What triggers civil unrest support and behaviour? Objective horizontal inequalities vs. collective grievances in Southern Tanzania

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Abstract

When does inequality lead to conflict? Despite recent studies highlighting the effect of excluded groups, this question remains to be fully answered. In this paper we argue that objective group inequality is not sufficient to fuel unrest. Structural inequalities need to be perceived as unfair, and become grievances, in order to be a mobilization resource. While most conflict scholars recognize this, statistical tests of the effect of inequality on conflict almost exclusively rely on objective data. We argue that this limits their ability to distinguish when inequality is politically relevant and when it is not. Southern Tanzania is a case in point. Despite decades of marginalization, the population remained peaceful until natural gas was discovered, and the government broke their promises of local development. Demonstrating that objective regional inequalities have remained relatively constant, while collective grievances have increased, we argue that direct measures of grievances are needed to pinpoint when inequality becomes politically salient. Using novel survey data, we find that people who think that the region is treated unfairly are more likely to support and participate in civil unrest than people who do not hold this opinion. While our data is cross sectional and limited to Southern Tanzania, our results have implications for conflict studies in general highlighting the importance of gauging perceptions and judgements, and how these are formed.

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Introduction

The age old debate about whether inequality leads to conflict has been brought a substantial step forward by recent research on group inequality. Spearheaded by Frances Stewart and her theory of Horizontal Inequalities (2002; 2008; 2010), the core argument in this work is that inequality becomes a mobilization resource when it overlaps with salient group identities. This theoretical development has given rise to several quantitative studies confirming the role of horizontal inequalities in inducing conflict (e.g. Buhaug, Cederman and Gleditsch, 2014; Cederman, Weidmann and Gleditsch, 2011; Cederman, Gleditsch and Buhaug, 2013; Deiwiks, Cerderman and Gledistch, 2012; Østby 2008a; 2008b; Østby, Nordås and Rød, 2009). In this article we address two gaps in this literature. First, while Stewart's theory postulates that structural asymmetries can drive political violence *in general*, empirical studies commonly test – and find – an effect on civil war occurrence. The effect on civil unrest support and behavior is far less investigated. Second, and most importantly, horizontal inequalities are widespread and do not always trigger mobilization. So what explains when and why inequality between groups leads to conflict? Studies of this topic are exceedingly scarce.

We argue that in order for horizontal inequalities to become a mobilization resource, people have to be aware of them, react on them with frustration and/or consider them unjust. In short, they have to be politically relevant. Such a line of argument concurs fully with the postulated causal chains underpinning existing studies, which generally assume that horizontal inequalities lead to collective grievances through group comparison and an evaluation of injustice (see e.g. Cederman, Weidmann and Gleditsch, 2011; Cederman, Gleditsch and Buhaug, 2013). However, contrary to these same studies we do not assume that structural inequalities and collective grievances overlap. Rather than being constant, grievances are changing over time (Wood, 2003), making them a better measure of conflict risk than objective horizontal inequalities, who are demonstrated to be remarkably 'sticky' (Tilly, 1999). Our analysis thus differs from existing studies of horizontal inequalities and conflict in that we apply direct measures of collective grievances rather than mere objective structural data.

Our methods are mainly quantitative, but we also rely on qualitative data from 35 semi-structured interviews to back some of our claims. To analyze the link between collective grievances and conflict we use novel data from an 800 respondent survey conducted in the Mtwara and Lindi regions in Southern Tanzania in June 2015. These regions have been economically, politically and socially marginalized compared to the rest of Tanzania at least since independence (see e.g. Seppälä and Koda, 1998). Despite grave, long lasting, objective horizontal inequalities, the population remained peaceful until very recently. Clearly, objective horizontal inequalities were not enough to trigger conflict. So what did? In short, a combination of newly discovered natural resources, broken promises of local

development, political mobilization and the historic marginalization (Mgamba, 2013). From 2010 and onwards a range of huge natural gas discoveries outside the regions' coastlines, as well as some smaller onshore developments, created hopes of change among the locals – further fuelled by ambitious politicians. 'Mtwara will be the new Dubai' President Kikwete declared when visiting this region as part of his 2010 electoral campaign. In 2012 and 2013 riots erupted amid claims of broken promises. The construction of a 532-kilometre pipeline bringing onshore natural gas from Mnazi Bay in the Mtwara region to Dar es Salaam infuriated the local population, who had expected the gas to be used for local industries.

By choosing this case, we also help fill gaps in the natural resource/conflict literature. Very much as for the horizontal inequality literature, this body of work has largely neglected political violence in the form of protests, demonstrations and riots. However, as pointed out by a recent review article, it is unlikely that local natural resources are only associated with civil war (Koubi et al. 2014). And while there are some studies indicating that a combined presence of horizontal inequalities and natural resources increases conflict risk (e.g. Østby, Nordås and Rød, 2009), this combination is generally understudied, and once more based on structural facts rather than perceptions and judgements.

We develop our measures of collective grievances by taking as point of departure several proposed grievance-inducing mechanisms in the literature. In line with Gurr's relative deprivation theory (1970), we postulate that frustrated expectations are a driver of grievances, however, we connect this to the horizontal inequality literature by looking at frustrated expectations on behalf of the group, not the individual. Furthermore, since it is uncontroversial that people act on perceived, and not objective, inequality (see e.g Gurr, 1970, Stewart, 2008, Cederman et al. 2013), we use a measure capturing perceived horizontal inequality. Finally, people may be aware of horizontal inequalities without considering them unjust (Cederman et al. 2013, Almås et al. 2010). We therefore apply a measure of perceived unfair group treatment.

We are interested in whether collective grievances increase the risk of civil unrest behavior, taken to include participation in demonstrations or protest marches, and actual use or willingness to use force or violence for a just cause. However, since recent work demonstrate that attitudes towards use of political violence – more precisely the acceptance of the use of physical violence – is positively linked to subsequent actual conflict events (Linke, Schutte and Buhaug, 2015), we also test whether collective grievances affect attitudes towards civil unrest.

Using logit regressions we find that collective grievances are indeed associated with civil unrest support and behavior. People who think that their region is treated unfairly by the government are significantly more likely to both support and having participated in civil unrest than people who do not

hold this opinion. This lend support to our argument that horizontal inequalities lead to conflict when they are considered unfair. While our statistical analysis does not test directly whether grievances were exacerbated by the frustrations linked to the gas developments, interviews and secondary sources strongly suggest that they were. Frustrated collective expectations and perceived economic regional inequality is also significantly associated with support for civil unrest, but not with participation. Interestingly, a perception of individual inequality is insignificant in all models – confirming that the group aspect is indeed essential.

On one hand, our results support the causal chains underpinning studies of horizontal inequalities and conflict – for structural inequalities to become politically relevant they will have to be perceived as unfair. On the other hand, it is equally evident that objective figures will not capture such sentiments. Our results therefore have implications for the broader studies of the relationship between horizontal inequalities and conflict. Current studies using measures based on objective data are able to establish a 'base line' risk of conflict, but if we are to provide more nuanced information on when the conflict risk is more imminent, we have to apply direct measures of the grievances who actually drive mobilization.

Our survey data is cross-sectional, making us unable to make any direct causal claims based on our statistical analyses. However, our qualitative data supports that the direction of the causality during the riots was indeed what we propose; grievances led to civil unrest. While we believe that the potential endogeneity in our quantitative analyses is to some extent mitigated by this, further analyses based on a larger set of countries as well as panel data are needed to fully establish the scope and validity of our argument[1].

The paper proceeds as follows: we first review the relevant literature, then give the rationale for choosing Tanzania as a case, before presenting our theoretical framework as well as testable hypotheses. We then describe our data and lay out our empirical strategy, before presenting results and concluding.

Literature review

This paper feeds into two separate, though still interlinked, lines of research: the inequality/conflict nexus and the natural resource/conflict nexus. In the next sections, we provide a short overview of current knowledge within both strands. Furthermore, we will identify common weaknesses in empirical studies in both literatures, most prominently the limited focus on the intermediate steps in

[1] It should be noted that it is only our analysis of participation, not our analysis of attitudes, that is affected by this.

the causal process from structural background patterns to mobilization for conflict, and the predominant focus on civil war events.

Inequality and conflict

Gurr's (1970) work on relative deprivation as a source of political violence remains a classic today. At the core of his theory is the notion that when people get less then they originally expected, frustration will arise and their willingness to participate in political violence to rectify the perceived injustice will increase. Despite initial praise, his work was very soon critiqued by scholars holding that frustrations/grievances are too ubiquitous to explain when conflict occurs, and that the economic or political opportunity to organize a rebel group is the most important explanatory variable (Snyder and Tilly, 1972; Tilly 1978). This view received strong support from acknowledged statistical studies (Collier and Hoeffler, 2004; Collier, Hoeffler and Rohner 2009; Fearon and Laitin, 2003).

