The Hunger Games: Food Prices, Ethnic Cleavages and Nonviolent Unrest in Africa

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Abstract

Nonviolent movements are more successful when mobilizing large and diverse numbers of participants. However, while there has been considerable research on the outcomes of nonviolent campaigns, far less is known about the initial emergence of nonviolent action. A growing literature suggests ethnic divisions may undermine the ability of activists to engage in mass nonviolent mobilization across diverse social lines. Yet many large and diverse nonviolent movements have successfully emerged in various ethnically divided societies across the world. I argue that nonviolent mobilization is made possible in ethnically polarized contexts when broader cross-cutting grievances are present as they enable local activists to widen their appeal across social lines. I focus on food price spikes as an example of a cross-cutting issue that is likely to affect consumers from different ethnic groups. The unique and symbolic nature of food price spikes facilitates nonviolent action across ethnic lines and provides clear short-term incentives for many people to participate in protests against the government. Using new spatially disaggregated data on government targeted nonviolent action I analyse grid-cell years across 41 African countries (1990-2008). I find strong evidence that food price spikes increase the likelihood of nonviolent action in politically excluded and ethnically diverse locations.

Introduction

In recent years, mass nonviolent resistance has become an increasingly prevalent form of anti-government dissent. Movements have been remarkably successful in achieving political change using unconventional nonviolent action (i.e. Chenoweth & Stephan, 2011), defined as a combination of persuasive tactics (i.e. protests and demonstrations) and noncompliant methods (i.e. strikes and sit-ins) (Sharp, 2005).[1] The growing civil resistance literature relates this success to a movement's ability to mobilize *large* and *diverse* numbers of participants across social lines, which builds legitimacy and draws support away from the government (DeNardo, 1985; Schock, 2005; Sharp, 2005; Svensson & Lindgren, 2011; Chenoweth & Stephan, 2011).

Yet while there has been considerable research on the outcomes of nonviolent campaigns, far less is known about the initial emergence of nonviolent action (Chenoweth & Ulfeder, 2017), in particular, how movements succeed in mobilizing large numbers of people across diverse support bases. There are many prominent examples where activists have engaged in mass nonviolent action after unifying otherwise disparate social groups, including the "Arab Spring" and movements that emerged in countries with a history of ethnic conflict (i.e. Burundi and Bosnia). Yet a number of recent studies have shown that ethnic cleavages undermine nonviolent mobilization, by reducing the ability of activists to attract mass numbers of people from different social groups (Svensson & Lindgren 2011; Arriola, 2013; Vidovic & Gleditsch, 2015; Thurber, 2018).[2] How do nonviolent movements mobilize sufficient numbers in societies with ethnic divisions?

[1] While a contested concept, this widely used definition of nonviolent action focuses on mass and unconventional measures of action, undertaken by individuals and organisations that aim to overthrow a regime or change government policy (see also Schock 2003; Chenoweth & Stephan, 2011).
[2] I define ethnicity as a socially constructed ascriptive identity, based on common descent and collective cultural affiliations such as: language, tribe, race, and religion (Horowitz, 1985).

This article seeks to unravel this question and extend our understanding of emergence by highlighting a process through which nonviolent activists overcome political exclusion and local ethnic divisions to engage in mass and diverse mobilization. I argue that cross-cutting grievances, which transcend divisions within and between politically relevant ethnic groups, provide opportunities for activists to appeal to individuals across social boundaries, thereby greatly facilitating nonviolent mobilization in socially divided contexts. I focus on one example of a cross-cutting issue, spikes in domestic food prices, which are likely to impact consumers from all social groups, enabling a movement to mobilize individuals based on a common economic grievance.

To test these claims I disaggregate the emergence of nonviolent action to the subnational-level, using new geocoded events data. This approach advances existing quantitative research on emergence using country-level variables that do not reflect subnational realities (i.e. Chenoweth & Ulfeder, 2017; Butcher & Svensson, 2016). Ethnic cleavages are a social barrier faced by activists locally and vary considerably within countries along with other structural factors that influence the viability of nonviolent mobilization. I explore the emergence of nonviolent action across subnational grid-cells of 41 peacetime African countries (1990-2008). The findings provide strong evidence that the cross-cutting nature of food price spikes increase the feasibility of nonviolent mobilization in ethno-politically excluded and diverse areas that would otherwise be unlikely to observe nonviolent action.

The article begins by exploring existing research and ways ethnic cleavages may constrain nonviolent action, before theorising food prices as a cross-cutting issue that facilitates mass and diverse mobilization. This is followed by the empirical analysis and concluding remarks.

Ethnic divisions and nonviolent mobilization

The strategic logic of mass nonviolent action is to generate enough leverage, through mobilizing greater numbers, in order to disrupt the state's ability to rule or impose particular policies (DeNardo, 1985; Schock, 2005; Sharp, 2005; Schock, 2005; Chenoweth & Stephan, 2011; Svensson & Lindgren, 2011). Few governments confronting nonviolent action from 5% of the population have avoided political change (Lichbach, 1998).

Studies of civil resistance tend to explain the emergence of mass nonviolent action through forms of political agency, such as the skills and leadership of activists (Sharp, 2005; Schock, 2005). Yet, mass mobilization is also likely to depend on existing structural contexts that remain outside the control of political activists (Goldstone, 1994; Chenoweth & Ulfeder, 2017; Butcher & Svensson, 2016). Nepstad (2015), for example, points to three broad determinants of nonviolent action: widely held grievances against the government, intergroup coalitions, and space to organize. While the latter has synergies to opportunity factors and resources that provide 'space' for mobilization, the former largely correspond to two interconnected forms of mass mobilization unique to nonviolent action: the *vertical* mobilization of large numbers against the regime (i.e. building on widespread anti-government grievances) and *horizontal* mobilization that occurs across diverse social groups (coalition building).

Nonviolent movements seek to challenge the regime vertically by mobilizing mass numbers of people in order to achieve political change. Leverage is achieved by drawing on widely held anti-government grievances and by dislocating the regime from its so-called 'pillars of support' (e.g. police, military, workers, civil servants, business, political parties), which if removed, limit the regime's ability to rule (Sharp, 2005). Nonviolent activists target these pillars of government support by appealing to common ground and by encouraging loyalty switches within broad segments of the population; including pro-regime supporters

and security forces that carry out state repression (Chenoweth & Stephan, 2011; Nepstad, 2015).

