VULNERABILITY IN THE URBAN ENVIRONMENT:
A COMPARATIVE ANALYSIS.

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EXECUTIVE SUMMARY

In 2007, the Internal Displacement Monitoring Center estimated that the total number of individuals who had been forcibly displaced from their homes, but remained within the territory of boundaries of their country, surpassed 27 million. (Jennings, 2008) Known as Internally Displaced Persons (IDPs), their numbers have been steadily growing since the early 1990s. Defined by the Guiding Principles on Internal Displacement (Guiding Principles) as "persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict… and who have not crossed an internationally recognized state border", IDPs have overtaken refugees as the largest constituent of forced migrants throughout the world. (Jennings, 2008; United Nation, 1998:2) But what specifically are the protection needs of the displaced? What deprivations have they suffered during their flight, and what distinguishes them from other conflict-affected populations?

The purpose of this study is to better understand the experience of IDPs living in urban centers, the specific risks they face, and the means with which they mitigate those challenges. This study examines if IDPs are more vulnerable than voluntary (economic) migrants or their long-term resident neighbors, and analyzes what factors most influence vulnerability in the urban context.

To compare the relative vulnerability of urban residents, the author constructed a vulnerability index oriented around risk indicators and influencing factors drawn from the survey tools used in the "IDMC-Tufts urban IDP profiling study", which collected data from 3 urban centers known to host large numbers of forced migrants: Santa Marta (Colombia), Khartoum (Sudan), and Abidjan (Ivory Coast.)(Jacobsen, 2008(1); Jacobsen, 2008(2); Jacobsen, et al, 2008(3). The index was used in a 3 model regression analysis of the Tufts-IDMC study data: an initial model to test the validity of the index, followed a regression analysis for each indicator of the index, and a final analysis using a composite variable built on the six indicators of the index.

Though a degree of variability was anticipated, IDPs were expected to be more vulnerable than other city residents across a range of indicators, and that factors such as time displaced, household composition, and education would have a particularly significant influence on vulnerability.

The findings of this study varied considerably across each of the vulnerability indicators, as well as the influencing factors included in the index. The results did not fully support the hypothesis, in that IDPs were not consistently more vulnerable than other residents, but proved less vulnerable than other residents on a number of variables, including their access to water and steady employment. Education was found to be an important influence on vulnerability, in that a respondent's level of education was strongly correlated with low vulnerability. The findings did not demonstrate a strong relation between vulnerability and the length of time of displacement, nor was it able to adequately illuminate how a household's configuration influences vulnerability.

This study found that vulnerability was most readily identified at the household level, rather than within a specific sub-group within the broader community, and in this regard, this study provides further support to the hypothesis that IDPs are often vulnerable, but as a group, aren't adequately homogenous to warrant preferential treatment *prima facie*. Rather, vulnerability in the urban context, whether experienced by IDPs, voluntary migrants, or long-time residents, must be considered at the household level, as an analysis of the risks vulnerable groups face in the city, balanced against the means and mechanisms they employ to mitigate those risks.

CONTEXT

Where have all the refugees gone?

In 2007, the Internal Displacement Monitor Center estimated that the total number of individuals who had been forcibly displaced from their homes, but remained within the territory of boundaries of their country, surpassed 27 million. (Jennings, 2008) Known as Internally Displaced Persons (IDPs), their numbers have been steadily growing since the early 1990s.

Driven in part by the conflicts that followed the end of the Cold War, and to a lesser extent by natural disasters and large-scale capital investment projects in the developing world, IDPs have overtaken refugees as the largest constituent of forced migrants throughout the world. (Ibid)

It is widely acknowledged that the rise of involuntary displacement over the last two decades has it roots in the shifting dynamics of contemporary conflict. (Cohen, 1998) Wars are now rarely fought between two states, vying for control over territory, but by belligerents within their country over control of mineral-rich areas or to further the political agenda of a marginalized group. Tragically, civilians are most often at extreme risk in these conflicts, in part because of the belligerents' disregard for international humanitarian law, such as distinction between civilians and combatants, but also because they have come to be the very target of combatants. (Jennings, 2008) Civilians are often identified by governments as sympathetic to rebel groups who rely on villages for both cover and supply, which in turn, can drive a government to force rural people out of contested areas as part of their tactics for counter-insurgency. (Ibid; Hines, 2002; World Food Programme, 2004; Muggah, 2000; Martin, 2005) And in conflicts characterized by ethnic tensions, belligerents are less likely to distinguish between their armed rivals and their unarmed ethnic kin, deliberately attacking civilians to further the goals of their campaign. (Kalin, 2008; IDMC, 2009(2); Fitzpatrick, 2002)

In addition to conflict-induced displacement, the last decade has seen a rise in development-related displacement and migration linked to resource scarcity and climate change. From Sri Lanka to Colombia, Sudan to China, communities living in areas slated for economic development or capital investment projects such as hydro-electric dams find themselves at risk of being forcibly relocated. In some contexts, this is driven by the government's development agenda, and involves compensation and support for the displaced. While in other instances, communities living in undeveloped rural areas have come into conflict with private sector interests that would drive people from their homes in order to claim their land for their own ventures, or have lost their livelihoods to shifting climate patterns, such as prolonged droughts in the Sahel-region of North Africa (Cernea, 1990; Homer-Dixon, 2006)[1]

If, in the words of Thomas Weiss, IDPs are the world's "biggest population of conflict affected people", their experience and the challenges they face warrant particular attention. (Weiss, 2006)

IDPs are defined by the Guiding Principles on Internal Displacement (Guiding Principles) as "persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized state border." (Guiding Principles on Internal Displacement, Introduction, paragraph 2) IDPs share the experience of

[1] In *Shock Doctrine*, Naomi Klein discusses the same phenomenon, as it was manifest in Sri Lanka in the days following the 2005 Tsunami.

'displacement' in common with other forced migrants, however, unlike refugees who are legally entitled to the protection provisions outlined in the 1951 Refugee Convention. IDPs must also rely on their sovereign for protection and support, though governments may not have the capacity or willingness to provide that protection or may in fact be hostile towards the displaced. In this sense, it can be said that the state has a 'responsibility to protect' its displaced citizens (Cohen, 1998).

But what specifically are the protection needs of the displaced? What deprivations have they suffered during their flight, and what distinguishes them from other conflict-affected populations?

The initial stages of displacement are characterized but severe deprivation and risks (Cohen, 1998). IDPs are often forced out of their homes under duress, abandoning their livelihoods and what assets they could not carry. Families are at risk of being separated during flight, and face predation by armed forces and other opportunists as they make their way to safety (Jennings, 2008; Mooney, 2005(2). IDPs are more likely to be without official administrative documents, such as birth certificates or deeds to property, which expose them to a number of hazards (Fitzpatrick, 2002; Jennings, 2008; Deshingkar, 2005). And often, the displaced arrive at the end of their journey with serious health conditions, caused in part by their exposure to the elements during flight (Cohen, 1998).

Deprived of their homes, IDPs need shelter throughout their displacement. (Jennings, 2008) Though some may have relations they can rely on for support, IDPs are often without adequate community support, not least because their support network is dismantled over the course of displacement. (Schutte, 2005; Evans, 2007) Deprived of their livelihoods and other productive assets, IDPs need basic material support, those commodities essential for survival such as potable water and adequate food. Some IDPs have the means to meet their essential needs with cash resources; however, even well endowed IDPs have difficulty covering the needs of their households over an extended period of time (Mooney, 2005(2); Hill, 2006). In this sense, IDPs need support to reestablish their livelihoods, and by extension, their self-sufficiency. IDP are also in need of protection from hostile host communities, especially where ethnic tensions are high, and from anyone who would exploit their vulnerability and violate their rights (Cernea, 1990; Fitzpatrick, 2002; Mooney, 2003). In many cases, IDPs also need protection from members of the civil service or armed forces: protection from discrimination and harassment, abduction, arbitrary detention, and forced recruitment into military service rank highest in the list of hazards posed to IDPs by representatives of the state (Holland, 2004).

In urban centers, IDPs face additional hazards and challenges. On the one hand, the cash economy in the city obligates IDPs (and other residents) to generate considerable income to cover the costs of their household. In this sense, rebuilding the social networks destroyed during flight, accessing credit, and securing steady employment are critical for survival, such that those who are unable to successfully attain these things are considerably more exposed to the hazards of the city. (Schutte, 2005) In more agrarian societies, like those found in many parts of Africa, migration to an urban center needn't result in an individual losing his farm. In fact, many urban livelihood strategies rely on revenue generated by farms in rural areas. (Evans, 2007) However, IDPs are less likely to be able to maintain access to their land, and any potential revenue it would contribute to their urban livelihood. In this sense, IDPs are at a considerable disadvantage in the urban context, competing from a position of marginalization. (Kalin, 2008) Without access to land for farming, or the skills required for employment in most quarters of the urban economy, IDPs are often confined to lower paying employment, such as laboring on a construction site, or providing domestic services to wealthier households.

Differing Opinions in 3 parts:

On the concept of IDPs as a distinct category of concern

As the plight of IDPs has gained greater prominence on the international humanitarian agenda, there has been a corresponding increase in disagreements within policy and academic circles over a selection of unresolved issues. Some are concerned over the tendency to categorize IDPs as a specific group, privileging their needs over those of other conflict-affected communities. Others have taken positions over the perceived institutional gaps in the international response to IDPs. All participants in the discourse have an opinion regarding how to achieve durable solutions for the displaced.

Perhaps the most controversial IDP debate currently underway, the question of whether the needs of IDPs are so great as to warrant differentiation from other conflict affected groups has engaged academics and policymakers alike. The more widely held view suggests that the vulnerability caused by displacement puts IDPs at such a great risk that they require specialized attention over and above that required by other groups, such as conflict-affected communities that had not fled. (McNamara, 2005) Newland argues that the displaced warrant special attention because, in many cases, they can no longer rely on the government for protection. (Newland, 2003) In a 2008 seminar report on urban displacement, the IDMC tasks agency 'country teams' to identify the defining characteristics of IDPs (using the GPs), affirming that IDPs are generally in such need that a profile ought to be established to guide policy and programming, though it is noted that in urban centers it can be difficult to differentiate between coerced and economic migration. (Anon, 2008) For Thomas Weiss, that IDPs are displaced at all is "*prima facie* evidence of vulnerability", in that the displaced are not able to draw on the coping strategies they may have employed if they had not lost their home, community, and livelihoods. (Weiss, 2006 (p1)

Others are less convinced that displacement alone is sufficient to warrant singling out IDPs as a special category of concern. Some take issue with the notion that 'displacement' is synonymous with vulnerability. Drawing on his experience in Burundi, Marc Vincent argues that in situations of widespread, conflict-induced displacement, IDPs aren't always as vulnerable as some would believe, but that the reality is often more nuanced. (Vincent, 2001(2) Robert Muggah suggests that the displaced, though facing considerable hardship and vulnerable to all manner of risk, are often among the most productive members of a community, exercising remarkably creative strategies to cope with the challenges they face. (Muggah, 2000) Many of the government donors who fund humanitarian operations in support of IDPs are also skeptical of the need to single-out IDPs from other vulnerable groups. In his meta-evaluation of studies conducted on donor funded programme's supporting IDPs, Borton found that donors objected to identifying IDPs out of concern that they would be privileged over equally needy, though perhaps less visible groups, noting that the practical obstacles to identifying IDPs in urban areas, coupled with the poor quality of most IDP needs assessments conducted by NGOs detracted from the arguments for treating IDPs apart. (Borton, 2005) Furthermore, donors generally view IDPs to be a dynamic, rather than homogenous group, where not all members are equally destitute or vulnerable. (Ibid)

That said, in her work on the case for IDPs as a category of concern, Erin Mooney responds to the objections raised against treating IDPs as a specific category, arguing that displacement ought to be given *greater* weight as an indicator of vulnerability, not simply because of the destitution it is likely to cause in the lives of the displaced, but because the *causes* of displacement are what differentiate IDPs from other conflict-affected communities, noting that IDPs have often been deliberately targeted. (Mooney, 2005(2); Brusset, 2009) To be displaced, in her view, is a strong indication that the person has suffered a serious violation of their rights, and may have suffered a

crime against humanity, as prohibited in international humanitarian law, which thus requires that the IDPs be viewed from the perspective of international law, as a group that has likely suffered grave rights abuses, and are at risk of suffering others.