Lately inequality has been made relevant once more following Frances Stuart's (2002; 2008) theory of horizontal inequalities. Defining horizontal inequalities as 'inequalities in economic, social or political dimensions or cultural status between culturally defined groups' (Stewart 2008: 3), she argues that group inequality matters more than individual inequality, and that inequality becomes an important source of conflict when it overlaps with salient group identities. Thus, by combining social identity theory and relative deprivation theory, Stewart suggests causal mechanisms to bridge the gap between structural background patterns and collective action. A range of quantitative studies support Stewart's theory. Economic, social and political inequality between *ethnic* groups (Cederman, Weidmann and Gleditsch, 2011; Cederman, Gleditsch and Buhaug, 2013; Østby, 2008a), between *regional* groups (Østby, 2008b; Østby, Nordås and Rød 2009) and between *religious* groups (Østby, 2008b) significantly increases the risk of civil war. While the studies of ethnic inequality have received most attention, Østby (2008b) actually find that regional inequality have the strongest explanatory power on civil war – when comparing with ethnic and religious inequality.

Besides focusing on civil war events, all the above empirical studies rely on objective measures of horizontal inequalities as a proxy for collective grievances. However, collective grievances are highly subjective phenomena that will not be reflected in the statistical figures currently used to measure their effect. If we are to understand when and how horizontal inequalities lead to conflict, we will have to investigate how people actually perceive their situation, and whether they judge it to be good or bad. Accordingly, the measures used to analyze collective grievances should reflect such perceptions.

Natural resources and conflict

There is increasing empirical evidence that countries depending on non-renewable resources face a higher risk of intrastate conflict (Koubi et al. 2014; Ross, 2015). Of the various non-renewable

resources, Ross (2012) finds that oil and gas are particularly conflict prone, while Lujala (2010) indicate that onshore production increases the risk of conflict while offshore production does not. Blair (forthcoming) conducts an even more fine-grained analysis and concludes that oil increases the risk of conflict when it is discovered in populated areas. All these studies look at the overall link between the presence of oil and gas and civil war events, and do not take into account individual level motivations for supporting and participating in conflict.

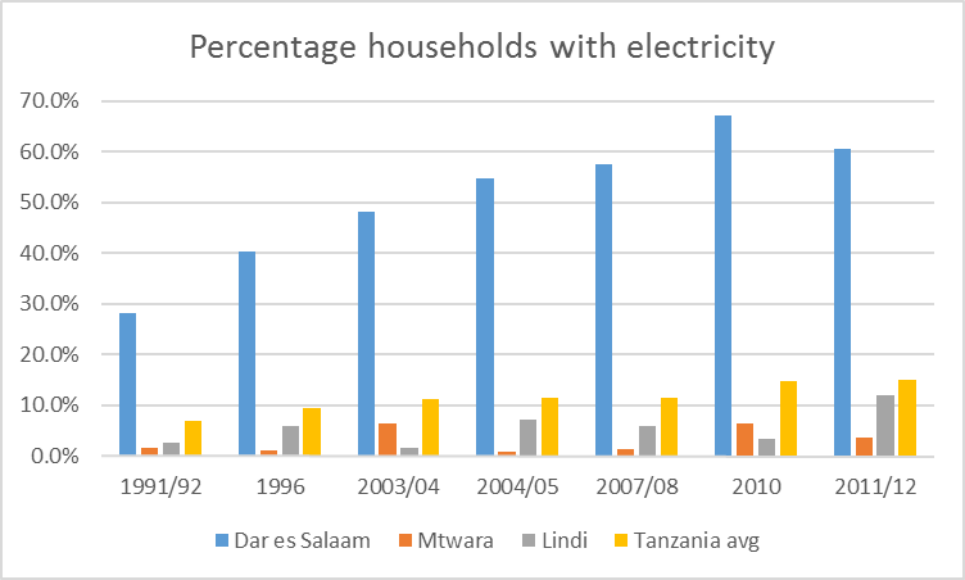
A large share of the studies leans towards the 'opportunity' civil war literature. For example Collier and Hoeffler (2004) highlight that revenues from natural resources constitutes financial support for rebels. Fearon and Laitin (2003) emphasize that resource wealth weakens state institutions by diminishing incentives to build a strong bureaucratic apparatus to collect taxes. This in turn makes the state an easy target for rebel groups. Blair (forthcoming) postulates that the risk of conflict induced by oil in populated areas are strongly linked to the increase bargaining capacity resulting from direct access to production facilities and hence means to conduct sabotage. Less studied is the role of grievances, which is surprising given that natural resource wealth rarely spreads evenly, and hence is likely to both exacerbate existing as well as create new inequalities – particularly horizontal inequalities. This resonates with an emerging branch of horizontal inequality theory, who argues that the prospect of resource revenues could create high expectations in resource-rich regions, which can again lead to frustration and potentially conflict if they are not met (Ross, Lujala and Rustad 2011; Stewart, Brown and Langer 2008). A few quantitative studies do support a link between natural resources, horizontal inequalities and civil war (Asal et al. 2015; Basedau and Pierskalla, 2013; Wegenast and Basedau 2014; Østby, Nordåa and Rød 2009). Similar to the studies looking at horizontal inequalities, these analyze civil war events, and they measure the objective situation of the given group rather than how people actually interpret these inequalities.

Southern Tanzania: Lasting objective horizontal inequalities, yet peaceful

Tanzania stands out as a remarkably politically stable country on a continent plagued by political violence. A strong national identity resulting from Nyerere's extensive policies to fight tribalism and ethnic affiliation is a frequently mentioned reason for this. Concurringly, horizontal inequality scholars highlight Tanzania as a case example of how the absence of ethnic asymmetries fosters stability (Østby 2008a). However, the horizontal inequality literature also find that regional inequality is a strong driver of conflict – when compared across Africa actually a stronger driver than ethnic inequality (Østby 2008b). And when it comes to regional inequality, the southern regions of Mtwara and Lindi has been relatively deprived and marginalized compared to the rest of the country for decades (Seppälä and Koda, 1998). Data on household electricity access from the Demographic and Health Surveys from 1991

to 2012 clearly demonstrates that Mtwara and Lindi has persistently lagged both Dar es Salaam and the general average for the country (*Note: we will use HI measures based on household asset ownership, also from DHS, for the next version of the paper*).

Figure 1. Percentage households with electricity Mtwara and Lindi vs. Dar es Salaam and Tanzania total:



Source: Demographic and Health Surveys, accessed at http://beta.statcompiler.com/

This combination of long lasting objective horizontal inequalities and a peaceful population triggered our interest, as it is a clear indication that structural inequalities in themselves are not enough to spark conflict. So what happened in front of the riots in 2012 and 2013? We argue that the natural gas discoveries and the government's management of the resource development increased collective regional grievances. We base this on a similar story underlined by all our 35 informants – summarized as follows: Mtwara and Lindi has been neglected in terms of development for a very long time, with extremely limited infrastructure, and low quality and access to education and health care. Following the gas discoveries the government promised large scale local development. But by deciding to pipe the gas to Dar es Salaam – without involving or consulting the local communities at all – they broke this promise. The sum of years of neglect, new hopes followed by broken promises, and lack of local participation, was what infuriated people and led to the riots in 2012 and 2013.

So while objective regional inequalities have been large and stable over many years, collective grievances increased following the governments management of the new gas resources.

Theoretical framework and hypotheses

Taking as point of departure the development we have seen in Tanzania, we argue that instead of looking at structural background patterns alone, we have to analyze and understand grievances – both

what they are and how they are formed. Central to our argument is the fact that while all current studies of horizontal inequality and conflict postulate that collective grievances drive conflict behavior, none of them measure or test these grievances directly. Before moving on to developing such grievance variables, we first make a case for both horizontal inequalities and natural resources being relevant to other types of conflict than civil war.

Horizontal Inequalities, Natural resources and Civil Unrest Behavior

Groups that are dissatisfied with their access to power, resources or their security can pursue different strategies to improve their situation (Cunningham and Lemke, 2011). While civil war is one option, and the one analyzed by most quantitative studies, aggrieved groups might also demonstrate, riot or target other groups in society in order to capture their resources or positions (ibid). In line with this, the underlying theories of conflict have a much broader scope in terms of the types of conflict they aim to explain than the empirical studies cited above. Gurr (1970) developed his relative deprivation theory to account for the outbreak of a broad array of political violence, and his main focus in the original work was race riots in the US, not civil war. Social identity theory accounts for all types of 'intergroup conflict'. And Stewart (2008) developed her horizontal inequalities theory to explain political violence. Similarly, the natural resource/conflict empirical studies, while building on many of the same underlying theories of conflict, also predominantly analyze civil war events. In a recent review article, Koubi et al. (2014: 238) notes that civil war 'may not even be the predominant' type of violence associated with natural resources, and calls for a broadening of the empirical scope to include for example demonstrations and riots.

