

Appendix 1: Descriptive Tables and Figures

Table A.I: Summary Statistics, Cross-Sectional Data

	Mean	Median	Min	Max	SD	Obs.
All Insurgencies with Territory						
Secessionist	0.34	0.00	0.00	1.00	0.48	106
Communist	0.26	0.00	0.00	1.00	0.44	106
Ethnic War	0.06	0.00	0.00	1.00	0.23	106
Rebel Strength	1.15	1.00	0.00	4.00	0.81	106
Duration	9.57	6.00	0.00	54.00	11.26	106
Infant Mortality	88.96	90.95	8.20	254.30	50.41	72
GDPpc	7.21	6.98	5.33	9.88	1.06	71
Democracy	0.22	0.00	0.00	1.00	0.41	97
Population (logged)	16.37	16.26	13.18	20.60	1.51	85
Rugged Terrain	2.57	2.63	0.00	4.31	1.24	105
Competition	2.99	2.00	1.00	12.00	2.29	106
Population (change)	12.51	12.69	8.65	16.63	1.54	72
Secessionists (Territorial Control)						
Communist	0.14	0.00	0.00	1.00	0.35	36
Ethnic War	0.00	0.00	0.00	0.00	0.00	36
Rebel Strength	1.03	1.00	0.00	3.00	0.70	36
Duration	9.56	5.00	0.00	54.00	12.06	36
Infant Mortality	73.73	73.60	9.90	176.30	47.42	25
GDPpc	7.30	7.12	6.00	9.08	0.90	23
Democracy	0.20	0.00	0.00	1.00	0.41	35
Population (logged)	16.92	16.66	13.18	20.60	1.88	30
Rugged Terrain	2.80	2.72	0.00	4.27	1.20	35
Competition	3.33	2.00	1.00	12.00	2.92	36
Population (change)	12.86	12.79	9.41	16.63	1.98	22
Non-Secessionists (Territorial Control)						
Communist	0.33	0.00	0.00	1.00	0.47	70
Ethnic War	0.09	0.00	0.00	1.00	0.28	70
Rebel Strength	1.21	1.00	0.00	4.00	0.87	70
Duration	9.57	6.50	0.00	40.00	10.92	70
Infant Mortality	97.06	100.20	8.20	254.30	50.55	47
GDPpc	7.17	6.89	5.33	9.88	1.14	48
Democracy	0.23	0.00	0.00	1.00	0.42	62
Population (logged)	16.06	15.95	13.22	18.33	1.18	55
Rugged Terrain	2.46	2.44	0.34	4.31	1.24	70
Competition	2.81	2.50	1.00	7.00	1.88	70
Population (change)	12.36	12.59	8.65	14.28	1.28	50

Table A.II: Groups Controlling Territory, Inclusive Services

Croatian Republic of Bosnia and Herzegovina
Dniestr Republic
Eritrean People's Liberation Front
Sudanese People's Liberation Movement-Nasir Faction
Karen National Union
Katanga
Oromo Liberation Front
POLISARIO
Republic of Abkhazia
Republic of Biafra
Republic of Chechnya
Republic of Nagorno-Karabakh
Republic of South Moluccas
Republic of South Ossetia
Shan State Army
United Front for the Liberation of Assam
United Front for the Liberation of Assam Faction
Burmese Communist Party
FRELIMO
Hamas
Hezbollah
Kurdistan Democratic Party
Kachin Independence Army
Patriotic Union of Kurdistan
Pathet Lao
People's Liberation Army
Sudanese People's Liberation Movement
United Islamic Front for the Salvation of Afghanistan
United Wa State Army

Note: Coding for whether the group controlled territory from (Cunningham, Gleditsch, and Salehyan 2009).

Table A.III: Groups Controlling Territory, No Inclusive Service Provision

Anya Nya
Bougainville Revolutionary Army
Alliance of Democratic Forces for the Liberation of Congo
Conseil National de Liberation
Communist Party of India (Maoist)
Communist Party of Nepal-Maoist/United People's Front
Communist Party of Malaya
Democratic Army of Greece
Eritrean Liberation Front
Ethiopian People's Revolutionary Party
Eritrean Liberation Front
Free Aceh Movement
Zapatista Army of National Liberation
Armed Forces of the North
Fuerzas Armadas Revolucionarias de Colombia
Congolese National Liberation Front
Farabundo Marti National Liberation Front
Front for the Restoration of Unity and Democracy
Sandinistas
National United Front of Kampuchea
Hukbalahap Rebellion
Independent National Patriotic Front of Liberia
Nasserite Movement
Indonesian Peoples Army
Khmer Issarak
Kurdistan/KDPI (1946)
Lebanese Front
Lebanese National Movement
Liberation Tamil Tigers of Eelam
Movement of Democratic Forces of Casamance
Mouvement Populaire de l'Azaouad
Mong Tai Army
Mukti Bahini: Liberation Force
Democratic Movement for Malagasy Restoration
Mouvement Pour la Justice et la Paix
Mouvement pour la Liberation du Congo
Mouvement Patriotique de Cote d'Ivoire
Mon People's Front
Mouvement Populaire des Ivoiriens du Grand Ouest
Free Papua Movement
Muslim Brotherhood

Note: Coding for whether the group was secessionist and whether the group controlled territory from (Cunningham, Gleditsch, and Salehyan 2009).

Table A.III: Groups Controlling Territory, No Inclusive Service Provision (Cont.)

National Liberation Front
 New People's Army
 National Patriotic Front of Liberia
 National Liberation Army
 Free Oman Movement
 People's Front for the Liberation of Oman and the Arab Gulf
 Rally for Congolese Democracy
 Rally for Congolese Democracy (Faction)
 Revolutionary United Front
 Renamo
 Somali National Movement
 Shan State Independence Army
 Tigrayan People's Liberation Front
 Taliban
 Tibet
 United Lao National Liberation Front
 National Union for the Total Independence of Angola
 Ushtria Clirimtare e Kosoves
 Ukrainian Insurgent Army
 National Revolutionary Movement
 United Somali Congress (Faction)
 Ushtria Clirimtare e Kosoves
 Viet Nam Doc Dong Min Hoi
 Zviadists

Note: Coding for whether the group controlled territory from (Cunningham, Gleditsch, and Salehyan 2009).

Appendix 2: Controls

In most models, I add insurgency-level control variables that may impact whether a rebel group provides inclusive services. In his text *On Guerrilla War*, Mao Tse-Tung writes that insurgencies need a popular base of support in order to survive, and it is from this base that they derive their strength.¹ As a result, Mampilly (2011) has hypothesized that Maoist groups are more likely to provide social services.² Moreover, these groups may be more inclined to rely on guerrilla strategies and seek out certain types of territory that convey a tactical advantage (mountains, swamps, jungles, etc.). To account for the ideological influence of Mao on other insurgent groups, I created a variable called *Communist* if a group had a socialist or communist ideology. Data from this variable originate from the NSA Dataset casebook. If the NSA Dataset casebook refers to a group as “Marxist,” “Maoist,” “communist” or “socialist,” the observation receives a “1” meaning communist, and a “0” if otherwise. I also triangulate this coding with the *Communist* variable from the “Technologies of Rebellion” dataset,³ which codes all civil wars that had at least one communist insurgency.

Additionally, some ethnic wars are secessionist wars, while almost all secessionist wars have an ethnic component. To ensure that secessionism drives the results, and not ethnicity, I include the variable *Ethnic War*. This variable comes from the NSA Dataset’s variable *ethnic*. It is coded as a “1” if a civil war is an ethnic war, but not a secessionist war. If ethnicity truly drove the results, then non-secessionist, ethnic wars should be associated with a greater likelihood of providing more inclusive governance. Otherwise, coding both secessionist and non-secessionist ethnic wars introduces collinearity.

Another key factor that may incline rebel groups to provide inclusive services is military strength. The strength of a rebel group might positively or negatively impact its propensity to provide inclusive goods. Weinstein⁴ argues that groups lacking economic endowments are more likely to provide social services. Similarly, groups lacking military strength may heavily rely on the civilian population for support. As a result, inclusive goods provision could be a weapon of the

¹Tse-Tung 2000, 43-4

²Mampilly 2011, 78-9

³Kalyvas and Balcells 2010

⁴Weinstein 2006

weak, employed to generate support amongst, and harvest supplies from, the population in which an insurgency is embedded. The National Revolutionary Movement (NRM) in Uganda, for example, began with few military resources and just 27 men, but soon provided social services within the territory it controlled.⁵ This suggests that lower levels of rebel group strength will correspond to an increased likelihood of providing inclusive goods. Alternatively, social service provision could be seen as a corollary of strength: only strong groups have the necessary resources, training and capacity to provide inclusive services. In this case, one would expect rebel group strength and inclusive goods to have a positive relationship with inclusive service provision, indicating that stronger insurgencies are more likely to provide services inclusively. I include a measure of rebel strength from the NSA Dataset, with each insurgent group coded as “much weaker,” “weaker,” “parity,” “stronger,” or “much stronger,” in comparison to the incumbent government they are fighting (operationalized as an ordinal variable ranging from “0” to “4,” respectively).

Finally, I include the variable *Duration* which measures the number of years a rebel group operated. Some insurgencies may not provide inclusive services, let alone any services, simply because they achieve victory too quickly and do not have time to establish these institutions. To account for the time rebels needed to establish their governance, I include this measure.

Insurgencies do not operate within a vacuum, and state-level attributes could be critical determinants of inclusive goods provision. The regime type of the incumbent regime could also influence rebels’ propensity to provide inclusive services. Because democracies foster electoral participation and competition,⁶ insurgencies may need to develop a broader base of support. To create this broad coalition, insurgencies may provide services inclusively. To account for this, I include a binary indicator variable for whether a country is a *Democracy* (coded as “1” if the country is a democracy and a “0” otherwise) from Cheibub, Gandhi and Vreeland.⁷

The level of social development may also impact inclusive goods provision because lower levels of social development means populations have a greater need for services. Insurgencies may be incentivized to provide more inclusive goods when the population has a greater need for these

⁵Weinstein 2006, 68

⁶Mulligan, Gil, and Sala-i Martin 2004

⁷Cheibub, Gandhi, and Vreeland 2010

services. Consistent with previous research,⁸ I measure social development with the *Infant Mortality Rate* variable from the [World Bank \(2012\)](#). Additionally, high levels of state capacity and economic strength may make it more difficult for an insurgency to begin a civil conflict or control territory. However, a stronger state may produce the personnel resources (educated teachers and doctors) to staff an insurgency's social service apparatus. To account for this, I include the variable *GDPpc*, a logged measure of GDP per capita⁹ from Penn World Tables.¹⁰ Measures of extractive capacity or political capacity would better approximate state strength,¹¹ however, these data are geographically and temporally limited, so I use GDP per capita which has greater coverage and does not reduce the sample size drastically.

If insurgents operate in a highly populated area, it may limit their ability to provide inclusive services as the insurgency might require a greater capacity and more resources to meet the demands of that population. Therefore, I include the variable *Total Population (Logged)* from Penn World Tables.¹² I also include measures of *Rugged Terrain*¹³ as a mountainous landscape might make it more difficult for states and insurgencies to control territory, and thus it may also complicate both a state's and an insurgency's ability to provide inclusive goods. Additionally, if insurgents, especially non-secessionist rebels, choose territorial spaces that confer tactical advantage (like mountains or jungles) but are depopulated, this would suppress the ability of insurgents operating in these areas to provide services inclusively.

Finally, in some models, I include two variables to address rival mechanisms. The first variable is *Competition*, a count of the maximum number of rebel groups simultaneously operating in the same country. If inclusive goods provision is a response to intensifying rivalries, an increase in the number of rebel groups should correspond to an increase in the likelihood of inclusive service provision. This count measure was created from the NSA Dataset (2009). Second, I include the variable *Population (Change)* to account for insurgencies' desire to prevent out-migration. Created using data from Penn World Tables, *Population (Change)* measures fluctuations in a

⁸Girod 2012

⁹Fearon and Laitin 2003

¹⁰Heston, Summers, and Aten 2012

¹¹Hendrix 2010

¹²Heston, Summers, and Aten 2012

¹³Fearon and Laitin 2003

country's population from one year to the next. Decreases in the population should correspond to an increased likelihood of insurgencies providing services inclusively.

Table A.IV: **Summary of Controls and Coding**

Variables	Original Variable	Operationalization
Inclusive Services	NA	1=Inclusive education, health 0=No Inclusive Services
Secessionist	21 unique conflict types (NSA Dataset, 2009)	1="Secessionist," "Ethnic Conflict/Secessionist," "Civil War/Secessionist," and "Secessionist/Terrorist" 0=All other conflict types
Territorial Control	"Yes" or "No" (NSA Dataset, 2009)	1=Territorial control 0=No territorial control
Communist	NSA Case notes/ (Kalyvas and Balcels 2010)	1=Communist 0=Not communist
Ethnic War	"ethnic" variable (NSA Dataset, 2009)	1=Ethnic, non-secessionist war 0=Not ethnic or secessionist war
Duration	Year (NSA Dataset 2009)	Number of years an insurgency existed (count)
Rebel Strength	"rebstrength" variable "Much Stronger" "Weaker" "Parity" "Stronger" "Much Stronger" (NSA Dataset, 2009)	0-4 range: 0=Much Weaker, 1=Weaker, 2=Parity, 3=Stronger, 4=Much Stronger
Infant Mortality	Infant Mortality Rate (World Bank 2012)	Infant Mortality Rate
GDPpc	GDP per capita (Penn World Tables 2012)	Log of GDP per capita
Democracy	Democracy Variable (Cheibub, Gandhi, and Vreeland 2010)	1=Democracy 0=Non-Democracy
Population (Logged)	Total Population (Heston, Summers, and Aten 2012)	Total Population (Logged)
Rugged Terrain	Log of Mountainous Terrain (Fearon and Laitin 2003)	Log of Mountainous Terrain
Competition	Number of insurgencies operating simultaneously in a country (NSA Dataset, 2009)	Rebel groups (count)
Population (Change)	Total population (Heston, Summers, and Aten 2012)	Change in population (logged) from one year to the next

Appendix 3: Robustness Checks

In this section, I describe the results of several robustness checks in greater detail. Across all models, the *Secessionist* coefficient remains positive and statistically significant, indicating that the relationship between secessionist long-term goals and inclusive service provision is strong. I describe each robustness check more fully below.

First, in Appendix Table A.V, I replicate Table 2 in the main text, but use the full sample of insurgencies. I interact the *Secessionist* variable with the *Territorial Control* variable. The positive and statistically significant coefficient for *Secessionist* \times *Territorial Control* supports the hypothesis that when secessionist rebels control territory, they are more likely to provide inclusive services. Figure A.1 and Figure A.2 present a side-by-side comparison of the predicted effect of secessionism on inclusive governance using both the stratified sample (Figure A.1a and Figure A.2a) and the full sample of insurgencies (Figure A.1b and Figure A.2b). Because there are so few observations in Table 2, this robustness check is particularly valuable.

Next, in Appendix Table A.VI, I include additional controls that might impact the likelihood that secessionist insurgencies with territorial control provide inclusive goods. In each model of Appendix Table A.VI, I include an additional control variable, before including all additional control variables in Models 9-12 of Appendix Table A.VI. In Model 1, I replace the *Population (Logged)* variable with *Population Change (Logged)*. The results do not support the out-migration hypothesis, while the *Secessionist* variable remains positive and statistically significant.

Because Weinstein¹⁴ predicts that groups with high levels of economic endowments are less likely to provide social services, insurgencies receiving external monetary support may also be less likely to provide social services.¹⁵ Therefore I include a measure for whether a group received non-military aid in Model 2, Appendix Table A.VI. To code this *Non-Military Aid* variable, I used the NSA Dataset in conjunction with UCDP’s External Support Dataset.¹⁶ I code *Non-Military Aid* as “1” if the NSA Dataset lists the observation as receiving “non-military aid,” as opposed to an “endorsement,” “troops” or “military aid.” As some observations might receive two types of

¹⁴Weinstein 2006

¹⁵Salehyan, Siroky, and Wood 2014

¹⁶Högbladh, Pettersson, and Themnér 2011

aid, I also code the *Non-Military Aid* variable as “1” if the UCDP External Support Dataset codes the observation as receiving economic aid in that year.¹⁷ The results are robust to the inclusion of the *Non-Military Aid* variable.