Others suggest that though displacement is an indication of vulnerability, the focus ought to be on identifying those households most at risk in a given crisis, whether displaced or not. Citing his research on urban IDPs in Afghanistan, Schutte argues repeatedly that vulnerability is best understood at the household level, taking into accounts not just the challenges facing the group of which a household is a member (e.g. a displaced community), but the unique assets and liabilities that household must balance as it tries to establish itself in a new setting. (Schutte, 2004) Similarly, Borton encourages humanitarians to recognize the concerns and skepticism with which donors treat the IDP issue, and work harder to identify the most vulnerable in a crisis, affirming that displacement contributes to vulnerability, but exercise greater diligence in drawing out the specific needs of individuals affected by a crisis. (Borton, 2005)

On the institutional structure of response

For many, the greatest concern involving IDPs relates to the manner in which the international community has responded to their growing needs. On the one hand, IDPs are caught in a legal limbo, where, unlike refugees who have lost the protection of their state and thus come under the legal auspices of the 1951 Refugees Convention, IDPs have no legal entitlements outside those afforded by the state to which they are citizens, nor any formal institutional center to champion their cause. On the other hand, a growing international norm indicates that the responsibility to protect IDPs falls to the state, they have yet to resolve the practical dimensions of responsibility as it pertains to situations where the state is either incapable or unwilling to protect the displaced.

It is the notion of sovereignty as responsibility that underlies efforts to develop an institutional framework for IDPs (Cohen, 1998). In the absence of political will to negotiate a legal treaty governing the obligations of states towards its citizens, which would have been considered by many states as an affront to the sovereignty, advocates for the displaced had to find an alternative mechanism for articulating a framework for IDPs. In 1992, Francis Deng, the then UN Representative on the Human Rights of Internally Displaced Persons, was asked by the Secretary General to determine if existing human rights and international humanitarian law provided sufficient legal protection to cover the unique needs of IDPs, given the absence of a body of law such as the refugee conventions. (IDMC, 2009(1)) Whereas some argued for an international legal framework such as the refugee regime, Deng found that not only were the legal needs of IDPs adequately covered by the existing international law, but to frame the entitlements of IDPs within the discourse of human rights would not only address the sovereignty objections raised by some states, but could contribute to furthering the cause of human rights more broadly. (IDMC, 2009 (1)) Thus, proceeding from the fact that IDPs were entitled all the rights and privileges afforded to human beings, a team of legal experts in collaboration with Deng and the Brookings Institution drafted a set of thirty principles outlining the "rights and guarantees relevant to the protection of IDPs in all phases of displacement." (IDMC, 2009(2):22)

Thus, though not a legal document, by drawing on existing laws and norms the Guiding Principles on Internal Displacement (Guiding Principles) elaborates on the specific applicability of existing legal guarantees for IDPs and outlines clearly "the measures that must be taken by governments to discharge their responsibilities towards IDPs." (Kalin, 2005(2); Jennings, 2008) Some states have objected to the Guiding Principles, expressing concern that they are legal constraints to which they have not consented. (Cohen, 1998; Ferris, 2008(2) Some states, such as Sudan and Myanmar, have actively shirked their duty towards their citizens, and in so doing, have put IDPs at greater risk.

(Jennings, 2008) Other states currently facing internal displacement within their borders have welcomed the Guiding Principles, citing their utility as a framework for action, providing concrete steps for authorities to consider when devising national strategic plans to address the displacement (Mooney, 2004).

However, since the creation of the Guiding Principles, there has been a growing body of legislation adopted by IDP hosting states directly related to the government's obligations towards IDPs, the Guiding Principles, have the potential truly impact the lives of the displaced. (Kalin, 2005(2); Mooney, 2005(1); Ferris, 2008(1) In fact, while the growing body of legislation in countries currently facing situations of mass displacement provides an important mechanism by which to hold governments accountable to their responsibilities towards IDPs, the impact of such legislation on the lives of the displaced has not resulted in an improvement in either application of government policy, or in the general human rights status of IDPs. (Borton, 2005; Jennings, 2008; Cohen, 1998)

Just as there has been debate over how to frame the legal entitlements of displaced people, so there has been considerable discussion over how to organize the United Nations (UN) response to IDPs. Should there be a UN agency mandated to support states in the discharge their responsibilities towards the displaced? Who ought to bear responsibility for coordinating support to IDPs in the absence of a sovereign capable and willing to do so? Early deliberation considered the possibility of establishing a new agency specifically mandated to protect the internally displaced, but this quickly shifted towards assigning the mandate to an existing agency such as UNHCR or UNICEF. (McNamara, 2005) Curiously, it would appear that the drive to resolve the 'responsibility gap' for the growing number of IDPs, resulted in a more concerted push for reform within the humanitarian operations of the UN, ultimately resulting in the cluster system for coordination, which promotes accountability in humanitarian response by assigning responsibility for specific domains of action to certain operational agencies like UNICEF and UNHCR (Borton, 2005; Cohen, 1998) In the spirit of this reform, then, it was agreed that a collaborative approach would best suit the operational environment, and thus, responsibility for IDPs was shared between the different UN agencies with a given expertise relevant to the needs of the displaced: in complex emergencies, UNHCR would take the lead; UNDP would do so in contexts recovering from conflict; and IOM/IFRC in the event of a natural disaster. (Vincent, 2001(2); McNamara, 2005; Anon. 2007(2); Borton, 2005)

Yet, for the governments that fund the majority of humanitarian operations that serve the needs of IDPs, there continues to be fundamental concerns over how best to engage the issue. The majority of donors claim to be committed to the Guiding Principles, yet only USAID has developed a policy statement outlining its position on IDPs. (USAID, 2004; Borton, 2005) The European Union, in contrast, appears more ambivalent, affirming the unique needs and protection concerns of IDPs, resists the drive to identify IDPs as a special category of concern, pushing instead for a regime based on humanitarian principles, such as impartiality or giving assistance to those have need of it. (Cosgrave, 2004) This stands in contrast to recent appeals by ECHO for support in meeting the needs of IDPs in conflict-affected regions of Somalia. (Anon. 2007(1)

Though replicated in part among these donors' implementing partners, the NGO community is considerably clearer about its obligations towards the displaced. Though few have articulated a formal position on the IDP issue, most agencies implement a broad range of programmes serving the needs of IDPs at various stages of displacement, from the initial flight through some form of resolution. Among the humanitarian agencies, however, the Norwegian NGOs and the ICRC are perhaps the most articulate on how they view the humanitarian imperative applied in situations of displacement. After considerable debate within its ranks, the ICRC concluded that IDPs are often in

extreme need, well beyond that experienced by other, non-displaced (though conflict-affected) people, and thus they have no concerns over providing assistance to IDPs in conflict zones. (ICRC, 2007; Mooney, 2005(2); Korn, 1999) The Norwegian Refugee Committee and the Danish Refugee committee, by contrast have taken the lead in advocating for the rights of the displaced. Further, NRC has been tasked by Representative Deng to maintain the Internal Displacement Monitoring Center, their world's focal point for early warning and current data on displacement situations worldwide. (Korn, 1999; DRC, 2007)

On the importance and nature of durable solutions

Along with the question over the legal status of IDPs and how the international community ought to respond to their needs, the question of when, precisely, displacement ends has also generated considerable debate. Unlike the 1951 convention, which outlines the conditions in which the status determination of a refugee may be revoked, there are no such 'cessation clauses' within the body of law that is presumed to outline the entitlements of IDPs. Though it is generally understood that a '*durable solution'* to displacement will be achieved when an IDP returns to their home once the crisis subsides, integrates into the community to which he's been displaced, or resettles elsewhere in the country, the absence of clear cut-offs or guidance over when an IDP is no longer an IDP has generated considerable frustration amongst stakeholders, IDPs included, not least because the 'end of displacement' often results in steep decline in assistance to the displaced. (Mooney, 2003; LCHR, 2002; Mooney, 1999; Anon, 2007(3)

Some argue that the 'end of displacement' ought to be determined, therefore, by a fundamental change in the needs of the displaced, particularly when their needs extend longer than those of the average citizen. In keeping with the principle of *impartiality*, assistance to IDPs ought to continue so long as their needs require support, and as such, support can be tailored to the particular challenges presented by any of the three durable solutions. (Mooney, 2003; Martin, 2005; Borton, 2005) Others (though notably few) argue that IDPs are effectively no longer displaced when the opportunity to return is viable, whether they choose to return or not, is less important than the occasion. (Mooney, 2003) However, this view is often dismissed on the grounds that the end of a conflict does not necessarily generate conditions for successful return. (Ferris, 2008(3); Mooney, 2003) In fact, when the displaced return in without adequate support, it is likely that they will fail to reestablish themselves and return to a state of displacement. (Martin, 2005) In this sense, the third position argues that the causes of displacement are the most critical factor in finding durable solutions for the displaced, such that without security, equitable access to political and economic space, and the means to support one's household, a displaced person cannot be expected to return home. (Ferris, 2008(3); Martin, 2005; Jennings, 2008) In support of this point, Robert Muggah suggests that any potential cut-off policy be based on agreed indicators of the likely success of a return program, such as those put forth by Michael Cernea, which highlight the principal obstacles to successful resettlement, namely a lack of land, employment, and home, as well as the degree of economic marginalization, food insecurity, and health risks a returnee is likely to face. (Cited in Muggah, 2000)

However, much of the discourse over durable solutions is biased towards the eventual return of IDPs to their original place of residence. In some cases, especially in protracted situations of displacement, a permanent change has occurred such that the displaced will not be able to (or desired to) go home, which drives some to maintain an assistance regime rather than pursue alternative solutions. (Fagen, 2003) Or in some instances, where displacement has become politicized, one's status as a displaced person ceases to be a matter of categorization, but fundamental to the group's identity. (Anon, 2007(3), Maxwell and Young, 2009) Perhaps a return

may be ultimately achievable, but in the interim, some argue it is best to promote the integration of IDPs *in situ*, rather than maintain a protracted relief operation and risk obstructing any eventual resolution to displacement or reinforcing any tensions between the host community and the displaced population. (Martin, 2005; Hill, 2006; Ferris, 2008(3))

Others express concern that the absence of mechanisms to resolve property disputes between returning IDPs and those who've appropriated their property in their absence risks sabotaging the durability of returns. (Fitzpatrick, 2002; Ferris, 2008(3)). As mentioned previously, IDPs have abandoned their property in flight and often do not have in their possession the documents required to prove legal ownership. Given that assets such as home and property are crucial to livelihoods, especially in rural contexts, it is imperative that returnees are able to reclaim their property or receive adequate compensation for the loss, as recommended by the Guiding Principles. Fitzpatrick notes that in situations of mass, conflict-related displacement, it is often useful to establish special tribunals to arbitrate the claims of different communities affected by the conflict. (Anon, 2007(3); Fitzpatrick, 2002; Ferris, 2008(3)

And yet, for all of the discussion over how durable solutions can be established for IDPs, there is a conspicuous dearth of discussion over the means and methods IDPs bring to bear on their situation. (Schutte, 2005; Vincent, 2001(2) As Darcy notes, the international community tends to frame an IDP's plight in terms of needs and the lifesaving response of the humanitarian enterprise, thereby distorting "…a much more complex reality, in which a variety of factors – not least the affected people's own adaptive strategies – are at work." (Darcy, 2003, p12) Rather, Schutte and Vincent have offered compelling evidence that IDPs, though "competing from a position of marginalization", are in fact considerably more adept at mustering resources for survival, finding dynamic and creative ways to cope with the challenges of their displacement. (Schutte, 2005; Vincent, 2001(2) Thus, to reiterate the argument put forward by Borton, the discourse and debate over the status of IDPs turns on their vulnerability, and how it differs for that experienced by those who are not displaced, whether conflict-affected, poor, or otherwise. In the following sections of this paper, I will elaborate on the conceptual underpinnings of vulnerability and propose a theoretical model for examining more closely the experience of IDPs and other urban groups, drawing out how certain characteristics influence their relative vulnerability to the risks and hazards of the urban environment.

