobilization that can no longer be ignored by the government. That is why public transport plays such a crucial role in all steps of non-violent campaigns, as it creates the conditions for mass mobilization, which as a result puts pressure on the government and increases the chances for the success of campaign.

Taken together, there are two main mechanisms in place through which public transports impacts the likelihood of the campaign's success. Firstly, in the early stages it allows for informal exchange of opinions and forming connections in a society, which creates conditions for building mass collective action and therefore increase likelihood of dissidents' success. Secondly, public transport constitutes a crucial way of bringing people together into one, designated space and therefore increase mobilization, which when reaches the tipping point ensures movement's success. Overall, public transport facilitates mass mobilization which leads to the success of the non-violent movement. These findings allow for forming the hypothesis: *Public transports has a positive effect on the success of non-violent movements.*

<u>Research design</u>

The dependent variable, success of non-violent movement, will be measured by the 'success' variable from the NAVCO 2.1 dataset. It is a binary variable indicating whether the maximalist outcome has been achieved. The dataset includes hundreds of non-violent campaigns throughout the years, so it is a representative sample for broader conclusions. Accounting for limited data on transportation, there are 93 campaigns by year variables that will be used. As the variable measures only maximalist outcome, it does not account for partial success.

The independent variable in this study is public transport, which will be measured by Rapid Transit to Resident Ratio (RTR) from the Rapid Transit Database. It contains data from 73 different countries from all continents, so it is representative of global dynamics. Unfortunately, the more developed countries are unproportionally more covered than the developing ones which can be a limitation of the study. Rapid transit is defined as public transportation that is separated from other traffic, which is a good representation of my conceptualization of the term. The RTR variable is continuous – it compares the length of rapid transit lines, which include metro, buses and railway, with the countries urban population. Using such variable allows for understanding the density of the public transportation network. Using simply the length of transit lanes would introduce the bias and favour larger countries, whereas RTR variable can avoid it.

In order to test the hypothesis, I use quantitative analysis with a large number of cases from all around the world. Not focusing on any region in specific allows for more generalizability in the findings. Using the Ordinary Least Squares regression will help establishing whether there is a relationship between the two variables. The OLS regression is widely used by political scientists for binary dependent variables, so it will ensure valid results. The unit of analysis will be campaign by year, specifically using non-violent campaigns.

In order to control for additional effects, control variables will be employed, including use of repression, level of democracy, state's population, number of campaign's participants and GDP per capita of each country in the year of the campaign. Repression is measured on an ordinal scale, where 0 indicates lack of repression and 3 means extreme repression. Level of democracy is an ordinal variable, whereas population, number of participants and GDP per capita are all scale variables. Variables repression and number of participants can be found in the NAVCO 2.1 dataset, which focuses specifically on civil movements. Level of democracy is measured by the 'polity' variable from Polity 5 (2018), a widely used dataset measuring level of democracy of a regime, where 10 indicates perfect democracy and -10 extreme autocracy. Population and GDP per capita are found in Penn World Table 10.1 (2015).

Stephen and Chenoweth (2008) suggest that using repression against non-violent movements increases the likelihood of their success, as such unproportional response is often met with greater mobilization. Additionally, the use of repression might backfire due to loyalty shift among the supporters of the regime, as well as increased legitimacy and support of the movement internationally. As this factor has been proved to have an effect on non-violent movements, it is crucial to include it in the model.

Many scholars have argued that authoritarian regimes, as well as lower level of economic development leads to less responsive government, that are more likely to repress than negotiate changes (Davenport, 2007). Lower economic development was also found to be sparking more tension within a country, leading to higher likelihood of conflict (Poe, 2004). With higher levels of economic development the leaders tend to feel more powerful, therefore do not need to engage in conflict and repression in order to increase their perceived strength (Poe, 2004). Higher level of democracy allows for a realistic space for negotiating demands, which increases the likelihood of an agreement between the state leaders and dissidents (Poe, 2004).

As the theoretical model in this paper suggest, public transportation increases the chances of movement's success due to it's ability to mobilize citizens. That is why, including a control variable accounting for number of participants should strengthen the model. As Stephen and Chenoweth (2008) suggest, increased mobilization is crucial for showing the strength of the movement, which could not be overlooked or easily repressed by the government.