Nonviolent mobilization also occurs horizontally across social lines, as winning popular support is often dependent on the movement's ability to appeal to various social groups. Mobilizing individuals from different social backgrounds, occupations and political ideologies, which have differing relationships with the state, provides a movement with greater leverage (Svensson & Lindgren, 2011; Butcher & Svensson, 2016). Yet, while nonviolent mobilization has fewer moral and physical barriers to participation (Chenoweth & Stephan, 2011), mobilizing thousands of people across social lines is extremely challenging, particularly in polarized societies with high social distance within and between ethnic groups (Svensson & Lindgren, 2011; Arriola, 2013; Bhavnani & Jha, 2014; Vidovic & Gleditsch, 2015; Thurber, 2018). Existent research remains poorly placed to explain the emergence of nonviolent action in divided societies, in which ethnic cleavages are rarely featured in existing explanations (see Thurber, 2018).

A large literature on grievances instead argues that collective participation can be achieved by solely appealing to ethnic grievances that derive from ethno-political inequalities (Stewart, 2008; Wimmer, 2013), with empirical evidence suggesting that ethnic exclusion motivates engagement in nonviolent action (Gurr, 1993; Olzak, 2006; Jazayeri, 2016), as well as armed rebellion (Stewart, 2008; Østby, 2008; Cederman, Gleditsch & Buhaug, 2013). By focusing on ethnic-mobilization, the grievance approach has greatly extended our understanding of *why* excluded groups might be motivated to mobilize against the government (vertical mobilization), but has largely ignored the horizontal dimension of nonviolent mobilization and *how* movements mobilize across group lines. This relates, in part, to the wider research agenda that has emerged in isolation to civil resistance literature and has almost exclusively focused on civil war. This has led many grievance scholars to

draw on civil war mechanisms that are poorly suited to explain mass nonviolent mobilization, since nonviolent and violent mobilization are distinct (Chenoweth & Lewis, 2013). For instance, while armed opposition only needs to recruit a few hundred fighters and may be aided by ethnic-based recruitment, nonviolent resistance requires tens of thousands of participants meaning horizontal coalitions across group lines is often necessary to achieve the greater scale of mobilization.

More recent research suggests that nonviolent movements can bypass social barriers to horizontal mobilization when having the support of a larger politically excluded ethnic group with a bigger recruitment pool (White et al., 2015; Dahl et al., 2016). Yet this highlights two key theoretically limitations within existing grievance research.

Firstly, even with the support of a large ethnic base, interethnic support is often essential because some ethnic groups are more tied to the state than others and are clustered in certain occupations, sectors and settlement types (DeNardo, 1985; Lichbach, 1998; Schock, 2005; Butcher & Svensson, 2016). This is illustrated by nonviolent struggle against Apartheid in South Africa, where the non-racial United Democratic Front also appealed to Asians, Coloureds, and Whites even though Blacks made up 85% of the population. Moreover, ethnic movements can alienate potential support from other ethnic groups and can be more easily isolated and repressed (Chenoweth & Stephan, 2011; Svensson & Lindgren 2011; Butcher & Svensson, 2016). Yet excluded groups are often less able to participate or engage in nonviolence campaigns due to ethnic divisions, meaning only 13% of nonviolent resistance campaigns are mobilized in pursuit of ethnic goals (Thurber, 2018). By focusing on ethnic mobilization, existing grievance literature misses the vast majority of cases where nonviolent mobilization involves multiple groups.

Secondly, while some movements are able to mobilize along ethnic lines, they are still likely to face internal divisions. The grievance literature often assumes ethnic preferences are monolithic, ignoring challenges to horizontal mobilization deriving from differing interests and divisions within ethnic groups (i.e. class and language). For example, although the Oromo represent the largest ethnic group in Ethiopia, intra-ethnic differences have limited the group's ability to mobilize large numbers of co-ethnics and engage in nonviolent action (Arriola, 2013). To be successful nonviolent activists must overcome intra-ethnic divisions as well as cleavages between ethnic groups (Gorenburg, 2000; Goldstone, 2011). Yet, how a movement may unify sub-groups as well as disparate ethnic groups remains poorly understood.

Other structural literatures on revolution and social movements, provide a better indication of *how* movements may unify social groups to engage in horizontal mobilization, pointing to the importance of resources and political opportunities. Social networks and pre-existing organisations (i.e. trade unions) often provide "free space" for civilians to organize (Ackermann & DuVall, 2000; Nepstad, 2015) and can facilitate meso-mobilization; temporary coalitions that underpin nonviolent movements (Gerhards & Rucht, 1992). Mass mobilization is also assisted by information and economic resources, most often found in urbanized and industrialized countries (Goldstone 1991; Lohmann, 1994; Siegal, 2009; Butcher & Svensson, 2016), and political opportunities which signal that nonviolent action is feasible, for example, when the regime is unstable or increases its political openness (Tilly, 1978; McAdam, 1999; Meyer, 2004).

However, studies of revolution and social movements often disregard the importance of ethnic cleavages as a social barrier to nonviolent mobilization. While important, resources are likely to be distributed along social lines rather than across them and activists may be

unable to act on political opportunities if ethnic and intra-ethnic cleavages divide the wider population that activists seek to mobilize.

Local structures and the emergence of nonviolent action

The preceding discussion provides the expectation that ethnic and intra-ethnic cleavages are an important social structure that undermine the feasibility mobilizing large numbers of people (vertical mobilization) by restricting mobilization across social lines (horizontal mobilization). Grievance literature has shown that ethno-political exclusion produces particularly salient animosities between groups (Stewart, 2008; Wimmer, 2013) that have been found to have a particularly negative impact on the emergence of nonviolent action. Political exclusion diminishes the likelihood of broader coalitions, social diversity and loyalty switches (Svensson & Lindgren, 2011), and reduces the likelihood of having coethnics within key pillars of power, thereby decreasing the likelihood that excluded groups will participate in protest (Thurber, 2018).

Yet nonviolent mobilization and activism is often carried out locally, with activists drawing on communal and informal networks that loosely bind would-be participants (Goldstone, 1994; Kuran, 1991). While we know ethno-political exclusion undermines nonviolent action at the national, group and movement-level (Svensson & Lindgren, 2011; Thurber, 2018), this should also be evident at the subnational-level by hindering localized attempts to build coalitions.

Firstly, sub-groups within excluded ethnic groups often have differing goals against the government. Without superordinate goals that cut across social lines, it is difficult for sub-groups to cooperate, find common ground and build coalitions, even when in close proximity (Tajfel, 1982; Goldstone, 1994). As seen in Oromia (Ethiopia), the inability to coordinate

strategy, broaden alliances and engage in horizontal mobilization is more closely connected to ethnic infighting and a switch to violent strategies, rather than engagement in nonviolent action (Arriola, 2013; Cunningham, 2015). The preceding discussion provides the expectation that ethnic exclusion undermines local ethnic-based nonviolent mobilization.

H1a: Mass nonviolent action is less likely to occur in locations with politically excluded ethnic groups.