Model 3 of Appendix Table A.VI includes the variable measure *Rebel Size*, operationalized as the log of the best estimate of rebel size from the NSA Dataset. A larger rebel group may be more likely to provide services inclusively because the rebel group has enough people to fill both combat and non-combat positions. Even with the inclusion of the variable *Rebel Size*, *Secessionist* is still positive, large and statistically significant.

In Model 4 of Appendix Table A.VI, I control for the logged number of *Battle Deaths*, as groups that commit more violence may use inclusive services to attract recruits more willing to commit greater violence.¹⁸ Using data from [Lacina and Gleditsch \(2005\)](#), this variable is operationalized as the log of the maximum best estimate of the number of battle deaths that occurred in any year of a rebel group’s existence. When the best estimates were not available, I used the maximum low estimate. Even with the inclusion of this variable, the *Secessionist* coefficient is still robust and positive, further supporting my argument.

Model 5 includes the measure *Competition* for the maximum number of other insurgencies operating within the same country at the same time. Again, however, the *Secessionist* coefficient retains its strong positive result.

Models 6 and 7 of Appendix Table A.VI presents the results of the inclusion of the control variables *Pre-Conflict Education* and *Pre-Conflict Health*. The *Pre-Conflict Education* and *Pre-Conflict Health* variables measure whether the group provided *any* education or any healthcare prior to the onset of civil war. This does not mean a rebel group provided inclusive education or healthcare, but it could mean they provided healthcare for combatants or core members. For example, rebels may be hidden away in the hinterlands training and participating in literacy or mathematics courses, prior to launching any violent campaign. On the other hand, it could suggest that some rebel groups provided services but had not committed enough violence to be considered

¹⁷While an important theoretical variable, because many observations are missing, it reduces the sample size significantly, and so I do not include it in the base models (Models 4-7, Table 1).

¹⁸[Berman and Laitin 2008](#)

an active insurgency. These variables are coded as a “1” if the rebel group provided any education or healthcare prior to conflict onset, and a “0” if they did not. The *Secessionist* coefficient is still positive and robust.

In Model 8 of Appendix Table A.VI, I create binary indicator variables for each category of rebel group strength (five total categories ranging from “Much Weaker” to “Much Stronger”). I include each of these categorical indicators (except one, “Much Stronger,” which is used as a reference category). The *Secessionist* variable remains positive and statistically significant.

Finally, I include all additional control variables in Models 9-12 of Appendix Table A.VI as a difficult test for the hypothesis, and I include region, and region and decade fixed effects (Models 11 and 12, respectively). Across all specifications, *Secessionist* is positive and statistically significant despite the inclusion of seven additional control variables and the related decrease in observations due to the missingness of these data in an already small dataset. The results strongly support the hypothesis that territory-controlling secessionist insurgencies are more likely to provide inclusive goods.

Next, to ensure that the results are not the results of outliers or influential observations, I re-estimate the base model excluding all outliers (Model 1, Appendix Table A.VII). To determine the cases that are outliers, I calculate the Cook’s D of each observation in the sample. The Cook’s D measures the leverage of each observation. Typically, if an observation has a Cook’s D higher than $4/n$ where “ n ” equals the number of observations, the observation is considered an outlier and excluded. After identifying all outliers, I re-estimate the model excluding these observations. The coefficient of *Secessionist* is statically significant and positive, supporting the hypothesis.

I also analyze the data using a “jackknife” estimation technique. Jackknifing entails dropping a single observation from the sample and re-estimating the model, generating predicted coefficients and standard errors. Once the model has been estimated, the observation is replaced, the next observation is excluded, and the model is re-estimated. This process is repeated until all observations have been excluded, at which point the coefficients and standard errors are recalculated. Again, the *Secessionist* coefficient is robust (Model 1, Appendix Table A.VIII).

The dataset I use reflects updates to the original NSA Dataset in lieu of new information.

These updates include changing the coding of territorial control of Hezbollah, Hamas and the Ethiopian People’s Revolutionary Party as well as eliminating the conflict type of “terrorist” which lacked analytic utility. I use alternative conflict-type categories already existing in the NSA Dataset to re-code this variable. Seven rebel groups including Hamas, Hezbollah, Al-Aqsa Military Brigades, Popular Front for the Liberation of Palestine (PFLP), Popular Front for the Liberation of Palestine-General Command (PFLP-GC), National Organization of Cypriot Fighters (EOKA) and Devrimci Sol were coded as terrorist groups only. All but three of these groups are Palestinian liberation organizations. The Palestinian liberation groups are re-coded as “independence/anti-occupation” organizations. Because Hezbollah formed in response to the Israeli occupation and also sought to overthrow the Lebanese government until 1990, Hezbollah is coded as “anti-occupation/civil war.” The EOKA operating in Cyprus is coded as an “anti-colonial” organization as it sought to overthrow Turkish influence. The Devrimci Sol group sought to implement communism in Turkey, and so it is coded as a “communist” conflict. To demonstrate that these updates to the data do not bias the results, I re-estimate the model using the unchanged NSA Dataset. Again, the results are still robust: the *Secessionist* coefficient is positive and statistically significant, supporting the theory (Model 1, Appendix Table A.IX).

Because the dependent variable is hand-coded with global coverage of all insurgencies dating back over 70 years, there may be concerns that results are biased as a result of the available information, or a lack thereof. To address these concerns, I conduct three additional tests. First, in Model 1 of Appendix Table A.X, I limit my sample further to only insurgencies that: 1) controlled territory and 2) had a group size greater than the average (mean) group size of insurgencies that controlled territory. Because there may be limited information available about rebel groups that were smaller, these small insurgencies may be coded as missing or as no service provision, when in fact they did provide services, even inclusive services. By limiting the sample to only large insurgencies, this eliminates the possibility that the results are biased because of a lack of information about small rebel groups. In Model 2 of Appendix Table A.X, I limit my sample again to only insurgencies that operated after 1970 and controlled territory. Here again, there may be a lack of information about rebel groups that existed at earlier time periods. By stratifying

my sample, I account for this potential source of bias. Again, results remain robust. Finally, in Model 3 of Appendix Table A.X I present the results when missing values for inclusive service provision are replaced with “0.” This serves as a check against missing observations needing to be accurately coded as “0.” Across all models in Appendix Table A.X, results are positive and statistically significant suggesting that information bias was not driving the results of my analysis.

To ensure that my operationalization of secessionist groups is not too narrow, I develop three alternative specifications of secessionist rebel organizations. Secessionists as well as anti-occupation and anti-colonial insurgencies may all view their state as being controlled by a “foreign” ruler. Each of these types of groups might seek to overthrow the “foreign” ruler and govern the occupied or colonized state independently. Using the NSA Dataset, if any group’s conflict type includes the term “Secessionist” or “Anti-Colonial,” it is coded as *Secessionist, Broadly Defined* in Model 1 of Appendix Table A.XI. In Model 2, *Secessionist, Broadly Defined* includes secessionist, anti-occupation, and anti-colonial conflict types.¹⁹ Finally, because autonomy conflicts seek an increase in regional power while eschewing outright independence, it is similar to, although not precisely the same as, secessionism. Thus, I include autonomy conflicts, secessionist conflicts, anti-colonial conflicts and anti-occupation conflicts²⁰ in the final measure of *Secessionist, Broadly Defined* (Model 3, Appendix Table A.XI). In all three models, the variable *Secessionist, Broadly Defined* is positive and statistically significant, consistent with the hypothesis.

While the results of the alternative specification of the independent variable are robust, to ensure that results are not simply an artifact of coding the dependent variable, I analyze the same statistical model using an alternative measure of inclusive service provision (Appendix Table A.XII). In Model 1 of Appendix Table A.XII, I code a group as providing inclusive goods if the organization provided either inclusive education or healthcare. This is a lower threshold of inclusive goods provision because organizations need only provide one service inclusively.²¹ Even with this lower threshold, the results continue to support the hypothesis, due to the positive and

¹⁹From the NSA Dataset “Conflict Type” variable.

²⁰Also from the NSA Dataset “Conflict Type” variable.

²¹This coding also increases the number of observations that can be included in the model. This is because in the original measure of inclusive goods provision I use demands that both education and healthcare variables are not missing. For Model 1 of Appendix Table A.XII, if either education or healthcare variables are not missing, this observation is included in the model.

statistically significant *Secessionist* coefficient.

As noted in the sections above, any questionable cases I encountered while coding were first coded as the best estimate and then as an alternative coding. In Model 2 of Appendix Table A.XII, I replace the best estimate with the alternative, secondary measure if a case was questionable or marginal. Despite this alternative specification of the dependent variable, the *Secessionist* coefficient is robust with a statistically significant and positive coefficient, providing further evidence in support of the theory.

In Model 3 of Appendix Table A.XII, I replace the binary *Inclusive Service Provision* variable with an ordinal measure ranging from “0” to “2” that represents the various categories of beneficiaries included in the Insurgent Social Services Dataset. A “0” represents no services; a “1” signifies provision to insurgents, supporters and non-affiliated civilians likely to support the insurgency; while a “2” signifies that insurgents provided services inclusively. A positive and statistically significant coefficient for the *Secessionist* term supports the hypothesis. Again, the results are robust to this alternative specification.

Appendix Tables A.XI and A.XII demonstrate that the results are not an artifact of the construction of the independent or dependent variables. To ensure that the results are not driven by my use of a Linear Probability Model (LPM), however appropriate this estimator may be, I re-estimate the analysis employing a logistic regression estimator (Model 1, Appendix Table A.XIII). Next, in Model 2, I use the ordinal construction of *Inclusive Service Provision* from Model 3 of Appendix Table A.XII, but I use an ordered logistic regression estimator to estimate the effects of *Secessionism* on more inclusive governance. Again, the results are robust, statistically significant, and positive.

Finally, the country-level control variables induce considerable missings. To ensure that results are not an artifact of the missingness generated from the inclusion of these control variables, I use multiple imputation by chained equations in Appendix Table A.XIV. In these models, I create 20 imputations of the variables *GDP per capita*, *Democracy*, *Infant Mortality Rate*, and *Total Population*. Results are robust and the predicted effect size of being a secessionist group is approximately the same as the predicted effect presented in Table 2.

Table A.V: Secessionism Predicts Inclusive Services, Interaction

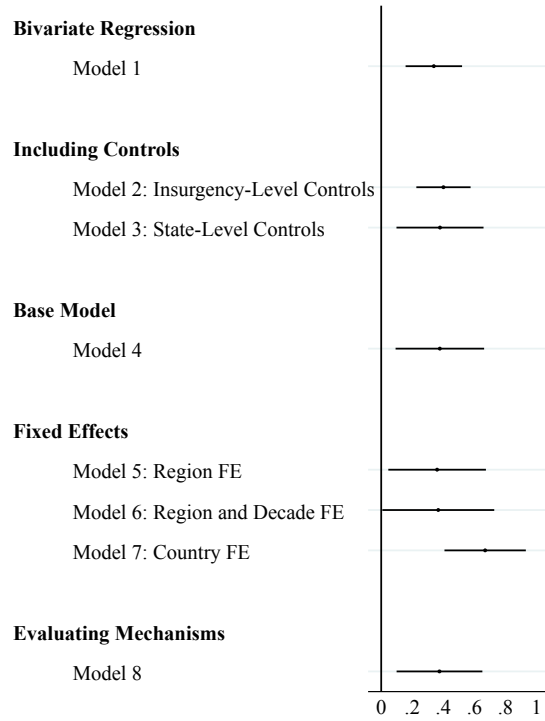
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Secessionist × Territorial Control	0.29** (0.12)	0.32*** (0.12)	0.45** (0.18)	0.47** (0.19)	0.53*** (0.20)	0.57*** (0.19)	0.48+ (0.32)	0.45** (0.20)
Secessionist	0.05 (0.05)	0.02 (0.05)	-0.00 (0.05)	-0.03 (0.08)	-0.06 (0.09)	-0.09 (0.09)	0.22 (0.24)	-0.04 (0.08)
Territorial Control	0.12** (0.05)	0.09** (0.04)	0.07* (0.04)	0.05 (0.05)	0.04 (0.05)	0.03 (0.06)	-0.08 (0.09)	0.06 (0.05)
Communist		-0.01 (0.05)		-0.09 (0.09)	-0.06 (0.09)	-0.06 (0.09)	0.16 (0.24)	-0.09 (0.08)
Ethnic War		0.14+ (0.09)		0.03 (0.10)	-0.01 (0.10)	-0.03 (0.11)	0.23 (0.28)	0.05 (0.09)
Rebel Strength		-0.02 (0.02)		-0.01 (0.04)	-0.02 (0.04)	-0.02 (0.04)	-0.00 (0.04)	-0.02 (0.04)
Duration		0.01*** (0.00)		0.01* (0.00)	0.01* (0.00)	0.01* (0.00)	0.01+ (0.01)	0.01* (0.00)
Infant Mortality			0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00+ (0.00)	0.00 (0.00)	0.00 (0.00)
GDPpc			0.04+ (0.03)	0.05+ (0.03)	0.07* (0.03)	0.07** (0.03)	0.08 (0.07)	0.07** (0.03)
Democracy			-0.04 (0.06)	-0.06 (0.06)	-0.01 (0.07)	0.00 (0.06)	0.06 (0.06)	-0.08+ (0.05)
Population (logged)			0.01 (0.01)	0.01 (0.01)	-0.01 (0.02)	-0.01 (0.01)	0.06 (0.21)	
Rugged Terrain			0.01 (0.02)	0.01 (0.03)	0.02 (0.02)	0.02 (0.02)	1.03 (0.83)	
Competition								0.01 (0.01)
Population (change)								0.01 (0.01)
Constant	0.05** (0.02)	-0.00 (0.03)	-0.64* (0.36)	-0.60+ (0.40)	-1.06*** (0.32)	-1.10*** (0.33)	-4.97** (2.31)	-0.76** (0.35)
Observations	254	253	177	176	176	176	176	165
R ²	0.174	0.252	0.279	0.309	0.346	0.371	0.705	0.304

Standard errors in parentheses. Standard errors clustered by country in all models.

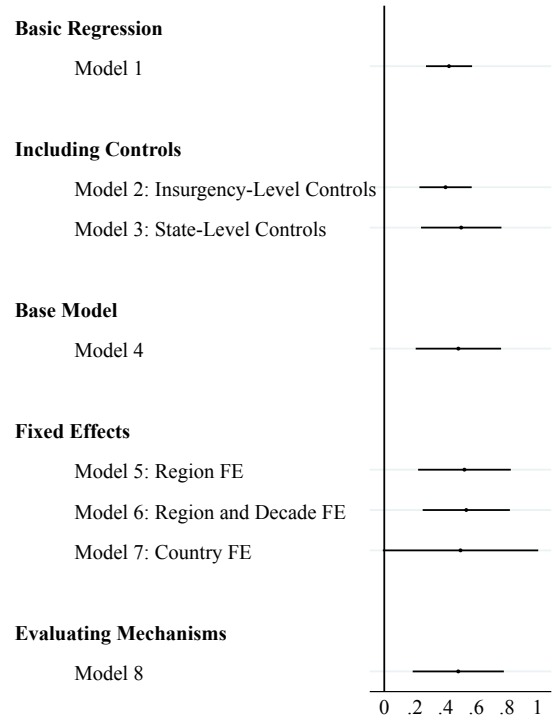
+ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure A.1: Secessionist Coefficient Estimates

(a) Table 2



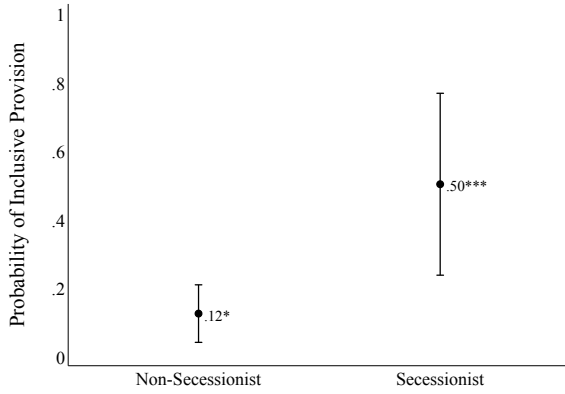
(b) Table A.V



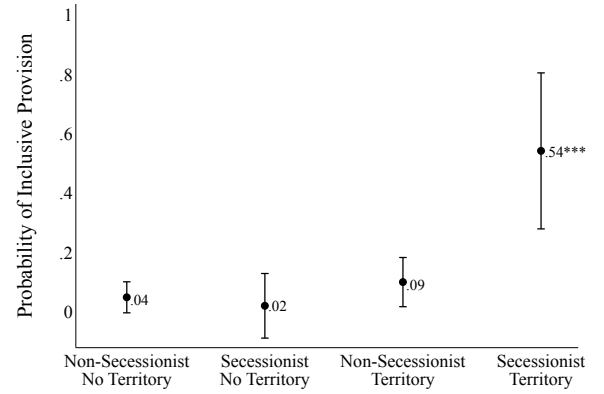
Note: Figure A.1 presents the coefficient estimates for the variable *Secessionist* in Table 2 and Table A.V. Black horizontal lines represent 90% confidence intervals. If the confidence intervals fail to overlap with the vertical black line, then the effect of *Secessionist* is statistically significant. As can be seen, the results are highly similar, positive and robust across all specifications.

