

# Perceived Relative Deprivation and Risk: An Aspiration-Based Model of Human Trafficking Vulnerability

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## Abstract

While human trafficking often conjures up images of victims being taken by force, in reality, a minority of today's slave population are physically abducted. Rather, a significant share of human trafficking victims are "pushed" (e.g., trying to escape crisis conditions) or "pulled" (e.g., pursuing the prospect of economic opportunities) into situations of high risk. This study focuses on those who are "pulled" into risky scenarios, assessing when individuals make decisions that may put themselves at risk. I hypothesize that an increased salience in relative deprivation can lead individuals to be more risk-seeking, putting themselves and their children at greater risk for exploitation. Using both an original survey experiment and nationally-representative data in Nepal, I find that perceptions of relative deprivation induces more risk-seeking behavior. The result speaks to the interaction between inequality and risk-tolerance, and how economic and social forces that alter perceived relative deprivation can increase vulnerability.

Keywords: Relative Deprivation, Human Trafficking, Slavery, Risk

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Slavery is one of the oldest human institutions, and more than 150 years after the Thirteenth Amendment to the United States Constitution legally abolished slavery in the United States, nearly 70 years after United Nations Article 4 of the Universal Declaration of Human Rights banned slavery globally, and over 30 years after slavery became *de jure* illegal in every country,<sup>1</sup> *de facto* practices of slavery continue to exist and modern day slavery has a new name — “human trafficking” (Koettl 2009). In fact, the illicitness has pushed slavery into the dark, allowing the public to believe that slavery no longer exists despite widespread enslavement practices. Over 2.4 million men, women, and children are estimated to be trafficked each year (ILO 2008), and approximately 27 million are thought to be enslaved today (Bales and Soodalter 2009; Bales 2012).<sup>2</sup> These numbers around “new” slavery are striking when we compare them to the numbers of “old” slavery. At the peak of the Trans-Atlantic slave trade, 2 million were transported to the New World, and over the lifespan of the slave trade, 12.5 million were thought to have been enslaved. In other words, more than twice as many individuals are thought to be enslaved today than were taken from Africa during the entire 350 years of the Atlantic slave trade (Bales and Soodalter 2009). Annual profits generated from slaves are estimated to be as high as 32 billion USD (ILO 2008), and there have been reports of human trafficking in 161 countries. More specifically, there have been documentation of the trafficking of human beings from 127 countries to be exploited in 137 countries (UNODC 2006).

Absolute poverty is commonly identified as being at the root of vulnerability to modern forms of slavery and other forms of exploitation (Thomas 2002). However, not every individual facing extreme poverty is equally vulnerable. Poverty is neither a necessary nor sufficient reason for being vulnerable to exploitation. For example, a 2004 UNICEF report on child trafficking finds that human trafficking occurred irrespective of economic status (Chamberlain 2004). A 2002 Asian Development Bank report cautions that it is important to recognize that factors other than poverty play a role in human trafficking vulnerability (Thomas 2002). In other words there are poor-and-less vulnerable individuals and poor-and-very vulnerable individuals, and unveiling the factors that separate the two groups is important to understanding human trafficking vulnerability. These findings raise the following question: Apart from poverty, what additional factors can explain variation in individuals’ vulnerability levels?

Extant research on modern forms of slavery has focused on economic, political, and social contexts

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<sup>1</sup>In 1981, Mauritania became the last country in the world to legally abolish slavery (Sutter 2012).

<sup>2</sup>Given that human trafficking is in the shadows, this is a rough estimate at best. At this time, no one can produce comprehensive and accurate numbers for the extent of human trafficking worldwide.

(or structural factors), along with the interaction of structural factors with policy and governance issues (or proximate factors): “the overarching argument is that the interaction between structural factors or variables (such as economic deprivation and market downturns, social inequality, attitudes to gender, demand for prostitutes) and proximate factors (such as lax national and international legal regimes, poor law enforcement, corruption, organized criminal entrepreneurship, weak education campaigns) is key to understanding why some individuals are vulnerable to trafficking through the use of deception and coercion” (Newman and Cameron 2007, p.1). Certainly, each of these lines of inquiry may push (e.g., trying to escape poverty or exclusionary environments) or pull (e.g., prospect of employment opportunities) individuals into situations that make that more at risk for human trafficking (Bales 2007). What is not highlighted in previous research, even in the discussion of economic context specifically, is the potential role of relative deprivation — when individuals view their situations as less than a community standard. I propose an additional economic structural factor by inquiring whether differences in people’s perceived sense of relative deprivation explain some of the variation in people’s vulnerability levels. What if increasing perceptions of disparities in wealth within one’s own community and between one’s community and other parts of the world drive individuals to make decisions that put themselves and their families more at risk for undesirable outcomes? Does a sense of relative deprivation impact an individual’s likelihood that he or she will prefer risky labor options that may have high returns but are prone to high risks of devastating consequences like being trafficked?