Secondly, broader ethnic identities often form the basis of membership in social networks in politically exclusive societies (Wimmer, 2013), increasing social distance between groups that live in close proximity. Political inequalities in particular increase the salience of divisions between ethnic groups, thereby reducing the viability of horizontal mobilization across ethnic lines and undermining the scope of mobilization (Thurber, 2018). In societies where high levels of political inequalities exist between groups, boundaries tend be salient and ethnic networks are more socially 'closed' (Gurr, 1993; Stewart, 2008; Wimmer, 2013). This limits intergroup interaction in everyday life and precludes the formation of intergroup ties—a distinct obstacle to horizontal mobilization across ethnic lines.

H1b: Mass nonviolent action is less likely to occur in diverse locations where politically excluded ethnic groups coexist with other groups.

With existing research providing little indication of how movements overcome social barriers, the next section highlighting the importance of cross-cutting issues as a means to mobilize disparate groups and engage in both vertical and horizontal nonviolent mobilization.

Food prices spikes and overcoming ethnic obstacles to nonviolent mobilization

Building on the preceding discussion, the main argument of this article is that the emergence of nonviolent action within ethno-exclusive environments is greatly facilitated by the existence of broader cross-cutting grievances that transcend divisions across and within ethnic groups. Sharp increases in domestic food prices, or 'spikes,'[3] are a good example of a cross-cutting issue, as when large enough, they generate widespread economic grievances that impact consumers from all social groups. Regardless of social affiliations, access to affordable food is a basic need for all consumers (Barrett, 2013).

The cross-cutting nature of increases in food prices sets this apart from other types of issues. For example, while elections often spark unrest against the government (*vertical mobilization*), many major political parties in Africa gain the majority of their support from one or a few ethnic groups (i.e. Kitschelt & Wilkinson, 2007), reducing the likelihood that protests will attract a broad spectrum of participants across group boundaries (*horizontal mobilization*). Food price spikes also differ from other economic shocks: climatic disasters (see Buhaug, 2015), negative economic growth (see Blattman & Miguel, 2010), downturns in food production (Wischnath & Buhaug, 2014), or shock declines in food prices (i.e. Dube & Vargas, 2013). These types of shocks typically impact certain ethnic groups residing in specific, often rural, parts of a country, and instead have been related to armed conflict and communal violence as they reinforce ethnic-based grievances rather than cut across them.

In contrast, higher spikes in food prices provide an opportunity for movements to broaden their appeal and engage in horizontal mobilization across intra-ethnic and inter-ethnic divides because they are what Tilly (1978) calls a 'symbolic issue.' In Bosnia, protests in 2014 over high prices and low wages were framed around the powerful message: 'We are

[3] On a continuum, more dramatic price spikes, i.e. 24% increases in Egypt in 2008, are more detrimental than normal price spikes, i.e. 1% increases in Botswana (Barrett, 2013).

hungry in three languages' (Hopkins, 2014). In Egypt, the famous 'bread helmet' was a symbol that transcended ethno-religious lines, and was easily replicated by various segments of the population.

I argue that the unique and symbolic nature of food price spikes provide two simultaneous forms of motivation that facilitate the emergence of nonviolent action: common intergroup grievances, which eases *horizontal mobilization* in ethno-politically exclusive environments, and clear short-term incentives to join in anti-government protests, which fosters *vertical mobilization*.

Firstly, the greater the magnitude of price spikes, the more likely a higher number of social groups, across and within ethnic groups, will be impacted. Higher prices make economic hardship more 'visible' and therefore display the hardship of others (Weinberg & Bakker, 2014), increasing the perception that large segments of the population share similar grievances and have a common interest in addressing them. Between 2007 and 2008, the Egyptian opposition was able to mobilize 400,000 people, using record high food price spikes to unify individuals from different classes across Arab and Coptic Christian communities (Bush, 2010). Higher spikes encourage the participation of affluent segments and groups that are closer to political power (Barrett, 2013), including professionals and intellectuals, who tend to purchase more of their food and often participate due to a higher sense of entitlement (Tilly, 1978). This, in turn, is likely to encourage the participation of poorer and often politically marginalized consumers, who are the most vulnerable to price spikes (Ivanic et al., 2012), but are less likely to have the coordination required to engage in nonviolent action (Gamson, 1990; Tilly, 1978). In other words, food price spikes generate superordinate goals that unify normally divided groups.

Secondly, high food price spikes create short-term incentives to participate in nonviolent action because of their sudden economic impact. Households generally have very little warning of the impending economic hardships due to price rises, placing significant pressure on coping mechanisms. Attempts to adapt are often constrained by static wages (Wodon & Zaman, 2010) and poor social protection; African governments, on average, spend the least on social protection programs relative to their GDP (Ortiz et al., 2014). Faced with significant economic pressure and few avenues to redress economic hardships, individuals have extraordinary short-term incentives to participate in nonviolent action in order to force immediate concessions from the government.

Higher food price spikes provide movements with a unique opportunity to overcome ethnic obstacles to *horizontal mobilization* by conflating non-ethnic food-related grievances with anti-government and often ethnic-based sentiments, which facilitates *vertical mobilization* against the government who is solely to blame for widespread economic hardship (Barrett, 2013; Smith, 2014; Weinberg & Bakker, 2014). A movement can link the inability of the government to deal with food prices with its broader ineffectiveness and misuse of political power, and offer an viable alternative vision that advance its opposition (Chenoweth & Stephan, 2011), thereby drawing intergroup support away from government. This is illustrated in Uganda, where the opposition remains severely weakened by the legacy of a 19-year ban on opposition parties. The main opposition leader, Kizza Besigye, has increasingly used food price spikes to appeal across group lines and unite the fragmented opposition in demonstrations against the government by conflating economic hardships with issues of government corruption and misuse of power (Kron, 2011). In 2008, food price spikes enabled movements in a number of ethno-politically exclusive countries to organize nonviolent action by politicising various issues linked to increasing food prices, including

high wages, employment, lower tax levels, social protection, subsidies and corruption (Bush, 2010; Smith, 2014). Based on the preceding discussion, I offer the final hypothesis:

H2: In ethnically excluded and diverse locations, spikes in domestic food prices increase the likelihood of mass nonviolent action.

Research design

To test these hypotheses, I undertake a subnational analysis of all African countries between 1990 and 2008. The unit of analysis is grid-cell-years, based on the PRIO-GRID data-structure which consists of 0.5 X 0.5 degree geographical grid-cells (approximately 55 X 55 kilometres) (Tollefsen et al., 2012). This approach advances existing studies on the emergence of nonviolent action that rely on country-level data, which assumes conditions are consistent across a given country and conceals a great deal of subnational variation. Not all parts of a country experience nonviolent action. Different locations have disparate types of ethnic groups, and varying levels of diversity, population and wealth that either facilitate or undermine local nonviolent action. This can only be captured by the use of subnational data, which enables the exploration of spatial variations in the occurrence of nonviolent action across distinct local ethno-political contexts. Moreover, compared to administrative units, grid-cells do not vary in size or change over time and therefore are consistently comparable across countries (Tollefsen et al., 2012).