Figure A.2: Predicted Effect of Secessionism on Inclusive Services

(a) Model 4, Table 2



(b) Model 4, Table A.V



Note: Figure A.2 presents the predicted probability of *Secessionist* rebel groups of providing inclusive services with all other variables set to their means. As is clear, secessionist rebel groups are between three to six times more likely to provide inclusive services than non-secessionist rebel groups. Moreover, the predicted effects of secessionist and non-secessionist goals on the probability of inclusive service provision is statistically significantly different (in Figure A.2a: $\chi^2 = 5.00$, $p < 0.05$, and in Figure A.2b: $\chi^2 = 7.94$, $p < 0.01$). Black vertical lines represent 90% confidence intervals.

Table A.VI: **Additional Controls**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Secessionist	0.37** (0.17)	0.37** (0.17)	0.35* (0.17)	0.34* (0.19)	0.38** (0.15)	0.31* (0.17)	0.26 (0.20)	0.38** (0.17)
Communist	-0.21 (0.16)	-0.19 ⁺ (0.12)	-0.02 (0.13)	-0.18 (0.15)	-0.17 (0.16)	-0.12 (0.15)	-0.17 (0.14)	-0.17 (0.17)
Ethnic War	0.33 (0.25)	0.81*** (0.16)	0.36 ⁺ (0.24)	0.42 ⁺ (0.29)	0.42 ⁺ (0.28)	0.49 ⁺ (0.29)	0.48 ⁺ (0.29)	0.43 ⁺ (0.27)
Rebel Strength	-0.12* (0.06)	-0.10* (0.05)	-0.16* (0.09)	-0.06 (0.06)	-0.06 (0.06)	-0.05 (0.06)	-0.04 (0.06)	
Duration	0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.01 (0.01)	0.01 (0.01)	0.00 (0.01)
Infant Mortality	0.00 (0.00)	0.00 ⁺ (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
GDPpc	0.13* (0.07)	0.16* (0.08)	0.10 (0.07)	0.09 (0.08)	0.09 (0.07)	0.03 (0.07)	0.03 (0.07)	0.07 (0.08)
Democracy	-0.06 (0.18)	-0.04 (0.14)	0.12 (0.17)	0.00 (0.17)	-0.09 (0.13)	-0.04 (0.12)	-0.03 (0.13)	-0.02 (0.16)
Population (logged)		0.08 (0.05)	0.02 (0.05)	0.05 (0.05)	0.03 (0.04)	0.04 (0.04)	0.05 (0.04)	0.04 (0.05)
Rugged Terrain	0.06 (0.05)	0.10** (0.04)	-0.01 (0.05)	0.07 (0.05)	0.05 (0.05)	0.05 (0.04)	0.05 (0.04)	0.07 (0.05)
Population (change)	0.04 (0.04)							
Non-Military Aid		0.27*** (0.09)						
Rebel Group Size			0.15** (0.06)					
Battle Deaths				-0.00 (0.02)				
Competition					0.04* (0.03)			
Pre-Conflict Education						0.35* (0.19)		
Pre-Conflict Health							0.33* (0.19)	
Rebel Strength Categories								Yes
Constant	-1.56 ⁺ (0.99)	-2.70* (1.45)	-2.15 ⁺ (1.28)	-1.57 (1.52)	-1.40 (1.23)	-0.95 (1.04)	-1.14 (1.06)	-1.43 (1.46)
Observations	51	49	51	53	56	54	54	56
R^2	0.390	0.494	0.436	0.341	0.404	0.452	0.445	0.371

Standard errors in parentheses.

Standard errors clustered by country in all models.

⁺ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.VI: **Additional Controls, Cont.**

	(9)	(10)	(11)	(12)
Secessionist	0.45** (0.20)	0.51** (0.20)	0.45** (0.18)	0.54** (0.21)
Communist	0.03 (0.19)	0.01 (0.24)	0.21 (0.19)	0.26 (0.18)
Ethnic War	0.29 (0.44)	0.30 (0.37)	0.54 (0.44)	0.43 (0.52)
Duration	0.00 (0.01)	-0.00 (0.01)	-0.01 (0.01)	-0.00 (0.01)
Infant Mortality	0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
GDPpc	-0.00 (0.10)	-0.01 (0.13)	0.11 (0.09)	0.13 (0.11)
Democracy	0.01 (0.15)	0.09 (0.15)	0.07 (0.18)	0.12 (0.21)
Population (logged)	-0.06 (0.07)		-0.02 (0.07)	-0.04 (0.07)
Rugged Terrain	-0.04 (0.08)	-0.05 (0.07)	0.03 (0.07)	-0.01 (0.10)
Population (change)		-0.07 (0.07)		
Non-Military Aid	0.06 (0.18)	0.12 (0.14)	0.05 (0.15)	-0.07 (0.19)
Rebel Group Size	0.29** (0.13)	0.33*** (0.09)	0.34** (0.13)	0.42*** (0.15)
Competition	0.01 (0.02)	-0.01 (0.03)	0.00 (0.03)	0.00 (0.05)
Battle Deaths	-0.08* (0.04)	-0.10** (0.04)	-0.07** (0.03)	-0.06* (0.03)
Pre-Conflict Education	0.40 (0.28)	0.24 (0.27)	0.73** (0.28)	0.76** (0.33)
Pre-Conflict Health	-0.14 (0.23)	0.03 (0.23)	-0.38 ⁺ (0.24)	-0.41 ⁺ (0.26)
Rebel Strength Categories	Yes	Yes	Yes	Yes
Constant	-1.47 (1.44)	-1.57 (1.74)	-3.06** (1.29)	-3.14** (1.35)
Region Fixed Effects	No	No	Yes	Yes
Decade Fixed Effects	No	No	No	Yes
Observations	42	39	42	42
R^2	0.721	0.754	0.831	0.861

Standard errors in parentheses.

Standard errors clustered by country in all models.

⁺ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.VII: **Excluding Outliers**

	(1)
Secessionist	0.48*** (0.13)
Communist	-0.20 ⁺ (0.13)
Ethnic War	0.00 (.)
Rebel Strength	-0.05 (0.05)
Duration	0.00 (0.01)
Infant Mortality	0.00*** (0.00)
GDPpc	0.12*** (0.04)
Democracy	-0.07 (0.13)
Population (logged)	0.08* (0.04)
Rugged Terrain	0.10*** (0.03)
Constant	-2.63** (0.98)
Observations	49
R^2	0.602

Standard errors in parentheses.

Standard errors clustered by country in all models.

⁺ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.VIII: **Jackknifing**

	(1)
Secessionist	0.38** (0.18)
Communist	-0.17 (0.15)
Ethnic War	0.42 (0.51)
Rebel Strength	-0.08 (0.07)
Duration	0.00 (0.01)
Infant Mortality	0.00 (0.00)
GDPpc	0.08 (0.09)
Democracy	-0.01 (0.18)
Population (logged)	0.05 (0.06)
Rugged Terrain	0.06 (0.05)
Constant	-1.44 (1.62)
Observations	56
R^2	0.365

Standard errors in parentheses.

+ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.IX: **Original Dataset**

	(1)
Secessionist	0.36** (0.17)
Communist	-0.20 (0.17)
Ethnic War	0.35 (0.28)
Rebel Strength	-0.11 ⁺ (0.07)
Duration	0.00 (0.01)
Infant Mortality	0.00 (0.00)
GDPpc	0.11 (0.08)
Democracy	0.06 (0.18)
Total Population	0.03 (0.05)
Rugged Terrain	0.05 (0.04)
Constant	-1.33 (1.36)
Observations	57
R^2	0.343

Standard errors in parentheses

Standard errors clustered by country in all models.

⁺ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.X: **Correcting for Information Bias**

	(1)	(2)	(3)
	Large Insurgencies	Post-1970 Insurgencies	No Missingness, No Services
Secessionist	0.56** (0.25)	0.35** (0.17)	0.33** (0.15)
Rebel Strength	-0.05 (0.10)	-0.12* (0.07)	-0.08+ (0.05)
Communist	-0.03 (0.45)	-0.22+ (0.13)	-0.17 (0.14)
Ethnic War	0.82** (0.38)	0.37* (0.21)	0.43+ (0.27)
Duration	0.01 (0.02)	0.01 (0.01)	0.00 (0.01)
Infant Mortality	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
GDPpc	-0.07 (0.13)	0.07 (0.08)	0.07 (0.06)
Population (logged)	-0.07 (0.11)	0.04 (0.05)	0.04 (0.04)
Democracy	-0.19 (0.20)	0.04 (0.16)	-0.04 (0.13)
Rugged Terrain	0.02 (0.08)	0.07+ (0.04)	0.06* (0.03)
Constant	1.84 (2.67)	-1.20 (1.44)	-1.29 (0.97)
Observations	31	52	62
R^2	0.384	0.429	0.332

Standard errors in parentheses.

Standard errors clustered by country in all models.

+ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.XI: **Alternative Secessionist Specification**

	(1)	(2)	(3)
Secessionist (Broadly Defined)	0.38** (0.17)		
Secessionist (Broadly Defined)		0.42** (0.15)	
Secessionist (Broadly Defined)			0.45*** (0.15)
Communist	-0.17 (0.15)	-0.14 (0.15)	-0.11 (0.15)
Ethnic War	0.42 ⁺ (0.27)	0.49* (0.29)	0.28 ⁺ (0.16)
Rebel Strength	-0.08 (0.06)	-0.06 (0.06)	-0.05 (0.06)
Duration	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
Infant Mortality	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
GDPpc	0.08 (0.07)	0.06 (0.07)	0.05 (0.07)
Democracy	-0.01 (0.17)	-0.07 (0.16)	-0.06 (0.16)
Population (logged)	0.05 (0.05)	0.05 (0.05)	0.04 (0.05)
Rugged Terrain	0.06 (0.04)	0.07 ⁺ (0.04)	0.07 ⁺ (0.04)
Constant	-1.44 (1.38)	-1.44 (1.35)	-1.23 (1.35)
Observations	56	56	56
R^2	0.365	0.401	0.422

Standard errors in parentheses.

Standard errors clustered by country in all models.

⁺ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.XII: **Alternative Inclusive Services Specification**

	(1)	(2)	(3)
	Any Inclusive Services	Alternative Coding	Ordinal Ranking
Secessionist	0.42** (0.18)	0.36** (0.17)	0.55** (0.23)
Communist	0.04 (0.18)	-0.15 (0.17)	-0.02 (0.28)
Ethnic War	0.39 (0.30)	0.27 (0.29)	0.24 (0.62)
Rebel Strength	-0.04 (0.06)	-0.14* (0.07)	-0.10 (0.12)
Duration	-0.00 (0.01)	0.00 (0.01)	0.01 (0.01)
Infant Mortality	-0.00 (0.00)	0.00 ⁺ (0.00)	0.00 (0.00)
GDPpc	0.09 (0.08)	0.18* (0.09)	0.18 ⁺ (0.12)
Democracy	0.07 (0.19)	0.02 (0.17)	0.22 (0.25)
Population (logged)	0.06 (0.05)	0.01 (0.05)	0.02 (0.08)
Rugged Terrain	-0.00 (0.05)	0.05 (0.05)	0.08 (0.08)
Constant	-1.36 (1.36)	-1.59 (1.37)	-1.38 (2.23)
Observations	57	57	57
R^2	0.382	0.334	0.301

Standard errors in parentheses.

Standard errors clustered by country in all models.

⁺ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.XIII: **Alternative Estimator**

	(1)	(2)
	Logit	Ordered Logit
Secessionist	2.49** (0.97)	1.95** (0.95)
Communist	-1.68 (1.64)	-0.17 (0.86)
Ethnic War	2.42* (1.33)	0.85 (1.94)
Rebel Strength	-1.11* (0.64)	-0.30 (0.37)
Duration	0.03 (0.07)	0.04 (0.04)
Infant Mortality	0.01 (0.02)	0.01 (0.01)
GDPpc	0.56 (0.64)	0.73* (0.44)
Democracy	-0.23 (1.20)	0.58 (0.68)
Population (logged)	0.09 (0.28)	0.15 (0.29)
Rugged Terrain	0.71* (0.37)	0.26 (0.25)
Constant	-9.31 (7.64)	
cut1		
Constant		9.01 (8.27)
cut2		
Constant		11.81 (8.70)
Observations	56	57
Pseudo R^2	0.362	0.175

Standard errors in parentheses

Standard errors clustered by country.

+ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.XIV: **Multiple Imputation**

	(1)
	Public Goods
Secessionist	0.38*** (0.13)
Communist	0.07 (0.12)
Ethnic War	0.51*** (0.18)
Rebel Strength	-0.02 (0.06)
Duration	0.01 (0.01)
Infant Mortality	-0.00 (0.00)
GDPpc	0.02 (0.08)
Democracy	-0.06 (0.12)
Population (logged)	0.02 (0.04)
Rugged Terrain	0.02 (0.04)
Observations	92

Standard errors in parentheses.

Standard errors clustered by country in all models.

+ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix 4: Model Accuracy Diagnostics

In Table A.V, I use the full sample of insurgencies to evaluate whether the interaction of *Secessionist* \times *Territorial Control* predicts rebel inclusive service provision. I conduct a joint significance test to ensure that the interaction of *Secessionist* \times *Territorial Control* and the coefficients of its lower-order terms are statistically different from the coefficient *Secessionist*. The chi-square value is 4.92, indicating the coefficients are significantly different from each other at the 95% level.

