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Fighting For Food?

Investigating Food Insecurity as a Source of Urban Unrest

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Abstract
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Under what conditions does food insecurity lead to urban unrest? This dissertation contributes to the burgeoning literature on this topic by introducing a multifaceted conceptualization of experienced food insecurity, and by developing a context-specific framework for food-related unrest. It investigates the effect of experienced food insecurity on citizens' willingness to participate in unrest, and how a favourable structural context in the form of organizational networks moderates this relationship. By going beyond aggregate food insecurity proxies and direct effects, the dissertation makes theoretical and empirical contributions to existing knowledge. The thesis consists of an introductory chapter and four independent essays. Essay I reviews the literature on food insecurity and social upheaval, identifies main research gaps, and provides suggestions for future research. Focusing on urban Africa between 1990 to 2014, Essay II examines the moderating role of societal organizations on urban unrest when food prices increase. It finds that the manifestations of food-related unrest are contingent on the level of state repression of societal organizations. Essay III and IV use unique survey data of residents in Johannesburg, South Africa. Essay III applies a vignette experiment to investigate the assumption that food is an especially potent driver for people's willingness to engage in unrest. The results indicate a higher willingness to engage in unrest when presented with a scenario of increasing living expenses, but this effect does not appear to be stronger for the price of food. Essay IV conceptualizes experienced food insecurity on the individual level, and finds that food insecurity increases unrest participation, where some types of organizational networks act as catalysts in this relationship. Taken together, the dissertation furthers our understanding of the relationship between food insecurity and social upheaval, suggesting that both food-related grievances and a favourable organizational context have significant influence on the likelihood of urban unrest.

Keywords: food insecurity, urban unrest, organizational networks, Johannesburg, South Africa, urban Africa

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To Tale and Hedda

List of Essays

This dissertation is based on the following essays, which are referred to in the text by their Roman numerals.

I Rudolfsen, Ida (2020) Food insecurity and domestic instability: A review of the literature. *Terrorism and Political Violence* 32(5): 921–948.

II Rudolfsen, Ida (2021) Food price increase and urban unrest: The role of societal organizations. *Journal of Peace Research* 58(2): 215–230.

III Rudolfsen, Ida and Todd G. Smith (2021) Nothing compares? Investigating the cost of food as a driver of urban unrest. *Unpublished manuscript*. Equal authorship.

IV Rudolfsen, Ida (2021) Food insecurity and unrest participation: Evidence from Johannesburg, South Africa. *Unpublished manuscript*.

Reprints were made with permission from the publishers (Essays I and II).

Contents

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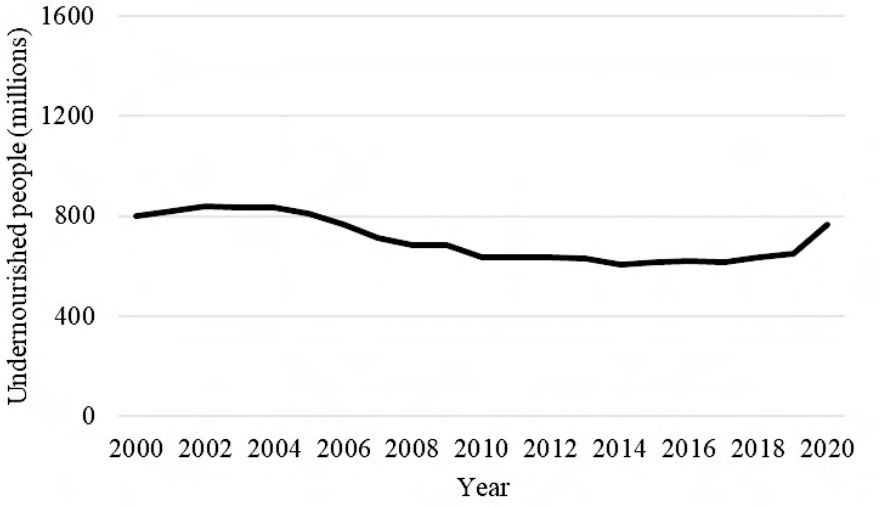
Introduction

Under what conditions does food insecurity lead to urban unrest? From Ancient Rome to the Arab Spring, food has been the foundation of the social contract between regimes and their citizens. Cura Annonae was one of the first examples of a food supply and social safety net system. It provided the inhabitants of Rome with imported grain for consumption, some of it handed out for free or at a reduced price. This regular and stable supply of grain to the city was a central part of the Roman leadership's political strategy in pacifying a restless urban population that could easily penalize its rulers, and the supply of food was a central social and political issue for urban consumers (Erdkamp, 2005). According to Rickman (1980, 2), the citizens of Rome expected '[...] as a right a guaranteed supply of food, and they could not be allowed to go hungry without unpleasant political consequences for those whom they held responsible'. Moving from Ancient Rome to current day politics, food-related grievances are still centred on political authorities and what they are (not) willing (or able) to do to accommodate their citizens in obtaining food. During the Arab Spring a main slogan in Egypt, once the breadbasket of ancient Rome, was 'bread, freedom and social justice' (Alexander and Bassiouny, 2014), a telling order of importance in covering basic needs before higher-order political goals. Regimes go to great lengths to dampen potential shocks to food security, such as sheltering consumers from international food price shocks (Alderman, Gentilini and Yemtsov, 2018). The assumed importance of food for politics led the poet Juvenal to conclude that 'Give them bread and games and they will never revolt' (*panem et circenses*), and the emperor Tiberius to fix a maximum price of wheat during a food price shock and claim that neglecting to provide food for the citizens would be the 'utter ruin of the state' (Garnsey, 1993; Rickman, 1980). Implicitly, this means that the political stability of the state is dependent on the willingness and ability of authorities to use resources to feed its citizens.

Food insecurity is nothing if not widespread. The new estimate for 2020 from the Food and Agriculture Organization (FAO), displayed in Figure 1, shows that since 2014 an increasing number of people are food insecure, and in 2020 around 770 million people were undernourished. The trend is likely to be further aggravated in the coming years due to the impact of the ongoing COVID-19 pandemic, undermining decades of development efforts (FAO, 2021; Swinnen and Vos, 2021). Currently, in 2021, global food prices are 33% higher than last year, reaching price spikes not seen since the 2010s and the start of the Arab Spring. Major food price shocks occurred in both 2008–09 and 2010–11 (Abbott and de Battisti, 2011; Tadesse et al., 2014; Watson,

2017), and countries in several regions, including Asia, Africa, Latin America and the Middle East, experienced widespread unrest in their wake (see e.g. Demarest, 2014). With the increasing number of food insecure, the food price fluctuations from the mid 2000s, and the current food price hike occurring worldwide, there is increasing worry about the impact of food insecurity on social upheaval (Durisin, 2021; Gopaldas and Ndhlovu, 2021).