Dependent variable

To capture mass nonviolent action against the government at the grid-level, I use georeferenced events data from Social Conflict Analysis Dataset (SCAD) (Salehyan et al., 2012). SCAD events are based on local news reports from the Associated Press and Agence

France Presse newswires.[4] SCAD provides the most comprehensive collection of georeferenced social conflict events in Africa, offering detailed information on dates, coordinates, numbers of participants and a description of the incident and actors involved.[5] Using this information, I include SCAD events coded as: (1) targeting the national government, (2) involving nonviolent methods of noncompliance or persuasion, i.e. peaceful protests, demonstrations and strikes (Sharp, 2005), (3) organized, not sporadic and (4) involving a minimum of 1,000 participants. The last criteria follows the widely used Nonviolent and Violence Campaigns and Outcomes (NAVCO 2.0) dataset (Chenoweth and Lewis 2013), capturing mass number events that were mobilized despite potential barriers to nonviolent mobilization. Since nonviolent action does not use physical violence to resist the government (Butcher & Svensson, 2016), this also excludes violent unrest (i.e. communal violence and armed conflict) and incidental violence (i.e. riots).[6] While it is difficult to ascertain whether these nonviolent events are mobilized along ethnic or interethnic lines, the cross-cutting mechanism applies for ethnic movements, attempting to unify intra-ethnic groups (hypothesis 1a), and movements mobilizing across ethnic lines (hypothesis 1b).

The SCAD data has two limitations. Firstly, in some events the number of participants is coded as unknown. Where participation numbers are unknown, I only include events which have clear evidence of involving at least 1000 persons, using secondary information on the event, its geographical scope and the size of the organisations involved. For example, many strikes far surpass this threshold (i.e. the 1994 general strike in Burundi against military rule).

[4] This improves on the Cross-National Time-Series (CNTS) Data Archive which is based solely on reports from the *New York Times*.
[5] The SCAD data has much better temporal coverage than the Armed Conflict Location and Event (ACLED) dataset (starts at 1997), and the Afrobarometer (limited to sporadic rounds of surveys).
[6] While food prices impact protest and riots more broadly (Smith, 2014), the focus of this article is on nonviolent action which uniquely involves large, diverse, and nonviolent mobilization, which is distinct from sporadic rioting that does not require cross-cutting issues. This is explored further in the robustness checks.

Secondly, many widespread events are often not accurately georeferenced. For example, events coded as nationwide are assigned to the geographical centre of the country, while regional events are georeferenced in the centre of the region. These events cannot be excluded as they represent one-third of all events (see Table 1) and represent important examples of mass nonviolent action, including, for example, numerous anti-Apartheid events in South Africa.[7] Nationwide events also occur exclusively in 91 out of the 340 country years and removing these events would wrongly code these years as a 'false 0s'.

Table 1. Number of geocoded estimates across events and PRIO-GRID locations

	Total Events	National Estimates	Regional Estimates	Unknown Estimates	Other Estimates	Total Estimates
No. SCAD Events	5823	1637	145	298	67*	2080 (35.7%)
No. Grids with SCAD Events	1494	802	89	180	56*	992 (56.2%)**

*The 'other' category (rural, dockland and areas) overlaps with national, regional and unknown estimates.
**153 estimated locations overlap with geocoded SCAD events, meaning 839 locations are uniquely estimated.

To avoid dropping these cases, I generate different specifications to approximate the location of the non-geocoded events to closely resemble the types of events that are geocoded, in which 93% occur in cities (with a population over 100,000).[8] Approximations are also based on SCAD's description of each event and its actors; in this way, I can ensure the geocoding reflects spatial realities. For example, tea-producer strikes in Kenya are coded as occurring in tea producing areas.

For the main analysis, I use an estimated dependent variable (DV) that includes all geocoded events and estimates non-geocoded events as occurring in the capital and the

[7] These represent one-third of all event locations (see Table 1) but, in reality, are likely to represent a much wider number of event locations as they are occurring across the country.
[8] There is no global definition of an urban area with population thresholds based on various densities and travel times (see Uchida & Nelson, 2010). To remain consistent, I follow SCAD coding procedure of coding cities if they have a population greater than 100,000, obtained from http://www.geonames.org/countries/ and www.worldatlas.com. Coordinates are taken from http://itouchmap.com/latlong.html.

country's (or region's) five largest cities (*Top5_est*). This is a conservative assumption since most nationwide campaigns occur in multiple urban centres (Chenoweth & Stephan, 2011), as illustrated by the January 2018 Iranian protests that occurred in at least 19 cities amid food price spikes. I generate other DVs that estimate these events as occurring more widely across a country as a robustness check. Using the most modest estimated DV (*Top5_est)* in the main analysis balances potential bias induced by excluding non-geocoded events with bias from including too many estimated locations (see Table 1). Each event is aggregated to the relevant PRIO-GRID year. Grid-years with at least one nonviolent event are coded as 1 (otherwise 0).

Independent variables

To capture domestic food price spikes, I take the highest percentage change in domestic food indices from one month to the next and aggregate this to the year.[9] Following Smith (2014), I use domestic food price data from indices collected by the International Labour Organisation (ILO) (2014). Most peacetime African countries have monthly indices available from 1990 to 2008,[10] based on the price of a basket of the most important foods in the capital or major city.[11] This is a continuous variable with price spikes ranging from minimal increases, to very high changes that I expect are more likely to increase the risk of nonviolent action.[12] Using the highest percentage changes in food indices captures the short-term nature of spikes and provides a comparable indicator across countries.

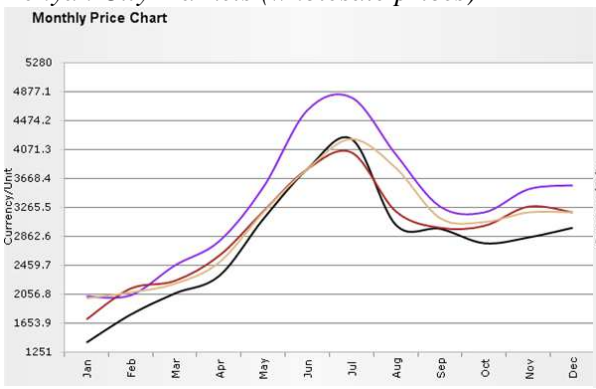
While these national-level data do not capture potential subnational variations in prices, I remain confident the ILO data are appropriate for the two reasons. Firstly, current

[9] While monthly data is aggregated to the year, this correlates highly with yearly increases in prices.
[10] Years where a government artificially alters food indices are excluded from the analysis. The following countries have no data: Democratic Republic of Congo, Eritrea, Liberia, Libya, Somalia, and Sudan.
[11] Where two food indices exist within a country, the most complete is chosen.
[12] I cap price increases at 100% to prevent hyperinflation from biasing the results. To retain data, I recode extreme values to the next highest % increase below 100%.