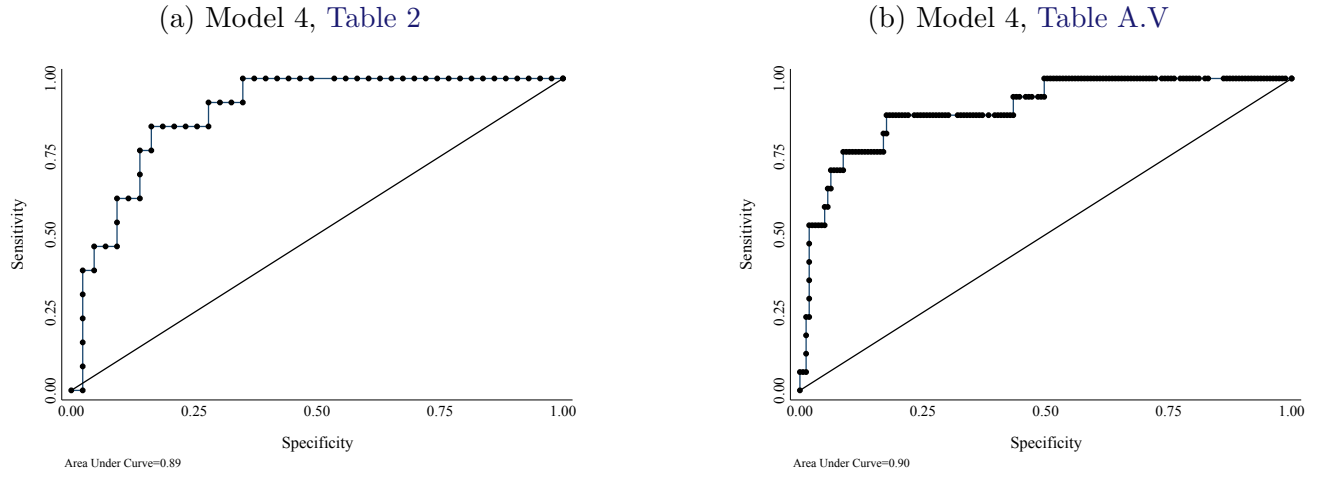
To assess the predictive power of the model, I present a Receiver Operator Characteristic (ROC) plot (Figure A.3). The ROC plot illustrates the relationship between the rate of false positives and the rate of true positives, or how well a model is able to correctly predict inclusive service provision relative to incorrectly predicting inclusive service provision.²² The greater the Area Under the Curve (AUC), the greater predictive accuracy the model has. To ascertain the predictive accuracy of the model, I re-analyze Model 4 of Table 2 but use logistic regression. The AUC is 0.89/1.00, indicating that the model correctly predicts 89% of cases. Moreover, the *Secessionist* variable has the greatest predictive accuracy in comparison to all other variables (the AUC is 0.69/1.00). As a point of comparison, I determine the AUC of Model 4 of Table A.V, analyzed using logistic regression, and present the results in Figure A.3b. Again, the AUC is extremely high at 0.90/1.00.

To assess the model's ability to predict future response cases, I re-estimate Model 4 of Table 2 using a bootstrapping technique of sampling with replacement. The bootstrapping technique involves creating a sub-sample of data whereby observations have an equal probability of being selected for the sample, and the same observations may be included multiple times in the sub-sample (Efron and Gong 1983; Efron and Tibshirani 1997). The model is re-estimated multiple times using this limited sample, and the coefficients and standard errors are re-calculated. In this case, I set the sub-sample size to 30 observations, about one-third of the number of insurgencies that control territory. I then replicate the model 500 times. The results are robust, indicating that the model would perform well in its ability to predict future out-of-sample cases (Appendix

²²Ward, Greenhill, and Bakke 2010; Young 2013

Table A.XV).

Figure A.3: ROC Curves of Predicted Accuracy



Note: The figure demonstrates the predictive power of Model 4 in Table 2. The AUC for Model 4, Table 2 is 0.89 and the AUC for Model 4, Table A.V is .90 meaning that the model is highly capable of correctly predicting insurgencies likely to provide inclusive services.

Table A.XV: **Bootstrapping**

	(1)
Secessionist	0.38*
	(0.22)
Communist	-0.17
	(0.20)
Ethnic War	0.42
	(0.36)
Rebel Strength	-0.08
	(0.08)
Duration	0.00
	(0.01)
Infant Mortality	0.00
	(0.00)
GDPpc	0.08
	(0.11)
Democracy	-0.01
	(0.26)
Population (logged)	0.05
	(0.07)
Rugged Terrain	0.06
	(0.07)
Constant	-1.44
	(1.86)
Observations	56
R^2	0.365

Standard errors in parentheses

+ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

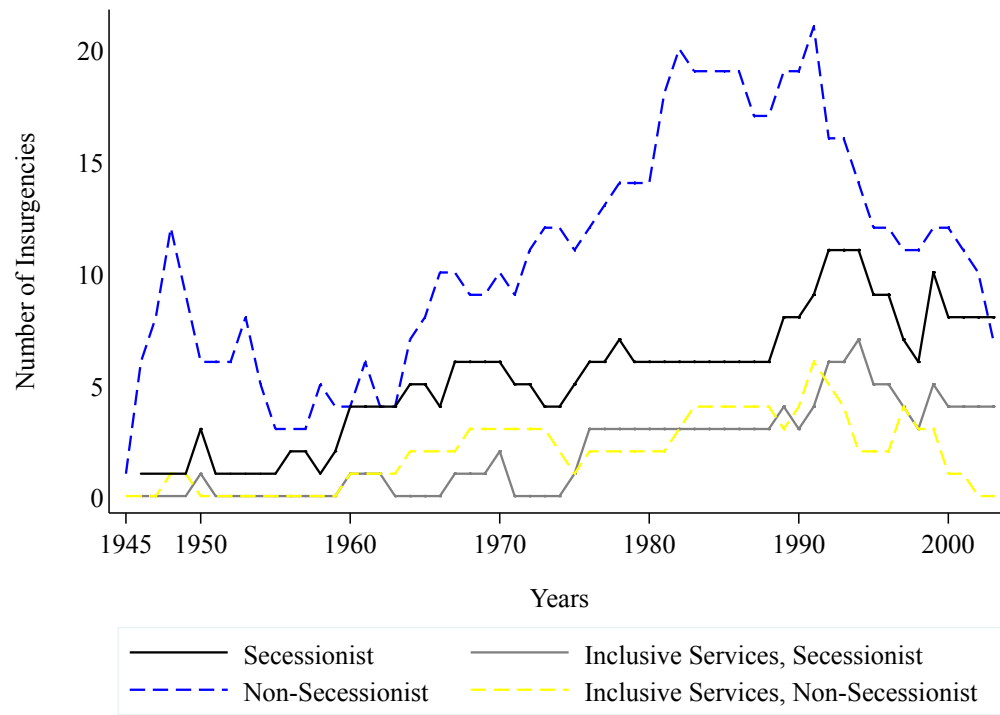
Appendix 5: Replication of Analysis Using Panel Data

In this Appendix, I replicate the entire analysis contained in the main text, Appendix 3 and Appendix 4 using the NSA Dataset (2009) in its original panel construction.²³ This allows me to measure the effects of important time-variant variables such as the dependent variable (*Inclusive Provision*) and key variables that test rival mechanisms: *Competition* and *Population (change)*. I begin this appendix by first presenting some descriptive figures: Figure A.4 and Figure A.5. As is clearly seen, from 1945 to 2003, the proportion of secessionist rebel groups providing inclusive services far out-weighs the proportion of non-secessionist insurgencies providing inclusive provision. I then present summary statistics from the panel data, and replicate Table 2 and Table A.V from the main text. Figure A.6 presents the predicted effects of secessionism on the probability of providing inclusive services. I next replicate all tables in Appendix 3 and 4. Results remain substantively impactful and statistically significant. Finally, Figure A.8 and Figure A.9 compares *Secessionist* coefficient estimates using the cross-sectional and panel datasets. These figures demonstrate the comparability in both substantive effect and statistical significance between these two sets of data.

There are two differences between the cross-sectional analysis in the main text, Appendix 3 and Appendix 4, and the panel data analysis presented here. First, all time-variant state-level variables, the dependent variable (*Inclusive Service Provision*), and the *Competition* variable change from year to year. Second, the *Duration* variable is also altered slightly to measure years since an insurgency began, so this variable also changes from year to year. Although the sample size is larger, I still rely on a LPM in most models for consistency and ease in comparing estimates from both the panel and cross-sectional data. Again, standard errors are clustered by country in almost all models.

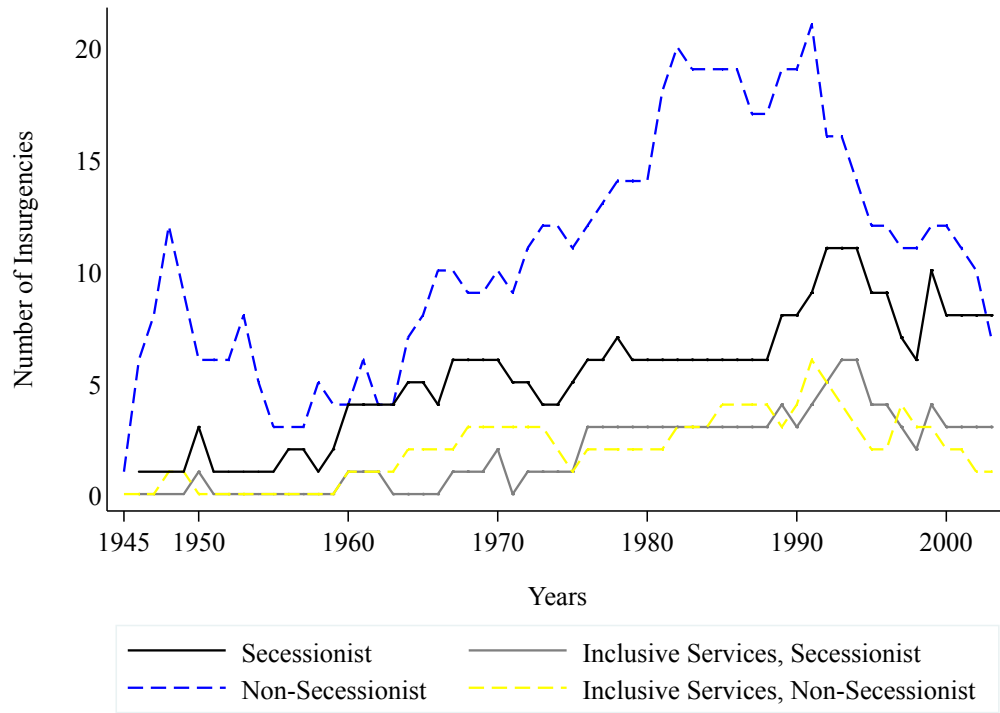
²³This approach is similar to Fortna (2015).

Figure A.4: Insurgencies Providing Inclusive Education, by Strategic Goals



Note: The figure represents the number of insurgencies that provided inclusive education over time, conditional on territorial control. Dashed lines represent non-secessionist insurgencies and solid lines represent secessionist insurgencies. The proportion of secessionist insurgencies providing inclusive education to all secessionist insurgencies is much greater than the proportion of non-secessionist insurgencies providing inclusive education to all non-secessionist insurgencies. These data provide support for the hypothesis that secessionist insurgencies are more likely to provide inclusive services.

Figure A.5: Insurgencies Providing Inclusive Health, by Strategic Goals



Note: The figure represents the number of insurgencies that provided inclusive health over time, conditional on territorial control. Dashed lines represent non-secessionist insurgencies and solid lines represent secessionist insurgencies. The proportion of secessionist insurgencies providing inclusive health to all secessionist insurgencies is much greater than the proportion of non-secessionist insurgencies providing inclusive health to all non-secessionist insurgencies. These data provide support for the hypothesis that secessionist insurgencies are more likely to provide inclusive services.

Table A.XVI: Summary Statistics, Panel Data

	Mean	Median	Min	Max	SD	Obs.
All Insurgencies with Territory						
Secessionist	0.32	0.00	0.00	1.00	0.47	943
Territorial Control	1.00	1.00	1.00	1.00	0.00	943
Communist	0.41	0.00	0.00	1.00	0.49	943
Ethnic War	0.10	0.00	0.00	1.00	0.30	943
Rebel Strength	0.87	1.00	0.00	4.00	0.76	943
Duration	10.24	7.00	0.00	54.00	10.62	943
Infant Mortality	84.38	81.10	5.20	259.20	45.62	753
GDPpc	7.34	7.28	5.12	10.05	1.12	632
Population (Logged)	16.61	16.68	13.12	20.76	1.24	701
Democracy	0.29	0.00	0.00	1.00	0.45	876
Rugged Terrain	2.89	3.50	0.00	4.31	1.10	942
Competition	3.16	2.00	1.00	12.00	2.22	943
Population (Change)	12.87	13.05	7.13	16.66	1.27	642
Secessionists (Territorial Control)						
Communist	0.27	0.00	0.00	1.00	0.45	304
Ethnic War	0.00	0.00	0.00	0.00	0.00	304
Rebel Strength	0.70	1.00	0.00	3.00	0.60	304
Duration	11.43	7.50	0.00	54.00	12.33	304
Infant Mortality	81.74	80.70	9.00	178.00	38.31	256
GDPpc	7.15	7.18	5.49	9.24	0.87	168
Population (Logged)	17.22	17.04	13.15	20.76	1.48	183
Democracy	0.22	0.00	0.00	1.00	0.41	300
Ethnic War	0.99	1.00	0.00	1.00	0.11	304
Rugged Terrain	3.12	3.60	0.00	4.27	1.08	303
Competition	3.70	2.50	1.00	12.00	2.66	304
Population (Change)	13.25	13.09	7.52	16.66	1.59	167
Non-Secessionists (Territorial Control)						
Communist	0.47	0.00	0.00	1.00	0.50	639
Ethnic War	0.15	0.00	0.00	1.00	0.36	639
Rebel Strength	0.96	1.00	0.00	4.00	0.81	639
Duration	9.67	6.00	0.00	40.00	9.66	639
Infant Mortality	85.73	82.70	5.20	259.20	48.95	497
GDPpc	7.41	7.49	5.12	10.05	1.19	464
Population (Logged)	16.40	16.45	13.12	18.42	1.06	518
Democracy	0.32	0.00	0.00	1.00	0.47	576
Ethnic War	0.15	0.00	0.00	1.00	0.36	639
Rugged Terrain	2.78	3.10	0.34	4.31	1.09	639
Competition	2.91	2.00	1.00	7.00	1.92	639
Population (Change)	12.74	13.03	7.13	14.62	1.11	475

Table A.XVII: Secessionism Predicts Inclusive Service Provision (Panel)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Secessionist	0.26*** (0.09)	0.28** (0.12)	0.27*** (0.10)	0.26** (0.11)	0.18* (0.10)	0.21* (0.11)	0.49** (0.18)	0.27** (0.11)
Communist		0.05 (0.13)		-0.09 (0.16)	-0.01 (0.15)	0.04 (0.12)	0.64*** (0.13)	-0.07 (0.17)
Ethnic War		0.07 (0.14)		-0.11 (0.14)	0.09 (0.12)	0.15 (0.13)	0.57*** (0.16)	-0.18 (0.16)
Rebel Strength		-0.01 (0.06)		-0.08+ (0.05)	-0.04 (0.05)	-0.05 (0.04)	-0.02 (0.07)	-0.09+ (0.06)
Duration		0.01 (0.01)		-0.00 (0.00)	-0.01 (0.00)	-0.01** (0.00)	-0.01 (0.01)	-0.00 (0.00)
Infant Mortality			0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)
GDPpc			0.07 (0.08)	0.05 (0.08)	0.12 (0.09)	0.18** (0.07)	-0.29* (0.15)	0.04 (0.08)
Democracy			-0.18** (0.07)	-0.20** (0.09)	-0.01 (0.07)	-0.06 (0.08)	0.04 (0.05)	-0.20** (0.09)
Population (Logged)			0.08** (0.04)	0.06+ (0.04)	0.08* (0.04)	0.08* (0.04)	0.33* (0.20)	
Rugged Terrain			0.01 (0.04)	0.03 (0.04)	0.06 (0.05)	0.09** (0.04)		0.03 (0.05)
Population (Change)							0.03 (0.05)	
Competition							0.02 (0.02)	
Constant	0.19*** (0.06)	0.06 (0.15)	-1.77* (1.02)	-1.14 (1.13)	-2.33* (1.24)	-3.12*** (1.11)	-3.33 (3.71)	-0.50 (1.17)
Region FE	No	No	No	No	Yes	Yes	No	No
Decade FE	No	No	No	No	No	Yes	No	No
Country FE	No	No	No	No	No	No	Yes	No
Observations	823	823	543	543	543	543	544	504
R ²	0.072	0.139	0.204	0.225	0.305	0.370	0.653	0.210

Standard errors in parentheses

Standard errors clustered by country in all models but Model 1.

+ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.XVIII: Secessionism Predicts Inclusive Services, Interaction (Panel)

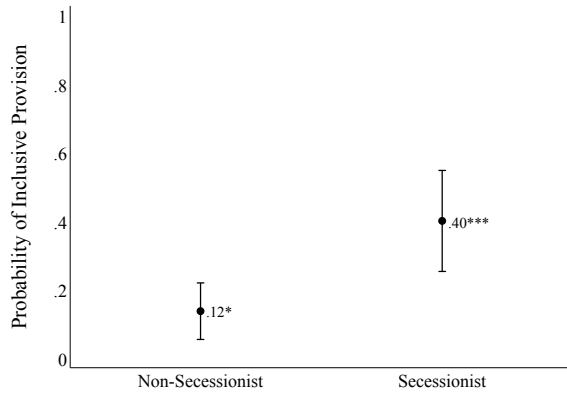
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Secessionist \times Territorial Control	0.26*** (0.09)	0.26*** (0.10)	0.35*** (0.09)	0.38*** (0.10)	0.46*** (0.12)	0.46*** (0.12)	0.25*** (0.10)	0.32*** (0.10)
Secessionist	0.00 (0.05)	-0.00 (0.06)	-0.03 (0.05)	-0.07 (0.08)	-0.16* (0.10)	-0.15* (0.09)	0.12* (0.07)	-0.03 (0.06)
Territorial Control	0.12** (0.06)	0.08 (0.06)	0.06 (0.05)	0.07 (0.06)	0.06 (0.06)	0.07 (0.05)	0.01 (0.06)	0.08 (0.06)
Communist		-0.02 (0.07)		-0.10 (0.09)	-0.09 (0.08)	-0.08 (0.08)	0.11 (0.12)	-0.08 (0.08)
Ethnic War		-0.00 (0.08)		-0.08 (0.08)	-0.15+ (0.09)	-0.14+ (0.09)	0.09 (0.10)	-0.07 (0.08)
Rebel Strength		0.01 (0.03)		-0.02 (0.02)	-0.05* (0.02)	-0.05** (0.02)	-0.00 (0.05)	-0.02 (0.03)
Duration		0.01+ (0.01)		0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)
Infant Mortality			0.00* (0.00)	0.00* (0.00)	0.00** (0.00)	0.00** (0.00)	0.00 (0.00)	0.00+ (0.00)
GDPpc			0.06* (0.04)	0.06* (0.03)	0.06* (0.03)	0.07* (0.04)	-0.05 (0.05)	0.04 (0.03)
Democracy			-0.10+ (0.06)	-0.11* (0.06)	-0.06 (0.05)	-0.07 (0.05)	0.00 (0.03)	-0.08* (0.04)
Population (Logged)			0.03* (0.01)	0.03** (0.01)	0.00 (0.02)	0.00 (0.02)	0.11 (0.08)	
Rugged Terrain			0.02 (0.03)	0.04 (0.03)	0.06** (0.03)	0.06** (0.03)		0.02 (0.03)
Population (Change)								0.01 (0.01)
Competition								0.01 (0.01)
Constant	0.07* (0.04)	0.02 (0.06)	-1.02*** (0.36)	-0.98** (0.39)	-1.09*** (0.34)	-1.17*** (0.37)	-1.55 (1.17)	-0.54* (0.31)
Region FE	No	No	No	No	Yes	Yes	No	No
Decade FE	No	No	No	No	No	Yes	No	No
Country FE	No	No	No	No	No	No	Yes	No
Observations	1897	1896	1384	1383	1383	1383	1387	1304
R^2	0.116	0.160	0.191	0.210	0.267	0.283	0.562	0.185

Standard errors in parentheses. Standard errors clustered by country in all models.

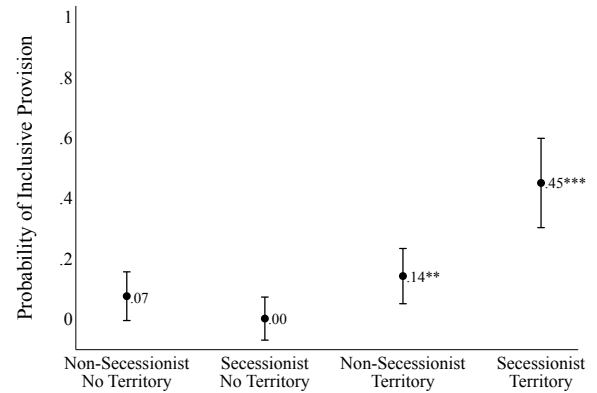
+ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure A.6: Predicted Effect of Secessionism on Inclusive Services (Panel)

(a) Model 4, Table A.XVII



(b) Model 4, Table A.XVIII



Note: Figure A.2 presents the predicted probability of *Secessionist* rebel groups of providing inclusive services with all other variables set to their means. As is clear, secessionist rebel groups are between two to three times more likely to provide inclusive services than non-secessionist rebel groups. Moreover, the predicted probability between secessionist and non-secessionist groups is statistically significantly different, as confidence intervals fail to overlap. Black vertical lines represent 90% confidence intervals.

Table A.XIX: **Additional Controls (Panel)**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Secessionist	0.26** (0.11)	0.19+ (0.12)	0.31*** (0.11)	0.23** (0.11)	0.27** (0.11)	0.24** (0.12)	0.22* (0.13)	0.27** (0.11)
Communist	-0.08 (0.17)	-0.10 (0.17)	-0.03 (0.15)	-0.08 (0.16)	-0.07 (0.16)	-0.03 (0.14)	-0.08 (0.13)	-0.10 (0.19)
Ethnic War	-0.20 (0.15)	-0.10 (0.12)	-0.20 (0.15)	-0.06 (0.13)	-0.11 (0.13)	-0.03 (0.13)	-0.07 (0.12)	-0.14 (0.13)
Rebel Strength	-0.11** (0.05)	-0.05 (0.06)	-0.19** (0.09)	-0.07 (0.05)	-0.06 (0.05)	-0.05 (0.05)	-0.05 (0.04)	
Duration	-0.00 (0.00)	-0.00 (0.00)	-0.01+ (0.00)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)
Infant Mortality	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)
GDPpc	0.05 (0.08)	0.07 (0.08)	0.05 (0.08)	0.06 (0.07)	0.05 (0.08)	0.01 (0.07)	0.01 (0.08)	0.05 (0.08)
Democracy	-0.19** (0.09)	-0.25** (0.10)	-0.09 (0.10)	-0.16* (0.08)	-0.22** (0.08)	-0.17** (0.07)	-0.16* (0.08)	-0.21** (0.09)
Rugged Terrain	0.04 (0.05)	0.04 (0.05)	-0.01 (0.04)	0.05 (0.04)	0.02 (0.05)	0.04 (0.04)	0.03 (0.04)	0.04 (0.05)
Population (Change)	0.04 (0.04)							
Population (Logged)		0.10** (0.04)	0.02 (0.05)	0.06 (0.04)	0.05 (0.04)	0.04 (0.04)	0.04 (0.03)	0.06 (0.04)
Non-Military Aid		0.15* (0.08)						
Rebel Group Size			0.13** (0.05)					
Battle Deaths				0.02** (0.01)				
Competition					0.02 (0.02)			
Pre-Conflict Education						0.28+ (0.18)		
Pre-Conflict Health							0.24* (0.14)	
Rebel Strength Categories								Yes
Constant	-0.69 (1.11)	-1.93+ (1.15)	-1.51 (1.10)	-1.33 (1.09)	-0.95 (1.20)	-0.56 (1.01)	-0.57 (1.06)	-1.16 (1.04)
Observations	504	422	510	526	543	500	500	543
R^2	0.202	0.226	0.291	0.213	0.234	0.252	0.256	0.230

Standard errors in parentheses

Standard errors clustered by country in all models.

+ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.XVIII: **Additional Controls, Cont. (Panel)**

	(1)	(2)	(3)	(4)
Secessionist	0.28 ⁺ (0.17)	0.27* (0.16)	0.21 ⁺ (0.14)	0.30* (0.16)
Communist	0.13 (0.22)	0.13 (0.22)	0.27 (0.20)	0.34** (0.15)
Ethnic War	-0.38 ⁺ (0.25)	-0.49** (0.23)	-0.01 (0.32)	0.11 (0.29)
Duration	-0.00 (0.01)	-0.00 (0.01)	-0.01 (0.01)	-0.01*** (0.00)
Infant Mortality	-0.00 (0.00)	-0.00 (0.00)	-0.00** (0.00)	-0.00 (0.00)
GDPpc	-0.08 (0.08)	-0.07 (0.10)	-0.03 (0.08)	0.07 (0.07)
Democracy	-0.17 ⁺ (0.11)	-0.20 ⁺ (0.13)	-0.06 (0.09)	-0.05 (0.10)
Population (Logged)	-0.02 (0.04)		0.01 (0.04)	-0.00 (0.04)
Rugged Terrain	0.01 (0.06)	0.00 (0.06)	0.02 (0.07)	0.05 (0.05)
Population (Change)		0.01 (0.04)		
Non-Military Aid	0.02 (0.07)	0.05 (0.08)	-0.00 (0.09)	-0.05 (0.08)
Rebel Group Size	0.18** (0.08)	0.18** (0.08)	0.19** (0.07)	0.21*** (0.06)
Competition	-0.01 (0.02)	-0.02 (0.02)	0.00 (0.02)	0.00 (0.02)
Battle Deaths	-0.01 (0.01)	-0.01 (0.01)	0.00 (0.01)	-0.00 (0.01)
Pre-Conflict Education	0.49** (0.21)	0.40* (0.20)	0.80*** (0.20)	0.68*** (0.20)
Pre-Conflict Health	-0.00 (0.17)	0.05 (0.16)	-0.16 (0.17)	-0.20 (0.14)
Rebel Strength Categories	Yes	Yes	Yes	Yes
Constant	-0.59 (1.17)	-0.97 (1.33)	-0.99 (0.97)	-2.40*** (0.83)
Region Fixed Effects	No	No	Yes	Yes
Decade Fixed Effects	No	No	No	Yes
Observations	386	356	386	386
R^2	0.436	0.418	0.526	0.578

Standard errors in parentheses.

Standard errors clustered by country in all models.

⁺ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.XIX: **Excluding Outliers (Panel)**

	(1)
Secessionist	0.31*** (0.09)
Communist	0.03 (0.15)
Ethnic War	-0.11 (0.15)
Rebel Strength	-0.03 (0.04)
Duration	-0.00 (0.00)
Infant Mortality	0.00 (0.00)
GDPpc	0.09 (0.07)
Democracy	-0.22** (0.11)
Population (Logged)	0.10** (0.05)
Rugged Terrain	0.02 (0.04)
Constant	-2.39* (1.27)
Observations	509
R^2	0.372

Standard errors in parentheses.

Standard errors clustered by country in all models.

+ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.XX: Jackknifing (Panel)

	(1)
Secessionist	0.26*** (0.04)
Communist	-0.09* (0.05)
Ethnic War	-0.11 ⁺ (0.08)
Rebel Strength	-0.08*** (0.02)
Duration	-0.00 (0.00)
Infant Mortality	0.00 (0.00)
GDPpc	0.05* (0.03)
Democracy	-0.20*** (0.04)
Population (Logged)	0.06*** (0.02)
Rugged Terrain	0.03** (0.02)
Constant	-1.14** (0.52)
Observations	543
R^2	0.225

Standard errors in parentheses.

⁺ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.XXI: **Original Dataset (Panel)**

	(1)
Secessionist	0.25** (0.11)
Communist	-0.11 (0.17)
Ethnic War	-0.21 (0.17)
Rebel Strength	-0.12* (0.07)
Duration	-0.00 (0.00)
Infant Mortality	0.00 (0.00)
GDPpc	0.08 (0.08)
Democracy	-0.18* (0.10)
Population (Logged)	0.04 (0.04)
Rugged Terrain	0.02 (0.04)
Constant	-1.00 (1.18)
Observations	543
R^2	0.207

Standard errors in parentheses.

Standard errors clustered by country in all models.

⁺ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.XXII: Correcting for Information Bias (Panel)

	(1)	(2)	(3)
	Large Insurgencies	Post-1970 Insurgencies	No Missingness, No Services
Secessionist	0.56*** (0.14)	0.35** (0.13)	0.27** (0.11)
Rebel Strength	-0.04 (0.07)	-0.18** (0.07)	-0.07 (0.05)
Communist	0.15 (0.25)	-0.27** (0.12)	-0.09 (0.16)
Ethnic War	0.00 (0.18)	-0.25+ (0.16)	-0.11 (0.14)
Duration	-0.00 (0.00)	0.01+ (0.01)	-0.00 (0.00)
Infant Mortality	-0.00+ (0.00)	0.00* (0.00)	0.00 (0.00)
GDPpc	-0.08 (0.09)	0.11+ (0.07)	0.05 (0.08)
Population (Logged)	-0.03 (0.08)	0.01 (0.04)	0.06+ (0.04)
Democracy	-0.22* (0.11)	-0.17** (0.08)	-0.19** (0.08)
Rugged Terrain	-0.08 (0.08)	0.11** (0.04)	0.03 (0.04)
Constant	1.81 (1.82)	-1.04 (1.10)	-1.17 (1.13)
Observations	319	404	556
R^2	0.353	0.338	0.224

Standard errors in parentheses

Standard errors clustered by country in all models.

+ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.XXIII: **Alternative Secessionist Specification (Panel)**

	(1)	(2)	(3)
Secessionist (Broadly Defined)	0.26** (0.11)		
Secessionist (Broadly Defined)		0.32*** (0.10)	
Secessionist (Broadly Defined)			0.31*** (0.10)
Communist	-0.09 (0.16)	-0.05 (0.16)	-0.05 (0.16)
Ethnic War	-0.11 (0.14)	-0.04 (0.14)	-0.31** (0.13)
Rebel Strength	-0.08 ⁺ (0.05)	-0.05 (0.05)	-0.05 (0.05)
Duration	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Infant Mortality	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
GDPpc	0.05 (0.08)	0.04 (0.07)	0.03 (0.07)
Democracy	-0.20** (0.09)	-0.20** (0.08)	-0.19** (0.08)
Population (Logged)	0.06 ⁺ (0.04)	0.06 ⁺ (0.04)	0.06 ⁺ (0.04)
Rugged Terrain	0.03 (0.04)	0.04 (0.05)	0.04 (0.04)
Constant	-1.14 (1.13)	-1.21 (1.13)	-1.14 (1.14)
Observations	543	543	543
R^2	0.225	0.265	0.257

Standard errors in parentheses

Standard errors clustered by country in all models.

⁺ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.XXIV: **Alternative Inclusive Services Specification (Panel)**

	(1)	(2)	(3)
	Any Inclusive Services	Alternative Coding	Ordinal Ranking
Secessionist	0.39** (0.16)	0.26** (0.12)	0.41*** (0.14)
Communist	0.01 (0.19)	-0.08 (0.17)	0.07 (0.20)
Ethnic War	0.51** (0.20)	-0.23 (0.16)	-0.05 (0.22)
Rebel Strength	-0.14* (0.07)	-0.13* (0.06)	-0.17** (0.08)
Duration	-0.01* (0.00)	-0.00 (0.00)	0.00 (0.00)
Infant Mortality	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
GDPpc	0.03 (0.09)	0.12 (0.09)	0.12 (0.11)
Democracy	-0.22* (0.12)	-0.20* (0.10)	-0.13 (0.11)
Population (Logged)	0.05 (0.06)	0.03 (0.04)	0.05 (0.07)
Rugged Terrain	-0.02 (0.06)	0.01 (0.05)	0.02 (0.05)
Constant	-0.41 (1.43)	-1.17 (1.18)	-0.87 (1.86)
Observations	561	546	561
R^2	0.404	0.206	0.225

Standard errors in parentheses

Standard errors clustered by country in all models.

+ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.XXV: **Alternative Estimator (Panel)**

	(1)	(2)
	Logit	Ordered Logit
Secessionist	1.54** (0.71)	1.90** (0.77)
Communist	-0.63 (1.18)	0.38 (0.93)
Ethnic War	-1.21 (1.01)	-0.18 (1.06)
Rebel Strength	-0.98* (0.52)	-0.69** (0.34)
Duration	-0.01 (0.03)	0.02 (0.02)
Infant Mortality	-0.00 (0.01)	0.01 (0.01)
GDPpc	0.27 (0.60)	0.62 (0.51)
Democracy	-1.82*** (0.68)	-0.62 (0.52)
Population (Logged)	0.32 (0.32)	0.30 (0.31)
Rugged Terrain	0.31 (0.37)	0.06 (0.23)
Constant	-8.18 (7.60)	
cut1		
Constant		8.42 (8.21)
cut2		
Constant		12.60 ⁺ (8.59)
Observations	543	561
R^2	0.227	0.159

Standard errors in parentheses.