Figure 1. Number of undernourished people in the world



Data from FAOSTAT (FAOSTAT, 2021).

Indeed, there has been an accelerating number of scientific contributions on the relationship between food insecurity and domestic instability in recent years, putting the question of whether food insecurity is related to unrest to the fore of the academic debate (e.g. Abbs, 2020; Bellemare, 2015; Raleigh, Choi and Kniveton, 2015; Smith, 2014). Within this large and diverse literature, there is increasing agreement that food insecurity predicts social unrest, especially in the form of rising food prices in urban areas. Despite the varying suggested theoretical pathways through which food leads to unrest, the quantitative literature tends to have deprivation at the core of the theoretical argument, and often uses the same proxy for food insecurity on the aggregate level: the direct effect of food price on unrest events. However, while food insecurity is frequent, widespread and everyday in nature, social instability is relatively rare. This begs the question of under which conditions food-related unrest may occur. For example, while hunger and famine have been widespread and lead to large-scale deaths in North Korea, we have not witnessed corresponding unrest events over food. At the same time, we have seen frequent demonstrations and riots triggered by food access in countries such

as Bangladesh and India (Hendrix and Haggard, 2015; Heslin, 2021). What factors can explain this variation?

While there is an assumption amongst both policy makers and academics that provision of food is the most basic and fundamental task of the state, and while the correlation between food insecurity and unrest is established in the literature, it would seem that lack of food is not enough in and of itself to make the people revolt. The theoretical emphasis on grievances alone in the existing literature appears insufficient in explaining food-related unrest, and the variation in outcome necessitates going beyond aggregate proxies and direct effects. There is much room for theoretical and empirical advancement, and we lack more precise arguments, measurements and analyses that help identify the conditions under which food insecurity leads to such mobilization. Thus, to move the research frontier forward, there is a need for a more nuanced understanding of food insecurity, and a contextually sensitive approach to the question of food's relationship to social instability.

Addressing this gap in the literature, the overall aim of this dissertation is to theoretically specify and systematically explore under which conditions food insecurity leads to unrest. A major novelty with the thesis is that it both articulates and examines a multifaceted conceptualization of experienced food insecurity, and introduces a context-specific framework for food-related unrest. Specifically, I argue that the current focus on aggregate proxies and attention to direct effects misses much of the micro-level variation and conditional factors that are relevant in explaining the occurrence of collective action over food. I therefore propose that how the specific context – in terms of how the organizational networks that individuals are embedded in – interact with the experienced intensity of food insecurity has much explanatory leverage in understanding the conditions under which we see food-related unrest. While one essay provides a comprehensive literature review, the other three are empirical studies that assess the relative importance of food insecurity and their interaction with organizational conditions for mobilization potential, both on the country-month (macro) and on the individual (micro) level. To assess these relationships, I make use of a variety of research designs and methods, including observational data both at the country-month level from urban Africa and individual level from Johannesburg, South Africa, as well as experimental designs. In sum, I argue and show that the relationship between food and unrest is conditional on the intensity of experienced food insecurity and the presence of favourable contextual conditions in the form of organizational networks.

The constituent parts of the dissertation offer independent and complementary assessments of the contextual argument. The first essay reviews the burgeoning literature on food insecurity and social upheaval, and identifies main research gaps and suggestions for the way forward. The second essay puts forth a context-specific argument, looking at the degree of state repression of societal organizations when food prices go up. The third essay addresses the question of whether there is a higher willingness to engage in unrest over food

compared to other living expenses, an assumption often found in the literature and popular media. The fourth essay contributes to understanding the micro-foundations of the link between food insecurity and urban unrest by looking at whether the type and intensity of food insecurity matter for participation in unrest on the individual level, and whether the organizational context moderates this effect. Tying the contributions together, the main finding of the thesis is that *food insecurity is associated with the incidence of urban unrest: The likelihood increases corresponding to the experienced intensity of food insecurity, and when the structural context allows for organizational ties*. This shows that there must be both (deep) motivation and capacity for food-related unrest to occur. The thesis makes two overall contributions. First, the study advances our understanding of the micro-level underpinnings of the general relationship between food insecurity and social unrest, both by studying this at the level of the individual and assessing whether there is a special mobilizing potential in food. Second, while each essay makes a specific contribution to the research field, the thesis as a whole advances our understanding of food-related unrest by using a disaggregated approach that highlights the importance of the experienced intensity of food insecurity, and the organizational contexts within which it occurs.

The structure of the remainder of this chapter is as follows. In the following, I present the theoretical concepts relevant for each essay, before presenting the theoretical framework that guides the thesis. After this, I briefly present the empirical context of the dissertation that focuses on urban centres in Africa and Johannesburg, South Africa. I then describe the research methods applied, before discussing implications for policy and future research.

Theoretical concepts

The overarching phenomena of interest in this dissertation are food insecurity and urban unrest. While the four essays address different research questions and apply different research designs, they all enhance our understanding of different facets of the relationship between these two phenomena.

Food insecurity

Food insecurity is a multifaceted concept with different understandings and definitions, and the debate on how to best measure food insecurity has been ongoing for decades (Hendriks, 2015). The most well-established definition is from the Food and Agriculture Organization (FAO), stating that food security exists when 'all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active healthy life' (FAO, 1996). The definition from FAO includes four dimensions of food insecurity: food availability (sufficient

quantities of food available), food access (access by individuals to adequate resources/entitlements), utilization (utilization of food through adequate supplies) and stability (the risk individuals have to food insecurity due to interruptions in availability, access and utilization) (FAO, 2008). While this is a widely accepted definition because of its inclusive focus, the definition is also constrained by the multiple understandings that such a broad definition can contain. However, while the definitions and understandings of food insecurity can vary between scholarly contributions, there is nonetheless a commonality across all definitions in that food insecurity is a phenomenon relating to the individual. It is the nutritional status of the individual that is at the core of the definition, and the extent of and threats to this status.

There has been a shift from focusing on food insecurity in terms of availability towards focusing on it in terms of access, based on the seminal work by Sen (1982), and overall, the dissertation has a focus on food insecurity in terms of inadequate food access. Food insecurity is about poverty and vulnerability rather than agricultural productivity, where consumption rather than production is emphasized. This is because access is most closely related to the concept of well-being for the individual or household, focusing on the food choices available (Barrett, 2010). Therefore, I understand food insecurity in terms of individuals' or households' ability to obtain food from the marketplace or from other sources, with an emphasis on food access (Webb et al., 2006). However, while the main focus of the dissertation is access to food, I recognize that accessibility, availability and utilization are interrelated. They are also hierarchical in nature: 'food availability is necessary but not sufficient for access, and access is necessary but not sufficient for utilization' (Webb et al., 2006, 1405S).