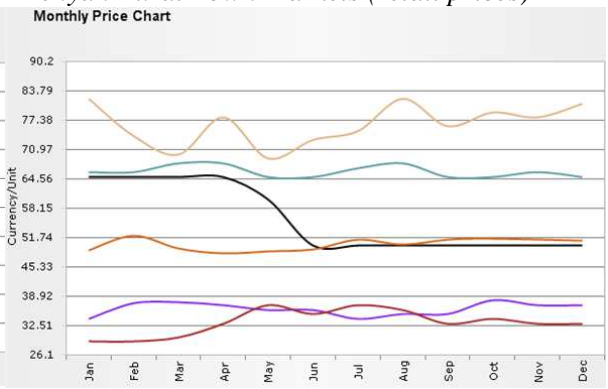
disaggregated data remains limited. For example, recent data from the World Food Programme (WFP) only comprehensively cover some African countries and are largely confined to 2015 and 2016. Secondly, as figure 1 shows, trends in the WFP data suggest that price spikes vary little across different urban areas, where the vast majority of nonviolent action occurs. Here I displays two examples of Kenya and Malawi, comparing the monthly price changes of urban and rural markets (each line is a local market), for the year 2011 when prices achieved record highs and good data is available. This figure shows that price trends in urban markets tend to move in the same direction in Kenya (spike in July) and Malawi (dip around May and June), while much more price variation occurs across rural markets.

Figure 1. Food price variation across urban and rural areas of Kenya and Malawi (2011)

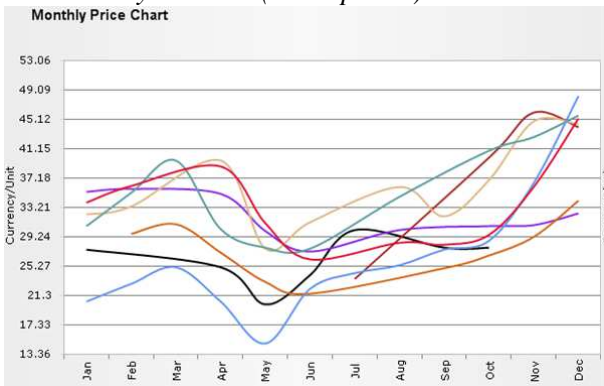
Kenyan City Markets (wholesale prices)



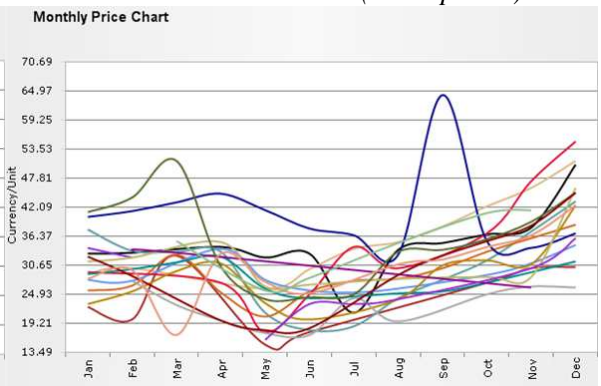
Kenyan Rural Town Markets (retail prices)



Malawi City Markets (retail prices)



Malawi Rural Town Markets (retail prices)



Source: VAM Food and Commodity Prices Data Store. (http://foodprices.vam.wfp.org/).

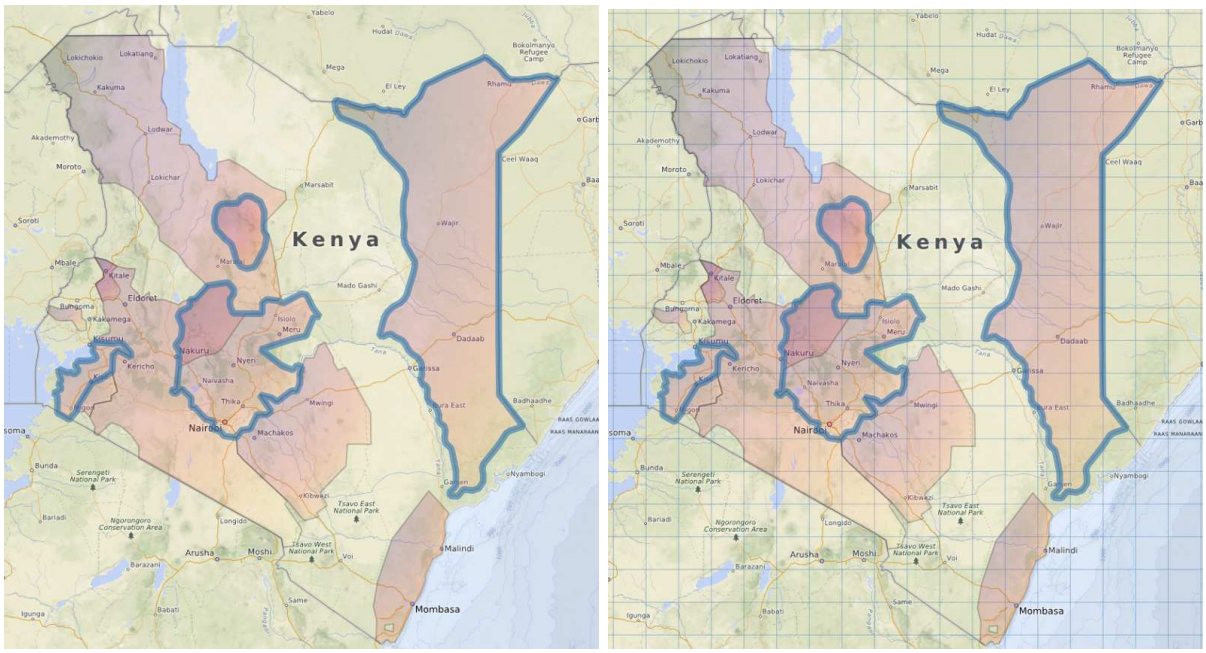
I focus on domestic rather than international food prices, as they are less distorted by state market interventions (Ivanic et al., 2012; Hendrix & Brinkmann, 2013; Smith, 2014) and more closely reflect the price that people pay, with 90% of all food consumed in Sub-Saharan Africa being produced domestically (Barrett, 2013). I exclude country-years in which civil war is ongoing, because of its clear endogenous relationship with food prices (Gates et al., 2012).