Even though findings regarding the influence of population size on the success of non-violent movements are not clear, including it in the analysis is expected to enhance the model. Davenport (2007) suggest that larger populations are harder to control and as a result the state is not capable of effectively repressing the citizens. Therefore, large movements in states with large populations are more likely to be successful.

Empirical analysis

The first model presents a statistical linear regression to observe the effect of density of public transport on the success of non-violent movements. The total number of cases is 176. The data was tested for heteroskedasticity and multicollinearity. Neither one is an issue, as the data is not funnel-shaped and VIF does not exceed 5 in any of the variables.

The results of the first model indicated a null relationship, so an increase of one unit of density of transportation leads to a 0.000 increase in the success of non-violent movement. The explained variance ($R^2$) equals to 0.00, so this model cannot explain the variance of the effect of public transportation on the success of the non-violent movements, whereas adjusted $R^2$ equals to -0.006. However, the results are not statistically significant using 95% confidence interval ($p < 0.05$), therefore the null hypothesis cannot be rejected.

The second model additionally includes level of repression, level of democracy, state's population, number of participants in the campaign and GDP per capita as control variables in order to enhance the relationship between public transportation and success of non-violent

movement. The result indicated a minimal negative relationship, where an increase of one unit of public transportation leads to a 0.003 decrease in the success of non-violent movement. The explained variance ($R^2$) equals to 0,115 therefore this model allows for explaining around 11.5% of the variance of the effect of public transportation on the success of the non-violent movements when keeping repression, level of democracy, population, number of participants and GDP per capita constant. Adjusted $R^2$ is equal 0.084. However, the results are not statistically significant. Thus, using model two, the explanatory power did not improve

| | Model 1 | Model 2 |
|---|---|---|
| (Constant) | 0.180*** | 0.448 |
| | (0.036) | (0.094) |
| Transportation | 0.000 | -0.003 |
| | (0.002) | (0.003) |
| Repression | --- | -0.101** |
| | --- | (0.031) |
| Democracy | --- | -0.003** |
| | --- | (0.001) |
| GDP per capita | --- | -0.001 |
| | --- | (0.000) |
| Population | --- | 0.000 |
| | --- | (0.001) |
| Total participation | --- | -0.001 |
| | --- | (0,000) |
| $R^2$ | 0.000 | 0.115 |

| | | |
|---|---|---|
| Adj R$^2$ | -0.006 | 0.084 |
| N | 176 | 176 |

*Note: OLS regression coefficients with standard errors in brackets.*

[***]p < 0.001, [**]p < 0.01, [*]p < 0.05

While comparing the two models, it is clear that the control variable has improved the model, as it explains more of the variance – from R-square equal to 0.000, which does not explain a lot of the variance, R-square in the second model equals 0.115. Similarly, adjusted R-square has improved from -0.006 to 0.084. Therefore, the second model allows for explaining around 8% of the effect of public transportation on the success on non-violent movements. However, both models are not statistically significant, therefore the addition of the control variables did not improve the results.

Discussion of findings

The correlation between public transportation and success of social movement was not previously examined on a global scale, but rather solely on country-specific case studies. This paper examined a model which manages to explain 8% of the variance when using the control variables. However, as the model is statistically significant, it does not supports the hypothesis of an existing correlation between public transportation and non-violent movements. Even though as Nicholls (2009) explains, mobility is a crucial part of citizens' life, which facilitates access to education, work or healthcare, public transportation in this statistical analysis does not appear to have an effect on non-violent movements.

Given that R$^2$ equals to 0.18, that indicates that only a part of the variance was explained. As it was also statistically insignificant, that can be due to the different importance of public transportation around the world. Even with lower number of public transportation, if a community is adapted to use of other means, such as cars or bikes, that might not impede

mobilization. The culture of commuting vastly differs across countries, so other factors might have greater effect of the success of non-violent movements. The significance of public transportation might also be more visible in cases where the infrastructure in place is suddenly no longer available. Wood et al. (2022) described the effects of COVID 19 and sudden restriction of public transportation, which had an influence on mobilization, and as a result also affected the success of movements. If the infrastructure was never available, the citizens might be more likely to adapt and find other means facilitating mobilization.

The first control variable, repression had a statistically significant results. It predicts that for increase of one unit of repression, the chances of the success of non-violent movements decrease by 10.1%. This finding does not go in line with many of the previous research, that indicates that repressing non-violent movements will most likely backfire (Hess & Martin, 2006). However, without a great mobilization, repression might result in an opposite effect, as it enhances citizens' fear (Siegel, 2011). Direct repression of close members of one's circle might lead to withdrawal from the conflict, which would explain the negative coefficient of repression in the analysis.