Food insecurity is often understood as being on a continuum of intensity corresponding to increasing deprivation in terms of food needs. People can be food secure, experience mild levels of food insecurity that include worrying about food, and experience moderate levels that include reduced food consumption, whereas severe levels concern those that consume insufficient amounts of food and experience hunger (Saint Ville et al., 2019). An adequate intake is when the individual is food secure and fulfils all the criteria in FAO's definition. For the purpose of theorizing about mobilization potential and unrest behaviour, I do not understand these dimension as stepwise or linear experiences. Rather, food insecurity is understood as comprising of multiple facets, where it is possible for the individual to experience different combinations simultaneously. For example, whereas worrying about food is characterized as a mild form of food insecurity in the general definition, it may have a significant impact on individual mobilization potential. I therefore understand the different types of food insecurity not as different levels of food insecurity, but as distinct facets, where individuals who experience multiple dimensions simultaneously have a higher experienced intensity of food inse-

curity. In other words, I perceive the different types of food insecurity to be both separate and inter-related.

An important contribution of the thesis is to integrate this multi-dimensional conceptualization of food insecurity into quantitative analysis of the subject. Most quantitative studies on food-related unrest have relied on changes in food prices, a well-established proxy for food insecurity in the literature (e.g. Hendrix and Haggard, 2015; Smith, 2014). A large majority of the world's population is dependent on the market for access to food, and urbanization is steadily amplifying this trend (Barrett and Lentz, 2010). Increasing food prices are therefore likely to be a large threat to food security, and previous research shows that short-run increases in most food prices raise poverty levels, especially in developing countries (Ivanic, Martin and Zaman, 2012; Jolliffe, Seff and de la Fuente, 2018; Kalkuhl, von Braun and Torero, 2016; Skoufias, Tiwari and Zaman, 2012). Thus, food prices are likely to have an effect on food insecurity, and food prices are used as a proxy for food insecurity in Essay II.

Also, to capture the multiple dimensions of food insecurity directly and reduce the threat of measurement error, the dissertation takes seriously the call from previous research to go from a focus on objective proxies to an experienced and subjective understanding of food insecurity. Indeed, there is little if any work on individual-level food insecurity and unrest participation. To look closer at different types of food insecurity, the dissertation both investigates the impact of increasing food prices (Essay III) and experienced food insecurity as a phenomenon composed of multiple dimensions on the individual level (Essay IV).

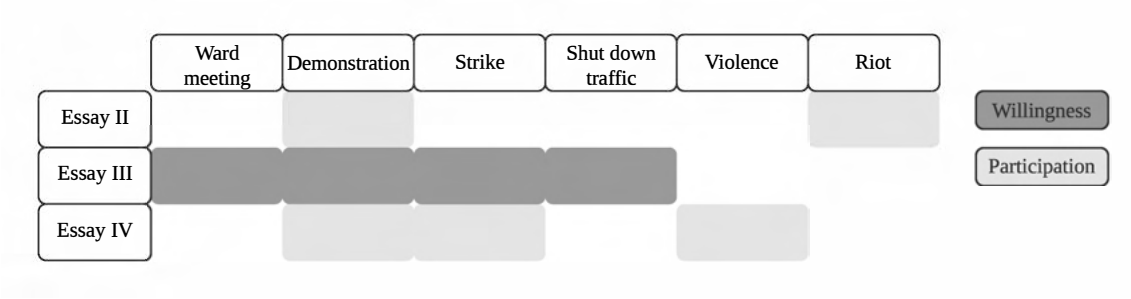
Urban unrest

The main outcome of interest across all of the essays in this dissertation is urban unrest. I use the concept as an overarching term for various forms of collective action that occurs in cities. I understand the term collective action as a coordinated effort of several individuals, and focus here on such collective efforts in urban areas, where people act together in pursuit of common interests (Tilly, 1978). The essays focus on different types of urban unrest that are non-routine, outside the realm of institutionalized politics and elections (Piven and Cloward, 1991). However, while I view urban unrest as non-routine, I refrain from including an understanding of unrest as rule-violation, as unrest also encompasses forms of participation such as peaceful demonstrations and legal strikes. This non-routine collective action can be either organized or spontaneous, violent or non-violent, more or less regular and legitimate, and may be legal or illegal (Opp, 2009). While the dissertation probes different types of collective action, there is a recognition of similarities in the underlying processes that might generate contentious action (McAdam, Tarrow and Tilly, 2001). I follow Salehyan et al. (2012), and define a demonstration as a dis-

tinct, continuous and largely peaceful action that is directed toward members of a distinct group or state authorities. I understand a riot as a distinct, continuous and violent action toward members of a distinct group or state authorities, where the participants are intending to cause injury on people and/or property. Both demonstrations and riots can either be organized or spontaneous, depending on whether clear leadership or organization can be identified. Lastly, I understand a strike as the abandonment of workplaces and public facilities by members of an organization or union.

I present the different forms of urban unrest covered in the thesis in Figure 2. These include attending a ward meeting, demonstrations, strikes, shutting down traffic, violence and riots. While Essay II includes demonstrations and riots, Essay III includes the willingness to engage in different tactics, including attending ward meetings, engaging in labour strikes, attending demonstrations, and shutting down traffic. Essay IV focuses on demonstrations, violence and strikes. Although the dependent variable encompasses different types of unrest, it is distinguishable from internal armed conflict and revolutions that are aimed at overthrowing the government of state or taking over territory. Urban unrest differs from armed conflict and civil war violence in its lower level of organization, intensity and duration (see e.g. Raleigh, 2015).

Figure 2. Forms of urban unrest in the thesis



A distinctive feature of the dissertation is that it looks at a variety of collective action. I do this for two main reasons. First, quantitative research on food-related unrest is a relatively nascent field. As such, I see no theoretical reason why one outcome should be more likely than another within this broader category of social upheaval. This, to me, is an empirical question. Previous literature has studied a variety of outcomes linked to food-related grievances, such as demonstrations, protests, riots, and communal and armed conflict. Still, a majority of these contributions have focused on riots (Raleigh, Choi and Kniveton, 2015). Violent riots are one likely response to food insecurity. However, this predominant focus on riots in the literature risks indicating that rioting is the most likely outcome of food-related grievances relative to other types of contentious action. Given that a wide range of possible actions could occur as a response to increased food insecurity, the thesis does not discriminate between types of collective unrest. Second, and relatedly, increasing

food insecurity can be a contributing causal factor, or catalyst, to any type of socio-political unrest regarding a range of issues. For example, widespread unrest in the summer of 2021 in South Africa was triggered by the arrest of former president Jacob Zuma, but people turned to the issue of food during the upheaval, and looted grocery stores, shops and restaurants to secure food (de Sousa and Diamond, 2021). Also, food insecurity may contribute to unrest without it being explicitly stated or framed as such by participants or the media (Smith, 2014). Thus, only looking at 'the food riot' both reflects an assumption that food riots are simply about food and not also about broader socio-economic challenges, and masks the possibility that food can lead to manifestations of unrest that appear unrelated to food. I therefore include a range of possible tactics under the heading of unrest.