If we look to the literature on riots as such, there are some examples of horizontal inequalities leading to mobilization, with evidence mostly from large-N studies of U.S race riots (e.g. Lieberson and Silverman, 1965; Olzak, 1992), but also more recently from interethnic violence in Britain (Dancygier, 2008). This literature also highlights the importance of state response – riots are less likely where participants anticipate coercive or violent responses, and more likely if not (Horowitz, 2001; Wilkinson 2004; 2009). This importance of state actions is also emphasized by the emerging research agenda on nonviolent uprisings. Analyzing when and where such uprisings are most likely to take place, Chenoweth and Ulfelder (2015: 21) find that while political opportunity structures have the strongest explanatory power, grievances – once more proxied by objective measures – are also relevant.

Recognizing, and by no means disregarding, the importance of political opportunity structures, we nonetheless focus on 'push' or motivation factors in this paper. The riots in Mtwara were met with brutal force and human rights violations (Domasa, 2013), and a fear of similar reactions is regarded by the locals to be the main reason for no further riots after 2013. The first round of mobilization was

presumably less affected by such fears, since, by most local accounts, the conduct by the police and the army was surprising in its brutality.

In summary, while the underlying theories of conflict suggest that horizontal inequalities and natural resources may induce a range of different responses, the effect on civil unrest – comprising demonstrations, protests marches and the use of political violence is largely understudied, and the focus of this paper. Having established this, we now move on to our measures of collective grievances.

Grievances arising from Frustrated Expectations

As noted above, Gurr's (1970) classic work on relative deprivation is one of the main building blocks for Stewart's horizontal inequality theory. Central in Gurr's argument is the notion that people will get frustrated – and grievances will develop – when people get less than they originally expected. His precise definition reads: 'Relative Deprivation (RD) is defined as actors' perception of discrepancy between their value expectations and their value capabilities' (Gurr 2011/1970: 24). Thus, he follows in the footsteps of Davies (1962), who's J-Curve theory predicted that that revolutions will occur when a period of good times – and rising expectations of wealth – is followed by recession. Disappointment thus stand out as a key grievance inducing mechanism in the classic works horizontal inequality theory are party founded on. Even so, none of the empirical studies neither theorize nor measure frustrated expectations.

Frustrated expectations might be particularly relevant for resource rich regions. Oil and gas discoveries are notorious in creating inflated expectations, which might turn into disappointment if and when they are not fulfilled (Aryeetey and Asmah, 2010). As noted above, a few studies of natural resources and horizontal inequalities mention the potential effect of broken expectations, but none of them test them directly.

The powerful effect of frustrated expectations is illustrated by our case Tanzania. From 2010 and onwards the large natural gas discoveries created expectations of increased spending and benefits among Tanzanian citizens in general, and among the population in the southern regions close to the discoveries in particular. All our informants highlight that the government broke their promises of local development when deciding to pipe the gas to Dar es Salaam.

In summary, both the underlying theories of grievances and conflict as well as the potential prominence of frustrated expectations in natural resource rich areas calls for a direct test of this mechanism. We hence propose a first set of hypotheses:

H1a: The higher the collective frustrated expectations linked to the natural gas developments, the higher the support for civil unrest

H1b: The higher the collective frustrated expectations linked to the natural gas developments, the higher the participation in civil unrest

We specifically test the effect of frustrated expectation on behalf of the people in the region rather than behalf of the respondent as an individual – in line with horizontal inequality theory, and in line with Gurr's (2011/1970) own criticism of his original work.

Perceived rather than objective horizontal inequality

We then move on to existing empirical studies of horizontal inequalities and conflict, and take as point of departure the postulated casual chains that create the basis for their analyses. Drawing on the broad literature within social psychology on social and intergroup comparison (e.g. Hogg and Abrams 1988; Tajfel and Turner 1979), Cederman et al. (2011:481-482) construct a causal pathway where objective political and economic asymmetries are translated into grievances 'through a process of group comparison driven by collective emotions'. The 'perception of injustice' generates grievances that in turn facilitate recruitment and mobilization. Developing this further, Cederman et al. (2013) base their analyses on a theoretical framework where objective horizontal inequalities are transformed into grievances through **1) group identification, 2) group comparison, 3) evaluation of injustice, 4) framing and blaming.** All these steps will have to be in place for latent objective inequalities to develop into politically salient grievances. Implicit – not all horizontal inequalities lead to conflict (ibid). Once more our case Tanzania serves as a supporting example. Despite decades of relatively stable economic, social and political marginalization (see e.g. Seppälä and Koda, 1998) the population in the southern regions Mtwara and Lindi remained peaceful until very recently. Cleary, something more than structural inequalities was needed in order to spark mobilization.

The notion that people act on perceived rather than objective inequality is uncontroversial and, as demonstrated above, a central part of the assumed causal chain linking structural inequalities to conflict risk. In fact, in his original definition of relative deprivation theory, Gurr (1970) explicitly emphasizes that it is the perception of deprivation that matters, not the judgement of an objective observer. However, most likely due to lack of data on perceived horizontal inequalities, existing studies rely on objective figures and an assumption that objective and perceived horizontal inequalities more or less overlap (see e.g. Stewart, 2008). Yet, if we turn to existing empirical evidence it soon becomes evident that this is not the case. After conducting perception surveys in in Ghana, Kenya, Nigeria, Uganda, and Zimbabwe, Langer and Mikami (2012) conclude that there are large discrepancies between objective and subjective horizontal inequalities in all case countries. Analyzing the responses from 19 countries covered by the Afrobarometer Surveys Round 4, Langer and Smedts (2013) in fact find evidence of a *negative* association between objective and perceived economic inequality between

ethnic groups. Yet another study based on the Afrobarometer concludes that there is a positive – although relatively low – correlation between objective and perceived ethnic inequality (Holmquist 2012).

This discrepancy between objective and perceived horizontal inequalities underscores the importance of using a measure that takes into account people's subjective views when analyzing the relationship between horizontal inequalities and conflict. We thus propose a second set of hypotheses:

H2a: The higher the perception of regional economic inequality, the higher the support for civil unrest

H2b: The higher the perception of regional economic inequality, the higher the participation in civil unrest

Judging Inequalities as Unfair

While measuring perceptions clearly helps us distinguish the cases where people are actually aware of horizontal inequalities from those where they are not, this awareness in itself does not necessarily generate grievances. For frustrations to arise, people will have to evaluate the inequalities and consider them unfair. Inequality acceptance varies greatly among both individuals and groups, and depends, among other things, on existing norms and ideologies (Almås et al. 2010; Cederman et al. 2013; Williams 2003). Even more importantly, the process of determining what is unfair is often driven by political entrepreneurs (Wilkinson, 2004). Within the social movements literature, such 'framing processes' are regarded as instrumental in driving mobilization (see e.g. Benford and Snow, 2000; Gamson, 1992). These processes create collective action frames, defined as 'action-oriented sets of beliefs and meanings that inspire and legitimate the activities and campaigns of a social movement organization' (Benford and Snow 2000: 614). In short, such action frames constitute a shared understanding of a problem, who's to blame for it, and a call for collective action to rectify it (ibid).

Natural resources may provide a particularly useful tool for political entrepreneurs and thus become instrumental in framing processes. Their inherent local nature makes it plausible for leaders to forward claims that the resources belong to the group living in the area where they are found, and not, for instance to the central government. In an influential study of the separatist conflict in Aceh, Aspinall (2007) demonstrates how natural resources are used to create grievances and become a mobilization tool. However, he emphasizes the need for a pre-existing collective identity for such a framing strategy to work: 'resource extraction will trigger conflict only if an appropriate collective action frame exists in the cultural toolkit of the group in question. Natural resource exploitation gives rise to conflict when it becomes entangled in wider processes of identity construction and is reinterpreted back to the population by political entrepreneurs in ways that legitimate violence' (Aspinall 2007: 951). His

argument resonates with findings in empirical studies of realistic group conflict theory. The original version of this theory posits that conflict between groups arise when there is intergroup competition over resources (Campbell 1965). However, empirical studies testing this relationship indicate that an emerging threat from competition over resources only generates in-group solidarity when this in-group solidarity is above a certain threshold before the threat arises, when the threat is affecting the whole group and when leaders seeks to mobilize solidarity (Brewer and Campbell, 1976; Sherif et al., 1961).

Such an explanation for natural resource driven conflict resonates with the situation in Mtwara before the riots in 2012 and 2013. First of all, the historic marginalization as well as a relative isolation from the rest of Tanzania have resulted in people developing a distinct regional identity, with people identifying themselves as 'Kusini' (southerners) or people from Mtwara/Lindi. Second, the hopes created by the natural gas discoveries, and the following disappointment once it was decided to pipe the onshore gas to Dar es Salaam, was used deliberately by political entrepreneurs. Opposition party leaders from several different parties, as well as both Christian and Muslim religious leaders, joined forces and orchestrated large community meetings with a clear message: the gas should not leave Mtwara. People were encouraged to take to the streets and protest – and did – very much to the surprise of observes highlighting the peaceful conduct characterizing the region for such a long time (Mgamba, 2013).