Purpose and Hypothesis

The purpose of this study is to better understand the experience of IDPs living in urban centers. Put more precisely, this study examines if IDPs are more vulnerable than voluntary (economic) migrants or their long-term resident neighbors, and analyze what factors most influence vulnerability in the urban context. It is expected that IDPs will be more vulnerable than other city residents across a range of indicators, and that factors such as time displaced, household composition, and education will have a particularly significant influence on vulnerability.

PRIMARY DATA COLLECTION AND CONTEXT

Intro

In order to examines the comparative vulnerability of IDPs and other urban residents, this study analyzed a pre-existing data-set established as part of an urban IDP profiling exercise conducted by researchers at the Feinstein International Center and the Internal Displacement Monitoring Center. The profiling exercise was conducted in three cities known for hosting large populations of IDPs, namely Abidjan, Ivory Coast, Khartoum, Sudan, and Santa Marta, Colombia.

Study Sequence

The profiling exercise followed a standardized, two-phase approach to data-collection: an initial phase to prepare the study for the specific location, followed by the actual data-collection exercise, which together took approximately three months to complete. In each location, the research team prepared for the study by gathering requisite background data such as administrative maps of the urban area and current census data, and establishing working relations with important stakeholders, including a variety of government ministries and UN agencies. Building on the expertise of local partners and contribution of the other stakeholders, the groundwork concluded with a final mapping exercise of the study area, identifying those districts where IDPs were most likely settled.

Once the initial groundwork was completed and the questionnaire adapted to the language and context of the study, enumerators were selected and trained in the use of the questionnaire in household interviews. (Jacobsen, 2008(4)) During the second phase of the study, the enumeration areas and interview routes were determined, and the questionnaire was field tested and revised if necessary, prior to the data collection exercise. Data-entry was conducted in the field, entered into excel and translated where

Case Study 1: Santa Marta, Colombia

At present, it is estimated that there are approximately 4 Million IDPs displaced throughout Colombia. While the rest of Latin America recovers from the violence and conflict of the Cold War and political upheavals in the 1980s, Colombia continues to see new, conflict-induced displacement each year. (Delgado, 2001)

The principal cause of displacement is the ongoing, forty year-old conflict between the government and leftist rebels. (Obregon, et al, 1998; Jacobsen, et al, 2008(3) The insurgency and counter-insurgency have both precipitated the displacement of populations throughout the country, predominantly from the rural reaches of the country towards the city centers, and often as tactic in the pursuit of their military objectives as civilians are perceived by both government forces and rebels as supportive of their adversaries. And yet, for those who've displaced to the cities in search of safety, the conflict may continue to menace their families as they may be considered to have associations with particular factions of the conflict and suffer violence for their perceived affiliations.

Displacement in Colombia has also been linked to private sector interests in developing land that is otherwise occupied by others. For instance, in 2007, the Attorney General began an investigation into allegations that a consortium of palm oil producers had "commissioned the forced displacement" of villages in the district of Chocó so as to clear the area for industrial production of palm for bio-fuel. (Jennings, 2008)

The Colombian government, however, is considered amongst the most progressive in developing legislative protections for the displaced. Colombia is one of three countries that had developed IDP specific legislation prior to the articulation of the Guiding Principles on Internal Displacement in 1998, and while the government continues to develop policies relating to forced displacement, the judiciary has also rendered judgments in favor of the rights of IDPs and the government's constitution obligation to provide for their needs, such that IDPs are now able to register with *Accion Social*, and receive free health care, education, and other basic humanitarian services to cover their immediate needs for an initial period of three months, followed by subsidized support to access essential services. (Ferris, 2008;

In addition, given the protracted nature of the displacement crisis, Colombia provides insight into how displacement evolves over time, including how IDPs engage with the challenges of the urban environment (Muggah, 2000), and the difficulties of differentiating between the displaced and the urban poor as their needs decouple from the experience of flight. (Jennings, 2008)

appropriate, before being sent to the senior researcher for cleaning and analysis.

Sampling

The research team used a standardized, three-stage sampling methodology for the data collection component of the exercise, determining the outer limits of the urban center, and the civil and administrative planning units-—*Barrio*, *Quartier*, etc—to be used for the sample. Sampling units were then selected using the "Population Proportion to Size" (PPS) method, a common technique used to generate a more representative sample when the population density of a given sampling frame varies significantly between sample units, thereby ensuring that every household shared the same probability of being selected for the study. (Jacobsen, 2008(4)

Once selected, the units were categorized and stratified on the basis of the anticipated concentration of IDP households in each unit. Stratification categories were established in collaboration with study stakeholders and covered a selection of possible options from "low" to "high" concentration of IDPs. (Jacobsen, 2008(4)) In Abidjan, however, sampling units were not stratified, primarily because the erratic distribution of IDPs throughout the city and the outdated census data did not allow for sound estimates of IDP concentration within sample units. (Jacobsen, 2008(2)) Enumeration points were then assigned to the sample units on the basis of the stratification. In units considered likely to host large numbers of IDP households, a greater number of enumeration points were randomly located within the unit. Finally, once the units and enumeration points were determined, the research team then randomly sampled households around the enumeration point until a sufficient number of households were surveyed.

Case Study 2: Abidjan, Ivory Coast

The Ivory Coast, though historically a peaceful and prosperous country, went through a period of intense upheaval through the 1990's, when the government went to war against rebel groups in the north and west of the country. (Jacobsen, 2008(2) The conflict, and attendant violence against civilians resulted in a steady flow of displaced people towards the urban centers in the south, where IDPs settled amongst locals and economic migrants from elsewhere in the region. Curiously, relatively little in known about the IDPs and their experience in Abidjan and other cities in the Ivory Coast, despite the scale of displacement: existing census data for the region dates back to the 1998, and research initiatives targeting IDPs have not established representative samples. (Ibid)

However, unlike many countries hosting large numbers of displaced people, despite the conclusion of the conflict that precipitated the original displacement, the Ivory Coast has seen a rise in the rate of returns, following the end of the conflict between the government and northern rebel groups, in 2007. (Jennings, 2007) However, rates of return are lower than some had expected, and where returns have taken place, it has given rise to the phenomenon of "chain displacement", where the return of the displaced to their homes results in the displacement of those who had settled in those places during the conflict.

The Government has limited capacity to support IDPs, either in the provision of services outside the main population center like Abidjan, or to bring about an end to displacement either by supporting returns or through resettlement elsewhere in the country. (Ibid) However, the Government has been proactive in establishing a ministry–level focal point for IDPs, to promote the protection of the displaced, and facilitate coordination of support and assistance to IDPs between different offices of government. (Ibid)

Prospects for durable solutions, however, seem to rest on the resolution of property disputes in areas of return. IDPs who had abandoned their homes in flight find their properties occupied by others, and, often, political affiliations impede recovery or restitution. (Jacobsen, 2008(2) Most IDPs appear to have difficulty accessing the judicial system to pursue settlement in the courts. (Jennings, 2007

In this sense, the survey did not seek out IDPs, but attempted to establish a random and representative sample from each city, such that accurate estimates could be made of the IDP population in each city and comparisons made to other residents. In Abidjan, a final sample of 976 households was drawn from fifty *Quartiers*, selected from the city's ten *Communes*. (Jacobsen, 2008(2)) In Santa Marta, 940 households were surveyed in 45 of the city's 85 Barrios. The largest sample was taken in Khartoum, where 980 households were surveyed in the three regions that comprise greater Khartoum: Omdurman, Khartoum North, and Khartoum. (Jacobsen, 2008(1)

Case Study 3: Khartoum

In 2008, it was estimated that Sudan hosted 5.8 Million IDPs, the largest number of IDPs hosted by any country. (Jennings, 2007) Conflict-induced displacement in Sudan began in the early 1980s when war broke out between the government and a secessionist movement in the south, but has since been linked to conflict in other regions of the country, notably Bahr El Ghazal, South Kordofan, and Southern Blue Nile (Known as "the three areas"), and in the western provinces of Darfur. (Ruiz, 1998)

The dynamics of displacement, however, differ considerably between these three regions. Civilian flight from the southern region was characterized predominantly by rural-urban migration, with large proportion of IDPs settling in Khartoum, often in search of economic opportunities. (Jacobsen, 2008(1) While in Darfur, the tactics used by belligerents on both sides of the conflict have effectively emptied the countryside, resulting in IDP camps and informal settlements established on the outskirts of urban centers, including Khartoum. (Ibid)

While the displaced in Darfur have, until recently, been supported by a large humanitarian operation, IDPs in Khartoum face considerable challenges, including difficulties securing employment, forced relocation, and social marginalization and harassment, particularly at the hands of those who perceive that their livelihoods are threatened by the presence and competition of the displaced. (Hill, 2006; Jacobsen, 2008(1)

Yet, despite the challenges of life in Khartoum, and the end of hostilities between the government and the south, a considerable proportion IDPs report that they have no intentions of returning home, while some who have returned to the south have abandoned their effort to reestablish themselves, returning to Khartoum for want of support and opportunities in the their areas of origins, indicating that greater integration into the socio-economic space of Khartoum is the most likely solution to this protracted situation.(Hill, 2006; Jacobsen, 2008(1); Jennings, 2007)

The Survey Instrument

The Questionnaire was designed to capture data relating to the background, profile, and experience of IDPs. (Jacobsen, 2008(4) Questions relating to basic demographic topics such as the age, language, and origin were asked of the interview respondent, as well as questions relating to the size and composition of his or her household. Respondents were also asked a number of questions about their experience migrating to the city, such as their date of arrival, principal reason for coming, and general mobility within the city since arrival. The questionnaire also sought to capture data relating to the livelihood and protection concerns of IDPs, posing questions relating directly to employment status, housing arrangements, day-today problems and challenges, and legal identity documents.