I use unrest as a unifying concept of different types of outcomes in the dissertation, as it is an established term within the field (see e.g. Bellemare, 2015; Hendrix and Haggard, 2015). The term unrest may introduce negative normative associations and imply a preference for the status quo, as the word signals a state of agitation or disturbance. However, I seek to neither legitimize nor stigmatize different forms of collective action, but only acknowledge that there are various forms of responses that the public may engage in when faced with increased food insecurity. Unrest is not necessarily implicitly bad nor uniformly a force of good, and I pass no judgement over a given response. McAdam, Tarrow and Tilly (2001, 6) argue that '[...] the study of politics has too long reified the boundary between official, prescribed politics and politics by other means. As an unfortunate consequence, analysts have neglected or misunderstood both the parallels and the interactions between the two'. I view different types of unrest on a continuum, where strategies that are compatible with the existing rules and procedures of the formal institutionalized system are at one end (such as voting, community meeting attendance and peaceful demonstrations), and practices that are illegal and forceful (such as riots and violence) are on the other.

While urban unrest is linked to both rural and national processes more broadly, the literature on urban violence suggests that there are distinct features of the urban. There is no universal definition of what constitutes the city or the urban, but the concept of urban is understood here as '[...] geographically delimited political entities with a high concentration of population and infrastructure' (Elfversson and Höglund, 2019, 350). According to Raleigh (2015), while rural areas tend to see civil war violence and higher levels of organization, urban unrest tends to have less formal organizational forms, characterized by higher rates of riots, protests and demonstrations from civil society and communal groups able to make use of the collective action potential of the urban population. Also, the combination of population heterogeneity in urban areas, both in terms of population groups and socio-economic inequalities, may foster mobilization potential (Elfversson and Höglund, 2019). I focus on unrest in urban areas specifically because the capacity of the urban

population to engage in collective action is significantly greater than in rural areas, urban dwellers are more likely to consume food through purchase, and they are further away from the food's production. It is likely that social unrest during periods of increasing food insecurity most often originates from mobilized urban dwellers as they are both more dependent on the market for food and more likely to be able to overcome collective action problems (Verpoorten et al., 2013).

Theoretical framework

The theoretical framework is firmly rooted in the literature on motivation (Gurr, 1970) and capacity (Oberschall, 1978; Olson, 1965) for collective action, and I emphasize that individuals must both experience discontent with the situation, as well as have the means to act collectively to address grievances. The purpose of this section is to outline the overall theoretical expectations in the thesis, emphasizing both incentive and ability to engage in unrest over food. The thesis purports that food insecurity influences urban unrest through its effect on deprivation (Essays II–IV), but that the manifestation of unrest is contingent on the depth of experienced food insecurity (Essay II and Essay IV) and the organizational opportunities for engaging in collective action to redress food-related grievance (Essay II and Essay IV). The specific theoretical logic underpinning the empirical analysis in each essay is presented and discussed in each of the respective chapters. In the following, I will present the overarching framework that guides much of the theoretical approach in the thesis.

Motivation: Food as a bread-and-butter issue

Theories on how food relates to unrest often emphasize that food is the most basic of all necessities, that bread and butter is the core bread-and-butter issue, and therefore reflects political entitlement (Bush and Martiniello, 2017; Tilly, 1971). The argument that deprivation leads to conflict would therefore be particularly plausible for the issue of access to food (Hendrix and Haggard, 2015).

To explain why an individual might be motivated to engage in collective action due to increasing food insecurity, I draw on theories on perceived grievance. Overall, I understand grievances as 'a reaction to unfair treatment' (Cederman, Gleditsch and Buhaug, 2013, 41), which includes both absolute and relative deprivation. Absolute deprivation concerns a minimal level of subsistence for survival (Maslow, 1965; Sen, 1982). Relative deprivation concerns a negative change in food security status. Gurr (1970, 13) defines relative deprivation as the perceived discrepancy between an individual's expectations and what they are able to achieve, either through comparison over time or in relation to

others. This perceived gap could occur, for example, due to temporal changes, where grievances increase due to higher food prices that increase the pressure on the household budget, or because of differences between groups, where some are able to cushion the shock or may even benefit from increasing food prices (Arezki and Brückner, 2014; Sneyd, Legwegoh and Fraser, 2013). Discontent caused by deprivation is a general precondition for contentious action, and in explaining the occurrence of social upheaval, deprivation underlines the centrality of perceived injustice.

The dissertation investigates the role of experienced food insecurity as a source of deprivation in explaining participation in urban unrest (Essay II, Essay IV), and assesses the assumption concerning the fundamental nature of food in the deprivation–conflict nexus (Essay III).

Capacity: Organizational networks

While experiencing food deprivation on the individual level may increase grievances, these do not necessarily lead to collective action. Grievances related to food represent a plausible theoretical mechanism for why urban unrest occurs. At the same time, whether we see unrest or not is likely to be conditional on more static contextual conditions that enable collective action. Individuals must have the capacity to mobilize to address grievances. This is shaped by the available networks and resources, contingent on the opportunity structure given by the domestic institutional setting. Previous research suggests that integration within social networks is an important precursor for participation in unrest (Opp, 2009). The thesis therefore also draws on theories that focus on the presence of mobilizing structures in the form of organizational networks (Oberschall, 1978; Olson, 1965), both in terms of providing established mobilizing structures (McCarthy and Zald, 1977), and framing food-related grievances (Benford and Snow, 2000; Snow et al., 1986).

Food insecurity is a mundane and widespread phenomenon amongst the poor, which are often the same segments in society that lack organizational backing. Given the everyday and mass-based nature of food insecurity, mobilization potential provided by the existence of societal organizations[1] could

[1]There exist countless examples and varieties of civic groups with corresponding labels and definitions, such as social movement organizations, community organizations, civil society organizations, non-governmental organizations, trade unions and political party organizations. According to Zald and Ash (2006, 328), organizations can be seen as a 'collection of groups harnessed together by incentives of various kinds to pursue relatively explicit goals'. Also, Butcher et al. (2021, 2) define an organization as a structure '[...] designed to coordinate people and resources – often through collective action – for collective goals'. Such groups can engage both in conventional politics and extra-institutional unrest, and can be hybrid entities, or evolving from one type of entity to another (Mottiar and Lodge, 2017; Oldfield and Stokke, 2006). The focus of this thesis is not necessarily the nature or type of organization, its origin or composition, but rather whether there exists some form of organizational structure that people can draw on to address their grievances.