To assess the impact that local ethnic exclusion and diversity has on nonviolent action, I create two variables at the grid-level. First, grid-cells resided by ethno-politically excluded groups, to capture ethnic exclusion and proxy potential intra-group ethnic differences. Second, locations with excluded groups that coexist with other ethnic groups, to measure diversity where ethnic groups co-exist. These areas should normally constrain nonviolent resistance when food prices spikes are small. I use group-level data from the Ethnic Power Relations (EPR) dataset to gain information on the level of group representation in government, coding groups as included or excluded from governmental power (EPR data, Version 3.0; Wimmer, Cederman & Min, 2009). The EPR dataset only includes politically relevant ethnic groups represented by at least one political actor in the national political arena, which ensures there are political actors in place to potentially engage in unrest.

These variables are translated to the grid-level using georeferenced ethnic settlement patterns from the Geo-EPR dataset (Wucherpfennig et al., 2011). Grids containing no politically relevant groups are used as the reference category. These areas are either inhabited by no ethnic groups or by less politically relevant ethnic groups. These locations do not exhibit the same social barriers associated with politically relevant groups (Posner, 2004) and therefore make a good comparison with more socially constrained local ethnic contexts. I also exclude grids with a population less than the requirement for mass civil resistance (<1000). I

include two variables to capture politically relevant ethnic groups, the locations of politically relevant excluded groups, considered *oppositional*, and areas with included groups, treated as *pro-government* - coded as 1, otherwise 0. Using Kenya in 2000 as an illustrative example, Figure 2 visualizes the data. In 2000, three Kenyan ethnic groups were excluded from the executive: the Kikuyu, Luo and Somali (highlighted). The settlement areas of these groups are proxies for opposition areas. The other included groups (shaded and not highlighted) represent pro-government areas.[13] Politically excluded grids are then interacted with food prices to test the hypothesis that food prices increase the likelihood of nonviolent action in excluded areas.

Figure 2. Included and excluded ethnic group areas (Geo-EPR data) over the PRIO-Grid



To measure more challenging diverse areas, I generate a dummy variable for locations where excluded group settlement areas overlap with areas resided by at least one other ethnic group. To test the hypothesis that high food price spikes increase the likelihood of nonviolent action

[13] Although non-diverse areas are coded as 'homeland' regions of certain ethnic groups in the EPR data, these areas still exhibit levels of heterogeneity not picked up in the EPR data. For example, Nairobi is within the Kikuyu homeland but is also an ethnically diverse city.

in excluded and diverse areas, I generate an additional interaction term - diverse excluded areas X food price spikes.[14]

Control variables

At the grid-level I control for poverty, using the grid-level equivalent of national GDP (Nordhaus, 2006), as this reduces adaptability to price spikes and reduces the cost of participation (Barrett, 2013). I include the grid population (logged) (CIESEN, 2005), since larger and more concentrated populations facilitate the coordination of nonviolent mobilization (Butcher & Svensson, 2016; Barrett, 2013). Also included is the size of the largest excluded group within a grid (% of population), as larger groups have a mobilization advantage (Dahl et al., 2016). As nonviolent action is largely an urban phenomenon I also control for travel time (minutes) to the nearest urban centre and distance to the capital (kilometres) (Tollefsen et al., 2012). To account for spatial and temporal dependencies, I include a temporal lag for nonviolent action occurring in the previous year (t-1) and a spatial lag for nonviolence in neighbouring grids.

National-level controls are also included. This includes the number of excluded groups in a country, as governments are less likely to compromise when facing multiple groups (Walter, 2009), a logged version of national population to proxy for the size of the country (World Bank, 2013), the Polity2 measure (Marshall & Jaggers, 2010) to control for regime types and the number of peace years to account for instability. Finally, I include a dummy variable for national election years which often spark unrest (Lindberg, 2009).[15]

[14] Although this assumes that multiple groups are participating in nonviolent action in the majority of cases, it is unlikely one ethnic group is doing all the mobilization in excluded and/or diverse areas, since ethnic mobilization is comparably rare - 83% of nonviolent campaigns involve multiple groups (Thurber, 2018).
[15] A summary of all variables (non-standardized) and data sources are listed in Table 3 (Online Appendix).

Method

I run country-fixed-effects logistic regression models to restrict the analysis to the within-country variance. This allows the models to control for unobserved differences between countries and for certain country characteristics that influence food prices and nonviolent action, including environmental vulnerabilities, transport networks, food infrastructure, and trade policies, such as tariffs, food assistant programs and subsidies (Smith, 2014). To aid post-estimation, all independent variables are standardized, so each model reports the effect of a one-standard-deviation increase in each variable.[16]

Results

In this section, I analyse my hypotheses; local ethno-political exclusion and diversity reduces the likelihood of nonviolent action (H1a, H1b) and higher food price spikes increase the feasibility of nonviolent action in these excluded and diverse areas (H2). All models displayed in Table 2 explore these propositions using the primary DV, which estimates SCAD's non-geocoded events as occurring in a country's five largest cities (*Top5_est).*

Model 1 (Table 2) explores the baseline effect of local ethnic exclusion and diversity on the likelihood of nonviolent action. Model 1 reports no statistically significant effect of ethnic exclusion on the emergence of nonviolent action. Although it is extremely difficult to separate out ethnic and interethnic nonviolent events, this could relate to simultaneous effects, whereby ethnic exclusion generates ethnic protest in some areas, such as the Berber region of Algeria (Gurr, 1993; Jazayeri, 2016), but undermines more intergroup nonviolent activism in other areas, where the EPR variables may not pick up diversity, i.e. cities within ethnic homelands (Thurber, 2018). In contrast, Model 1 and 4 show that nonviolent action is

[16] A standardized variable is the variable minus the mean, divided by the standard deviation.

less likely to occur in ethnically excluded areas that are diverse (have at least one more EPR group). This provides strong evidence for hypothesis 1b, confirming that diverse environments present an obstacle to nonviolent horizontal mobilization and reduces the feasibility of nonviolent action ($p<0.01$ and $p<0.05$).

I proceed to explore the mediating impact of food price spikes on ethnic barriers to nonviolent resistance. Model 2 explores the general impact of food prices on the incidence of nonviolent action. The coefficient is positive and highly significant, providing strong evidence that greater rises in food prices increase the likelihood of nonviolent action in diverse locations within states ($p<0.001$). When increasing the percentage increase of food prices by one standard deviation (moving food prices from a 5.2% to a 10.5% increase), the risk of nonviolent action rises by 12.7%.

Model 3 then explores the likelihood of nonviolent action in locations resided by excluded ethnic groups. The model shows a positive effect for this interaction, suggesting that higher food price spikes increase the likelihood of nonviolent action in areas home to these groups, even when controlling for other structural factors. In addition, ethnically excluded areas, a non-finding in baseline models, becomes significant and negative, suggesting that these areas otherwise likely to constrain a movement's efforts to engage in nonviolent action during times of small or no price spikes ($p<0.05$). While we cannot be sure who is participating in nonviolent action in ethno-excluded areas, regardless of whether movements are attempting to mobilize sub-groups within the same ethnicity, or across ethnic divides, food price spikes have a general impact on nonviolent action in excluded areas. In these areas, Model 3 reports a 20.2% increased likelihood of nonviolent action with a one-standard-deviation increase in food prices (from 14.7% to 19.1%).