The questionnaire was fully coded for analysis, translated and back-translated to ensure linguistic accuracy, and field-tested prior to the data-collection exercise. (Jacobsen, 2008(4)

Limitations

General Challenges

The sequence of the study remained consistent between all three cases, the research team encountered a number of challenges during the initial phase of each study. For instance, whereas the Colombian Government's Bureau of Statistics was very supportive of the study, providing current census data and GIS information for the initial mapping exercise, the research team had difficulty securing current population data in both Abidjan and Khartoum. The Government of Sudan last conducted a census in 1993, while Abidjan's most current population data dates back to the national census conducted in 1998—nearly ten years prior to the study. (Jacobsen, 2008(1); Jacobsen, 2008(2)

Survey Instruments
Despite the necessity of tailoring the questionnaire to the context of each study, the survey instruments did not include focused consideration of livelihoods and finance queries, and inconsistencies between instruments deployed in each of the cites diminished the potential volume of quality data this study would have otherwise generated. The senior researcher concedes that the study could have delved further into the livelihood experience of the displaced, noting that this was a general weakness in the study, but due to time and resource constraints, the study ultimately had to select a limited number of queries for inclusion in the questionnaire. (Jacobsen, 2008(1) The research team also acknowledged that the questionnaire posed questions that some respondents would not be comfortable answering, especially to an unknown enumerator. This concern related principally to security problems faced by IDP households, and was associated most closely with the Khartoum study, where respondents were noticeably less willing to answer that particular question. (Jacobsen, 2008(1), Jacobsen, 2003)

Sampling Challenges
With regards to the quality of the sampling methodology, it would appear that the greatest challenge faced by the research team involved accessing accurate and current census data for study frame. Dated census figures for Khartoum and Abidjan diminished the representativeness of the PPS calculations and thus may have biased the selection of sample units, resulting in figures that, in the estimation of the senior researcher, under-represent the population of IDPs. (Jacobsen, 2008(1)) Similarly, though the study kept to the official boundaries of Santa Marta, the informal settlements on the periphery are growing, effectively being drawn into the functional bounds of the city. In this sense, though these settlements are generally excluded from census exercises, they ought to be included—as was the case with the three areas of Santa Marta—as they are likely to contain larger concentrations of IDPs.

VULNERABILITY

The Concept

But what, precisely is meant by 'vulnerability'? How is the term defined, and by what measure is an individual's vulnerability determined?

Though the term is used widely in the social sciences, 'vulnerability' remains a nebulous, and broadly defined concept, built around two poles: exposure to risk and the capacity to cope. Put simply, the term implies a degree of probability that one will fall victim to a particular hazard, while affirming the individual's ability to influence their exposure to that risk. (Schütte, 2004) Put differently, the two-fold nature of vulnerability is perhaps best captured in R. Chambers' classic definition: "The exposure to contingencies and stress, and difficulties coping with them. Vulnerability has thus two sides: an external side of risks, shocks and stress to which an individual or household is subject; and an internal side which is defenselessness, meaning a lack of means to cope without damaging loss." (Chambers, 1989)

The notion of risk is defined relative to context, in that threats and hazards are uniquely situated within the specific circumstances of an individual or group's experience. Furthermore, risk relates to specific categories of hazard, in that a person is exposed *'to'* a particular threat, such as the loss of employment, or food insecurity. (Schütte, 2004) Take, for instance, a family living in the desert. Among the various hazards they face on a daily basis, exposure to the elements is among the most acute. Intense heat and sunshine can be debilitating if the family did not have shelter. In this sense, the desert-dwelling family is exposed to extreme environmental hazards, such that they are at *risk* of suffering considerable negative outcomes if they were not able to find shelter.

On the other hand, the ability of an individual/group, to engage their circumstance and influence how a threat affects their lives and livelihoods, though critical to a full understanding of vulnerability, is considerably more difficult to ascertain. In the concept of vulnerability, therefore, is the notion that people actively and creatively draw upon a range of mechanisms to cope with the risks they face from day to day, adjusting their strategies to meet the shifting dynamics of their circumstance. In this sense, the concept of vulnerability fits well with the notion of livelihood assets elaborated in Caroline Moser's work on sustainable livelihood frameworks, highlighting how various types of assets can be brought to bear in a given situation, to 'overcome or at least mitigate the exposure to unfavorable and adverse conditions."(Moser, 1989; cited in Schütte, 2004:4) This thinking helps to define a shift in the study of forced migration and the conceptualization of vulnerability; away from the 'weakness' or destitution faced by the displaced, towards an understanding of how the displaced organize their livelihoods and assets to cope with their circumstance, and in some cases, thrive. (Vincent, 2008; Black, 1994; Schütte, 2004; Stephen, 2001)

By way of an illustration of the 'coping' component of vulnerability, if the desert family, put forward in the previous example, were in fact internally displaced people who had fled to the outskirts of the city, they would continue to be at risk of exposure to the elements. However, you can imagine how they may draw upon any number of resources to reduce their exposure, to the climate, or any of the other risks they'd face in the urban environment. They may look for shelter amongst family relations or other members of their social network, they may use cash resources to rent shelter or purchase materials to build their own. In some cases, the displaced family may seek out assistance from the government or international agency.

Therefore, the concept of vulnerability has considerable potential for guiding policy and practice. It can capture a more nuanced picture of the complex relationships between the unique risks of a given context and the means by which their constituents cope with those risks. By understanding who is most vulnerable or exposed or less resilient, assistance can be more effectively targeted, ensuring a greater likelihood that those most in need will receive appropriate support. (Hines, 2002; Stephen, 2001) Similarly, for policy makers, a comprehensive understanding of the vulnerability dynamics of a given community can help guide the policy-making process, such that shortcomings in the legislative or bureaucratic apparatus can be more readily resolved. (Schütte, 2004; Stephan, 2001)

How to measure vulnerability?

If vulnerability is determined by the degree to which an individual is exposed to a given risk, weighed against their ability to mitigate that risk, what metrics can be used to measure vulnerability? What indicators can be used to quantify risk and what factors can be expected to influence an individual's ability to cope?

In the first instance, vulnerability is influenced by a range of factors, including the location and status of the displaced, the amount of time that has passed since displacement, and other factors linked to the demographic profile of the household. In the urban context, for instance, the environmental challenges and cash-based economy expose ill-equipped migrants to a range of additional risks, which not only threaten their security in the city, but constrains their ability mitigate the impact on their livelihoods in ways that, had they remained in a rural context, they would at greater means to provide for their households. These include the necessity of cash to secure the provisions required for survival, lack of land for subsistence farming, and environmental hazards linked to poor sanitation and other infrastructure in the informal settlements that usually house the displaced.

However, the challenges posed by the urban context do not apply solely to the forced migrant, but all residents, including those who've migrated to the city in search of economic opportunities. It has been demonstrated that these individuals often face many of the same challenges encountered by IDPs, such that some have questioned whether the collapse of one's livelihood ought to be considered as a sufficiently coercive to warrant designation as a 'forced migrant'. (Deshingkar, 2005) Yet, given that an economic migrant has not fled his home under duress, but has migrated voluntarily to the city, one can't help but presume that they are at a distinct competitive advantage over the IDP. That said, in many urban contexts, it is becoming increasingly difficult to differentiate between poor, long-term city residents, and their migrant neighbors. (Jennings, 2008) In this sense, given that many contend that one group is more 'vulnerable' than the others, precisely because of their status as a displaced person, it can be expected that an individual's status as a migrant, forced or voluntary, will influence their relative vulnerability.

Vulnerability may be more profoundly influenced by the amount of time a household has been displaced. Perhaps, vulnerability may be reduced over time, as the initial shock of displacement gives way to a more established existence, where a household can more effectively build on their livelihoods assets to effectively secure the needs of their family. Or perhaps the expenses of the city result in a steady exhaustion of an IDP's resources, causing an increasing vulnerability as the length of his displacement proceeds. The WFP and ICRC note that in the case of IDPs in Colombia, vulnerability shifts repeatedly overtime, as it is checked by an initial assistance package during the first phase of displacement, then spikes in the interlude between the time those supplies run out and that point at which they've established a more durable livelihood. (WFP, 2004)

It is also reasonable to presume that the demographic profile of a household will influence vulnerability. In the urban context, where there is a greater demand for skilled labor, a highly educated individual will be more likely to find adequate employment than his illiterate compatriot. Similarly, a household with a greater number of potential wage-earning adults may be more likely to have an effective livelihood strategy than a household caring for a large number of dependents.

That said, what are the indicators of vulnerability, and how are they measured? Unlike those variables that influence vulnerability, the actual indicators of a person's exposure to risk are considerably more tangible. For a given hazard, such as exposure to the elements, a corresponding indicator (such as housing) and list of possible options can be established to help determine or measure an individual's vulnerability. And since the risk factors that underpin vulnerability are context-specific, indicators and corresponding measures can be established for virtually any circumstance, though the validity of those indicators would need to be established by a thorough analysis of the circumstance dynamics. (Hines, 2002; Jayatilaka, 2004; WFP, 2004)

THE VULNERABILITY INDEX

Introduction

The author constructed a vulnerability matrix oriented around the risk indicators and influencing factors identified in the "IDMC-Tufts urban IDP profiling study", which collected data from 3 urban centers known to host large numbers of forced migrants: Santa Marta (Colombia), Khartoum (Sudan), and Abidjan (Ivory Coast.). (Jacobsen, 2008(1); Jacobsen, 2008(2); Jacobsen, et al, 2008(3)

Drawing from the survey instruments used in the profiling exercise, a selection of indicators that best represent vulnerability, and their corresponding response codes, were used to ascertain the degree of vulnerability experienced by respondents, namely the material used to construct their dwelling, accessibility of Water (source and distance), employment status, the nature of one's housing arrangement, and distance a respondent must travel to access health care.

Those factors deemed most likely to influence a respondent's relative vulnerability where also included in the index. Factors such as residency status of the respondent, level of education, length of time displaced (time since arrival), demographic composition of the respondent's household, and such standard controls as age, age^2, and gender were included in the matrix. The following discussion will describe in detail each of the vulnerability indicators selected for this study, and the significance of the independent variables selected for the regression analysis.

Vulnerability Indicators

Housing

Dwelling Material Score (Vulnerability) More	Less
Temporary shelter, Mud, other Natural material	Manufactured

Housing Arrangement Score (Vulnerability) More	Less
Hosted, Employment related	Rent or Legally Own House

The first two indicators selected for this study demonstrate how shelter relates to household vulnerability. Shelter, the materials used for its construction, and the arrangement by which an individual or household has taken up residence in a structure are critical to safety and wellbeing of people throughout the world. Shelter provides protection from the elements, a barrier to hostility and harm, and mental health benefits such as a sense of home, family, and social cohesion. (SPHERE, 2004: 207) The SPHERE standards locate shelter within the broader dictates of international law, affirming that the displaced, like all people, have a right to adequate housing. (Ibid, 207) The Guiding Principles on Internal Displacement state that IDPs not only have the right to adequate shelter and housing, but that it is the responsibility of the national government to ensure that they are adequately sheltered. (Guiding Principles, 2004: principles 3, 8) There is general consensus that shelter is principally a matter of basic survival, and as such shelter is more often than not discussed in conjunction with other necessities such as food and water. (Bagshaw, 2004; Darcy, 2003; Borton, 2005) Furthermore, secure housing has also been identified as an integral success factor for IDP households establishing new livelihoods in urban centers, as it diminishes the likelihood of mobility after arrival in the city, and can function as an important physical asset for livelihood investment. (Hines, 2002; Schütte, 2004; Holland, 2004)

The index incorporated an indicator for shelter material as well as the housing arrangement of the respondent. It is believed that housing material can be a useful indicator of a respondent's vulnerability, in so far as poor quality materials fail to provide adequate protection from the elements, which ultimately links to health outcomes. (Jayatilaka, 2004) Housing material can also provide insight into the respondent's livelihood status, as housing constructed of durable, manufactured materials are costly to build or rent, which in both cases necessitate that the respondent has secured sufficient cash resources to cover the costs of their shelter. Conversely, shelters constructed of natural materials, such as mud or salvaged material, though less protective, are more affordable to individuals who lack sufficient cash resources to rent or construct a shelter in durable material.

A respondent's housing arrangement, on the other hand, is an important indication of the household's stability, and resilience against such things as forced eviction or a sudden loss of income. Households without legal title to their homes are at considerable risk of abuse. (Hines, 2002; Schütte, 2004; Holland, 2004) Households squatting on property or renting a home depend on the good will of the property owner for their housing status. If they were no longer able to pay rent—because of a loss of employment for instance—or if the landlord were to tire of the arrangement, they would likely lose their shelter, which would be a serious blow to a household with limited means to avoid weather shocks.