To summarize, framing and leadership intervention seems to be instrumental in creating a common perception of unfair inequality among group members, and consequently in turning horizontal inequalities into a mobilization resource. It is also evident that objective statistical figures on horizontal inequality will not capture the effect of such framing processes. Hence, we suggest a third set of hypotheses:

H3a: The higher the perception of unfair treatment of the region by the government, the higher the support for civil unrest

H3b: The higher the perception of unfair treatment of the region by the government, the higher the participation in civil unrest

Empirical Analysis

The survey

To gather data to test our hypotheses we conducted an 804 respondent survey in Mtwara and Lindi covering altogether 6 of the 13 districts in the regions. While Mtwara has been the hub for the offshore exploration activity as well as the site for the onshore gas development in Mnazi Bay, the LNG plant to

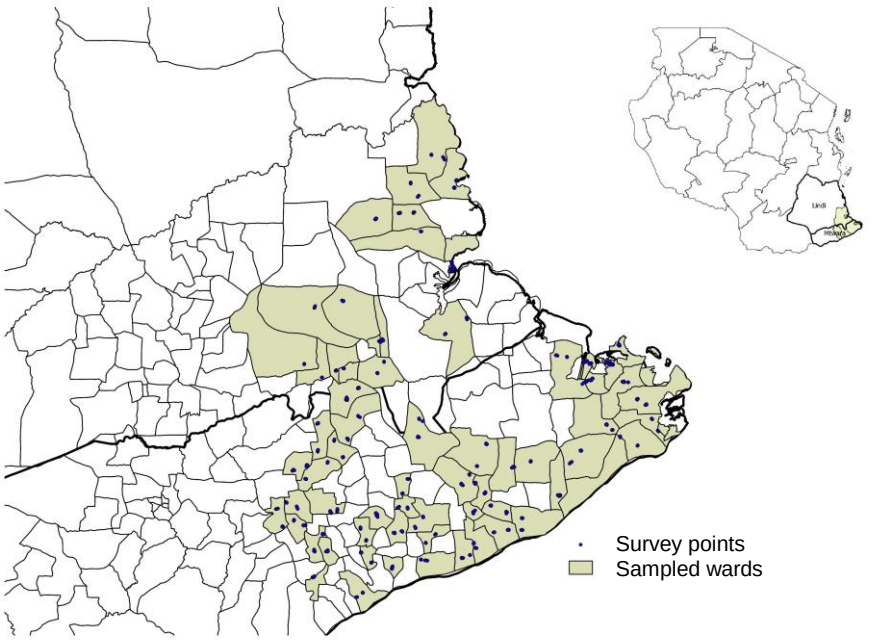
process the gas from the offshore fields is planned to be constructed in Lindi. Mtwara Municipality, Mtwara Rural, Lindi Rural and Lindi Municipality are thus the districts most affected by the current and planned gas developments, and were chosen due to this. Tandahimba and Newala are the main cashew nut producing districts. At the time of the riots, several people from these two regions were bussed to Mtwara to take part in the protests, according to our informants mobilized based on frustration with cashew nut subsidies and prices as well as gas issues. In order to cover these groups as well the two regions are included. The exclusion of the remaining 7 districts is due both to their limited relevance and financial constraints. Still, the survey covered areas far enough from the gas discoveries to capture the sentiments of people very little affected by the new resources.[2]

A pilot of 96 respondents was conducted both to test the questionnaire and to get data for power calculations. The final 800 respondents reflect the results from these power calculations. The survey was stratified according to district, urban, rural and mixed areas, and gender – but further to that the selection of wards, villages, and respondents was fully randomized. 67 wards were drawn, and subsequently two villages within each ward. We conducted six interviews in each village, selected households using random walking patterns and drew respondents within each household. The enumerators recorded the GPS location of each interview. The map below shows the selected districts, sampled wards and sampled villages (see appendix 1 for more information on the survey).

In addition to the survey data we draw on information from 35 semi-structured interviews conducted in 2014 and 2015 (see appendix 2 for more information).

Map 1: Survey points in Mtwara and Lindi

[2] 9% of the respondents had not heard about the gas discoveries at all.



Dependent variables

We use the survey data to test hypotheses H1-H3. We define civil unrest as protests, demonstrations and the use of violence in support for a just cause. Recent work demonstrates that attitudes towards use of political violence are positively linked to subsequent actual conflict events (Linke, Schutte and Buhaug, 2015), and that high levels of perceived horizontal inequalities increases the likelihood of supporting violence (Rustad, 2015). Therefore, we also test whether collective grievances affect attitudes towards civil unrest in addition to actual behavior. Concurringly, we use four different dependent variables as measures of civil unrest. Our first dependent variable – support for protest, is based on question 51, specifically related to whether the government's natural resource management is a reason to take to the street to protest. The respondent was given the alternative to agree with two different statements, and then asked to state how strongly he/she agreedwith the statement:

Statement 1: Taking to the streets to protest against the government's management of the natural gas resources is not acceptable.

Statement 2: Sometimes, it might be necessary to take to the streets to protest against the government's management of the natural gas resources.

Question 51: Protest	Freq.	Percent
Agree strongly with Statement 1	203	25.70
Agree with Statement 1	123	15.57
Agree with Statement 2	154	19.49
Agree strongly with Statement 2	189	23.92
Agree with neither	40	5.06

Refused to answer	13	1.65
Don't know	68	8.61
Total	790	100.00

The variable is recoded to a dummy variable. All those supporting statement 2, i.e. supporting protest, are coded 1, all those supporting statement 1 are coded 0, the rest are coded missing.

Our second dependent variable – support for violence - is similar, and resembles the variable used by Buhaug et al (2015) and Rustad (2015). Once more it is recoded as a dummy variable.

Statement 1: The use of violence is never justified in Tanzanian politics today.

Statement 2: In this country, it is sometimes necessary to use violence in support of a just cause.

Question 43: Violence	Freq.	Percent
Agree strongly with Statement 1	252	31.82
Agree with Statement 1	131	16.54
Agree with Statement 2	125	15.78
Agree strongly with Statement 2	193	24.37
Agree with neither	28	3.54
Refused to answer	7	0.88
Don't know	56	7.07
Total	792	100.00

The distribution of the support for protest and violence variables is fairly similar, however the correlation between the two variables is only 0.365.

Our third and fourth dependent variable – participation in protest and demonstrations, and use of political violence – are based on the question:

Q40: I'm going to read out some forms of political action that people can take, and I'd like you to tell me, for each one, whether you have done any of these things, whether you might do it or would never under any circumstances do it

E. Participated in a demonstration or protest march (1 have done, 2 might do, 3 would never do)

F. Used force or violence for a political cause (1 have done, 2 might do, 3 would never do)

	Participate in protest	Use violence
Have done	47	6
Might do	176	50
Would never	537	707
Total	760	763

The variables are coded into two dummy variables: *participated in protest* and *might or have used violence.* For the variable *participated in protest* all those who answered have done is coded 1 and those who answered *might do* or *would never* is coded 0. Only 6 respondents reply that they have participated in violence, impeding a proper test of participation in violence. However, rather than skipping this variable altogether, we include those who say they *might* use violence as well, emphasizing that this is a different test than for the protest variable.

Independent variables

To test our three sets of hypotheses we use three different independent variables. To test H1 a: *The higher the collective frustrated expectations linked to the natural gas developments, the higher the support for civil unrest* and b: *The higher the collective frustrated expectations linked to the natural gas developments, the higher the participation in civil unrest, we use the* variable 'frustrated regional expectations' which measures how satisfied or dissatisfied people are with the development of the living conditions for the people in their region compared to the expectations they had before they had heard of the pipeline[3]:

Q 31c: How satisfied are you with the development in the living conditions for the people in your region – compared to what you expected? (very dissatisfied is coded 5 and very satisfied is coded 1)

	Frequency	**Percent**
Very dissatisfied	109	17.19
Dissatisfied	274	43.22
Neither	115	18.14
Satisfied	45	7.10
Very satisfied	6	0.95
Dont't know	85	13.41
Total	**634**	**100.00**

From the descriptive statistics we see that more than 60% are dissatisfied or very dissatisfied with the development and less than 10% responded that they were satisfied or very satisfied. This reflects very well the attitudes that came across in the interviews.

To test H2a – *The higher the perception of regional economic inequality, the higher the support for civil unrest, and H2b – The higher the perception of regional economic inequality, the higher the participation in civil unrest,* our independent variable is 'perceived regional economic inequality', based on the question:

[3] The respondents were first asked when they heard of the pipeline, and then on their expectations to improved living conditions before and after they had heard of the pipeline, before they were asked to assess their satisfaction with the development so far. Only those that had heard of the pipeline got these questions, hence the number of respondents is 634, not 804.

Q15: Think about the condition of people living in this region. Are their economic conditions worse, same as or better than for those living in other regions in this country? (much worse is coded 5 and much better is coded 1).

	Frequency	**Percent**
Much Worse	103	12.81
Worse	319	39.68
Same	150	18.66
Better	105	13.06
Much Better	8	1.00
Don't know	119	14.80
Total	**804**	**100.00**

Finally, for H3a: *The higher the perception of unfair treatment by the government of the region, the higher the support for civil unrest,* and H3b: *The higher the perception of unfair treatment by the government of the region, the higher the participation in civil unrest,* the independent variable is 'region treated unfairly', based on the question:

q50: How often, if ever, are people living in this region treated unfairly by the government (Never is coded 1 and Always is coded 4).