The second control variable, level of democracy, also provides significant results. With each unit increase of level of democracy, the chances of the success of a non-violent movement decrease by 3%. Similarly to repression, the results vary from some theories described by political scientists (Davenport, 2007). However, non-violent campaigns in states associated with higher level of democracy might experience less protests against the government, while instead more focus shifts towards private companies (Salehyan and Stewart, 2016). As the NAVCO 2.0 dataset focuses mainly on protests aimed at the government, many of the demonstrations which are aimed at private actors are not accounted for. Despite the negative coefficient, the effect is minimal. As the data uses only 176 campaigns, the results could vastly differ if a wider range of movements were taken into account.

The last three control variables, GDP per capita, population and number of participants of the campaigns do not have a statistically significant effect on the success of non-violent movements. Effect of economic development is widely disputed, which is reflected in this study, as the coefficient equals to -0.001. According to Davenport (2007), lower level of economy can be associated with more repressive regimes, which are then less likely to be overruled due to heavy repression and surveillance. On the other hand, with the growth of state's economy, which increases citizen's dissatisfaction with the government, eventually leading to increased mobilization (Poe, 2004).

Similarly, population's coefficient equals 0.000, hence has no effect on the success of non-violent movements. As the existing literature does not come to an agreement on the existence of the link between the two variables, this paper supports lack of correlation between them (Poe, 2004). The number of citizens participating in the non-violent campaigns also does not seem to have a significant effect. Even though mobilization might be important in determining the results of social movement, there are many other, context-specific factors which might be more determinant in the success or failure of a movement.

Given the difference between states' infrastructure, regimes and level of surveillance, different mechanisms of the effect of public transport on non-violent movements might be in place. Depending on the distances between crucial points of the city, public transportation might play a crucial role or even be almost unnecessary. However, this study does not support the hypothesis that denser net of public transportation seems to have a positive effect on the success of non-violent movements.

Conclusion

Mobility is irreversibly linked to citizens' opportunities, including their opportunities to mobilize and for collective action movements. This paper explored this connection through

examining the effect of public transportation on the success of non-violent movements. The two main mechanisms included mobility facilitating access to various forms of dissent as well as public transportation facilitating stronger networks within the society, which is an important pre-condition for collective action (Chan et al., 2021, Neto, 2020). Without an efficient way of reaching the protest spot, the citizens might reconsider attending it, as the costs are higher than benefits of a long or expensive journey (Wood et al., 2021). Additionally, public transportation, especially railway systems, are less likely to be blocked by the government due to their importance in trade (Chan et al., 2021). With higher attendance, the movements are found to be more likely to be successful, and therefore mobilization might be an important factor on the success of failure of a movement in certain contexts. This argument explains how public transportation benefits both activists and the regime, facilitating both development of economy and mobilization. That is why once the dense net of transportation is in place, there is a smaller likelihood of purposeful impediment of movement of people.

Public commute is equally important in daily life, although it is also the variety of places citizens can reach during a day that allows for swifter movement of ideas. With many places in reach, people can easily access areas where the collective action is being initially build (Neto, 2020). Additionally, repeated interactions which appear while using buses or trains might lead to higher trust between members of society, along with better understanding of the issues that some citizens are facing. Through such trust, citizens are more likely to join dissident movements, as they do not fear uncontrollable crowd, which might turn violent (Ives & Lewis, 2020). As a result, mobilization of more citizens increases the chances of movement's success.

This paper developed two main mechanisms to explore the relation between public transport and non-violent movements, using the theories developed in case studies of Hong Kong and Angola. Furthermore, by using the date from Rapid Transit Database and NAVCO 2.0, I tested the relationship between public transportation and success of non-violent movements with a

linear regression. However, both models, including the model controlling for the effect of repression, level of democracy and GDP per capita, were found to not be statistically significant. Therefore, this paper does not find a relationship between public transportation and the success of non-violent movements.

Despite the statistical analysis not finding a correlation between the two variables, there might be factors which were not taken into consideration, and for that reason results were not significant. Most importantly, the strength of the correlation might vary between states and individual contexts of each campaign. Countries with a more developed road system might not be as reliant on public transportation to reach work, healthcare or education. However, lack of such opportunity is especially disadvantageous to the minorities and underprivileged communities (Wellman, 2015). In order to strengthen their resilience, more research needs to be developed on how the structure and spatiality of public transportation network can affect various parts of society differently.