Both indicators were constructed along a binary axis, sorting survey responses into one of two categories—Less vulnerable or More Vulnerable. As suggested above, respondents living in houses made of a manufactured material such as brick or cement, were considered less vulnerable than those who had built their shelters from salvaged materials or natural elements like grass or mud. Though the questionnaires differed slightly between each of the three city studies, response options naturally aligned with either the manufactured or natural category, thus there were no challenges specific to this indicator.

The indicator for housing arrangements was organized slightly differently. A respondent was deemed 'less vulnerable' if he held legal title to his home, or was renting the property. Though initially phrased as 'ownership', the experience in Colombia necessitated a revision of the criteria, as individuals who are somehow no longer in possession of their ownership documents are at risk of losing their homes, despite being the rightful owner. In this sense, the criteria for 'more vulnerable' included all other possible housing arrangements other than renting or outright (documented) home ownership, this includes squatting, being hosted in another family's household, or being without a home at all. Though clearly there are considerable differences in the vulnerability faced by an individual living in a mud hut compared to the one who, though without his documents, shelters his family in his own home made of brick, that both are exposed to a specific hazard and have limited ability to diminish their exposure to the risks they face, it is justified to identify them both as 'more' vulnerable than the one who is in full, legal possession of his home.[2]

[2] It would be interesting to conduct further analysis of the relationship of home ownership to vulnerability in the Colombia context, controlling for how legal ownership influences respondents' vulnerability status.

Water

Whereas the protection value of shelter is dynamic, influenced by climate, geography, and other socio-economic factors latent in a given context, access to water is a matter of survival. Individuals who fail to consume a sufficient quantity of water risk dying of dehydration, while those who draw water from non-potable sources are at greater risk of diseases, such as cholera. (SPHERE, 2004) In urban centers, where potable water is drawn primarily from the city infrastructure, residents depend on water service within the home, or source their water from merchants in the market. (Schütte, 2004) In both cases, individuals who haven't access to the water in their home or have difficult earning sufficient income to purchase water from vendors may be driven to collect from ground water or other questionable sources, thereby exposing their households to considerable health risks.

Access to water Score (Vulnerability) More	Less
Open well, Rain water collection	Improved source or purchase

Distance to Water Score (Vulnerability) More	Less
> 1km	<1km

In this sense, access to water is an important indicator of vulnerability. The SPHERE standards reaffirm that water is a right, and, among other things, must be both accessible and affordable, while the Guiding Principles indicate that a competent authority is obliged to provide the displaced with sufficient and safe access to potable water. Similarly, IDP vulnerability assessments and research studies also affirm the importance of water, especially in the urban environment where locating safe drinking water can be especially difficult. (Deshingkar, 2005; Schütte, 2004) Additionally, the literature also recognizes that adequate access to water is not simply a matter of securing potable water from an improved source, but what effort is required to access that water, including the distance an individual may have to travel collect water for their household. (Jayatilaka, 2004; Bagshaw, 2004)

The survey questionnaire collected two types of data relating to access to water. In the first instance, respondents were asked where they sourced their water, indicating any number of sources from an in-house connection to the city water distribution grid, whether legal or otherwise, from water vendors, or from unimproved sources like ground water or wells. Respondents were also asked about the distance they must travel to collect water, whether it was close to or within the home, or at a greater distance, beyond 1 kilometer.

Given the link between the location of the respondent's water source and the distance of the source from their home, and how they both relate to the accessibility of water, a variable was created for each indicator so that an independent regression analysis could be done of the two and compared for any correlations or relevant differences. The first considered how a respondent sources their household's water. Respondents who reported accessing water from a connection within their home or from a water vendor were considered "less vulnerable", while those who drew water from unimproved sources, whether ground water, wells, or by collecting rain water from roof-tops, these were considered more vulnerable, as they lacked access to the cities infrastructure nor had they allocated resources to purchasing water from the marketplace. The second controlled for the distance respondents travel to access to water. Those who had to travel less than 1 kilometer were considered "less" vulnerable, whereas those who had to travel further, regardless of the source from which they drew water, where considered 'more vulnerable'

Though this could be considered redundant, by framing accessibility to water in two unique ways, the study can better ascertain the vulnerability of households by ensuring greater precision in analysis. For instance, a respondent may report that they source their water from a hand pump, which would imply a certain degree of vulnerability. However, if that pump is located at a great distance from the respondent's home, the analysis of the individual's access to water can be understood more fully.

Employment

Employment Status Score (Vulnerability) More	Less
Irregular Employment (Unemployed/looking for work, part-time, casual)	Steady Employment (Full-time, Self-employed)

As mentioned earlier, adequate financial resources are fundamental to life in the city, such that any household unable to secure sufficient income to cover its basic expenses would have considerable difficulty securing the basic necessities. (Schütte, 2004) For new arrivals, finding adequately paid employment in the city can be particularly difficult, and often is only available in the service sector or other manual labor-dependent activities. (Deshingkar, 2005) In some cases, IDPs face additional barriers to securing employment, not least because they often compete from a position of "marginalization", and may resort to employing their children or engaging in other illicit activities to generate income for the household. (Kalin, 2008; Schütte, 2004)

The SPHERE standards highlight the role of gainful employment and livelihoods as it pertains to food security in emergencies, cautioning humanitarian agents to consider the benefits and consequences income-generating activities for the broader community. The Guiding Principles, however, frame employment as a right, suggesting that IDPs ought to be able to seek employment and participate in the market place without fear of discrimination. (Guiding Principles, 2004:22.b; SPHERE, 2004: standard 1) For those studies concerned with IDPs in urban contexts, questions regarding employment and livelihoods form a significant portion of the investigation. Black and Posner both consider employment as it relates to female employment in Greece and Azerbaijan, respectively, while others ask a broader set of questions regarding employment, livelihoods, and access to credit. (Black, 1994; Posner, 2002; Bagshaw, 2004; WFP, 2004; Hines, 2002)

Clearly, an individual's employment status can be taken as an indicator of vulnerability, and thus an employment variable was built into the regression model. To maintain simplicity in the categorization of results, an individual with regular employment—whether as a full-time worker, or as a self-employed business man—was considered 'less vulnerable', while respondents who reported any other employment status were deemed 'more vulnerable'. In this sense, part-time laborers, the unemployed, and those seeking employment were singled out for their particular vulnerability in the urban context. Those with full-time employment or the self employed were at a clear advantage given their regular cash flow or demonstrated ability to secure capital for their enterprise. It should be noted, however, that students and housewives—both considered legitimate 'employment' in the study questionnaire'—were excluded from the regression as neither activity generated cash income for the household.

Health

Distance to health Care Score (Vulnerability)	
More	Less
>1km	<1km

The final vulnerability indicator selected for the regression model is the distance a respondent is obliged to travel to access health care. Guiding principles maintain an especially strong position on the provision and accessibility of health care for IDPs. Principal 18 suggests that medical services, like food, water, and basic shelter, are to be understood as an entitlement due to the displaced as part of their right to an adequate standard of living. (Guiding Principles, 2004:18.2.d) Principle 19 outlines the state's responsibility to provide timely medical care to IDPs wounded or sick (presumably due to conflict), including gender-sensitive services, and collective protection from infectious diseases that may be particularly menacing to IDPs. (Guiding Principles, 2004:19) Furthermore, the Guiding Principles make explicit reference to the obligation of states to ensure access to health care for those displaced by development projects. (Guiding Principles, 2004:7)

Similarly, the SPHERE standards cover a broad range of health related standards, from minimum clinical services in emergencies and support to health infrastructure to the control of disease within a crisis-affected community. (SPHERE, 2004:252) The SPHERE standards also highlight the importance of equitable accessibility of health services, to the general public as well as specific sub-groups such as women, the elderly, or people living with HIV/AIDS. (SPHERE, 2004:255)

However, the literature presents a more nuanced view of the significance of health care as it relates to the vulnerability of a crisis-affected household. Some look to the presence of disease as a proxy indicator of vulnerability, incorporating health related questions into their surveys of IDP populations. (Hines, 2002; Holland, 2004; Muggah, 2004) Others consider access to health care from a protection 'lens', arguing that health is a critical household livelihood asset, while difficulties in accessing health care is often due to structural obstacles and discrimination against IDPs. (Bagshaw, 2004; Hines, 2002; Kalin, 2005;Schütte, 2004)

The regression model therefore utilized those elements of the questionnaire relating to the accessibility of health services as an indicator of the vulnerability of respondents. Those who were able to access health care by travelling less than one kilometer were considered 'less vulnerable' than those 'more vulnerable' individuals who had to travel a distance greater than kilometer for services. It should be noted that in all three case studies, response options included distances a great as ten kilometers or further, and in this sense, as the model presents an aggregate picture of distances greater than one kilometer, it fails to clearly identify those individuals who have the greatest difficulty accessing essential health services.

Influencing Factors—Independent Variables

Having thus determined the principal indicators of vulnerability, what factors are most likely to influence the vulnerability of a respondent? For the purposes of this study, four categories of influence were selected for the consideration. While the residency status of a respondent and the significance of the length of time the individual has been displaced have both been discussed in the previous section, the study also considered the level of education attained by the respondent, as well the composition of respondents' households.

Education
In urban economies, one's level of education is crucial for access to more stable and productive employment in the market place. (Schütte, 2005; Kalin 2008; Holland, 2004) Those with an education are more likely to have steady employment and a sufficient income to meet the needs of their dependents. Such specialists as doctors or accountants also possess transferrable skills that can be brought to bear in other sectors should their practice prove unfeasible in their circumstance. The illiterate, however, are less likely to be doctors or accountants, given their lack of education, and thus obliged to find employment in sectors more on level with their qualifications, such as manual labor on construction sites.

However, does one's level of education influence one's vulnerability uniformly across all indicators? Whereas it is expected that there would be a strong correlation between level of education and a respondents' employment status, but does this hold for those indicators that don't relate directly to employment or livelihood security, the respondents ability to pay for services?

What is certain is that education has come to be recognized as critical to a comprehensive analysis of IDP vulnerability. In a number of recent reviews, the UN has recognized a growing trend towards analyzing education status in target populations as part of routine/emergency needs assessments, and has recommended that education be incorporated into the analytical frameworks used to prepare CAP funding appeals. (Bagshaw, 2004; Darcy, 2003) While all of the IDP studies considered in this study's literature review considered questions related to education, asking respondents about the level of education attained by the adults in the household as well as the educational status of the children. (Hines, 2002; WFP, 2004; Muggah, 2000)

Composition
The final category of variables built into the regression model sought to control for the influence a respondent's household composition has on vulnerability. Are large households more vulnerable than small households, or is vulnerability more influenced by the composition of the household? (Hines, 2002) Are households with a greater number of children at a greater disadvantage than households with fewer children? Where households do have a large number of children, especially those under five who still require significant or near exclusive attention from caregivers, how does their vulnerability differ from other large households? Similarly, does the presence of the elderly influence a household's vulnerability? The elderly can contribute to a household's livelihood strategy by relieving the primary caregivers of child-care duties, enabling the parent to engage in other employment. In this sense, households caring for a number of elders may be exposed to similar pressures as those with a greater proportion of children, as the burden of caring for the elderly exceeds their contribution to the household.

In the urban context, households composed of potential wage-earning adults would be at considerable advantage over a traditional five-person household, in that they can more readily take advantage of employment opportunities to generate considerably more income than the traditional home.