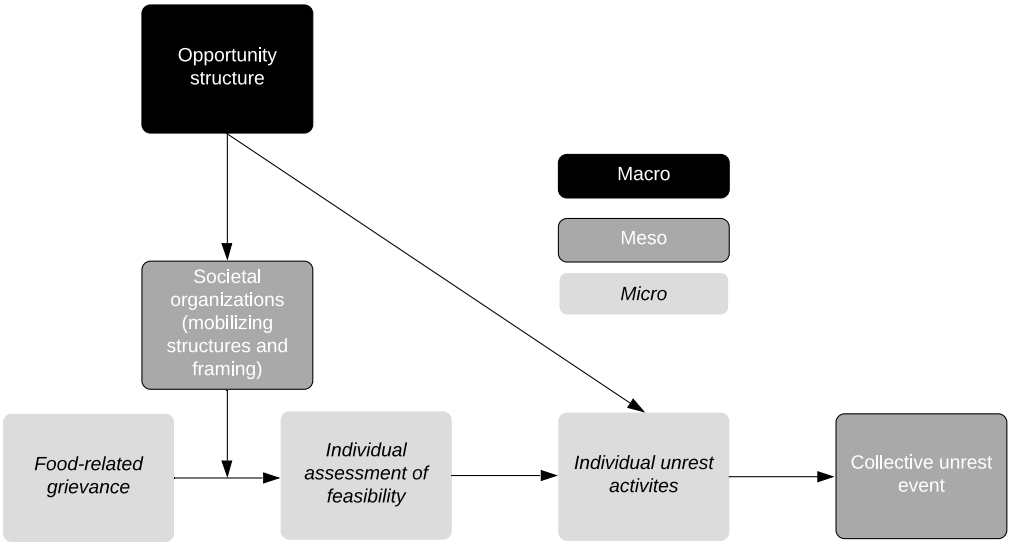
facilitate unrest participation. I argue that an important step in the transformation of an individual grievance into collective dissent due to increasing food insecurity is the involvement of organized groups in society. I suggest two factors that would make organizational networks especially important for food insecurity. First, societal organizations can provide existing mobilizing structures that people can draw on. The opportunity to engage in collective action is likely facilitated by societal organizations, affecting people's ability to act on their grievances by providing an existing infrastructure for mobilization, as these networks can more easily marshal resources to meet collective goals through established associations and leadership (McAdam, Tarrow and Tilly, 2001; McCarthy and Zald, 1977; Oberschall, 1978; Olson, 1965). I argue that this feature would be especially relevant for food insecure individuals, since while food insecurity can increase grievances, it can also have countervailing effects on mobilization potential. This is because individuals experiencing high levels of food insecurity invest most time in acquiring food, leaving limited time to pursue higher end political and economic goals (Hendrix and Brinkman, 2013). Therefore, individuals who experience food insecurity might especially benefit from existing organizational structures that facilitate collective action. Second, food is often seen as an apolitical or individual-level issue, related to the 'individual fortunes of households [...], and is therefore much less a community phenomenon' (Maxwell, 1999, 1940). In this context, where food is understood as a ubiquitous and 'invisible crisis' (Battersby and Watson, 2019), the organizational context could be especially important in politicizing food-related grievances on the individual level, and thereby translating the issue of food grievances into a broader and community-based phenomenon. Organizations can represent a mass-based grievance and garner support from affected groups, making use of existing resources and channels. Thus, societal organizations can translate a ubiquitous individual-level grievance into a group phenomenon by politicizing food insecurity through grievance frames (Snow et al., 1986).

While the micro level concerns individuals having incentives to engage in collective action over food, and the meso level concerns the degree of ability to collectively frame grievances and to mobilize as a group, it is also important to take into account the macro level, which concerns the political opportunity structure in which these individuals and groups operate. In order for individuals to act within the group collective, the opportunity structure must allow for – rather than repress – organizational activity. In other words, the aggregate structure that these individuals and groups act within is also relevant for explaining food-related unrest (McAdam, Tarrow and Tilly, 2001). The state shapes and influences both the extent and nature of food insecurity, and associational autonomy through freedom of organization (Hendrix and Haggard, 2015). I follow Tilly (1978) and assume that the circumstances under which societal organizations can form and act are shaped by the degree to which the state introduces costs for expressing grievances publicly (McAdam, Tar-

row and Tilly, 2001). Previous research suggests that state repression is an important factor for mobilizing potential, where repression of organizational structures central to mobilizing efforts could make collective action during increased food insecurity more difficult. Repressive states may well both create high levels of food insecurity, and thereby also increase grievances, and have the possibility to quell resistance over food deprivation. Thus, while societal organizations can have autonomy from the state, the state sets the premise and sphere that these organizations must operate within.

Figure 3 shows the suggested theoretical linkages between food insecurity, the organizational context and urban unrest. I suggest that food-related grievances (caused by a variety of sources) can lead to collective dissent. I suggest that the presence of societal organizations (given by the political opportunity structure that either facilitates or represses associational life) affects the relationship between food-related grievances and individual unrest activities by influencing the individual's assessment of feasibility in participating. Given the theoretical propositions presented here, I suggest that a potential explanation for when food insecurity leads to collective action is the depth of experienced food insecurity combined with the presence of organizational networks that can provide mobilization structures and politicize the issue of food. Food grievances and the mobilizational capacity to channel these into collective action jointly shape the manifestations of contention.

Figure 3. Hypothesized theoretical linkages between food insecurity and urban unrest



Empirical framework

When does food lead to feud? The case for context

The empirical material consists of one cross-national study based on urban Africa, and two individual-level studies using survey data from Johannesburg, South Africa. So what empirical context is this?

The focus on Africa is motivated by the fact that the region is experiencing high rates of urban population growth and urban food insecurity. For example, over one third of the world's undernourished are found in Africa (circa 282 million). Around 20% of the population was experiencing hunger in Africa in 2020 – more than double the proportion of any other region (FAO, 2021). City dwellers in Africa pay around 35% more for food than consumers in low- and middle-income countries elsewhere. Almost 50% of the African urban population lives in informal settlements that lack adequate housing and services, and are characterized by high levels of food insecurity (Smit, 2016). The New Urban Agenda (NUA) considers urbanization in Africa as one of the 21st century's most transformative trends, pointing to a unique urban development challenge in developing countries (UN, 2017, 3). Some estimates suggest that the share of urban residents in African will reach 50% by 2030 (Battersby and Watson, 2019). Organizations and policy agencies such as the World Bank and the International Food Policy Research Institute (IFPRI) are increasingly paying attention to the effect of high food prices and increasing food insecurity in an urbanized setting, where a growing urban population spend a substantial share of their household budget on food (IFPRI, 2017; Lall, Henderson and Venables, 2017). The region also saw widespread urban unrest in 2008–2009 and 2010–2011 occurring simultaneously with the international food price spikes (Sneyd, Legwegoh and Fraser, 2013). Understanding the societal consequences of these trends are therefore of great importance.