Table 2: Food prices, ethnic cleavages and mass nonviolent action, 1990-2008.

	Model 1 w/FE	Model 2 w/FE	Model 3 w/FE	Model 4 w/FE
Standardized Increase in Food Prices		**0.127*** **	**-0.034**	**-0.013**
		(0.037)	**(0.065)**	**(0.058)**
Excluded Group Area (opposition area)	**0.0750**	**-0.023**	**-0.201***	**-0.087**
	(0.064)	**(0.064)**	**(0.085)**	**(0.075)**
Included Group Area (government area)	-0.032	-0.080	-0.091	-0.093
	(0.059)	(0.057)	(0.057)	(0.060)
Food Price Increases X Excluded Areas			**0.202****	
			(0.065)	
Food Prices X Diverse Excluded Areas				**0.150****
				(0.048)
Ethnically Diverse Excluded Areas	**-0.142****			**-0.151****
	(0.053)			**(0.054)**
Grid Wealth (GCP) (log)	0.379**	0.417***	0.464***	0.481***
	(0.117)	(0.118)	(0.118)	(0.119)
Grid Population (log)	1.214***	1.201***	1.202***	1.223***
	(0.075)	(0.074)	(0.074)	(0.074)
Size of Excluded Group (%)	-0.031	-0.010	0.044	0.037
	(0.065)	(0.067)	(0.069)	(0.067)
Travel to Urban Centre (mins)	-4.376***	-4.460***	-4.461***	-4.403***
	(0.321)	(0.322)	(0.322)	(0.322)
Distance to Capital (km)	0.075	0.081	0.081	0.070
	(0.055)	(0.054)	(0.054)	(0.054)
No. Excluded Groups	0.065	0.080	0.060	0.003
	(0.094)	(0.094)	(0.095)	(0.096)
National Population (log)	-1.128*	-1.016*	-1.377**	-1.375**
	(0.441)	(0.440)	(0.456)	(0.455)
Regime Type (Polity2)	0.020	0.004	0.020	-0.011
	(0.087)	(0.087)	(0.088)	(0.087)
National Elections	0.122***	0.118***	0.107**	0.112**
	(0.035)	(0.035)	(0.036)	(0.035)
Number of Peace Years	-0.0190	-0.029	-0.036	-0.034
	(0.059)	(0.059)	(0.059)	(0.059)
Country Fixed Effects	Yes	Yes	Yes	Yes
Temporal and Spatial Lags	Yes	Yes	Yes	Yes
R2	0.524	0.524	0.525	0.526
Observations	86203	86203	86203	86203

† p<0.10 * p<0.05, ** p<0.01, *** p<0.001 Clustered standard errors by country. Reference category: grids with no ethnic groups.

Lastly, Model 4 explores the initiation of protest within a more challenging and divided diverse local environment. The interaction effect of food prices and diverse locations is positive (p<0.01), suggesting that while diversity undermines nonviolent action, food prices spikes mediates this effect and increase the likelihood of nonviolent action in these areas.

When food prices increase by one standard deviation (from 8.8% to 12.7%), the likelihood of nonviolent action in diverse locations increases by 15%. Overall, Table 1 provides supports my second hypothesis and suggests that food price spikes increase the feasibility of mass and diverse nonviolent mobilization, even in the most difficult multi-ethnic environments.

The control variables suggest there are other important drivers of nonviolent action. Grids that are more wealthy, have larger populations and that are closest to urban centres are more likely to witness nonviolent resistance. This gives support to claims that urban-based resources and related networks facilitate nonviolent action (Butcher & Svensson, 2016; Ackermann & DuVall, 2000; Nepstad, 2015). Several control variables – distance to the capital, number of peace years, regime type and the number of excluded groups residing within a state – have no significant effects on nonviolence. Furthermore, while other studies argue that larger ethnic groups have a greater potential for mobilization (Dahl et al., 2016), I find little evidence of this at the subnational level. While large groups facilitate ethnic-based protest, this is unlikely to facilitate mobilization across ethnic lines to engage in intergroup action. Finally, nonviolent action is less likely to occur in larger countries (proxied by population size) which increases coordination costs.

Moving beyond the impact of one-standard-deviation increases in food prices, I explore in-sample simulated predictions using CLARIFY (Tomz, Wittenberg & King, 2003).[17] Unfortunately, the post-estimations of fixed-effects models are limited and are not supported by CLARIFY.[18] I therefore generate predictions based on logistic regression models clustered around country standard errors.[19] The simulations show the likelihood of nonviolent action is very low (at 0.0052%) as nonviolent action is very rare and that the

[17] CLARIFY produces a mean percentage prediction of an outcome based on 1000 random simulations.
[18] The Margins package in STATA shares the same problem and provides similar simulations.
[19] This produces results similar to rare-events logistic regression.

effect exponentially increases with higher rises in food prices and when holding other variables at their mean. When food prices rise by 15%, the probability of nonviolent action increases to 0.0071%, an increase of 38.1%. When moving to a 30% rise in food prices, the likelihood of nonviolent resistance is increased to 0.0114%, making a jump of 60.2%. The same occurs in ethnically excluded areas, where a 1-15% rise in food prices increases the risk of nonviolent action by 51.1%. Finally, in more complex and ethnically diverse environments, the probability of nonviolent action increases by 31.4% when prices move from a 1% increase to a 15% increase and a further 37.8%.when prices go up by 30%.