METHODOLOGY

The methodology of this study is based on a regression analysis of the complete three city data set of the Tufts-IDMC Urban IDP profiling study, through which we examine the correlations between the indicators of vulnerability selected for the model, and the factors we think will most likely influence results (Jacobsen, 2008(1); Jacobsen, 2008(2); Jacobsen, 2008(3). Though this study did not involve primary data collection, thereby necessitating clearance with the Institution Review Board, the author did receive basic certification of his knowledge of the ethical dimensions of human subject research.

Data preparation

Building on the vulnerability model discussed above, the data set was recoded and uploaded into STATA, the statistical analysis program used to run the regression. For certain indicators, such as residency status, survey response codes differed between each of the city surveys, such that, to ensure the accuracy of the index, a careful review of each variable's code was necessary prior to establishing the common variable for analysis.

Creating the independent variables used in the regression model, however, was considerably more challenging. The model utilized four categories of independent variables, 'Residency Status', 'Household Composition', 'Level of Education', and 'length of time displaced,' each drawn directly from core queries in the Tufts-IDMC survey tool.

Independent Variables

Residency

The variable for residency status was organized around three categories that capture the status of the majority of survey respondents: IDP, voluntary migrant, and long-time resident. In each city, the criteria for IDP were slightly different because respondents were not self-identified, but determined during secondary analysis of the data. (Jacobsen, 2008 (1); Jacobsen, 2008 (2); Jacobsen, 2008 (3)

In order to be designated an IDP in the Khartoum case, a respondent had to be *from* Sudan, and fit one of three profiles: they state 'conflict' or 'drought' as the principal reason they came to the city; were from Darfur, and arrived after 2002 when the conflict in the Western provinces intensified; or they must hail from the South or transitional area, and have arrived in the city after 1983, when the

Independent Variable		**Indicator**	
		Model 1	Model 2
Residency			
	IDP	**	**
	migrant	**	**
	(Long-time Resident)		
Household Composition			
	Household size		**
	Large U5		**
	Large over-60		**
Education			
	Primary		**
	Secondary		**
	Technical, University		**
	(Illiterate/no education)		
Time Displaced			
	1-2 years		**
	3-4 years		**
	>4 years		**
	(< 1year)		

Independent Variable coding with model format

civil war last began, but before 2002 when the Comprehensive Peace Agreement ended the war between the North and the South. (Jacobsen, 2008(1): 40) Of the sample for Khartoum, 204 (20.8%) respondents met one of these three criteria. (Ibid: 40)

Two criteria were used to identify IDPs living in Abidjan. If a survey respondent stated that they been forced to move or had been evicted from their home for a reason relating to the conflict ("*la guerre*"), or if they had arrived at their current address after 2001, when the war broke out. In Abidjan, 95 (9.7%) respondents met the criteria for IDP. (Jacobsen, 2008(2):29)

In Santa Marta, a respondent was considered an IDP if they met one of three criteria: they had been forced to their habitual place of residence, which unlike the other cases, included other urban areas; they reported coming to Santa Marta to escape conflict of land issues; or they had applied to register as an IDP with the authorities. A total of 131 (14.4%) respondents met one of the three criteria. (Jacobsen, 2008 (3):37)

In all three cases, long-time residents would self-identify in the survey questionnaire: those who indicated that they had not migrated to the city, but had been 'born' or had always lived there were considered to be 'residents'. Similarly, those respondents that identified themselves as migrants, but did not meet any of the IDP criteria established in each study, would be considered voluntary or economic migrants. To facilitate greater precision in the comparative analysis of IDPs and voluntary migrants, the model utilized 'long-term' resident as the reference group for the residency variable.

Composition

To control for the influence a household's demographic composition exerts on vulnerability, a variable for household size, the proportion of elderly in the household, and a variable for the proportion of children under five in the household's total membership was included in the regression model. The variable for household size was designed to identify trends associated with base household size—i.e. is large households more or less likely to be vulnerable. The variables for proportion were considerably more complex. Given that the survey questionnaire captured data on both the presence and quantity of children under five years of age and elderly (>60years) in each household, the variable for both calculated the proportion of each category in respondent households. The variable then controlled for a specific threshold of significance, identifying only those households that met the minimum proportion. The threshold for children under five was set using a common operating definition for a standard household—five members total, two parents, an older child, and two younger (under five) children.[3] Using this standard, a household with more that two children (40% of the household) under fives would be considered to be composed of an unusual and large proportion of U5s. Similarly, a five-member household with more than one (20%) elderly individual could be considered to have an unusually large proportion of senior citizens. Thus the threshold for a household composed of a large number of under-fives was set at 40% of total household membership, whereas the threshold for senior citizens was set at 20% of total household membership. With these three variables, the model controlled for the influence of household size on vulnerability, as well as any potential influence an unusual proportion of young children or elderly members may exert on a household's vulnerability.

[3] Though 'average' size of a household can differ considerably between cultures, a standard measure was required in order to perform the calculation. It is recommended that in subsequent studies an average household size be determined for each case study to ensure greater precision in the regression model.

Education
The regression model also controlled for survey respondents' stated level of education completed. Respondents with a university education or had studied at a technical school were assigned to the same group, while respondents that had completed a secondary or primary education were treated separately. Those who reported that they had no formal education or were effectively illiterate were designated as the point of reference within the variable so that in the final analysis, any influence education may exert on a given vulnerability indicator could be understood in terms of increasing levels of education.

Time displaced
Given the variety of opinions in the literature as to how vulnerability changes over time, the regression model included a variable to control for how long *migrant* respondents had lived in the city. This variable was coded in such a manner that long-time residents were not included in the observations, and as such the population sample for this component of the regression was smaller than those considered by the other indicators. Working within the parameters laid out in the survey tools, four categories were established for the variable: migrants present in the city for less than one year; those who have resided in the city for one to two years, three to four years; and a fourth category for those who have been resident in the city for more than four years. These categories approximate the time periods used in similar studies investigating how the length of time displaced influences the experience of IDPs. (Hines, 2002; WFP, 2004; Briant, 2004; Black, 1994) Due to the limitations of the questionnaire, it was not possible to control for more precise time periods at the 'longer' end of the spectrum—this would have been especially interesting in Sudan, were the survey tool included a response for migrants who have been in the city for a period greater than seven years.

The Regression Analysis

The analysis of the data was conducted using a 3-model logistic regression, which was performed by the STATA data analysis and statistical software suite.[4]

Model Verification
Once the data set had been prepared, an initial regression analysis was conducted to verify the validity of the index, to ascertain if the variables captured statistically significant correlations. This initial regression model controlled only for the residency status of respondents, namely how IDPs and voluntary migrants compared to long-term residents (the reference group). The results of the initial model were sufficiently significant to warrant proceeding with running the complete regression analysis, including each of the independent variables discussed above.

Full model analysis
The second model was conducted using all of the independent variables selected for the study, including residency status, demographic factors such as gender, age/age^2, and household composition, level of education attained by a respondent, and the length of time displaced. Each vulnerability indicator in the index was run separately so that results could be analyzed in isolation of any other indicator. Though it was expected that the results would warrant additional investigation of particular interaction terms, this would be conducted in a separate model, specifically designed to explore vulnerability at a more macroscopic level.

[4] STATA data analytical tools can be purchased at the official stata website: www.stata.com

Composite Variable

A third and final analysis was conducted using a single composite variable, which combined respondent scores across all six vulnerability criteria. Whereas the analyses of the individual variables, such as dwelling material or employment status in the second model enabled an examination of correlations in isolation, the model using the composite variable captured a greater degree of interaction between the indicators of vulnerability, which is more representative of the fluidity of vulnerability as it is experienced in real time. It also provided an occasion to verify the utility of using a composite index of vulnerability for rapid assessment household exposure to risk and corresponding means to cope with that exposure.

The next section will present the findings from the logistic regression analysis, and will be followed by a discussion of the results.

FINDINGS

Introduction

As mentioned in the methodology portion of this report, the regression analysis was conducted using three different models, an initial trial to determine if the index would return valid results, a model to examine the individual vulnerability variables, and final model based on a composite variable. As the initial trial model returned sufficiently significant results to warrant continuing on to model two and three, the following discussion will present the findings returned by each of the subsequent models. A discussion of the significance of these results will be considered in a separate section, apart from the findings.

Model 2: Vulnerability Indicators

Dwelling material

The regression results for dwelling material were particularly strong. Migrant residents were less likely than long-time residents (the reference population) to reside in a house made of durable materials, while IDPs were less likely (-0.22145 P>[t] 0.000) than voluntary migrants to live in such a residence. Female respondents (0.10598, P>[t] 0.000) and households with a larger number of children (0.05902, P>[t] 0.000) were more likely to live in a durable dwelling than a household with simply a large number of members (-0.00767, P>[t] 0.000) or those households with a large number of elderly members (-0.12101, P>[t] 0.000). Education was also closely correlated to dwelling material, as respondents with any level of education demonstrating a greater likelihood than the illiterate of living in a house made of durable material. Migrants were less likely, however, to live in a dwelling made of durable material the longer they remained in the city.

Indicator	Dwelling Material				Access to Water			
	Model 1		Model 2		Model 1		Model 2	
Residency								
IDP	-0.28074	**	-0.22145	**	0.00592		0.00808	a
migrant	-0.19140	**	-0.17279	**	-0.00037		0.00153	
(Long-time Resident)								
Demographic								
gender			0.10598	**			-0.00048	
age			0.00445				0.00020	
age2			0.00000					
Household Composition								
Household size			-0.00767	**			-0.00102	**
Large U5			0.05902	**			-0.00341	
Large over-60			-0.12101	**			0.00473	
Education								
Primary			0.15925	**			0.01081	*
Secondary			0.31239	**			0.01330	**
Technical, University			0.40042	**			0.01508	**
(Illiterate/no education)								
Time Displaced								
1-2 years			-0.18132	*			0.00131	
3-4 years			-0.21805	**			0.00149	
>4 years			-0.25806	**			-0.00172	
(< 1year)								
_cons			0.77814	**			0.98351	*

Reference categories in brakets; '**' indicates P>[t] = 0.01, '*' indicates P>[t] = 0.05

Access to water

Analysis results for access to water were more varied. IDPs were more likely (0.00808, P>|t| 0.057) than the reference population to have adequate access to potable water, while large households were less likely (-0.00102, P>|t| 0.008). A respondent with a low level of education was more likely (0.01081, P>|t| 0.020) than an uneducated respondent to have access to water, while those with a secondary education or greater (0.01330 P>|t| 0.005; 0.01508, P>|t| 0.003) were even more likely than the others to have adequate access to water.

The results for the demographic variables, such as gender, as well as the variables for unusual household composition were not significant. Similarly, the results for all categories of time displaced did not achieve a sufficient degree of confidence to be considered significant.

Employment

The analysis results for employment status were more varied than those for dwelling material or access to water. The analysis indicated a strong relation between the level of education and the likelihood a respondent will be fully employed, with all levels of education performing better than the reference population.

Also noteworthy, the results for residency status indicated that both voluntary migrants (0.05758, P>|t| 0.07) and IDPs (0.07335, P>|t| 0.074) were more likely than long-time residents to be either employed full-time or maintaining their own business. While gender and all variables relating to household composition or the length of time displaced did not return significant results.