The individual-level data is derived from the townships of Alexandra and Soweto in Johannesburg, South Africa. The choice of empirical context is motivated by the fact that South Africa has witnessed rapid urbanization and high food insecurity levels. The two townships are particularly well suited for study for several reasons. First, while both Alexandra and Soweto are known for civil unrest, there is significant variation amongst urban residents in both areas regarding who decides to participate, and what type of tactic they choose. Political action is certainly not reduced to contentious action, and citizens make use of a range of actions, some that are compatible with the institutional political system, and some that are not (Alexander et al., 2018; Booysen, 2007). The repertoire of action varies greatly, and only a few participate in disruptive violent action. Thus, the case exhibits significant variation in unrest activity on the individual level. Second, both townships see widespread food insecurity. Around 22% of South Africans had inadequate food access in 2017 (Statistics South Africa, 2019). However, the townships are diverse and have different demographic profiles and levels of wealth, and the variation

in socio-economic profiles should not be overlooked (Ceruti, 2013). Finally, the phenomenon of interest occurs in an urban setting, characterized by population density and heterogeneity that can facilitate mobilization efforts. Poor consumers in urban areas tend to be particularly vulnerable to increasing food prices, and are also more likely to be in a position to put demands on the state and articulate grievances (Bezemer and Headey, 2008; Verpoorten et al., 2013). Given these three characteristics, I propose that Soweto and Alexandra together form a typical case of the phenomenon of interest, which provides an opportunity to study the effect of food-related grievances on individual-level unrest participation.

Research design and validity

Each essay in the dissertation uses different research designs and methods to address a specific research question, all aimed at providing new insights on the relationship between food insecurity and urban unrest. While Essay I is a systematic review of the literature on food insecurity and social unrest, Essays II to IV take an empirical approach, and collect and analyse data by survey methods and fieldwork, quantitative analysis and experimental design.

The ultimate goal of any research endeavour is to generate valid conclusions about an observable process (Trochim and Donnelly, 2007). The core objective of this dissertation is to specify the relationship between food insecurity and urban unrest, and the thesis both builds on existing approaches and advances the study of food insecurity in a number of important ways. However, as with all scientific inquiries, possible threats to validity are unobserved heterogeneity, reversed causality, and measurement error. I will therefore also discuss some of the potential threats to inference.

I tackle the issue of food-related unrest using different measurements. Essay II makes use of cross-sectional time-series data covering urban Africa between 1990 and 2014. The essay represents a more comprehensive sample with longitudinal data, that includes monthly domestic food prices (International Labour Organization) and data on urban unrest from the Social Conflict Analysis Database (SCAD) (Salehyan et al., 2012). While not measuring food insecurity explicitly, the use of food price fluctuations is well-established in the literature, and has clear and tangible implications for food insecurity.

To add to and go beyond the macro-level approach with food price data in Essay II, Essay IV seeks to explain whether unrest participation by individuals is driven by food insecurity, and the study is therefore based on original data from a survey fielded in Johannesburg, South Africa in 2017. Most of the current literature uses aggregate proxies to measure food insecurity, and the field has thus far made limited attempts to directly test theoretical assumptions about individual-level food insecurity and unrest participation. With the use of measurements such as the percentage of cropland or the share of stunted

children, proxies are likely to capture aspects unrelated to food insecurity, increasing the risk of measurement error. By using survey data, it is possible to study a variety of dimensions of food insecurity directly, including experienced hunger, reduced food consumption, and the extent to which people worry about food.

Despite the number of advantages to these empirical approaches, I also recognize their limitations. Given that the design in Essay II and IV is based on observational data, there exist threats to inference that include reversed causality and the potential for omitted variable bias. The analysis relying on observational data and self-reported experiences seeks to account for alternative explanations using other design features, such as controlling for confounding variables. Also, to explicitly address the possibility of an endogenous relationship between food insecurity and social upheaval, Essay III applies a survey experiment to assess the importance of food price hikes for unrest potential, and has a strong internal validity. As the prices of commodities such as electricity, fuel and food often shift in tandem, and since the outbreak of unrest may also influence the price of food, respondents were randomly assigned to treatment and control conditions, and the study maps how information about different commodity price hikes influence the stated willingness to engage in various forms of unrest.

The reliance on survey data from a single case, and a survey experiment in particular, raises concerns about the external validity of the findings. External validity concerns the 'validity of inferences about whether the cause-effect relationship holds over variation in persons, settings, treatment variables, and measurement variables' (Shadish, 2010, 4). The empirical context of this dissertation is urban Africa, and by design choice I do not have information on whether and to what degree the findings are applicable to other individuals in other settings. Also, given the persistently high levels of various forms of resistance in South Africa, it could be viewed as a peculiar case due to the legacies of apartheid resistance and post-apartheid transition.

However, there are important features of the contemporary unrest in South Africa that travel beyond the national context, with regards to both their manifestations and orientations. Previous research characterizes South Africa as an '[...] extreme but far from exceptional embodiment of forces at play in many regions of the world' (Hart, 2013, 21). This relates to issues such as absent or insufficient service provision by the state, high levels of economic inequality and insecurity, and a situation where collective action often corresponds with quotidian grievances related to poverty and unemployment (Ballard, Habib and Valodia, 2006; Paret, Runciman and Sinwell, 2017). Also, I suggest it is likely that the findings are relevant to regions beyond urban Africa as well, as anecdotal evidence suggests that the issue of food is relevant in other contexts. For example, following the food price spikes in 2007–08 and 2010–11 unrest occurred in more than 50 countries worldwide in their aftermath. Food insecurity is a widespread phenomenon that is likely to have socioeconomic

and political impacts in other contexts outside urban Africa. Thus, it is likely that the findings in the dissertation travel beyond the empirical focus of the thesis. However, the only way to systematically assess the external validity of the findings is to replicate the analyses in other areas as well.

Presenting the essays

Essay I

The essay 'Food insecurity and domestic instability: A review of the literature' has been published by *Terrorism and Political Violence*. It analyses the existing literature on food insecurity and social unrest. The essay sets out to give an overview of the rapidly expanding research field, and synthesizes its main empirical findings and explanations.