Even though the study provides some theories on the relationship of transportation and success of non-violent movements, there are still many areas of the topic to be researched and discussed. Most importantly, the data on public transportation is limited to 73 countries, so over half of the states are not included in the study. That is especially important as the majority of the campaigns were located in the areas where the data on public transportation was not available. That can lead to skewed results, especially as the less developed countries are underrepresented in the study, while almost all of the economically developed countries are included. Without the data on the least developed countries, the study cannot represent the trends from all around the world. Gathering data on these missing states could greatly improve the model, especially as one of the proposed mechanisms on public transportation as forums applies mostly to less developed states. As mentioned in the discussion section, the mechanism of using public transportation as a safe space from a controlling regime could be mostly applied to resource-

poor countries, while there are few of them actually represented in the study. Improving the sample numbers could greatly influence the understanding of the effect of public transport on the success of non-violent movements.

The study of public transport is still highly limited, therefore there is little causal mechanism development. To understand the full extent of its role in social movements, research on more case studies from all around the world should be conducted. In that way the studies could be compared and common factors would emerge.

As the theoretical framework is developed with support of case studies, the circumstances of given states and their economies must be taken into consideration. In countries with lower economic development, enhancing the social networks might be the crucial factor that contributes to the development of successful movements. On the other hand, in many developed countries repeated interactions might not have a real contribution to mobilization, while convenient transportation to the protest site would be a decisive factor. Understanding the difference between in what way public transportation contributes to the society is still to be researched, especially as it is crucial to enhance the understanding of the differences between how it might influence social movements in various countries.

Another factor that was not accounted for in this paper was the differences between types of public transportation, specifically the differences between road and rail transportation. Looking at these two variables separately would allow for a more detailed theory. That especially applies to the argument on inability of the government to block railway transportation, as it would simultaneously hinder the economy (Chan et al., 2021). A comparison between the two kinds of transportation and their influence on the success of non-violent movement could expose the disparity of the importance between types of public transport.

While understanding the role of mobility in dissent can significantly improve knowledge, and therefore plans of dissidents, this paper does not consider its importance for the governments. As containing citizens into a certain space can be an effective tool of oppression, the use of public transportation as a weapon in the hands of a regime is not well described. Examining the relationship between governments and their use of influencing mobility could greatly contribute to the debate on the role of public transportation around the world.

There is still much research to be conducted in both areas of non-violent movements and mobility. The latter has been mostly overlooked, especially in relation to dissent. In order to fully understand the organization and mobilization of civil movements, a wider variety of factors need to be explored beyond the mainstream focus on economy and regime type. Public transportation, even though seemingly ordinary part of many lives, could even shape the outcomes of modern revolutions.

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## Model Summary[c]

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | ,005[a] | ,000 | -,006 | ,3879 | |
| 2 | ,340[b] | ,115 | ,084 | ,3702 | 1,777 |

a. Predictors: (Constant), total_kms

b. Predictors: (Constant), total_kms, polity, total_part, pop, repression, gdppc

c. Dependent Variable: success

## ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | ,001 | 1 | ,001 | ,004 | ,950[b] |
| | Residual | 26,181 | 174 | ,150 | | |
| | Total | 26,182 | 175 | | | |
| 2 | Regression | 3,023 | 6 | ,504 | 3,677 | ,002[c] |
| | Residual | 23,159 | 169 | ,137 | | |
| | Total | 26,182 | 175 | | | |

a. Dependent Variable: success

b. Predictors: (Constant), total_kms

c. Predictors: (Constant), total  kms, polity, total  part, pop, repression, gdppc

## Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. | Tolerance | VIF |
| 1 | (Constant) | ,180 | ,036 | | 4,958 | <,001 | | |
| | total_kms | ,000 | ,002 | ,005 | ,063 | ,950 | 1,000 | 1,000 |
| 2 | (Constant) | ,448 | ,094 | | 4,757 | <,001 | | |
| | total_kms | -,003 | ,003 | -,098 | -1,016 | ,311 | ,567 | 1,763 |
| | repression | -,101 | ,031 | -,247 | -3,238 | ,001 | ,900 | 1,111 |
| | total_part | 9,552E-9 | ,000 | ,041 | ,557 | ,578 | ,956 | 1,046 |
| | polity | -,003 | ,001 | -,226 | -3,067 | ,003 | ,964 | 1,038 |
| | pop | ,000 | ,000 | -,034 | -,457 | ,648 | ,946 | 1,057 |
| | gdppc | -1,676E-6 | ,000 | -,023 | -,251 | ,802 | ,644 | 1,554 |

a. Dependent Variable: success

## Excluded Variables[a]

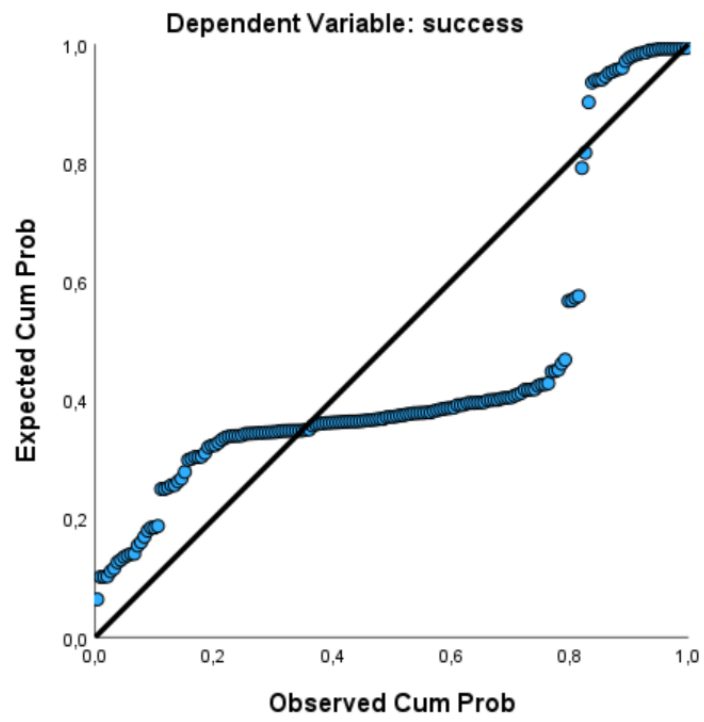| Model | | Beta In | t | Sig. | Partial Correlation | Collinearity Statistics | | Minimum Tolerance |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Tolerance | VIF | |
| 1 | repression | -,255[b] | -3,309 | ,001 | -,244 | ,914 | 1,094 | ,914 |
| | total_part | ,038[b] | ,489 | ,626 | ,037 | ,978 | 1,022 | ,978 |
| | polity | -,239[b] | -3,201 | ,002 | -,236 | ,983 | 1,018 | ,983 |
| | pop | -,064[b] | -,822 | ,412 | -,062 | ,955 | 1,047 | ,955 |
| | gdppc | -,083[b] | -,893 | ,373 | -,068 | ,670 | 1,493 | ,670 |

a. Dependent Variable: success

b. Predictors in the Model: (Constant), total_kms

## Collinearity Diagnostics[a]

| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (Constant) | total_kms | repression | total_part | polity | pop | gdppc |
| 1 | 1 | 1,595 | 1,000 | ,20 | ,20 | | | | | |
| | 2 | ,405 | 1,986 | ,80 | ,80 | | | | | |
| 2 | 1 | 3,619 | 1,000 | ,01 | ,02 | ,01 | ,01 | ,01 | ,02 | ,02 |
| | 2 | ,999 | 1,903 | ,00 | ,06 | ,01 | ,03 | ,27 | ,22 | ,01 |
| | 3 | ,878 | 2,030 | ,00 | ,06 | ,00 | ,15 | ,39 | ,05 | ,09 |
| | 4 | ,837 | 2,079 | ,00 | ,00 | ,00 | ,73 | ,26 | ,01 | ,00 |
| | 5 | ,392 | 3,038 | ,03 | ,12 | ,08 | ,00 | ,01 | ,69 | ,01 |
| | 6 | ,223 | 4,026 | ,01 | ,62 | ,01 | ,07 | ,05 | ,00 | ,87 |
| | 7 | ,052 | 8,343 | ,95 | ,12 | ,90 | ,00 | ,00 | ,01 | ,00 |

a. Dependent Variable: success

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: success



Scatterplot

Dependent Variable: success