Indicator	Employment			Ownership status		
	Model 1	Model 2		Model 1	Model 2	
Residency						
IDP	0.02254	0.07335		-0.08344 **	-0.06122	**
migrant	0.04221	0.05758		-0.00230	0.00366	
(Long-time Resident)						
Demographic						
gender		0.02867			0.00357	
age		0.01254	*		-0.00040	
age2		-0.00013	*		0.00001	
Household Composition						
Household size		0.00021			-0.00296	*
Large U5		-0.01382			0.00194	
Large over-60		0.00206			-0.05283	**
Education						
Primary		0.10638	*		0.05776	**
Secondary		0.10169	*		0.08374	**
Technical, University		0.20694	*		0.09366	**
(Illiterate/no education)						
Time Displaced						
1-2 years		0.23834			-0.08754	
3-4 years		0.14601			-0.05550	
>4 years		0.29872			0.00672	
(< 1year)						
_cons		-0.18284			0.89916	**

Reference categories in brakets; '**' indicates P>[t] = 0.01, '*' indicates P>[t] = 0.05

Ownership

IDPs were less likely (-0.06122, P>|t| 0.00) than other city residents to own or rent their residence, while larger households (-0.00296, P>|t| 0.044) and those with an unusual number of elderly members (-0.05283, P>|t| 0.00) were also unlikely to have a stable housing arrangement. The analysis results also indicated that education strongly influenced the likelihood of a respondent owning their residence, as the coefficient increased consistently through each category of education achieved by respondents.

The results for voluntary migrants, gender and age, as well as households caring for an unusual number of children under 5 years were not significant. While all three categories of time displaced also failed to return adequately significant results.

Distance to health care

Residency was a strong influence on the likelihood of a respondent having to travel a significant distance to access health care: IDPs (-0.07579, P>|t| 0.008) and voluntary migrants (-0.05994, P>|t| 0.006) were both more likely than long-term residents to have to travel a distance greater than 1 kilometer to access health care. Similarly, females (-0.08878, P>|t| 0.000) and households with an unusual number of elderly members (-0.08524, P>|t| 0.000) were unlikely to travel a short distance to access healthcare, whereas households caring for large numbers of under 5 year old children (0.05100, P>|t| 0.018) were more likely to travel a short distance to access health care.

Indicator		Distance to Health Care				Distance to Water			
		Model 1		Model 2		Model 1		Model 2	
Residency									
	IDP	-0.10094	**	-0.07579	**	-0.09950	**	-0.05677	*
	migrant	-0.05716	**	-0.05994	**	-0.03201	a	-0.02784	
	(Long-time Resident)								
Demographic									
	gender			-0.08878	**			-0.00135	
	age			-0.00322				-0.00010	
	age2			0.00005				0.00001	
Household Composition									
	Household size			0.00233				-0.00233	
	Large U5			0.05100	*			0.04151	*
	Large over-60			-0.08524	**			-0.14622	**
Education									
	Primary			-0.02881				0.00340	
	Secondary			0.02802				0.12092	**
	Technical, University			0.03465				0.12054	**
	(Illiterate/no education)								
Time Displaced									
	1-2 years			-0.06774				-0.03719	
	3-4 years			-0.02571				-0.01909	
	>4 years			0.02792				-0.01255	
	(< 1year)								
	_cons			0.73506	*			0.98351	**

Reference categories in brakets; '**' indicates P>[t] = 0.01, '*' indicates P>[t] = 0.05

The level of education attained by the respondent did not significantly influence access to health care, nor was the length of time displaced or household size significant.

Distance to water

Finally, the analysis of the distance respondents would have to travel to access water returned a varied set of results. For instance, IDPs were more likely than long-time residents to travel a short distance (<1km) to access water, while the result for voluntary migrants was not significant. Households caring for a large number of children (-0.00341, P>|t| 0.014), were likely to travel a considerable distance to secure water, while households with large number of elderly members (0.00473, P>|t| 0.00) were more likely to find water close to their home. Respondents who had completed secondary level education (0.01329, P>|t| 0.00) and those with tertiary education (0.01508, P>|t| 0.00) were also likely to find water near their residence.

Socio-demographic factors such as gender, the general size of the respondent's household, or the length of time in the city did not significantly influence results. And while level of education proved significant at the secondary and tertiary level, the completion of primary level education did not return a significant result.

Model 3: Composite Variable

The third model utilized a numerical scale to analyze the combined results from all six vulnerability variables, with the greater degree of vulnerability being represented by the lower numerical value of the respondents score. In this sense, the analysis was coded so as to return results that indicate the likelihood a respondent would log a "low" score on the scale, which would be representative of greater vulnerability.

Logistic Regression Results: Model 3

Indicator	Composite Variable	
Residency		
IDP	0.20812	**
migrant	0.15521	**
(Long-time Resident)		
Demographic		
gender	0.13139	**
age	-0.02006	**
age2	0.00014	*
Household Composition		
Household size	0.00553	
Large U5	-0.18256	**
Large over-60	0.62830	**
Education		
Primary	-0.20702	**
Secondary	-0.54432	**
Technical, University	-0.70344	**
(Illiterate/no education)		
Time Displaced		
1-2 years	0.12835	
3-4 years	0.28296	
>4 years	0.05050	
(< 1year)		

Reference categories in brakets; '**' indicates P>[t] = 0.01, '*' indicates P>[t] = 0.05

The results for the composite model were largely significant. IDPs and migrants were both more likely than long-time residents to have a low score, while households with large number of elderly were also likely to register a low score on the vulnerability scale, whereas households with large numbers of children were more likely to have a high score on the vulnerability scale, suggesting that on measure they are less vulnerable than the other household configurations included in this analysis. Females were likely to have a low score, while age and age^2 returned opposite results. Similar to the trend identified in the second model, there was a strong positive correlation between the level of education a respondent had attained and a high score on the scale. However, large households did not return statistically significant results, nor did the categories for the length of time migrant respondents have been displaced.

DISCUSSION

Introduction

The literature related to vulnerability, internal displacement, and the challenges of life in an urban context, suggested that vulnerability can be caused by a number of factors, each working with others to the detriment of a household's ability to thrive in the city. Most agreed that displacement was one of the principle elements of vulnerability, in that the risks and deprivations suffered during displacement are such that IDPs warrant categorical determination of vulnerability. (McNamara, 2005; Newland, 2003; Weiss, 2006) While others, argued that displacement is one of a number of important indicators, which can be used to evaluate the vulnerability of urban residents. (Vincent, 2001(2); Muggah, 2000; Borton, 2005)

The literature also debates the links between factors such as education and the passage of time, with a migrant's ability to successfully establish their households in the urban context. As they pertain to the three case studies from which the dataset was established, the findings of this study are consistent with this trend in the literature, in that they capture a broad range of tendencies, varied enough to confound simplistic attribution of vulnerability.

Residency

To begin, the analysis findings did not prove the principle hypothesis of this study, namely that IDPs would be more vulnerable than other city residents over a range of indicators. Rather, the results indicate that IDPs are at times more vulnerable than their neighbors, but can outperform their neighbors as well. For instance, IDPs were more likely than all other categories of residence to draw their household's water from an improved source, and were considerably more likely to have secure employment than long-term residents or migrants. It was particularly surprising to see that an IDP was more likely to report steady employment, while long-time residents were the least likely to report full-employment. Many picture IDPs as having fled under duress, perhaps fleeing from their village under fire. However, as some have argued in the literature, perhaps IDPs are just as likely to have fled preemptively, or to have the means to migrate to the city, while the more poor conflict-affected community members remain (Newland, 2003). In this sense, the findings suggest that IDPs, even more than voluntary migrants, either flee with the cash or other assets, or are considerably more adept at leveraging social networks to secure both access to water and employment. (Schütte, 2005)

However, IDPs were less likely than others to live in a durable dwelling, or to arrange a reliable housing arrangement such as renting or having documented ownership of property. If taken alongside the findings for employment and access to water, perhaps the findings for housing support the notion that IDPs rely heavily on their social networks to survive in the city where they may be hosted in the dwellings of friends or relations or build temporary shelters on their property.

Composition of household

Regression findings for household composition were considerably more erratic, making it difficult to identify patterns in the results. For some indicators, households with a large proportion of children under five (hereafter "under-5s") presented trends opposite to those reported by large households or households with a large proportion of adults over the age of sixty (hereafter "over-60s"). For instance, large households and those with a large proportion of over-60's were less likely to live in a dwelling made of durable material or rent or own their home, while households with a

large proportion of under-5s were likely to rent or own a well made dwelling, source their water from an improved source at a distance of less than 1 km, and have ready access to a clinic. And though the result fell outside of the .05 P-value, large households and those with a large proportion of over-60s were most likely to have steady employment.

This result, along with the generally erratic trends reported in this category of variable, support the hypothesis in that there is a relationship between these variables and vulnerability. However, the results confounded the expected direction of these relationships. For instance, it was expected that that larger households, particularly those with employable members, would be of greater means to establish their households in the urban context by generating greater revenue to cover the expenses of the home. Households caring for a large number of under-5s would not only carry additional household expenses associated with child care, but would forego the opportunity to earn income in order to care for their children. These findings suggest that large households are considerably more exposed to health related risks, both in terms of the protection from the elements provided by their dwelling and the risk of contagion linked to the density of household members sheltering in the dwelling. For those households with a large number of over-60 year old members, this hazard is compounded for the elderly, who have additional health needs. It is also alarming that large households are also unlikely to have a steady housing arrangement. Forced eviction is an often cited hazard facing IDPs in urban settings, thus this finding would suggest that large households without secure tenure on the dwelling may be at greater risk of losing their homes than smaller households, which, as Schütte has demonstrated, can be a profoundly detrimental to the ability of a displaced household to successfully establish itself in the urban context (Hines, 2002; Deshingkar, 2005; Schütte, 2004; Schütte, 2005).

Gender

Though gender is often included in regression analysis as a routine control on results, this study was particularly interested to see how female respondents scored on the vulnerability index. Females presented strong results in only two of the six indicators in the vulnerability index: in the domains of dwelling materials and distance to healthcare. Female respondents were more likely than male respondents to live in a dwelling made of durable or manufactured materials, while they were more likely to travel a considerable distance to access healthcare. And though the results for the other four indicators were not especially strong, the trends were interesting and may warrant additional attention. The results indicated that female respondents were more likely to own or rent their homes, as well as to have steady employment. This suggests that female respondents outperform males on the economic component of the index, which may indicate that women have a competitive advantage over men in the urban marketplace, or are more adept at creating a diversified or successful livelihood strategy. That said, females were particularly likely to have a low score on the composite vulnerability scale used in the third regression model, indicating that when considered across all of the measures in the vulnerability index, their relative vulnerability was greater than that of male respondents.

It is important to note, however, that these results pertain only to female respondents. The primary data-collection did not deliberately survey female-headed households, or hold focus groups for females in the enumeration areas. Rather, a question relating to the gender of the respondent recorded at the beginning of each interview. Therefore, the results may be influenced by a gender-specific reporting bias, such that additional research would be necessary to better understand the experience of females in each of the three cities. Nevertheless, in the same manner this study assumed that IDPs would be more vulnerable than others, females aren't not uniformly more vulnerable than their male counter-parts. In some instances, females seemed to have an advantage

over men, suggests that the gender dynamics of vulnerability preclude categorical attribution of vulnerability to one sex or another, but require more nuanced investigation as to how men and women experience risk, and what means they are uniquely able to leverage in the city.

Time and Education

It was expected that the passage of time and the level of education attained by respondents would have an important influence on vulnerability throughout the index. Education proved to be the most compelling of the two influencing factors. Regression results for all levels of education were significant across five of the six indicators, by far the strongest results for any of the factors included in the regression model. Educated respondents were consistently more likely to be less vulnerable than the reference group, and that this trend increased with every subsequent level achieved beyond primary school.