As the literature on the topic is vast in both time and scope, and includes different theoretical and methodological foci, it can be challenging to find commonalities in the literature. However, the essay argues that a trend emerges when tying the literature together, where the central feature of the literature is having deprivation at the core of the argument of how food is related to unrest. The source of the grievance, however, tends to differ between contributions, with theoretical mechanisms on the individual, group and state levels. The literature on food insecurity and unrest has seen a remarkable expansion, especially in recent years, that has made important advances in our understanding and knowledge on this topic. At the same time, the essay points to several unsettled issues and room for advancement both theoretically and empirically, and identifies four specific challenges that should be addressed to push the research field forward.

The first challenge relates to the various definitions of food insecurity and the different proposed theoretical mechanisms that tend to be tested empirically in a similar way. To advance conceptual and empirical clarity, it is necessary to explicitly define the understanding of food insecurity that underpins the research, what aspects of food insecurity are under scrutiny, and how this understanding relates to unrest. Second, the definition of food insecurity should have implications for the empirical test. The theoretical definition of food insecurity and how it it is captured in the applied measurement should be made explicit to facilitate comparisons between studies. Third, the literature focuses mostly on 'food riots', which implies a given reaction to increased food insecurity. But it is not established that this type of response or outcome is a given or most likely in the context of food. The possible manifestations of food-related unrest could include peaceful and violent demonstrations, violent riots, communal conflict and civil war. Thus, it would be a step forward to either not discriminate between the types of unrest as a potential outcome, or focus on a clearly defined type of unrest based on theoretical expectations.

Finally, the research field on food insecurity also includes potential for advancement in future research when it comes to causal inference.

Essay II

The essay 'Food price increase and urban unrest: The role of societal organizations' has been published by *Journal of Peace Research*. It addresses the puzzle of why there is large variation in the reactions to increasing food prices by the public. The paper argues for the centrality of state institutions in shaping people's ability to mobilize and engage in collective action over food. As food-related grievances tend to be mundane and mass-based, they often represent a deprivation that lacks organizational backing. As such, when active societal organizations[2] focus on increasing food prices, this can increase the risk of urban unrest. This is because societal organizations both provide existing mobilization structures that people can draw on, and articulate perceptions of hardship related to food, turning an individual-level food-related grievance into a group phenomenon by politicizing the cost of food.

In the essay I argue that the relationship between increasing food prices and urban unrest is moderated by the degree to which states repress these societal organizations. The state shapes the opportunity for people to engage in unrest over food. Looking at the organizational space available for these groups can thereby help illuminate why unrest during food price shocks occurs in some instances but not in others. Thus, while increasing food prices may provide stronger incentives for urban consumers to engage in unrest due to increased hardship, the outbreak of unrest is conditional on the degree of state repression of societal organizations. When the state is able to restrict or remove structures that facilitate collective action, this is expected to reduce the likelihood of unrest.

To evaluate this hypothesis empirically, the essay uses country-month data on urban unrest and food price fluctuations, together with data on the presence and nature of civil society organizations and political party organizations in urban Africa between 1990 and 2014. I find support for the expectation that a constrained or repressed organizational environment reduces the likelihood of urban unrest when food prices increase, but the relationship is not monotonic: it is not the most open societies that see the most unrest. Countries are more likely to experience unrest when there is moderate repression and barriers to formation.

[2]Societal organizations include civil society organizations (interest groups, labour unions, religiously inspired organizations (if they are engaged in civic or political activities), social movements, professional associations, and classic non-governmental organizations (NGOs)) and political parties.

Essay III

The essay 'Nothing compares? Investigating the cost of food as a driver of urban unrest' is a working paper co-authored with Todd Graham Smith, and focuses on the role of food as a motivation for collective action relative to other living expenses. Within the literature on food prices and social upheaval, the role of food is often pointed to as a particularly salient commodity in the relative deprivation–conflict nexus. This is due to its specific features regarding basic subsistence, its price visibility, symbolism, and volatility and inelasticity of demand. However, we do not know how consumers view food as a commodity relative to other living expenses, and whether food is an especially potent driver for the willingness to engage in unrest behaviour.

We test these theoretical expectations by using an individual-level approach, asking consumers about their willingness to engage in unrest following an increase in the price of food, fuel and electricity, respectively. To answer the question, we utilized a research design that accounts for endogeneity, and the essay makes use of a vignette experiment where we randomly assign respondents to treatment and control conditions consisting of fictional news stories of coming price hikes and subsequently map consumer reactions. We study how information on different commodity price hikes influences the stated willingness to engage in unrest using data from Johannesburg, South Africa.

The study does not find support for the proposition that food prices are an especially potent driver for the willingness to engage in unrest. While we replicate earlier findings based on observational data that food prices are related to social upheaval, we are unable to find an additional effect of the price of food as a motivation to engage in unrest activity relative to other living expenses.

Essay IV

The essay 'Food insecurity and unrest participation: Evidence from Johannesburg, South Africa' is a working paper. It investigates the proposition that food insecurity motivates unrest participation. While there is emerging agreement in the literature that food insecurity leads to social upheaval, the relationship remains theoretically and empirically ambiguous. Existing work on the issue of food-related unrest studies the relationship at the aggregate level with the use of proxies. The study therefore contributes to the literature by studying experienced food insecurity and unrest participation on the individual level.

In the essay, I emphasize the importance of both motivation and capacity for unrest participation over food. I argue that the experienced intensity of food insecurity increases motivation to participate in unrest. To assess when the willingness is more likely to turn to participation, I argue that the presence of structural conditions in the form of organizational networks would be especially beneficial for the emergence of collective action over food. This is both because high levels of food insecurity can have negative effects on mobiliza-

tion potential, and because the mundane nature of food as a grievance often causes it to remain an invisible issue. Organizational networks could facilitate unrest participation over food by both providing mobilization structures and politicizing grievances related to food.

I evaluate the relationship between food insecurity and unrest participation in the context of Johannesburg, South Africa. I find that higher experienced intensity of insecurity predicts unrest participation. I find the strongest effect for participation in demonstrations and strikes, but lower certainty regarding participation in violence. Also, I find that organizational networks moderate the effect of food insecurity on unrest participation. Those who are linked to organizational networks are more likely to participate in unrest at higher levels of food insecurity than those who are not. Looking at the types of organizational network separately, it appears that union ties are driving the interaction effect, whereas community and political party ties have less explanatory power.

Table 1 gives a summary of the essays in the dissertation.

Conclusion

Based on both the theoretical arguments and empirical evidence, the dissertation contributes to the existing literature in multiple ways. First, the dissertation moves away from a focus on direct effects to understand the conditional relationship between food insecurity and unrest, using both micro and macro data. Second, the dissertation contributes with a multi-dimensional conceptualization and operationalization of food insecurity that helps us understand who, among the food insecure, participate in unrest. Within the same context, the experience of food insecurity varies across individuals, and this is something that cross-national studies are not able to capture. Third, the dissertation contributes to the literature by investigating the common assumption that there is something especially aggrieving about increasing food prices.