The domain of vulnerability involves a willingness to acquiesce to a source of danger (e.g., pursuing a risky labor option that may put one at risk for trafficking) in addition to the number of dangerous incidents an individual can acquiesce to or encounter. This study focuses on the former form of vulnerability, which is an important source of vulnerability given a significant share of human trafficking victims made a decision that put themselves or their children at risk for becoming enslaved. Human trafficking often conjures up images of victims being abducted or taken from the homes, but in reality, a small minority of those who are trafficked are physically abducted. An analysis of interviews of rescued trafficked women in South Asia revealed that force and abduction accounted for only 6.8 percent of recruitment (Hennik and Simkhada 2004). Only 2.7 percent of rescued trafficking victims from Kathmandu restaurants/massage parlors reported that they were recruited forcibly (Kafle 2008). When considering documented human trafficking cases, there are a significant number of human trafficking victims that made decisions where exploitation and trafficking became more likely, which makes the

decision-making processes of trafficked individuals important to study. For example, one can observe the acceptance of risk by individuals when examining their calculus for determining whether they should or should not accept an opportunity to be a migrant worker, and how they should go about migrating. When individuals are seeking to migrate to find employment, individuals may be more or less cautious. One of these decisions involves the use of intermediaries or labor brokers. These middlemen often play a legitimate and useful role in job identification and placement. However, without strong accountability mechanisms, this system of labor recruitment is often opaque and sometimes corrupt. The deception that brokers and employers can introduce to the recruitment and hiring process (e.g., withholding passports, controlling bank accounts, charging egregious fees so that migrant workers are indebted to the labor broker, placing migrants workers in physical isolation) can create critical vulnerabilities to trafficking for migrant workers (ILO 2005*b*). With over a quarter of labor recruitment agencies having their licenses revoked for deceptive practices and over a hundred legal cases against manpower agencies for facilitating human trafficking, many families in Nepal are aware of the dangers of these employment agencies (USDS 2009). Yet many families opt to go through them to seek employment abroad demanding very little assurance (e.g., without contracts), as exploitation, deception, and trafficking is not necessarily guaranteed. As such, one form of “vulnerability” is greater risk tolerance, and “vulnerability” in this paper will hereafter be referred to as a willingness to acquiesce to a source of danger.

In this study, I assess whether an aspiration-based model of vulnerability predicting a relationship between relative deprivation and risk-tolerance could help explain risk-seeking behaviors of individuals that elevate vulnerability to exploitation, and at its extreme, human trafficking. Through an analysis of (1) original survey data collected in Nepal, (2) the 2003 Nepal National Living Standards Survey, and (3) the Women’s Cell of Nepal’s Police Department data, I attempt to assess the validity of the hypothesis that additional variance in vulnerability to undesirable outcomes like being trafficked can be explained through an aspirations-based framework. This paper is organized as follows. I first define human trafficking, and further discuss why engaging in risky behavior can translate into human trafficking vulnerability. I then present an aspiration-based theory and an empirically testable hypothesis around the relationship between relative deprivation and vulnerability. Next, I describe the methodology and findings of an experimental study of micro-level behavior in Nepal and an observational study of national level data. I conclude with a discussion of my findings and pathways for future research.

## Defining Human Trafficking

The stereotype of a human trafficking victim is of a young girl ensnared by criminal forces and coerced into sex work. This conventional wisdom of a human trafficking victim is perhaps not surprising given that human trafficking was first introduced in the context of “white slavery” in the 1904 International Agreement for the Suppression of White Slave Traffic<sup>3</sup> and the 1910 Convention on White Slave Traffic.<sup>4</sup> Both agreements rendered the term ‘trafficking’ to be synonymous with the international movement of *white* women and girls by force, deceit or drugs for the purposes of commercial sexual exploitation (Doezema 1999). Within the United States, the U.S. Congress passed the White Slave Traffic Act in 1910, also known as the Mann Act, which sought to defend and protect the purity of white woman by prohibiting women from crossing state lines for immoral purposes and criminalized interracial couples (Desyllas 2007; Saunders and Soderlund 2003). Many historians have argued that the discussion of “white slavery” was catalyzed by the increased number of women migrants, including prostitutes, from Europe seeing work abroad (Doezema 1999). For many Europeans, according to Guy (1992), “it was inconceivable that their female compatriots would willingly submit to sexual commerce with foreign, racially varied men. In one way or another these women must have been trapped and victimized. So European women in foreign brothels were construed as “white slaves” rather than common prostitutes” (p. 203).