Standard errors clustered by country in all models.

⁺ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.XXVI: Multiple Imputation (Panel)

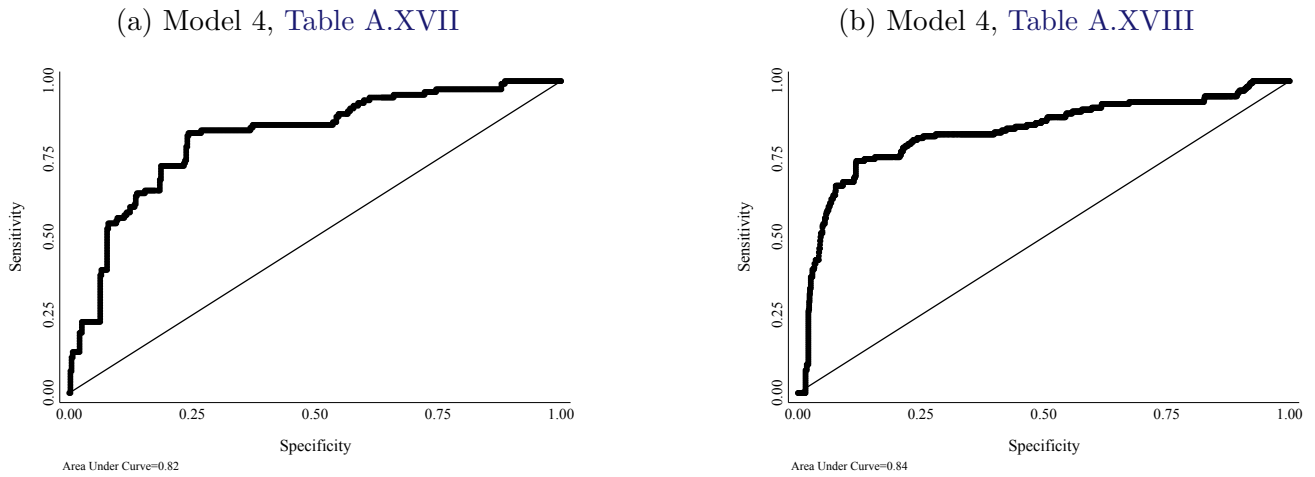
	(1)
	Public Goods
Secessionist	0.24** (0.11)
Communist	0.07 (0.13)
Ethnic War	0.00 (0.16)
Rebel Strength	-0.04 (0.05)
Duration	0.01 ⁺ (0.01)
Infant Mortality	0.00 (0.00)
GDPpc	0.03 (0.05)
Democracy	-0.26*** (0.08)
Population (Logged)	0.01 (0.03)
Rugged Terrain	0.02 (0.04)
Observations	822

Standard errors in parentheses.

Standard errors clustered by country in all models.

⁺ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure A.7: ROC Curves of Predicted Accuracy



Note: The figure demonstrates the predictive power of Model 4 in Table A.XVII. The AUC for Model 4, Table A.XVII is 0.82 and the AUC for Model 4, Table A.XVIII is 0.84 meaning that the model is highly capable of correctly predicting insurgencies likely to provide inclusive services.

Table A.XXVII: **Bootstrapping (Panel)**

	(1)
Secessionist	0.26*** (0.07)
Communist	-0.09 (0.07)
Ethnic War	-0.11 (0.12)
Rebel Strength	-0.08** (0.03)
Duration	-0.00 (0.00)
Infant Mortality	0.00 (0.00)
GDPpc	0.05 (0.05)
Democracy	-0.20*** (0.06)
Population (Logged)	0.06** (0.03)
Rugged Terrain	0.03 (0.02)
Constant	-1.14 ⁺ (0.78)
Observations	543
R^2	0.225

Standard errors in parentheses

⁺ $p < 0.15$, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure A.8: Comparison of Cross-Sectional and Panel Secessionist Coefficient Estimates

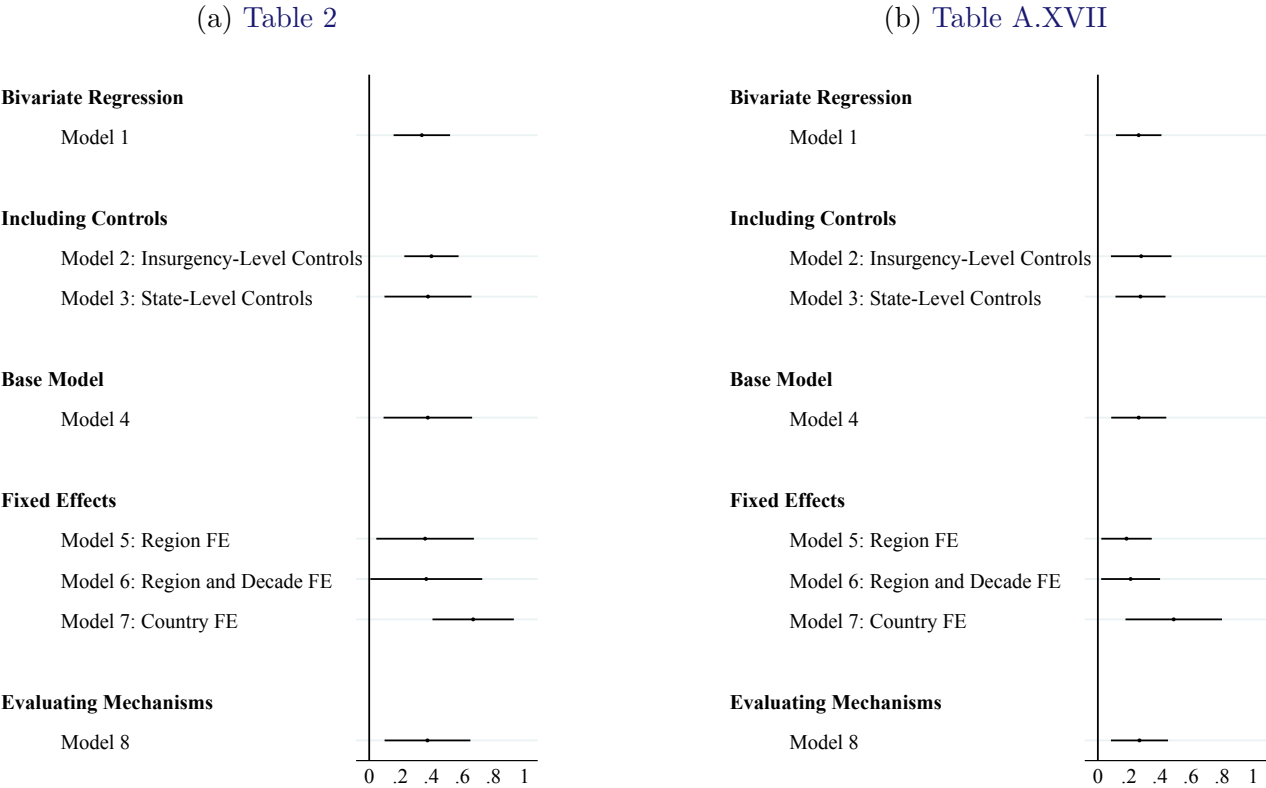
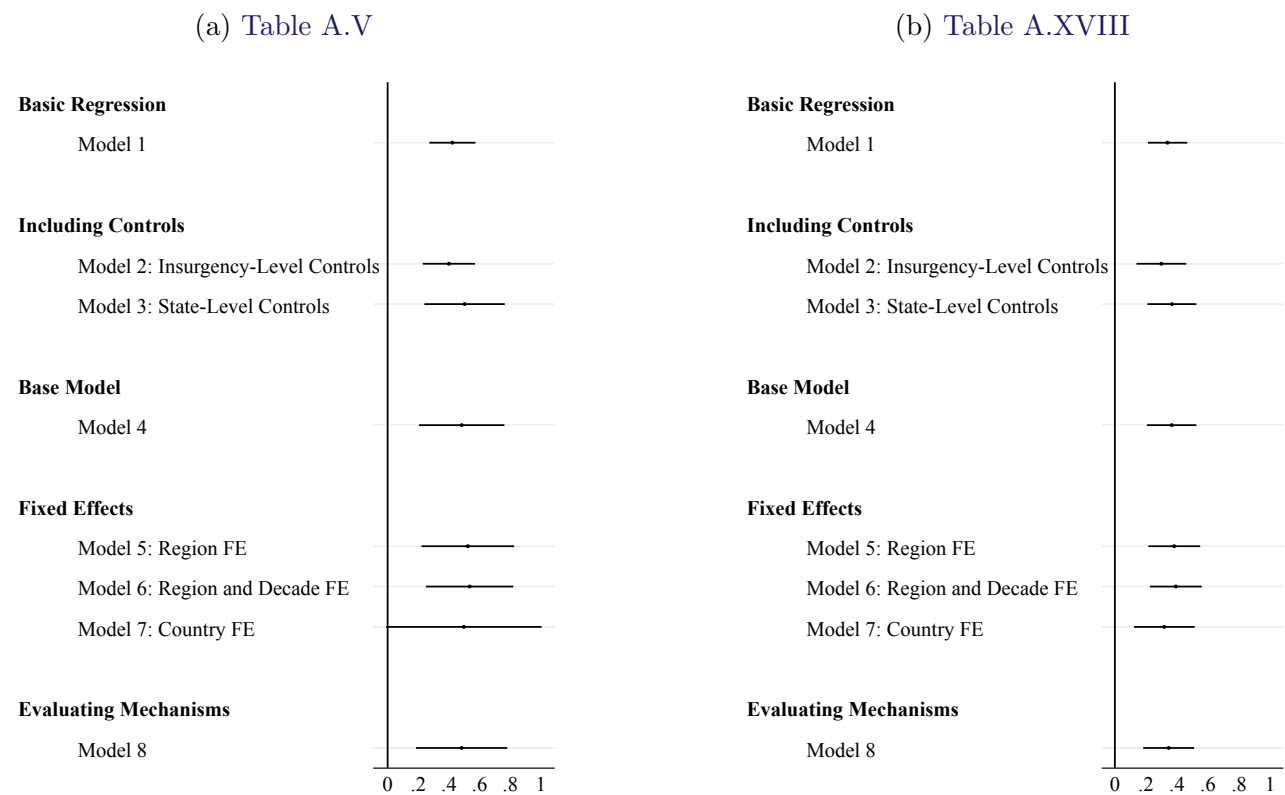


Figure A.9: Comparison of Cross-Sectional and Panel Secessionist Coefficient Estimates, Interaction



Note: Figure A.9 presents the coefficient estimates for the variable *Secessionist* × *Territorial Control* in Table A.V and Table A.XVIII. Black horizontal lines represent 90% confidence intervals. If the confidence intervals fail to overlap with the vertical black line, then the effect of *Secessionist* is statistically significant. The estimated effects using these two sets of data are highly similar in terms of statistical and substantive significance.

Appendix 6: Additional Information on the Insurgent Social Service Provision Dataset

In this section, I provide a more detailed and extensive overview of the theoretical framework I developed for determining inclusive versus exclusive service provision, the sources I used to code these data, and some of the challenges that I faced. I then explain why I focused on education and healthcare provision specifically and provide definitions for how I operationalized and coded these measures. I go on to present a set of textual examples that I used to code the dataset. These examples demonstrate how I was able to determine not only whether a rebel group provided education and healthcare but also who benefited from rebels' services. Finally, I conclude with a descriptive overview of the dataset, as well as a graphical presentation of trends in provision over time.

A Spectrum of Support for Rebels

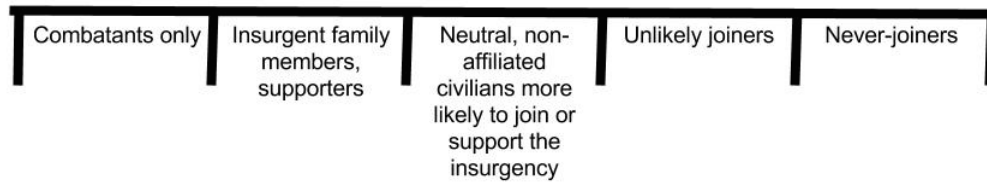
Support for an insurgency can be conceived as a spectrum of commitment to the insurgency and its goals, with certain civilian groups more or less likely to support and/or join the rebel group. On one hand of this spectrum are active rebel combatants, with never-joiners (such as members of the incumbent regime) on the other end of this spectrum. The majority of the population falls in between these categories. Within this broad center, civilians may be classified as already active supporters of the rebel group with weaker commitments, as neutral civilians with no commitments but who may be otherwise inclined to support and join the insurgency because of the rebel group's political platform, or finally as unlikely supporters and joiners who do not represent an insurgency's core constituency or political community.²⁴ This spectrum of support is highly similar to how some military officials conceive of popular support in insurgency and counterinsurgency operations, suggesting that this conception of support has useful theoretical and empirical applications.²⁵ Figure A.10 below presents this spectrum graphically.

The spectrum outlined above, however, is a theoretical construct. In Figure A.11 below, I

²⁴Stewart and Liou ????

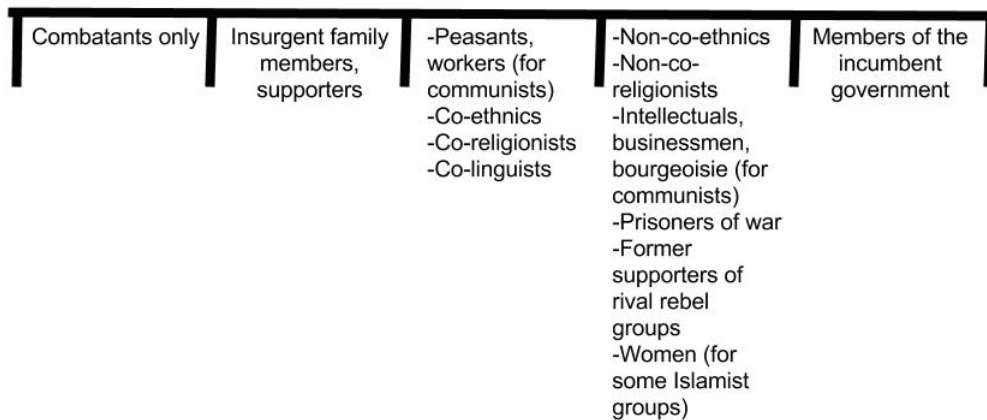
²⁵Packwood 2009, 71-2

Figure A.10: A Spectrum of Support for Insurgencies



delineate the observable implications of each of these theoretical categories. I consider neutral non-joining civilians as people who the rebel group explicitly seeks support from and are core members of the insurgency's coalition. For communists, these tend to be peasants, and in some cases, workers. On the other hand, unlikely joiners or supporters would include wealthier merchants or businesspeople, clergy members or traditional leaders, intellectuals or the bourgeoisie. For secessionist or ethnic insurgencies, neutral but likely joiners tend to be co-ethnics, co-religionists or co-linguists. People not of the insurgency's predominant ethnicity, religion or linguistic group represent unlikely joiners. For any rebel group, former supporters of a different insurgency can be classified as unlikely supporters, as would prisoners of war that a rebel group has captured. For some Islamist groups, such as the Taliban, women are unlikely supporters and joiners.