	Frequency	Percent
Never	335	42.41
Sometimes	188	23.80
Often	116	14.68
Always	34	4.30
Don't know	113	0.51
Refused to answer	4	14.30
Total	790	100.00

Controls

To control for other factors identified by the literature to affect conflict behavior, we include variables for age, gender (man coded 1), level of education and unemployment. Based on previous literature we assume that men and youths are more likely to support and participate in civil unrest than women and older people. We further assume that people with lower education and unemployed might be more likely to support and participate in civil unrest. We also add a variable called 'gone without food' asking how often the respondent go without food. This is an indicator for poverty, and we assume that the poorer a respondent is the more likely he or she is to support and participate in civil unrest. Further, we test variables related to the area that the respondent live in. Since the previous rounds of riots were all in Mtwara and not in Lindi, we add a dummy variable whether the respondent live in Mtwara or not. We also include a dummy for whether the respondent live in a rural area or not. We add two variables measuring the respondent's perception. One that measures the respondent's perception of

one's own economic situation compared to other Tanzanians, as this is likely to be influencing the respondent's perception of his or her regions situation (1= very satisfied and 5=very unsatisfied). Second, we also include a variable asking whether the respondent feel unsafe when walking in the neighborhood (0=never and 4=always). Finally, to control for the level of exposer to the gas developments, we use 'time known of gas discoveries' as a proxy – assuming that those who have known for the longest time are closer and more exposed than those that had not yet heard of the gas discoveries (1 – 'This is the first time I hear about it' and 5 – 'more than five years ago'). The descriptive statistics for all the variables are given in table 1.

Table 1: Descriptive statistics of all the variables

Variable	Obs	Mean	Std. Dev.	Min	Max
SuppProt related to NR	669	0.513	0.500	0	1
SuppVio	701	0.454	0.498	0	1
Participated protest	760	0.062	0.241	0	1
Willingness and used violence	763	0.073	0.261	0	1
Frustrated expectations	549	3.792	0.890	1	5
Perceived economic HI	685	3.590	0.960	1	5
Region treated unfair	673	1.776	0.907	1	4
Male	804	0.503	0.500	0	1
Age	789	3.188	1.576	1	7
Education	802	2.483	1.581	0	8
Mtwara	804	0.252	0.435	0	1
Gone without food	803	1.132	1.160	0	4
Perception of own situation	770	3.543	0.956	1	5
Rural	804	0.719	0.450	0	1
Unsafe	783	0.338	0.750	0	4
Unemployed	804	0.105	0.307	0	1
Known about gas discoveries	733	3.385	1.22	1	5

Results

In the following, we test our three sets of hypotheses. All our dependent variables are coded so that the highest value indicates high level of frustrated expectations, perception of inequality, or unfairness. Since the dependent variables are dichotomous, we use logit regressions to conduct the analyses.

In Table 2 we test hypotheses 1a and 1b, that frustrated expectations will lead to increased support and participation in civil unrest. We see that the model testing support for protest, (Model 1), is positive and significant, suggesting that the more frustrated someone is with the development for the people in their region, the more likely they are to support the use of protest. We do not see the same

for support of violence, hence H1a is partly supported. For participation on civil unrest, we do not get any significant results. H1b is not supprted.

Table 2: Logistic regression frustrated expectations on support and participation in civil unrest[4]

	Model 1	Model 2	Model 3	Model 4
	SuppProt related to NR	SuppVio	Participated protest	Might or have used violence
Frustrated expectations	0.331***	0.107	0.102	-0.172
	(0.125)	(0.117)	(0.228)	(0.226)
Male	0.229	-0.194	0.154	0.518
	(0.223)	(0.210)	(0.429)	(0.430)
Age	-0.450***	-0.296***	0.0330	-0.347**
	(0.0808)	(0.0733)	(0.136)	(0.143)
Education	-0.169**	-0.0251	-0.105	0.157
	(0.0796)	(0.0740)	(0.157)	(0.153)
Mtwara	0.767***	0.0943	-0.643	-0.472
	(0.242)	(0.221)	(0.489)	(0.458)
Gone without food	0.0797	0.214**	0.191	0.113
	(0.0972)	(0.0928)	(0.179)	(0.169)
Perception of own situation	0.0781	-0.115	-0.0501	0.259
	(0.120)	(0.115)	(0.222)	(0.223)
Rural	0.557**	0.266	-0.703*	0.187
	(0.233)	(0.224)	(0.412)	(0.421)
Unsafe	0.240	0.381***	0.436**	0.324
	(0.149)	(0.139)	(0.199)	(0.211)
Unemployed	-0.423	-0.000554	-0.726	-1.234
	(0.324)	(0.308)	(0.768)	(0.768)
Known about gas discoveries	0.258**	0.0140	-0.265	0.0256
	(0.116)	(0.108)	(0.210)	(0.206)
Constant	-1.230*	0.367	-1.642	-2.958**
	(0.731)	(0.704)	(1.358)	(1.351)
Observations	450	462	474	474

In Table 3 we test Hypothesis 2a and 2b, suggesting that those who feel that their region is economically deprived compared to other regions in Tanzania are more likely to support civil unrest and to participate in civil unrest. The coefficient for perceived economic horizontal inequality is

[4] Note: the 'frustrated expectations' questions only asked to the subset of respondents who had already heard of the pipeline from Mnazi Bay to Dar es Salaam. The number of observations is therefore much lower.

significant in models 5 and 6 testing support for civil unrest, giving some support to hypothesis 2a. Models 7 and 8 test whether perceived economic horizontal inequality affect the likelihood of participation in civil unrest, however the variable is not significant in either of the models.

Table 3: Logistic regression perceived economic horizontal inequality on support and participation in civil unrest

	Model 5	Model 6	Model 7	Model 8
	SuppProt related to NR	SuppVio	Participated protest	Might or have used violence
Perceived economic HI	0.284**	0.269**	0.284	-0.155
	(0.112)	(0.108)	(0.206)	(0.173)
Male	0.298	-0.164	-0.102	0.524
	(0.198)	(0.191)	(0.369)	(0.340)
Age	-0.370***	-0.259***	0.0190	-0.418***
	(0.0716)	(0.0681)	(0.123)	(0.125)
Education	-0.213***	-0.00593	-0.0176	-0.0711
	(0.0690)	(0.0648)	(0.127)	(0.116)
Mtwara	0.536**	-0.0814	-0.838*	-0.308
	(0.214)	(0.204)	(0.451)	(0.375)
Gone without food	0.0236	0.131	0.0970	0.00611
	(0.0870)	(0.0843)	(0.159)	(0.142)
Perception of own situation	0.0134	-0.0141	-0.00346	0.139
	(0.111)	(0.108)	(0.205)	(0.181)
Rural	0.323	0.394*	-0.726**	-0.162
	(0.209)	(0.205)	(0.355)	(0.343)
Unsafe	0.286**	0.507***	0.330*	0.364**
	(0.133)	(0.131)	(0.190)	(0.171)
Unemployed	0.0241	-0.0930	-0.591	-0.325
	(0.289)	(0.277)	(0.638)	(0.477)
Known about gas discoveries	0.272***	0.0409	-0.0294	-0.0709
	(0.0857)	(0.0811)	(0.154)	(0.136)
Constant	-0.859	-0.833	-3.075***	-0.988
	(0.593)	(0.576)	(1.102)	(0.972)
Observations	545	563	585	589

Table 4 test H3a and H3b. We see that the treated unfairly variable is significant and positive in all four models. This suggests that the perception of being treated unfairly is highly correlated with both support of civil unrest (models 9 and 10), participation in protests and demonstrations, and willingness to use/actual use of violence for a just cause.