In this sense, education was perhaps the most critical determinant of vulnerability in the urban context, even at rudimentary levels—respondents with even primary-level education were consistently more likely than the uneducated or illiterate to be less vulnerable. These results invite further investigation, as they provides additional evidence that vulnerability is more nuanced than a single factor such as the experience of flight. Given the strength of the results, it would be useful to consider analyses of interaction terms such as level of education alongside one type of resident, such as an IDP, to better understand how education contributes to reducing vulnerability within different groups. It would also be interesting to see how education and vulnerability interact in protracted crises, especially where there are large numbers of displaced children, as the literature notes that in the domain education, displacement often results deferred or lost education opportunities for children, which can have serious long-term affects on the community, while the city may present improved opportunities for education, not likely to be found in rural areas (Schütte, 2004; Holland, 2004; Vincent, 2001; Jennings, 2008).[5]

The influence of time displaced on vulnerability, on the other hand, was the least likely of the regression variables to influence results. Whereas it was expected that the results for time displaced would be strong, though perhaps varied, the regression analysis only returned statistically significant results for the influence of time on dwelling material. The result was particularly interesting in that it indicated that with the passage of time, migrants were less likely to live in a dwelling made of durable material. This result was unexpected, but it does find support in the literature, in that as time proceeds, IDPs are at risk of exhausting the financial resources carried with them in flight or the social network they leverage in the city (Schütte, 2004; Schütte, 2005) This may also be corroborated by this analysis, as the results for dwelling material could be interpreted as being linked to an IDP's existing resources or social connections. But given the poor statistical significance of the time results for other index variables, further consideration of the influence of time is in order.

Two sets of related variables

The vulnerability index was designed to capture trends between sets of related indicators, to examine what associations would emerge between the regression categories and similar indicators in the index, such as the likelihood of migrants to have a sturdy dwelling compared to the likelihood

[5] It should be noted there is historical precedent for education to be considered threatening to certain types of regimes, such as the Khmer Rouge during their rule of Cambodia in the late 1970's. In cases such as these, an assessment of vulnerability may consider education as a risk factor, rather than an asset that can be used to mitigate risk.

of migrants owning or renting their homes. The findings for the indicators relating to accessibility to water were particularly interesting. IDPs and migrants were both more likely than long-time residents to have access to an improved water source. However, both categories of migrants were less likely than their long-time residents to draw that water from a source near their homes, which begs the question of where and how precisely do migrants with access to good water locate that source? It also reminds the analyst that vulnerability, understood in terms of accessibility of potable, must be considered as a matter of both types of water sources as well as its location. After all, given that water is just as likely to be contaminated during transport and storage as at the source, potable water, drawn from city infrastructure, though considered an indication of reduced vulnerability if considered on its own, may disguise a more profound risk—namely that water is not accessible at a reasonable distance from the home.

Similarly, the vulnerability index included an indicator for two variables related to shelter: dwelling material and ownership status. Perhaps unsurprisingly, voluntary migrants and IDPs were both less likely than the reference group to live in a dwelling made of durable materials. However, voluntary migrants were in fact more likely than IDPs and long-time residents to rent or hold documented legal ownership of their dwellings. And as mentioned above, households with a large proportion of Under-fives were more likely than comparative households to own or rent a dwelling constructed of durable materials, while all categories of education were strongly correlated to both durable materials as well as a positive housing arrangement. Unlike the variables for accessibility of water, the results for the indicators related to dwellings were strongly associated. In this sense, the indicators for dwelling provide a strong picture of one element of vulnerability, as was the case with level of education attained by respondents, which would indicate that dwelling might be suitable for broader application in the assessment of vulnerability.

Composite

The initial justification for using a composite variable for vulnerability was based on the assumption that, having been considered in isolation of one another, the index indicators ought to be examined in their interactivity. The purpose of this was to facilitate an examination of how the independent variables would influence vulnerability when each of the six indicators were considered together. This study also presented an occasion to consider the vulnerability indicators together to evaluate the utility of an index for rapid field assessment of household vulnerability indicators. The results for this regression were comparable to those of first two models, in that the response trends reflected those across most of the independent variables. IDPs and migrants were both more likely than the reference group to have a low score on the composite scale, indicating greater vulnerability, while females were also likely to be identified by their score on the index as vulnerable. Larger households, on the other hand, along with older residents, where also likely to register high scores on the index, indicating that they were less vulnerable. Education results for the composite remained consistent with those from the first and second model, which reinforces the suitability of Education in the assessment of vulnerability, but also supports the utility of a composite variable to assessing vulnerability. However, time displaced continue to return statistically insignificant results, which reaffirm the early observation that the variable needs to be reviewed and revised. Time has been clearly established as a critical variable in the experience of IDPs and voluntary migrants alike, such that a composite variable should be able to register the length of time an individual has been displaced and adequately incorporate that fact into the analysis of vulnerability.

If a composite variable is to be used in the assessment of vulnerability, it follows that it produces results consistent with those drawn from the independent analysis of each constituent variable. A

robust composite would also require that critical variables like time be adequately incorporated into the measure.

Limitations and recommendations for further study

The vulnerability index used in this study did not include variables for possession of identification documents, or post-arrival mobility linked to forced eviction, two factors frequently cited in the literature as critical to the ability of migrant households to thrive in the urban context (Mooney, 2005(2); Jennings, 2008; Fitzpatrick, 2002; Holland, 2004). Identity documents are often lost during flight, and are often essential to accessing services such as health care or humanitarian assistance. In urban contexts in particular, forced eviction and general mobility within the city limits can illuminate adversity and hazards faced by IDPs that are not readily apparent through other means of analysis.

Though the IDMC-Tufts exercise collected data relating to both of these issues, it was not possible to incorporate the information into this study's vulnerability index. The data relating to identity documents was not sufficiently consistent across all three case studies to construct a meaningful variable for the model—in one case, respondents were not asked any questions related to the documentation they possessed. Forced eviction on the other hand, could have been incorporated into the model, however, because the specific queries relating to eviction and intra-urban mobility were incorporated into the definition of IDP in the Colombia case, it was not possible to construct a variable that adequately controlled for conflicts with the definition for IDPs.

In subsequent studies of IDP vulnerability, it is recommended that researchers ensure that their survey instruments include an adequate number of queries relating to documentation, force eviction or general mobility within the city, in order that these issues can be more thoroughly analyzed in the urban context.

In addition, given the configuration of the present study's vulnerability index, further consideration of how different factors influence vulnerability when considered together would help generate a more nuanced understanding of the differences between IDPs and voluntary migrants. This would be particularly relevant for education, where the variable was designed to capture results for all respondents. In this sense, to disaggregate the results by residency status, by running a regression analysis that included interaction terms for both types of migrants and a particular level of education would ensure greater accuracy in the analysis of vulnerability. Similarly, though the results for the time variable did not return strong results, the variable was designed to capture the experience of all migrants, not just IDPs. It is not clear why the time variable was not robust, however, in the same way that the education variable warrants further consideration, an analysis of how residency status and time displaced would also be interesting. Further study ought to consider how residency status and time displaced interact, so that the experience of IDPs can be more accurately compared to that of voluntary migrants and long-time residents.

CONCLUSION

In order to examine how vulnerability is experienced by IDPs displaced to urban centers, this study conducted a regression analysis of a data-set established by researchers at the Feinstein International Center of Tufts University, as part of an initiative to profile IDPs in urban centers throughout the world. The regression model was based on a vulnerability index drawn from the initiative's survey tool, and controlled for a variety of factors to illuminate which variables most influence the vulnerability of respondents.

The regression results varied considerably across each of the index variables as well as the influencing factors included in the model. The results did not consistently support the hypothesis, in that IDPs were not consistently more vulnerable than other residents, but proved less vulnerable than other residents on a number of variables, including their access to water and steady employment. And though it was expected that education would be an important influence on vulnerability, the study found that a respondent's level of education was strongly correlated with low vulnerability, including education at the primary level.

The study, however, did not demonstrate the relationship of the length of time of displacement with vulnerability outside of its relation to dwelling material, nor was it able to adequately illuminate how a household's configuration influences vulnerability. However, the analysis did demonstrate the variability of vulnerability at the household level, indicating that analysis at the level of the household, rather than as a community broadly defined, is most appropriate for understanding the dynamics of vulnerability within a particular sub-group of the population.

In this regard, this study contributes to the literature further support to the hypothesis that IDPs are often vulnerable, but as a group, aren't adequately homogenous to warrant preferential treatment *prima facie*. Rather, vulnerability in the urban context, whether experienced by IDPs, voluntary migrants, or long-time residents, must be considered at the household level, as an analysis of the risks vulnerable groups face in the city, balanced against the means and mechanisms they employ to mitigate those risks. Thus, this study concludes by affirming the position of those who maintain that vulnerability, though influenced by displacement, is a broad and multi-faceted phenomenon that cannot be simply ascribed to a particular population without a nuanced analysis that considers not just the risk factors facing the group, but what means they leverage to overcome the challenges they face.

ANNEXES

Logistic Regression analysis results: Model 1 and 2

Indicator	Dwelling Material		Access to Water		Employment		Ownership status		Distance to Health Care		Distance to Water	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Residency												
IDP	-0.28074 **	-0.22145 **	0.00592	0.00808	0.02254	0.07335	-0.08344 **	-0.06122 **	-0.10094 **	-0.07579 **	-0.09950 **	-0.05677 *
migrant	-0.19140 **	-0.17279 **	-0.00037	0.00153	0.04221	0.05758	-0.00230	0.00366	-0.05716 **	-0.05994 **	-0.03201 a	-0.02784
(Long-time Resident)												
Demographic												
gender	0.10598 **		-0.00048		0.02867		0.00357		-0.08878 **			-0.00135
age	0.00445		0.00020		0.01254 *		-0.00040		-0.00322			-0.00010
age2	0.00000				-0.00013 *		0.00001		0.00005			0.00001
Household Composition												
Household size	-0.00767 **		-0.00102 **		0.00021		-0.00296 *		0.00233			-0.00233
Large U5	0.05902 **		-0.00341		-0.01382		0.00194		0.05100 *			0.04151 *
Large over-60	-0.12101 **		0.00473		0.00206		-0.05283 **		-0.08524 **			-0.14622 **
Education												
Primary	0.15925 **		0.01081 *		0.10638 *		0.05776 **		-0.02881			0.00340
Secondary	0.31239 **		0.01330 **		0.10169 *		0.08374 **		0.02802			0.12092 **
Technical, University	0.40042 **		0.01508 **		0.20694 *		0.09366 **		0.03465			0.12054 **
(Illiterate/no education)												
Time Displaced												
1-2 years	-0.18132 *		0.00131		0.23834		-0.08754		-0.06774			-0.03719
3-4 years	-0.21805 **		0.00149		0.14601		-0.05550		-0.02571			-0.01909
>4 years	-0.25806 **		-0.00172		0.29872		0.00672		0.02792			-0.01255
(< 1year)												
_cons	0.77814 **		0.98351 *		-0.18284		0.89916 **		0.73506 *			0.98351 **

Reference categories in brakets; '**' indicates P>[t] = 0.01, '*' indicates P>[t] = 0.05

Logistic Regression Results: Model 3			
Indicator		**Composite Variable**	
Residency			
	IDP	0.20812	**
	migrant	0.15521	**
	(Long-time Resident)		
Demographic			
	gender	0.13139	**
	age	-0.02006	**
	age2	0.00014	*
Household Composition			
	Household size	0.00553	
	Large U5	-0.18256	**
	Large over-60	0.62830	**
Education			
	Primary	-0.20702	**
	Secondary	-0.54432	**
	Technical, University	-0.70344	**
	(Illiterate/no education)		
Time Displaced			
	1-2 years	0.12835	
	3-4 years	0.28296	
	>4 years	0.05050	
	(< 1year)		

Reference categories in brakets; '**' indicates P>[t] = 0.01, '*' indicates P>[t] = 0.05

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