The findings in this thesis contribute to our understanding of the relationship between food insecurity and urban unrest. Better knowledge on the societal consequences of food insecurity can help tailor efforts to ameliorate the negative impacts and outreach of inadequate food access. Overall, the essays in this dissertation confirm the results from existing work, and find that food insecurity is associated with social unrest (Essay I–IV). Yet, the essays also contribute both nuance to and confidence in this relationship. First, the findings suggest that the link is context specific (Essay II and Essay IV), where both micro and macro evidence suggest that opportunity structures in the form of organizational networks predict food-related unrest. Second, the findings also bring nuance to existing cross-national work regarding who participates in unrest on the micro level, corresponding to the individual's experienced intensity of food insecurity (Essay IV). Also, the dissertation finds that food

Table 1. *Overview of essays*

Essay	Hypotheses	IV	DV	Approach	Main conclusion	Contribution
I: Food insecurity and domestic instability: A review of the literature				Literature review of central qualitative and quantitative work on food and social upheaval.	Theoretical mechanisms vary despite empirical tests being akin, there is a gap between theoretical definitions and measurement, and a reliance on 'food riots' as outcome.	Synthesizes main findings and research gaps, and provides suggestions for future research.
II: Food price increase and urban unrest: The role of societal organizations	H1: The effect of increasing food prices on unrest is moderated by the degree to which states repress the formation of societal organizations. H2: The effect of increasing food prices on unrest is moderated by the degree to which states repress existing societal organizations.	Domestic food price	Urban unrest (demonstrations and riots)	Quantitative analysis on the country-month level in urban Africa, 1990–2014 (ILO, V-Dem, SCAD).	Repression of societal organizations decreases the likelihood of unrest when food prices go up.	Presents a contextualized framework of how societal organizations moderate food-related unrest through mobilizing structures and articulation of food-related grievances.
III: Nothing compares? Investigating the cost of food as a driver of urban unrest	H1: Individuals will be more willing to engage in collective action when presented with the prospect of increasing food prices than presented with the prospect of increases in the cost of fuel or electricity rates. H2: Individuals will be more willing to engage in collective action in response to increasing prices related to living expenses, regardless of category.	Three vignette treatments ('fuel prices', 'food prices', 'electricity prices'), and one control ('stable prices')	Willingness to attend a ward meeting, demonstration, strike, or shut down traffic	Quantitative analysis of original survey experiment of 608 respondents in Soweto and Alexandra, Johannesburg.	Higher food prices increase willingness to participate in unrest, but not more so than other household expenditures.	Assesses and compares the importance of food relative to other price spikes for the willingness to engage in collective action.
IV: Food insecurity and urban unrest: Evidence from Johannesburg, South Africa	H1: Higher experienced intensity of food insecurity increases unrest participation. H2: Food insecure individuals are more likely to participate in unrest if they are embedded in organizational networks.	Food insecurity index	Participation in unrest (demonstration, violence, strike)	Quantitative analysis of original survey data of 805 respondents in Soweto and Alexandra, Johannesburg.	Food insecurity increases urban unrest participation, especially demonstrations. Some types of organizational ties moderate this effect.	Conceptualizes experienced food insecurity on the individual level and surrounding mobilization structures through organizational ties.

price spikes are not experienced so differently from other price changes (Essay III).

Also, there are several assumptions in the literature and in popular media that the empirical analysis does *not* support. First, while food is a predictor for urban unrest, there is an assumption in the literature that there is something especially motivating about food in the grievance–collective action nexus as food is the most fundamental necessity. However, food does not appear to be more motivating for unrest participation than other commodities that make up a substantial share of the household budget (Essay III). Second, I do not find that more food insecure individuals are more violent (Essay IV). There is not support for the popular proposition that there is a hungry, angry crowd that engages in violence out of desperation from hunger. I do find that the most aggrieved over food engage in collective action through legal methods such as demonstrations and strikes. The poor make use of existing structures and make claims through collective action; they are neither passive nor a maddened crowd.

In addition, the dissertation provides avenues for future research. First, it highlights the need to understand the relative importance of food in collective action. While some strands in the literature point to the importance of food because of its fundamental nature, others suggest that food functions as the last straw that ignites unrest over a range of issues (Bush and Martiniello, 2017; Heslin, 2021). I suspect that it is both, that food insecurity functions as a base grievance influencing willingness to engage in unrest over a range of issues, and that food price shocks can function as a pretext for airing other grievances. However, we need more precise measurements and research designs to assess the relative importance of these different suggested mechanisms. A second avenue is to assess the effect of not only increasing food prices, but also rapidly decreasing prices, and their impact on poverty and mobilization potential amongst consumers and producers. While increasing food prices can have adverse impacts on urban consumers, we have little understanding of how the net effect of increased income versus increased cost of food affects mobilization potential. A parallel literature exists that suggests that a loss of income from agricultural yields increases the risk of conflict through lower opportunity costs (Fjelde, 2015; von Uexkull et al., 2016). An interesting avenue for future research is therefore to look into how both increasing and decreasing food prices may lead to varying outcomes depending on consumer/producer categories. Third, since the food price shocks starting in 2008, the World Bank has established a Food Price Crisis Observatory that categorizes all policy actions taken by governments (Watson, 2017). This provides a useful resource to assess not only how the people react to fluctuating food prices, but also their response to specific policies implemented by the state to tackle mounting food insecurity levels. Finally, given the endogenous relationship between food insecurity and conflict, there is much to be gained by applying experi-

mental, natural and quasi-experimental designs to draw inferences from this relationship.

With regards to policy, the dissertation has a number of implications. Despite the evidence of rapid urbanization and increasing levels of food insecurity, the consequences amongst the urban population in developing countries have remained a marginal concern at all levels of governance in the domestic and international arena (Battersby and Watson, 2019). However, based on the findings of the dissertation, it is evident that food security is important for political stability. It is high time that the potential societal impacts that may result from the mounting challenges with increasing urbanization and food insecurity are taken seriously and directly addressed in policy making. This implies proactive and targeted policies that aim to stabilize and reduce food prices, and tailored safety nets that explicitly benefit the poor with targeted food subsidies.

In sum, this dissertation has provided new insights into the relationship between food insecurity and social instability, highlighting a contextualized argument emphasizing the interaction between the experienced intensity of food insecurity and organizational ties. The negative trend in food security in recent years cannot be separated from the root causes of hunger and malnutrition, which are issues of poverty, inequality and marginalization. Thus, although food insecurity may appear as an apolitical challenge that relates to agricultural trade and climatic conditions, food, and lack thereof, is at its core about politics.

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