Table 4: Logistic regression unfair treatment on support and participation in civil unrest

	Model 9	Model 10	Model 11	Model 12
	SuppProt related to NR	SuppVio	Participated protest	Might or have used violence

Region treated unfair	0.446***	0.300***	0.477***	0.431***
	(0.111)	(0.105)	(0.183)	(0.166)
Male	0.258	-0.184	0.0589	0.486
	(0.199)	(0.192)	(0.367)	(0.347)
Age	-0.400***	-0.245***	0.0894	-0.421***
	(0.0709)	(0.0664)	(0.123)	(0.131)
Education	-0.175**	0.0173	0.0509	-0.0349
	(0.0689)	(0.0649)	(0.130)	(0.118)
Mtwara	0.752***	0.0287	-0.740*	-0.390
	(0.215)	(0.201)	(0.448)	(0.387)
Gone without food	0.0159	0.117	0.0894	0.0518
	(0.0867)	(0.0826)	(0.154)	(0.142)
Perception of own situation	0.125	0.0823	0.104	0.0748
	(0.101)	(0.0974)	(0.186)	(0.171)
Rural	0.151	0.218	-0.758**	-0.257
	(0.212)	(0.207)	(0.355)	(0.347)
Unsafe	0.0763	0.324**	0.104	0.231
	(0.131)	(0.127)	(0.203)	(0.180)
Unemployed	-0.262	-0.155	-0.553	-0.615
	(0.294)	(0.281)	(0.638)	(0.515)
Known about gas discoveries	0.234***	-0.0110	-0.215	-0.125
	(0.0856)	(0.0807)	(0.154)	(0.141)
Constant	-0.645	-0.470	-3.090***	-1.965**
	(0.563)	(0.551)	(1.028)	(0.964)
Observations	552	563	585	586

Finally, we also run a model where all the three dependent variables are included to test which of them have the strongest effect (the correlation between the three independent variables range from 0,2 to 0,3):

Table 5: Logistic regression perceived economic horizontal inequality, unfair treatment and frustrated expectations on support and participation in civil unrest

	Model 13	Model 14	Model 15	Model 16
	SuppProt related to NR	SuppVio	Participated protest	Might or have used violence
Frustrated expectations	0.311**	0.0174	0.0398	-0.224
	(0.142)	(0.131)	(0.233)	(0.234)
Perceived economic HI	0.144	0.121	0.0276	-0.317
	(0.151)	(0.141)	(0.244)	(0.238)
Region treated unfair	0.377***	0.199	0.564***	0.578***
	(0.140)	(0.129)	(0.218)	(0.209)
Male	0.262	-0.384	-0.0295	0.318
	(0.251)	(0.239)	(0.446)	(0.445)

Age	-0.454***	-0.273***	0.124	-0.285*
	(0.0911)	(0.0823)	(0.145)	(0.149)
Education	-0.258***	-0.0251	-0.128	0.126
	(0.0906)	(0.0808)	(0.160)	(0.158)
Mtwara	0.899***	0.238	-0.734	-0.197
	(0.278)	(0.252)	(0.518)	(0.491)
Gone without food	0.0796	0.232**	0.178	0.0693
	(0.109)	(0.104)	(0.187)	(0.178)
Perception of own situation	-0.0258	-0.0924	-0.0268	0.452*
	(0.144)	(0.137)	(0.240)	(0.246)
Rural	0.423	0.301	-0.900**	0.0551
	(0.265)	(0.252)	(0.433)	(0.438)
Unsafe	0.138	0.436***	0.306	0.171
	(0.164)	(0.157)	(0.215)	(0.224)
Unemployed	-0.438	0.0663	-0.825	-1.287*
	(0.349)	(0.331)	(0.781)	(0.778)
Known about gas discoveries	0.313**	0.0484	-0.336	-0.0357
	(0.131)	(0.120)	(0.221)	(0.213)
Constant	-1.801**	-0.343	-2.152	-2.887**
	(0.847)	(0.804)	(1.484)	(1.458)
Observations	385	389	397	396

In this table, we see that the effect of perceived economic horizontal inequality disappears. The frustrated expectations variable is still positive and highly significant for support of protest. Unfair treatment is still significant and positive for all the independent variables, but for support of violence the significance disappears (p-value of 0.123). This can partly be explained by the fact that we miss a lot of respondents when including Frustrated expectations. When running an analysis with only Perceived horizontal inequality and Unfair treatment, both of the variables are significant. The results in Table 5 suggest that the three variables to some degree measure the same, but not completely.

Figure 2: Substantial effects of perceived economic horizontal inequality, region treated unfairly and frustrated expectations on support for protest (model 13)

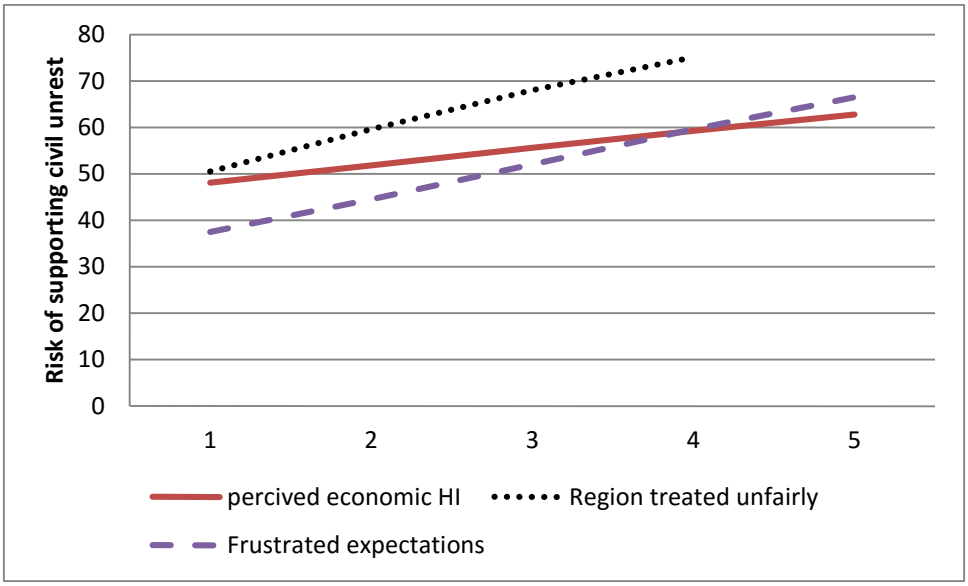
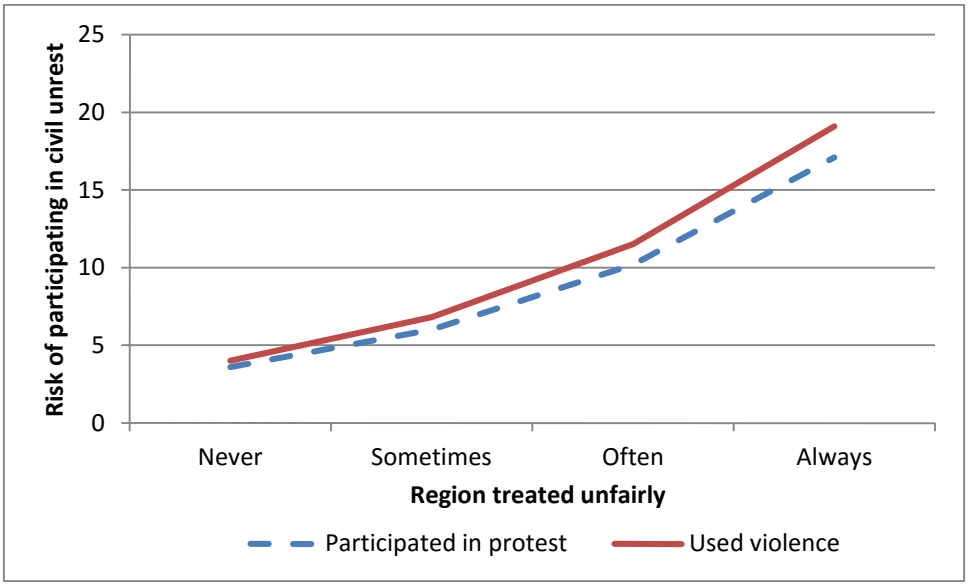


Figure 2 indicates the likelihood of supporting protest against the government's natural resource management for each value of the independent variables, based on Model 13 (all other variables are set at the mean). We can see that the Region treated unfairly variables has the highest likelihood with 75%, and is increasing the likelihood from someone answering *never* to someone answering *always* with approximately 25 percentage points.[5] The frustrated expectation variable has the highest increase going from 37% for those who answered 'very satisfied' to 66% for those who answered 'very dissatisfied'. We see that the trend for perceived economic horizontal inequality is similar to the two other dependent variables, but as we can see from Model 13 this variable is no longer significant when running the analysis with all the three dependent variables together.

Figure 3 shows the substantial effects for only 'region treated unfairly' as this is the only of the dependent variables that affect participation in civil unrest (models 15 and 16). The figure indicates that the likelihood of participating in protest is approximately the same as for expressing willingness and using violence. For both variables, the risk increases five folds from respondents feeling that the region is never treated unfairly to respondents holding the region always treated unfairly. As a sensitivity test we also run a variable testing actual as well as willingness for participation in protest. As expected, willingness and actual participation in protest is much higher than willingness and use of violence for a just cause.

Figure 3: Substantial effects region treated unfairly on participation in civil unrest (models 15 and 16)

[5] Note that Region treated unfairly only had 4 answer categories, compared to the two other dependent variables which have 5.