Following Ward, Greenhill and Bakke (2010) I then explore the predictive power of the above model in an out-of-sample analysis. Although more difficult to interpret substantively, out-of-sample prediction serves as a harder test for the predictive power of the model and whether key variables increase or reduce predictive power. Here I use K(10)-fold cross-validation, where nine random segments of the data are used to predict the final segment.[20] The output produces a size of area under the curve (AUC) ranging from 1.0 (perfectly predictive) and 0.5 (non-predictive). Higher rates have lower false positive and higher true positive outcomes. The above model performs very well at around 0.966, slightly less predictive than the in-sample (0.967). Moreover, inputting key explanatory variables into the model increases the model's predictive power.[21]

Robustness checks

To check the robustness of my results I run additional analyses.[22] The first issue I explore is whether food prices are indeed a unique cross-cutting issue and are not driven by the coding

[20] 10 folds in K cross-validation is the norm in the machine learning literature and with large datasets.
[21] See Online Appendix for a detailed discussion of the out-of-sample results.
[22] All are available in the Online Appendix.

scheme. I suggested theoretically that elections should have a positive effect on protest (Salehyan & Linebarger, 2015), but not necessarily cross-cut ethnic divides as electoral support in African countries is often drawn along ethnic lines. While I find elections do have a direct effect, I find no evidence that excluded and diverse areas are more likely to experience nonviolent action during election years. I explore this further by looking at riot outcomes. Rioting is directly impacted by food prices (see Barrett, 2013; Smith, 2015), but should not be dependent on a cross-cutting issue as the scope of mobilization is lower and sporadic. While price spikes have a direct effect, they do not mediate the likelihood of rioting in diverse areas. This suggests that the cross-cutting mechanism linking ethnic grievances to nonviolent action is unique to nonviolent mobilization. I then move on to other types of economic shocks that may cause nonviolent action or mediate the impact of food prices: deviations in average rainfall, economic growth and international food prices. The results do not impact the main findings.[23]

Moving beyond the theoretical mechanism itself, the results could be driven by model choice. I rerun my results using other methods that address unit effects: random-effects and logistic regression with country corrected standards errors (Beck & Katz, 1995). For the latter, I employ rare-events logistical regression to better estimate rare outcomes, as nonviolence only occurs in 1.7% of all grid-years (King & Zeng, 2001). For both models the results are identical. However, when using Rare-Events Logistic regression, the interaction of food prices with diversity remains positive, but falls just outside statistical significance.[24] I then look to see if the results can be reproduced at the country-level as an alternative unit of analysis. Here I look at the number of excluded EPR groups in a country, which when

[23] Models 5-12, Table 4.
[24] Models 13-20 (Table 5). A detailed discussion of these results can be found in the Online Appendix.

interacted with high food price spikes increases the likelihood of nonviolent action, in line with results at the subnational level.[25]

The next concern is the possible impact of time trends. Following Beck, Katz & Tucker (1998) I introduce time trend dummies and cubic splines (time since the last nonviolent event) using country fixed-effects.[26] The results remain the same. Another method is to add further fixed effects, although there are suggestions this can produce unstable results with binary outcomes (Beck & Katz, 2001). Nevertheless, I introduce more restrictive models with year-fixed effects and then grid-year fixed effects[27] where the results largely hold ($p<0.10$). Next I rerun the results using included EPR groups as the reference category, excluding all grids without EPR groups. The results remain the same and support Thurber's (2018) finding that excluded groups are less likely to protest than included groups.[28]

I then turn to three alternative DVs, as the results may be driven by the primary DV - Top5_est. The first two extend my geocoded estimations to include the ten largest cities with 100,000 people (Top10_est) and then includes all other cities with a population over 300,000 (Full_est). The results actually strengthen, which suggests that the Top5_est DV may underestimate the location of many nationwide events. The results are less stable with the last DV, which removes the non-geocoded nation/regionwide events (No_est). However, as previously argued, removing the geo-estimates leads to the coding of 'false 0s' in one-quarter of country years witnessing nonviolent action and removes key widespread nonviolent action most likely related to price spikes.[29]

[25] Models 21-23 (Table 6).
[26] I use time dummies for 1990-94, 1995-99, 2000-04 and 2005-08 (reference). See Table 7.
[27] Table 8.
[28] Table 9.
[29] Tables 10-12 where the merits of the geo-estimates are discussed in more detail.

Next, I explore urban-only nonviolent action, where I can be more confident that the food price data closely reflects what people are paying. I rerun the analyses with an urban-only sample (within five hours of an urban centre) and the full sample using a urban-only DV. I then also remove agricultural areas, which are less likely to be consumers and are less vulnerable to food prices than those in less agricultural areas (i.e. urban areas) (Barrett, 2013). While agricultural areas are associated with less nonviolent resistance ($p<0.05$),[30] the results do not change.

In the final robustness checks I account for possible reverse causality (i.e. nonviolent action could increase prices) and other omitted variable bias.[31] I re-run my analysis with lagged independent variables. Next I run additional models that account for other explanations of variations in the emergence of nonviolent resistance, including the CIRI Index to account for highly repressive states that may deter nonviolent action (Lichbach, 1998) and control for relatively richer and poor groups within a grid, as richer ethnic groups may have a higher mobilization potential. The findings remain the same.

Conclusion

Across various specifications, food price spikes as a cross-cutting issue, have been shown to facilitate nonviolent mobilization, both vertically against the government and horizontally in forging coethnic and intergroup coalitions. These results provide strong evidence that the existence of cross-cutting grievances increase the emergence of nonviolent action in ethnically excluded and diverse locations, which are otherwise constrained by social divisions.

[30] Table 13.
[31] Table 14.

These findings extend our understanding of how and when nonviolent action is likely to emerge when activists are facing difficult social barriers to nonviolent mobilization. In doing so, this article contributes to two broader bodies of literature that have grown in isolation to one another; existing studies of civil resistance that have focused on outcomes and structural approaches that largely neglect the horizontal dimension of nonviolent mobilization when exploring its emergence. This study also builds on country and movement-level quantitative studies, by exploring nonviolent action at the subnational level, thereby accounting for the variation of nonviolent action within countries, using new geocoded events data.

Beyond academic contributions, this article also provides important policy implications. African regimes that deploy ethno-exclusive policies as a means to maintain political power are not immune from nonviolent action. Such regimes need to develop more inclusive institutions to reduce the likelihood of nonviolent action and other forms of unrest. Moreover, food price spikes are clearly important for political stability. While African governments have various options to implement stabilisation mechanisms that alleviate the impact of rising food prices, safety net measures are either rare or ineffective. Only nine African countries implemented food-access programs during record high prices in 2007 and 2008 (Berazneva & Lee, 2013). In many cases, governments are limited in how they can act, as was the case in Egypt where subsidies became simply unaffordable, accounting for 8% of the country's GDP in 2011 (Hendrix & Brinkman, 2013). However, governments need to diversify their policies to implement creative long-term solutions for social protection.[32]

[32] These could include price regulations, food reserves, social welfare programs, lower taxes, food subsidies, lower tariffs on imported food, and increasing stocks by imposing export restrictions (Hendrix & Brinkman, 2013).

Future research could look at other 'unifying' factors that cut across social boundaries and enable opposition groups to engage in nonviolent action, for example, currency devaluation, cross-cutting religious and language cleavages and other commodities such as fuel prices. The paper is better placed to capture the grievances of consumers, but other research could consider decreases in food prices, particularly cash crops, which may trigger rural-based civil resistance which has its own unique mobilization challenges. Finally, research is also needed to understand how subnational variations in food prices impact unrest, but is dependent on the availability of new data.

Replication data

The dataset and do-files for the empirical analysis, along with the online appendix for this article, can be found at http://www.prio.org/jpr/datasets.

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