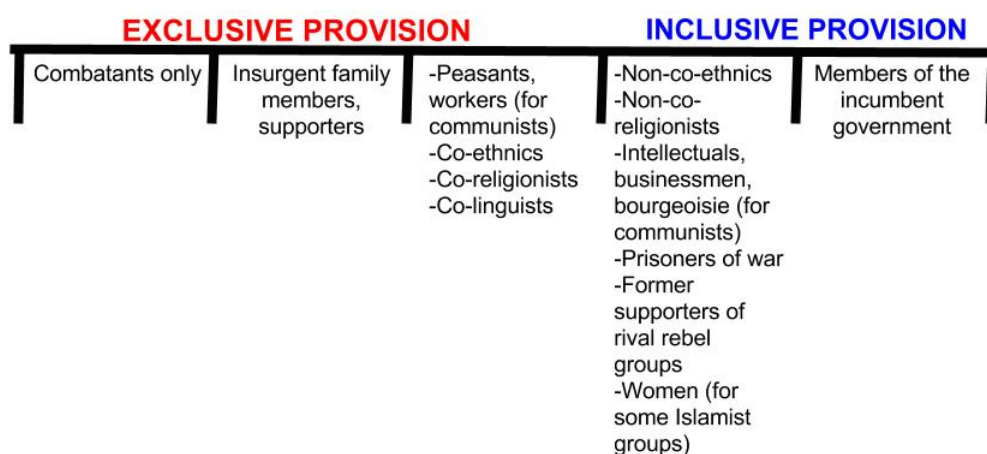
Figure A.11: Observable Implications of a Spectrum of Support



Using these distinctions, I code as inclusive service provision any rebel group that provided to unlikely joiners or never joiners. I code as exclusive service provision any insurgency whereby the organization provided only to members of the insurgency, to members of the insurgency and active supporters, or to neutral civilians who may be more likely to join the rebel group (Figure A.12).

Although these data represent an attempt to systematically and verifiably code the extensiveness and inclusivity of rebel governance, this measure is imperfect and cannot accurately predict each individual person's likelihood to be recruited by a rebel group. There may be idiosyncratic reasons why a person who is an unlikely joiner becomes a member of a rebel group. However, on average, the intuition that non-co-ethnics are less likely than co-ethnics to join an ethnic or secessionist insurgency is mostly true. In the same way, peasants are probably more likely to join a communist insurgency than wealthy merchants, on average.

Figure A.12: Operationalizing Inclusive Provision



It is worth noting that inclusive and exclusive service provision are not mutually exclusive. Even when providing inclusive services, insurgencies can also provide exclusive services simultaneously. In these cases, rebels provide services in tiers. More active and dedicated supporters receive higher quality education or training, including being sent abroad to study. Unlikely joiners receive basic literacy classes and rudimentary healthcare, but receive education and healthcare nonetheless. Therefore, the provision of inclusive services is not an indication that the insurgency prefers unlikely supporters over loyal members. An example of this tiered system is the African Party for the Independence of Guinea and Cape Verde (PAIGC), whose education services are described as “literacy for all, quality education for some.”²⁶ For its strongest and most committed adherents, the PAIGC offered high quality education in the capital Conakry or offered scholarships to study

²⁶Dhada 1993, 97

abroad. For everyone else, the PAIGC provided minimal public schooling throughout the country.²⁷ In these lower quality facilities, the PAIGC provided basic education and literacy courses, but little more. In other words, although a rebel group provided inclusive services, this by no means implies that it privileged unlikely joiners over committed followers. Rather, it underscores the theoretical logic presented in the manuscript: insurgencies could provide high quality, exclusive services for recruitment and retention purposes, and yet rebels could still also provide services to the population writ large, including unlikely supporters. Why rebels go beyond the initial high quality education services reserved for followers is what drives my research and what I aim to address in this manuscript.

Service Provision Over Time

These data are time-variant and capture changes in when rebel organizations began providing services or stopped. In most cases, specific dates for when services were provided was available in the text. Other times, texts would say that “by a given year” or “in the mid-1980s” (for example), a rebel group would have established social service institutions. In these cases, all years before that particular period of time are coded as missing. Additionally, some rebel groups also changed their level of provision. This typically occurred after an insurgency controlled territory: for example a rebel group might have only provided education and health to its cadres until the organization captured territory. Once the insurgency controlled territory, the rebel group might have started to provide services more broadly to civilians living in the territory it captured. In some rare cases, such as the People’s Liberation Army (PLA) in China in 1948, or Hezbollah after 1991, education moved from neutral supporters to more inclusive provision of unlikely joiners (both cases are discussed more in the main text).

Sources

To code these data, I relied primarily on secondary literature, especially secondary case histories on each rebel group. I also relied on newspaper and magazine articles collected through Lexis Nexis

²⁷Dhada 1993, 106-7

or Google web searches, journal articles, archival documents, testimonies, reports and memoirs. Because I code service provision in refugee camps, some NGOs such as Amnesty International or INGOs such as the United Nations had rich data on the governance of these refugee camps. Feminist accounts of the rebellion tended to have the best data: women were often asked to perform these service-providing roles and would detail the inclusivity and extent of rebel service provision. For an example of four different sources I used (newspapers, websites about refugee camps and case histories) please see the section below on examples of the coding procedure (pp. 57).

To the best of my abilities, I triangulated my coding with as many sources as possible. These sources were mostly written in English, but I did use other sources written in Spanish and French. These language choices mirror those selected by Shapiro.²⁸ The data coding process took place between October 2013 and October 2014, and research assistants served to validate the coding procedures as well.

Missingness and Coding Challenges

Some observations are missing, and this typically occurred if a text said the rebel group established “services” but never specified which, or if the insurgency set up a health or education ministry, but no further information about whether the group actually enacted any service provision could be found. As I note below, the Nationalist Socialist Council of Nagaland (NSCN) created an education ministry, but no information about whether this ministry actually offered services could be identified.²⁹

Because excludability is critical to the research question of this manuscript, observations without information on exclusion are coded as missing in the current analysis. If I found data that the rebel group provided services, but could not find information on exclusion, I coded the *Inclusive Service Provision* variable as missing, and coded that insurgency as providing *any* education or health in a separate variable not used for this analysis. This was the case for five different insurgencies, such as the United Democratic Resistance Movement in the Soviet Union.

²⁸Shapiro 2013

²⁹South Asian Terrorism Portal 2014

Alternatively, if any observations had unclear provision that could be considered as providing inclusively or exclusively, I created a second, alternative coding and I use this measure as a robustness check (Appendix Table A.XII). This was an issue with two cases: the Popular Front for the Liberation of Oman and the Arab Gulf (PFLOAG) and Hamas, which produced particularly conflicting accounts.

To test whether missingness systematically biases in favor of my results, I replace all missing values with a “0” signifying that missingness should be considered no inclusive provision (Model 3, Appendix Table A.X). These results are robust, indicating that missingness does not systematically bias in favor of my results.

Ultimately, these data are likely imperfect, but I anticipate updating these data as new information becomes available. Like most datasets that have undergone multiple iterations, this work represents a first-cut innovation that nevertheless improves our understanding of rebel governance.

Focus on Education and Healthcare Provision

The dataset focuses on the provision of education and healthcare specifically. I use these services for three reasons. The first is that there is great variation in insurgent services provision, and I needed services that were comparable across time and space. As an example of this variation, insurgencies have provided everything from food aid or “justice” to building hydroelectric power plants (Burmese Communist Party).³⁰ Due to the variation in the types of services insurgencies provide, I limit my focus to education and healthcare to ensure that I am comparing similar services across space and time. Education and healthcare are two such services that are comparable across cases and across time. A literacy or mathematics course in the 1970s in Africa will be similar to mathematics or literacy courses in Asia in the 1950s or in Latin America in the 1980s. Similarly, because what is generally healthy for one person is likely also going to be beneficial for another person anywhere else in the world or at any other time since 1945, healthcare is broadly similar across space and time.

The second reason I focus on these two services is that education and healthcare are broadly

³⁰Lintner 1990, Appendix II

desirable to all people and are services from which all people can benefit. As a result, exclusion from education or healthcare institutions clearly demonstrates the populations to which the insurgency is or is not providing social services. For example, insurgencies such as the Front for the National Liberation of Congo (FNLC) may provide food to the starving or most impoverished.³¹ Yet, because the majority of people are not starving or impoverished, they may be ineligible to receive these services at any given point. Because the social services data I collected also takes into account who can benefit from services, I do not examine any services that people might be ineligible to receive, however reasonable their exclusion. If an insurgency offered food to some civilians, and not others, it would be difficult to determine if the insurgency were limiting its provision to only those with economic need, or if the insurgency limited its provision to people with economic need and to people who were also likely to support the insurgency. Therefore, I do not include in my analysis any social service that might exclude members of the population, however reasonably, to ensure the greatest accuracy possible. Education and healthcare do not suffer from this exclusion problem, as ostensibly anyone at any time could benefit from education or healthcare.

Finally, all people have a reasonable expectation of receiving, either freely or in a deeply subsidized form, education or healthcare. Education and healthcare are codified as essential human rights in the Universal Declaration of Human Rights. In the vast majority of countries, education is constitutionally guaranteed and guaranteed to be free.³² Almost all countries have free or compulsory education.³³ Although healthcare is sometimes more complicated (particularly in countries like the United States), governments in almost all countries still allocate resources to subsidize and supplement healthcare throughout their state.³⁴ Although these services are not always considered classic state-provided public goods like national security or justice, people have a reasonable expectation of receiving these services from the state with little to no cost to themselves.

³¹Los Angeles Times 1977; Wright 1977

³²World Policy Center 2016

³³Tomasevski 2001, 32-80

³⁴World Bank 2016

Defining Key Terms

Below, I delineate how I defined “provision,” “education” and “healthcare” while coding.

Provision: I code insurgencies as “providing” services if they diverted their personnel and financial resources to ensure that a certain group of people received education and healthcare. This typically manifests in two ways:

1. Insurgencies offered education or healthcare themselves through their construction of schools, development of curriculum, service as teachers and doctors, or building of hospitals as needed.
2. Insurgencies ensured that services continued to operate in the area they controlled, typically through the administration and financing of these services, although these institutions already existed.

I do not code groups as providing services if they allow an NGO, religious group, or the incumbent government to provide services in the areas they control, but the insurgencies themselves did not contribute to this provision. For example, the Liberation Tamil Tigers of Eelam (LTTE) allowed the Sri Lankan government to continue its healthcare provision in the areas the LTTE controlled. The LTTE taxed this service, but was not involved in the direct administration of it. As a result, I do not consider the LTTE to have provided healthcare services.³⁵

Education: In the context of a civil war, insurgents or authors of secondary source texts could use the term “education” ambiguously, and may refer to propaganda campaigns or general military training as education. If the insurgent organization itself or the secondary literature refers to an insurgency as “training” recruits or supporters, and not educating them, I do not consider this to be education. If what the insurgency is providing is not described as training, then I code education as the instruction of skills that can be applied outside of the context of the military operations, such as language, mathematics, or history. If these skills are applicable to both the insurgents’ military goals as well as useful outside the context of the insurgency, such as teaching mathematics so that insurgents know how many explosives to use and how to budget resources, I still code this as education. A clear example of education provision is exemplified by the follow-

³⁵Mampilly 2011, 118-9

ing passage: Hezbollah’s “Educational Center of the Martyr Bojeii opened in 1992 in the village of Mashghara. . . [I]t has nineteen sections covering both nursery and elementary classes and also serves the children of seven neighboring villages.”³⁶ On the other hand, the Nationalist Socialist Council of Nagaland (NSCN) has an education ministry in their structure, but no texts referred to their explicit provision of education to insurgent members or civilians.³⁷ From this information above, it is not clear if the NSCN education ministry developed education policy, created propaganda campaigns or actually provided education to others. As a result of this ambiguity, I code this entry as missing.

Health Care: I code an insurgency as providing healthcare if the insurgency offered medical treatment. Because of the influence of Mao and China’s sponsorship of liberation movements in the Middle East and Africa, some insurgencies provided acupuncture to the populations under its control. Even if an insurgency provided acupuncture, such as the Ethiopian People’s Revolutionary Party (EPRP), I consider the group to provide healthcare.³⁸ This is to avoid a bias in coding medical care as only “Western” medical practices.

Examples of Coding

To demonstrate more clearly how these data were coded, I present examples of exclusive or inclusive provision. For rebels that provided exclusive services, I rely on the Sandinista National Liberation Front (FSLN), Zimbabwe’s African People’s Union (ZAPU), and the case of Ethiopian People’s Revolutionary Party (EPRP). For insurgencies that provided to unlikely joiners (inclusive services), I present the case of the Eritrean People’s Liberation Front (EPLF).

1. **Exclusive provision to only combatants: The Sandinista National Liberation Front (FSLN).** The evidence I found for the FSLN supports the idea that the guerrillas only provided education within their own camps. The text below is an excerpt from a newspaper report. A journalist from the *St. Petersburg Times* visited a Sandinista hideaway. There,

³⁶Jaber 1997, 164

³⁷South Asian Terrorism Portal 2014

³⁸Tadesse 1998, 368-9

guerrillas had classes and learned basic mathematics, albeit for the purpose of learning how to calculate the appropriate amount of explosives to use in certain situations. From the report:

“Our reporter was taken to the camp by Eden Pastora, the famous “Commander Zero” of last summer’s attack on the National Palace in Managua . . . The guerrillas are almost all young. Many are seasoned combat veterans by the time they reach age 20. . . . The guerrillas sleep in an area that doubles as a classroom during daylight hours. The day begins at 4:45am . . . The Commandos train in the field until the afternoon rains arrive, and they take cover for weapons instruction. **Men who have never mastered simple mathematics are trained to compute such essential calculations such as the proper charge to blow up a bridge, or a tree, or a house.** The training does not end at nightfall. Squads of men hold political meetings to discuss the principles for which they are fighting.”

As the quote demonstrates, guerrillas living in the camps in 1978 were learning mathematics, albeit for military purposes, but nonetheless received some education. This supports my coding of the FSLN as providing exclusive services to only combatants in 1978. Because no other texts mention the FSLN providing services outside its core guerrilla camp, we can be reasonably confident that education was primarily restricted to group members.

2. **Exclusive provision to only supporters and combatants: Zimbabwe’s African People’s Union (ZAPU).** The case of ZAPU represents an insurgency that provided services to supporters and members. ZAPU provided these services within a refugee camp, the only place they were able to hold territory.³⁹ During the war, “the Rhodesian regime retaliated ever more viciously and the civilians became the victims. The majority supported the guerrillas” and they fled across the borders where they became “ZAPU refugees” primarily in one of two refugee camps: Victory Camp and JZ Moyo Camp.⁴⁰ Though the camp was poorly equipped initially, “ZAPU did eventually have good medical provision for

³⁹Cunningham, Gleditsch, and Salehyan 2009

⁴⁰South African History Archive 2016

the refugees in the camps and did make an effort to avoid those problems which might be caused by poor sanitation or poor hygiene.”⁴¹ ZAPU did not control territory outside of the refugee camp, and no other textual evidence indicated more extensive or inclusive provision elsewhere. As is clear from the text, ZAPU supporters fled to the refugee camp and became “ZAPU refugees.” Because ZAPU only provided to supporters and members, its services are exclusive.

3. **Exclusive provision to neutral civilians: The Ethiopian People’s Revolutionary Front (EPRP).** The EPRP was a communist group. Therefore, the EPRP’s primary political base, the people most likely to support the EPRP’s political platform and the people most likely to be targeted for recruitment were rural peasants. For peasants lacking any education, the EPRP conducted literacy campaigns while more advanced recruits “conducted political discussion sessions on a regular basis and departments prepared reading materials.”⁴² In addition, the EPRP “had its own clinic where members and peasants were treated. The clinics were staffed by medical doctors, pharmacists, qualified health officers and nurses.”⁴³ One of the common treatments the EPRP administered to both its members as well as civilians was acupuncture. Acupuncture was “introduced by [EPRP] members who had been trained by Chinese medical groups in South Yemen who in turn trained others.”⁴⁴ The EPRP gained considerable popularity among the peasantry because of its acupuncture treatments and their seeming effectiveness. Moreover, the EPRP in the western part of the Begemidir province of Ethiopia also established abortion clinics.⁴⁵ The text here demonstrates that the EPRP provided services to neutral civilians and members, making the distinction in the text between “members” and “peasants.” The text itself was written by a member of the EPRP as well, and thus had inside knowledge of the EPRP’s behavior. More inclusive provision was not mentioned in any other texts by the EPRP, and thus we can be assured that the EPRP’s provision though extensive, was nonetheless exclusive.