Many of the control variables are insignificant, and they vary a bit between the different models. Age is the most stable variable, and is significant and negative in all models, suggesting that younger people are more likely to support and participate in civil unrest. Further, we see that the variable Gone without food is significant and positive in most of the models testing support for civil unrest, thus the more often you go without food the more likely you are to support civil unrest. However, this effect seems absent when it comes to participating in civil unrest, and in fact in a few models the coef is positive and significant at a 0.1 level. It seems plausible that poverty (which the variable Gone without food measures) leads to support, but that there are other factors than poverty that explains participation. Further, we see that the variable Unsafe, measuring whether the participant feels safe or not in their neighbourhood, is consistently significant and positive for the models testing support for violence. We can see the same effect for some of the other models but it varies between the different models. For the variable Known about gas discoveries we see that it is significant and positive in in all models testing support for protest, but not for the other independent variables. For the remaining control variables, we find little effect. Most curiously among this is the variable Perception of own situation. This variable measures a perceived vertical inequality, where the respondent is asked to compare one owns situation with others. The fact that we do not find any effect suggests that group inequality (tested in Table 1) is more important in explaining at least attitudes towards civil unrest. This resonates well with the findings of Rustad (2015), and in general confirms the premise of horizontal inequality theory – inequality matters when it overlaps with salient group identities.

We have tested several other variables, of which none of them change the results. Since there are relatively few respondents that have actually participated in protests and demonstrations, we run a separate model where we, equally to the use/might use violence model also include those who state

that they might participate in protests and demonstration. For this model the results are similar to the existing model with only participation, but the significance levels are stronger. Other measures for poverty (asset ownership, access to water, access to a latrine, connection to electricity grid) are all insignificant - as opposed to the gone without food measure. A dummy controlling for Muslim vs other religion (mainly Christian) is insignificant. Finally, a variable taking into account if village ward and/or spouse was present during the interview is also insignificant.

Conclusion

Based on our results we conclude that structural horizontal inequalities lead to civil unrest support and behaviour when they are perceived as unfair. We have demonstrated that objective horizontal inequalities have been persistent in for decades in Mtwara and Lindi without causing conflict. We also argue - based on overlapping accounts from all our informants – that collective grievances increased following the government's management of the natural gas resources. While we do not have survey data to back this latter claim, we do think that the interviews do support them sufficiently. In essence, the group members' subjective view on the relative position of their group may differ considerably to what is reflected in objective data. It follows that objective structural asymmetries between identity groups may or may not be politically relevant, and that empirical studies using objective data as a proxy for collective grievances have limited power to evaluate where the conflict risk is most imminent.

In general, we find that collective grievances are associated with civil unrest support. All our three measures of collective grievances – perceived horizontal inequality, frustrated collective expectations and perceived unfair treatment of the region by the government – are significantly linked to support for protests, while perceived horizontal inequality and perceived unfair treatment is significantly linked to support for violence for a just cause. When run in the same model, unfair treatment stand out as the strongest indicator, followed by frustrated collective expectations, while the effect of perceived horizontal inequality disappears – indicating that the effect of this measure to a large extent is captured by the two others.

When we turn to civil unrest behaviour, on the other hand, it is only those who find that the region has been treated unfairly by the government that are more likely to have both participated in demonstrations and protest marches, and that are willing to use or have used violence for a just cause. The effect of frustrated collective expectations and perceived horizontal inequalities is in fact negative, but not significant. From this we can draw two conclusions. First, in line with what one would expect, judging inequalities as unfair seems to be a stronger indicator of grievances than being aware of, or perceiving, horizontal inequalities, and also than frustrated expectations. Second, since our results are

not consistent for civil unrest attitudes and civil unrest behaviour, using attitudes as a proxy for behaviour has some limitations.

Our results speak to two different literatures. First, our findings have implications for the study of horizontal inequalities and conflict in general. While our data is from Southern Tanzania, the discrepancy between objective and perceived horizontal inequalities is demonstrated to apply for a whole range of Sub-Saharan African countries by other empirical works. It is unlikely – though remains untested – that this is different in other parts of the world. Hence, conflict studies should start to gauge perceptions and judgements, and how these are formed, in order to better determine when and how horizontal inequalities lead to mobilization. That said, our results support the postulated causal chains creating basis for current studies of horizontal inequalities and conflict (e.g. Cederman, Weidmann and Gleditsch, 2011; Cederman, Gleditsch and Buhaug, 2013).

Second, several conflict researchers highlight the risk of natural resources being a catalyst for political entrepreneurs to exacerbate – or create – grievances when they are found in areas inhabited by marginalized groups (e.g. Aspinall, 2007, Collier, 2015). This corresponds to empirical studies of realistic group conflict theory, emphasizing how competition over resources increases in-group solidarity and out-group hostility when an existing group identity precedes the resource discovery. Our qualitative data indicate that the Mtwara riots are a case example of such dynamics, and hence serve as a warning signal for a range of other African countries facing very similar situations. A critical feature with new discoveries in Sub-Saharan Africa is that they are frequently done in remote areas inhabited by marginalized groups – just as for our case Tanzania. Kenya has made discoveries in the land of the impoverished Turkana people (Johaneska et al.), Uganda's oil discoveries overlap with the territory of the marginalized Kingdom of Bunyoro (Vokes, 2012), Ghana's large Jubilee discovery is outside the coast of the underdeveloped Western Region, just to mention some examples. In fact, leading scholars warn that a combination of strong sub-national identities and new oil and gas discoveries constitute a substantial future security threat on the continent (Collier 2015).

Finally, our results lend support to Gurr's relative deprivation theory when applied on a group level – frustrated collective expectations linked to natural gas developments are associated with civil unrest support.

While we believe our results have implications for the broader study of horizontal inequalities, natural resources and conflict, our data remains limited to Southern Tanzania. Also, our data is cross sectional, making our results subject to potential endogeneity. While we believe that the example of what actually happened in Tanzania helps mitigate this as it demonstrates that collective grievances led to mobilization, we cannot rule out that the same mobilization also created some of the grievances we

measure. In summary, further analyses based on a larger set of countries as well as time-series data are needed to fully establish the scope and validity of our argument.

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Appendix 1 – Survey Documentation

Questionnaire

The questionnaire comprised 3 parts. The first introduction part included guidance and geographical information to be filled in by the enumerator (GPS coordinates, location, etc.). The second and main part contained 55 questions to be answered by the respondent. The third and final part contained 5 questions on the conditions during the interview to be completed by the enumerator (attitude of respondent, presence of others, etc.). A trained enumerator spent 35-40 minutes finalizing the whole survey.

Altogether 8 people with extensive survey and/or local experience provided thorough feedback on early drafts of the questionnaire and helped improving the overall quality. The questionnaire was developed in English and translated to Swahili by Yulli Jeremia at the University of Dar es Salaam. The translation was proofread and improved in several rounds – first following the pilot, then by lecturers at the Stella Maris Mtwara University College (STEMMUCO), and finally and most comprehensively during the enumerator training (see below).

Pilot

To test the questionnaire and to get data for power calculations we conducted a pilot survey in the Mtwara region in May 2015. The pilot covered 96 respondents in both rural and urban areas. The pilot was conducted by 4 lecturers from STEMMUCO on the same Android devices that was later used for the actual survey.

Several changes were made to the questionnaire after the pilot – ranging from improving questions the respondents found hard to understand to changing the sequence of questions to improve the flow and place the most sensitive questions at the end.

Sampling and Power calculations.

As described in the main text, we first chose 6 of the 13 districts in the Mtwara and Lindi Regions by taking into account relevance and exposure to natural gas activities, involvement in the 2012 and 2013 riots, as well as financial constraints. In addition to district, the survey was stratified according to urban, rural and mixed areas, and gender. Based on the main dependent/independent relationships from the pilot data, power calculations were conducted to establish the necessary number of respondents. The power calculations and sampling was done by Keith Weghorst, Post-doctoral Research Fellow, Department of Political Science, Vanderbilt University, US, who has extensive experience with both sampling and conducting surveys in Tanzania. An initial assumption on 600 respondents (based on

advice from organizations doing surveys in the area) was adjusted to 800 following the results of the power calculations.

In Tanzania, the districts are divided into wards, which in turn have an average of around five villages. We chose to cover two villages in each ward, with 6 interviews in each village. Apart from the stratification on urban/rural/mixed and gender, the selection of wards, villages, and respondents was fully randomized. The first round of the sampling was based on 2012 Census Data for Tanzania, giving population down to ward level split on urban/rural/mixed. Number of urban/rural/mixed wards per district was calculated based on population weights. The given number of wards per district were drawn using computer software – altogether 67 to reach 800 respondents (or 804 – since 12 interviews per ward).

The second round of sampling was done by Elise Must and Peter Kanyingy (STEMMUCO) in Mtwara during the survey preparations. The 2012 Census do not include data on village level, so in essence we had to call around to all the ward leaders to get the full list of villages per ward. With all the villages established we drew two for each ward by using a randomizer at random.org.

A full list of drawn wards and villages per district is given in the table below.

Region	District	Ward	Village 1	Village 2
Lindi	Lindi	Mchinga	Mchinga 1	Mchinga 2
Lindi	Lindi	Kilolambwani	Mnang'ole	Dimba
Lindi	Lindi	Kilangala	Mtumbikili	Kilangala B
Lindi	Lindi	Mnolela	Lukokwe	Simana
Lindi	Lindi	Mtama	Nangaka	Mihogoni
Lindi	Lindi	Nyangao	Nyangao	Namupa
Lindi	Lindi	Mandwanga	Chiuta	Lindwandwani
Lindi	Lindi	Chiponda	Chiponda	Mtakuja
Lindi	Lindi	Longa	Tulieni	Mtua
Lindi	Lindi	Mtumbya	Mtumbia	Kilimanjaro
Lindi	Lindi	Matimba	Kikomolela	Komolo
Lindi	Lindi	Nangaru	Mkumbamosi	Nangaru
Lindi	Lindi Municipality	Mikumbi	Mikumbi Uganda	Mikumbi Shuleni
Lindi	Lindi Municipality	Rahaleo	Rahaleo	Kariakoo
Lindi	Lindi Municipality	Matopeni	Matopeni	Risti
Lindi	Lindi Municipality	Wailes	Angola	Majani Mapana
Lindi	Lindi Municipality	Chikonji	Nanyanje	Moka
Mtwara	Mtwara Mikindani	MikindaMajengo	Gezaulole	Guine
Mtwara	Mtwara Mikindani	MikindaChikongola	Mwera	Sabasaba
Mtwara	Mtwara Mikindani	MikindaLikombe	Mtepwezi	Mlimani
Mtwara	Mtwara Mikindani	MikindaMitengo	Mnaida	Mnazimmoja
Mtwara	Mtwara Mikindani	MikindaMtonya	Haikata	Singino
Mtwara	Mtwara Mikindani	MikindaMagengeni	Bomani	Magengeni
Mtwara	Mtwara Mikindani	MikindaNailendele	Mkangala	Namlongo
Mtwara	Mtwara Rural	Madimba	Namidondi	Mitambo
Mtwara	Mtwara Rural	Ziwani	Msakala	Majengo
Mtwara	Mtwara Rural	Mahurunga	Kilombelo	Mahurunga
Mtwara	Mtwara Rural	Kiromba	Mjimwema	Kiromba
Mtwara	Mtwara Rural	Njengwa	Majengo	Hinju
Mtwara	Mtwara Rural	Nitekela	Maendeleo	Migombani
Mtwara	Mtwara Rural	Nanyamba	Mibobo	Kilimanjaro
Mtwara	Mtwara Rural	Mtiniko	Mtiniko	mbambakoji
Mtwara	Mtwara Rural	Mayanga	Msijute	Hiyari
Mtwara	Mtwara Rural	Chawi	Mkomo	Chawi Sokoni
Mtwara	Mtwara Rural	Namtumbuka	Namtumbuka	Kilimahewa
Mtwara	Mtwara Rural	Mbawala	Makome a	Mkobe b
Mtwara	Mtwara Rural	Msanga Mkuu	Majengo	Msanga Mkuu B
Mtwara	Mtwara Rural	Tangazo	Kirambo	Mnaida
Mtwara	Mtwara Rural	Milangominne	Milangominne	Nyahi barabarani
Mtwara	Newala	Luchingu	Mzalendo	Mahakama
Mtwara	Newala	Mcholi I	Mpilipili	Rihungira
Mtwara	Newala	Namiyonga	Msimamo	Manduma
Mtwara	Newala	Chitekete	Namkonda	Mchangani
Mtwara	Newala	Malatu	Mpanda	Malatu
Mtwara	Newala	Mchemo	Mkupete	Mchebegua
Mtwara	Newala	Chiwonga	Kihwinda	Mmulunga
Mtwara	Newala	Maputi	Mtongwele chini	Likwaya
Mtwara	Newala	Makonga	Kilidu Mashariki	Ofisini
Mtwara	Newala	Nakahako	Mpalu	Mnauki
Mtwara	Newala	Chihangu	Idamnole	Chihangu A
Mtwara	Newala	Nambali	Nambali A	Mlachi
Mtwara	Tandahimba	Tandahimba	Malamba	Malopokeno
Mtwara	Tandahimba	Michenjele	Mpunda	Michenjele
Mtwara	Tandahimba	Mihambwe	Mkaha	Kisagani
Mtwara	Tandahimba	Mkoreha	Dinyeche	Chikongo
Mtwara	Tandahimba	Maundo	Namahonga	Maundo
Mtwara	Tandahimba	Namikupa	Chihang	Pemba
Mtwara	Tandahimba	Mnyawa	Jangwani	Umoja
Mtwara	Tandahimba	Nanhyanga	Nanhyanga A	Mnaida
Mtwara	Tandahimba	Chingungwe	Mkupete	Chingungwe
Mtwara	Tandahimba	Mdimbamnyoma	Mdimbanyoma	Tukuru
Mtwara	Tandahimba	Milingodi	Milingodi	Namkomolela
Mtwara	Tandahimba	Lyenje	Mwembe 1	Mahona
Mtwara	Tandahimba	Ngunja	Ngunja	Mkuti
Mtwara	Tandahimba	Mkwiti	Likolombe	Mkwiti
Mtwara	Tandahimba	Mihuta	Mihuta	Ngongolo
Mtwara	Tandahimba	Chikongola	Horofea	Kilidu

To stratify on gender, the enumerators were instructed to always alternate between male and female respondents. Due to lack of household data, we used random walking patterns to draw households within each village. The enumerators were given a starting point in each village by the supervisors, and instructed to pick the third household on the right and then the third after that and so on for rural areas, and correspondingly but every fifth household in urban areas. Finally, the person opening the door was asked to make a list of all household members over 18, and draw a respondent from the list. Empty households and households where the drawn respondent was not at home were revisited two times. If still not at home, a new household was chosen. All no_calls were logged and reasons noted. Altogether 1042 households were visited to get the 804 respondents. Consent was given before starting all interviews. 'Did not fit gender quota' is the most frequent reason for no_calls, followed by 'empty premises' and 'respondent never at home'. Only 18 persons refused to be interviewed.

Organization and Training

Elise Must was Principal Investigator and lead all planning and execution of the survey. A survey manager and two supervisors were recruited – all of them lecturers at STEMMUCO. All three of them participated in the pilot and was already familiar with the research design, the questionnaire and the Android devices and the survey software.

We recruited a pool of 24 potential enumerators that were first trained for two days by the principal investogator. The training included background and rationale for the study, random sampling, how to ask questions, sampling procedure, and a range of exercises on the actual questionnaire. In addition to making the enumerators familiar with the questions and the procedures, this process also lead to a final quality check of the English versus the Swahili version of the questionnaire. We conducted both paper based and device based test interviews, and the results were used to evaluate the accuracy of each enumerator. At the end of day two, we evaluated the results, and chose 16 enumerators based on test results as well as observed skills during training. Of these, 11 were alumni from STEMMUCO, 1 alumni from the University of Dar es Salaam, and 4 where experienced enumerators previously employed by the Aga Khan Foundation. Of the alumni, most of them where secondary school teachers in the area. The 16 where trained for one more day, first in class (mostly by acting out the within household selection procedure in groups), and then in the field in an area not covered by the survey sample to get real household sampling and interview training before the actual survey started.

The survey was conducted on Samsung Tablets with Open Data Kit Software (ODK). Siri Aas Rustad programmed the questionnaire into ODK. Each enumerator had the same tablet during the whole field work period.

Logistics and field procedures

Each enumerator was assigned one village and 6 interviews per day. Including 1 rest day, we spent altogether 10 days in the field. The survey manager and the supervisors led the field work. The principal investigator stayed in Mtwara Town, keeping in touch with the survey manager every morning and evening. Each evening the survey manager and the supervisors uploaded the finalized surveys to the ODK app. That way, data was always secure, and the principal investigator could download data directly into excel each day and monitor data quality.

The enumerators were divided into three teams, with one car per team. Different people were put together each day.

Permits

The study was covered by research permit No. 2015-18-NA-2014-238 provided by COSTECH, Tanzania. In addition, permissions from the Regional and District authorities covering all survey areas were obtained. In each village the project was introduced to the village ward by the supervisors who then granted access.

Data Processing

The data was directly uploaded to the ODK internet application, and downloaded to excel from the same application. No data cleaning was necessary.

Apprendix 2 – Semi-structured interviews

In addition to the survey, we conducted 35 semi-structured interviews, of which 15 in May 2014 and 20 in June 2015. The interviews were done in Mtwara Town (urban), Mikindani (urban), Msanga Mkuu (rural) and Lindi Town (urban), with 10 women and 25 men. The interviewees included a Christian Religious Leader, the Regional Commissioner, a journalist and former Editor of the local radio station Radio Safari, participants in the riots, students and both unemployed and employed people. Apart from five interviews, all interviews were tape recorded (The five included four students as well as the regional commissioner, who all preferred not to be recorded). For the five unrecorded interviews extensive notes were taken and immediately cleaned once the interviews were done.

Some of the interviews with students, as well as all the leader/journalist interviews were done in English – 11 in total. 14 were done in Swahili and English together with an interpreter. Finally, 10 were done by an experienced research assistant in Swahili. All the recorded interviews have been transcribed by a professional fluent in both Swahili and English.

Lecturers at Stella Maris Mtwara University College were of great help in providing access to leaders. Ordinary people were recruited from the streets, outside their houses and at their working places. Participants in the riots were recruited mostly via snowballing.