⁴¹South African History Archive 2016

⁴²Tadesse 1998, 366

⁴³Tadesse 1998, 368

⁴⁴Tadesse 1998, 368

⁴⁵Tadesse 1998, 369

4. **Inclusive provision to unlikely joiners: The Eritrean People's Liberation Front (EPLF).** Eritrea has nine different ethnicities and two major religions (Islam and Christianity). Ethnicities tended to fall along religious lines. The EPLF was primarily a Christian organization and drew many of its core supporters from co-religionists. The EPLF also fought against the rival secessionist organization, the Eritrean Liberation Front (ELF). The ELF was primarily Muslim. Therefore, Muslims would be unlikely supporters. Moreover, the EPLF was a communist organization, so conservative, wealthier merchants and businesspeople were also unlikely supporters. Finally people living in towns previously controlled by the ELF or people who were ELF supporters would be unlikely to join or support the EPLF. Pool⁴⁶ provides an overview of the EPLF's 1977 conquest of a town in Eritrea called Keren. Keren was very conservative, wealthy and had a larger Muslim population. Additionally, the ELF, the main rival of the EPLF, had previously maintained a significant presence and support there,⁴⁷ and the ELF propaganda had led some of the local population to nickname the EPLF the "Eritrean Derg."⁴⁸ As a result, Keren "was a more difficult proposition" for liberation by the EPLF than other towns.⁴⁹ Despite these challenges, the EPLF proceeded with liberation and reconstruction, and implemented a series of wage reforms, price controls, taxes and education and healthcare initiatives that became very popular. One member of the town:

"[S]tate[d] that even the bourgeoisie was pleased with liberation. They had expected the EPLF to be like the Derg, but it was not because their property and riches were preserved. The EPLF placed great stress on the provision of services. Keren hospital, badly damaged during the fighting, was repaired and reopened. An EPLF clinic with an EPLF doctor was attached to the hospital and medical supplies were brought from the central pharmacy. Increasingly, rural people with serious conditions were referred to Keren hospital by squad doctors operating in the surrounding areas. Schools were reopened and continued to function

⁴⁶Pool 2001

⁴⁷Pool 2001, 121

⁴⁸Pool 2001, 123

⁴⁹Pool 2001, 123

despite the fact that teachers' salaries were not coming through from Asmara [the Ethiopian-controlled capital of Eritrea]. The EPLF succeeded to the array of local taxes and levies collected by the Ethiopian government: rent from nationalized properties, charges for veterinary checks on animals brought for sale in the market, for example. Ethiopian taxes were diverted for the provision of goods and services.”⁵⁰

The quote above demonstrates that the EPLF provided services to unlikely supporters or joiners of the rebel group, and this was a systematic approach to governance. In addition to providing to unlikely joiners, the EPLF also provided education and healthcare to *Ethiopian* prisoners of war.⁵¹ Because these soldiers were Ethiopian and would never benefit from the Eritrean after the war, this is another indication of provision to people unlikely to support the rebel group.

External Validation and False Positives

I turn to two existing datasets to externally validate the coding results, to address concerns of bias in coding arising from the hand-collected nature of the dataset. If the data I collected correspond to these existing datasets well, then confidence in my coding procedures should be improved. Nation-states are the traditional providers of inclusive services, especially healthcare and education. One may anticipate that insurgencies that provide inclusive goods behave as if they are states. Thus, insurgencies that provide inclusive goods may appear in the De Facto States in International Politics (1945-2011) Dataset.⁵² Florea⁵³ lists 34 de facto states and of these, 21 are also included in the NSA Dataset as either insurgencies or the de facto states that are products of insurgencies.⁵⁴ Among this group of 21 de facto states, over 80% are coded as providing inclusive goods (16 groups). Furthermore, Kalyvas and Balcells (2010) argue that some civil wars are conventional civil wars where “military confrontation is direct, either across well-defined front-

⁵⁰Pool 2001, 124-5

⁵¹Wilson 1991, 91

⁵²Florea 2014

⁵³Florea 2014, 5-6

⁵⁴For example the Karen National Union in the NSA Dataset created what Florea calls “the Karen State,” and what the Karens call “Kawthoolei.”

lines or between armed columns.”⁵⁵ One would predict that insurgencies that provide inclusive services could be acting as if they were states, and thus engage in conventional warfare as states do. Of the 46 conventional wars, insurgencies provided inclusive services in 15 of these.⁵⁶ The correlation between these two datasets and the *Inclusive Service Provision* variable offers external support for the reliability of the data.

These data are also highly responsive to instances that appear to be inclusive provision when rebel groups in fact exclude certain constituencies from the insurgencies’ services. These occurrences are most likely to arise in two ways. First, an insurgency may provide services to anyone within a town or territory it controlled, but only after expelling or killing anyone outside the insurgency’s core political constituency. These insurgencies are coded as providing exclusive services. Second, when civilians move to refugee camps during wartime, they may choose from several different locations. People who support the insurgency might move to the camp that an insurgent group controls, while people who support the government may move to camps the government controls. As a result, when the insurgency provides social services in the refugee camp, it appears that the insurgency is providing to everyone when it really provides to supporters, creating a false-positive. To address this issue, I examine the demographics of the refugee camp. If the refugee camp population contains more than 90% of people who are likely to support the insurgency (co-ethnics, co-religionists, etc.), I do not code this group as providing inclusive services.

Descriptive Overview of Insurgent Social Services Dataset

The Insurgent Social Services Dataset contains 313 unique rebel groups. Of these, 104 insurgent groups provided some form of education, or approximately 33% of rebel groups provided any education between 1945 and 2003. Nearly 49%, or 154 groups, provided no education, and 55 groups have missing observations (18%).

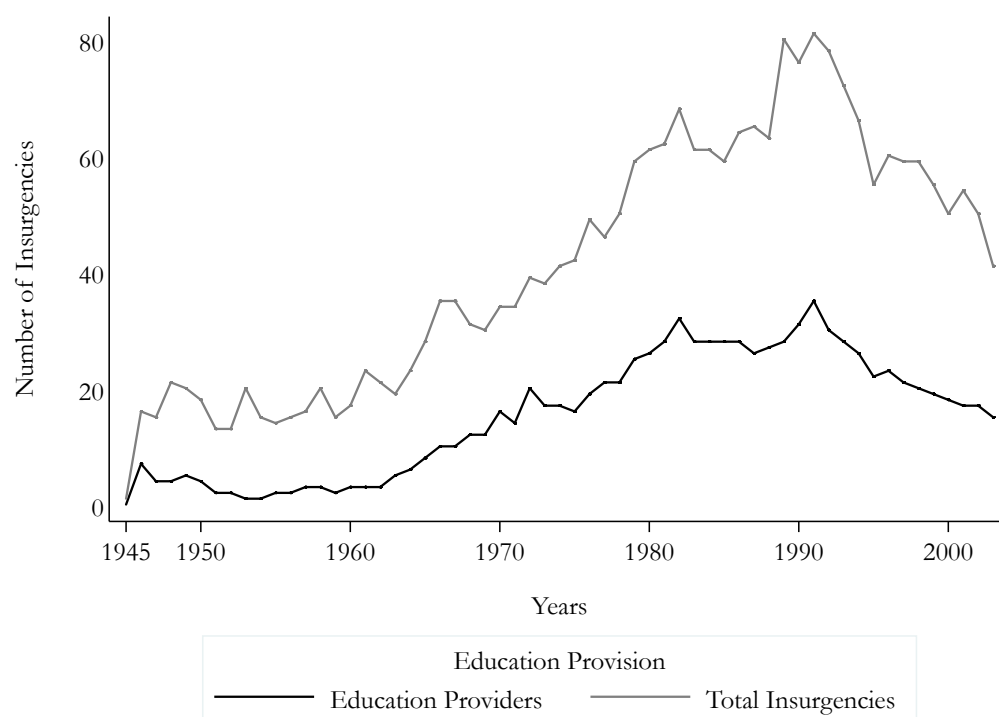
Correspondingly, approximately 102 groups provided healthcare, meaning that about 33% of insurgencies provided healthcare, while 148 insurgencies provided nothing, or 45%. For 63 groups, or 21% of insurgencies, the data are missing.

⁵⁵Kalyvas and Balcells 2010, 419

⁵⁶Kalyvas and Balcells 2010

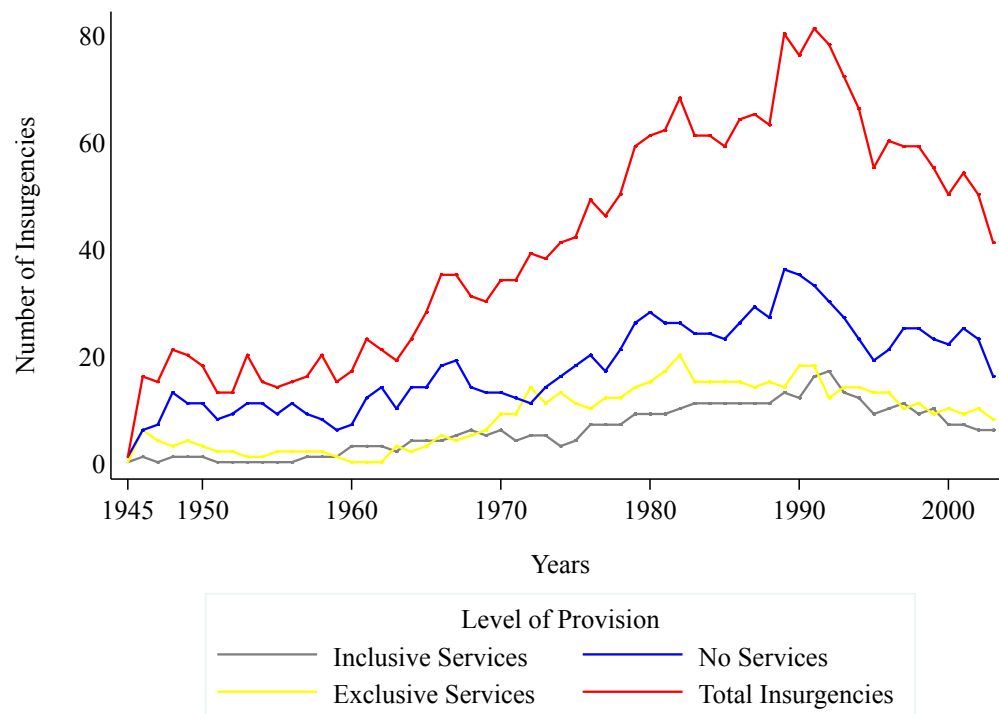
Most insurgencies either provided no education and no healthcare, or provided both education and healthcare. Just 7% of insurgencies provided healthcare but not education, and just 5% of insurgencies provided just education but not healthcare. About 95% of groups that provided education inclusively also provided and healthcare inclusively.

Figure A.13: Annual Total Insurgent Education Provision, Globally 1945-2003



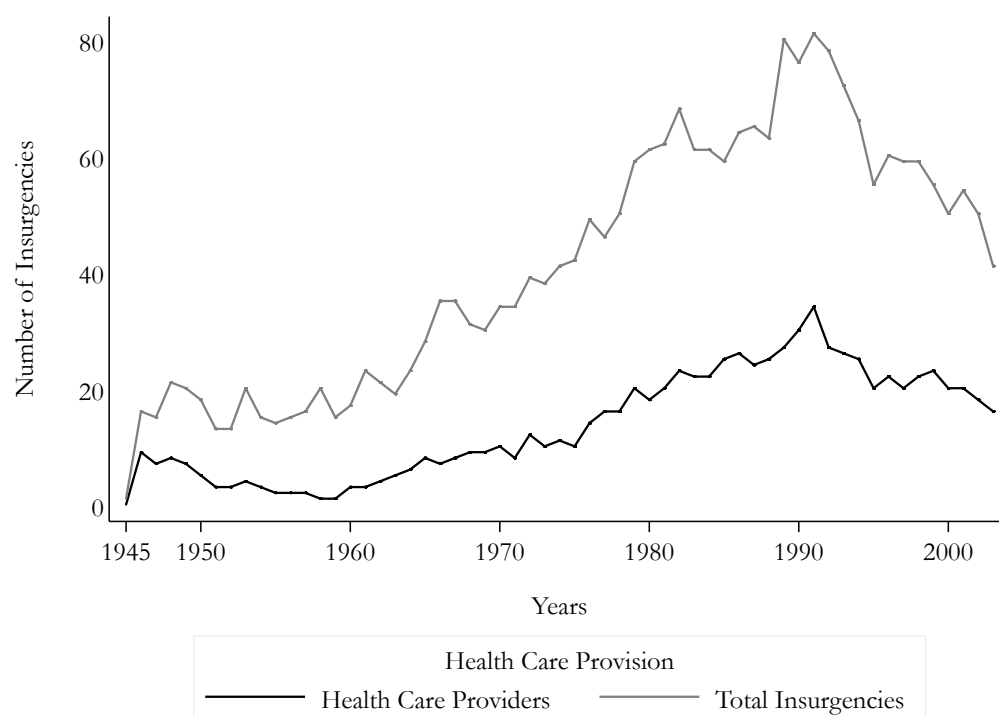
Note: The figure demonstrates the number of insurgencies providing education globally from 1945-2003.

Figure A.14: Annual Insurgent Education Provision, Globally 1945-2003



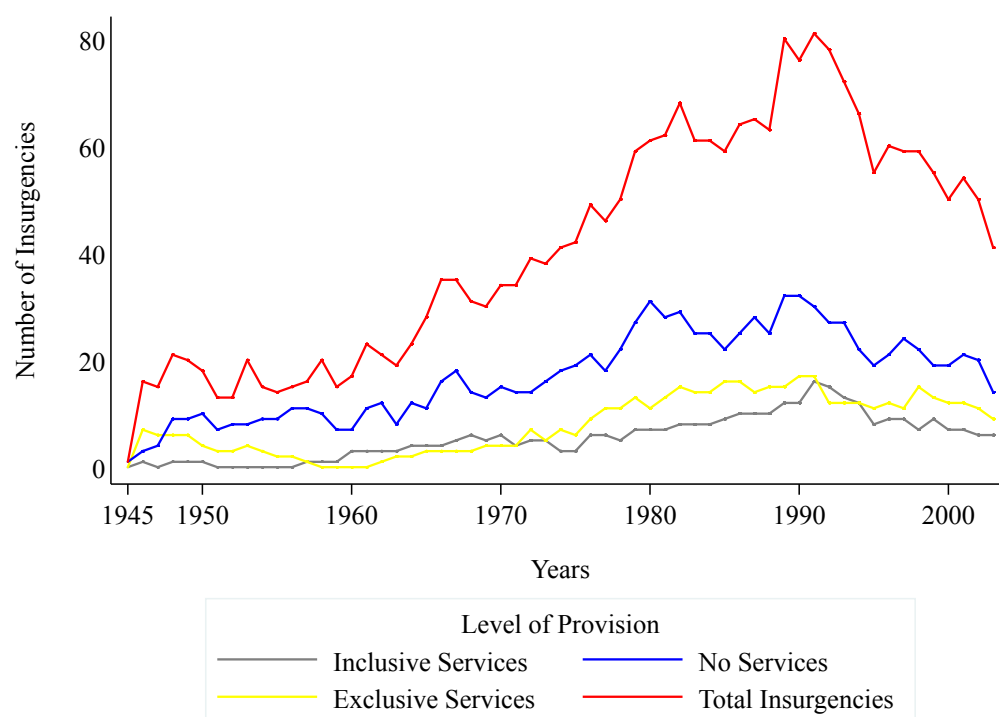
Note: The figure demonstrates the annual level of insurgent education provision globally from 1945-2003.

Figure A.15: Annual Total Insurgent Healthcare Provision, Globally 1945-2003



Note: The figure demonstrates the number of insurgencies providing healthcare globally from 1945-2003.

Figure A.16: **Annual Insurgent Healthcare Provision, Globally 1945-2003**



Note: The figure demonstrates the annual level of insurgent healthcare provision globally from 1945-2003.