While human trafficking was first discussed in the context of sexually exploited white women, distinguishing itself from “black slavery,” the terms “human trafficking” and “slavery” found themselves converging over the last two decades. In 2000, the concept of human trafficking was broadened to make it a term that is now synonymous with slavery in general rather than the “white slavery” of women and girls in the sex industry (Morcom and Schloenhardt 2011; Foundation 2014).<sup>5</sup> Today, the definition of human trafficking is not legally restricted to a particular age, gender, race or ethnicity, or a type of exploitation, or cross-border movement, and considered to be “modern slavery” (Koettl 2009; USDS 2015), and hence, I use slavery and human trafficking interchangeably in this paper. The most commonly utilized definition of human trafficking can be found in Article 3(a) of the 2000 Protocol to Prevent, Suppress and Punish Trafficking in Persons Especially Women and Children, Supplementing

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<sup>3</sup>International Agreement for the Suppression of the White Slave Traffic, adopted 18 May 1904, entered into force 18 July 1905, 35 Stat. 1979, 1 LNTS 83.

<sup>4</sup>International Convention for the Suppression of the White Slave Traffic, adopted 4 May 1910, LNTS 8(a).

<sup>5</sup>The connection between human trafficking and slavery and a brief history is described in detail by Koettl (2009)

the United Nations Convention against Transnational Organized Crime (or Palermo Protocol), and explicitly includes the term “slavery” in defining human trafficking:<sup>6</sup>

“Trafficking in persons” shall mean the recruitment, transportation, transfer, harboring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, *slavery or practices similar to slavery*, servitude or the removal of organs.

In the same year the Palermo Protocol was passed, the United States also passed its first anti-trafficking legislation, the Trafficking Victims Protection Act (TVPA). Passed in 2000 (H.R. 3244), and reauthorized in 2003, 2005, 2008, and 2013, similarly employs an expansive definition, defining human trafficking as the illicit enslavement of individuals for commercial sex or any labor or services induced by force, fraud or coercion (106th U.S. Congress 2000). The TVPA, the cornerstone of federal human trafficking legislation, also authorized the U.S. State Department to push for anti-trafficking policies globally and to both monitor and evaluate other countries’ actions with respect to counter-trafficking, generating greater information on human trafficking patterns.<sup>7</sup>

With the establishment of this new definition, there has been an exponential uptick in attention to human trafficking (Farrell and Fahy 2009), and concomitant reports on human trafficking prevalence. These reports speak to how the stereotype of human trafficking as exploited female sex workers by a criminal organization is inaccurate today; sex trafficking is a small fraction of the human trafficking or modern slavery problem today. According to the ILO (2012), 90 percent of slavery victims are exploited in the private economy, exploited by individuals or businesses, 22 percent are in forced sexual exploitation, and 68 percent are in activities such as agriculture, construction, domestic work and manufacture. Moreover, there is greater gender balance when studying human trafficking victims than what conventional wisdom would have us think. Men and boys represent nearly half of human trafficking victims (45 percent). According to the current human trafficking definition, in addition to sex trafficking victims, the abused, exploited, and underpaid domestic worker,<sup>8</sup> construction workers

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<sup>6</sup>As of 2015, the Palermo Protocol was ratified by some 169 state. For up to date ratification status information, go to <https://www.unodc.org/unodc/en/treaties/CTOC/countrylist-traffickingprotocol.html>.

<sup>7</sup>Since 2004 these ratings have been tied to access to US foreign aid, although due to a combination of waivers and existing sanctions, they have rarely resulted in sanctions (Kelley and Simmons 2015).

<sup>8</sup>For example, consider the 2014 case of the Indian domestic worker Sangeeta Richards abused by Indian diplomat Devyani Khobragade — paying her a little over \$1 an hour, withholding her passport, and using intimidation against her family in India — in the United States. She was represented by anti-human trafficking group Safe Horizon and

working in what amounts to forced labor camps,<sup>9</sup> bonded laborers making bricks under fraudulent terms<sup>10</sup> and victims of organ trafficking, which include those who agreed to sell their organs as they usually agree under false pretenses — like being told their organ will grow back, not receiving the payment they were promised, and/or not being provided with proper health care after surgery (Pokharel 2015) — are all example of human trafficking victims.

The majority of human trafficking cases begin with the more mundane decision of whether to migrate with the assistance of a smuggler, whether to pursue a particular economic opportunity, and/or whether to accept a loan in return for labor rather than kidnapping and force at the outset. According to (Kara 2012), bonded labor — “the exploitative interlinking of labor and credit agreements between parties” in which a party who does not have access to formal credit takes on a loan from another who has assets and capital pledging to work off his/her loan — is the most extensive form of slavery (p. 3). In an age of rapid expansion of broadcast and telecommunication media, horror stories around migration, fraudulent job opportunities, organ traffickers, and bonded labor have been circulated through awareness campaigns and news coverage individuals. Certainly, level of awareness and concern varies from individual to individual, but it is commonplace to view migration and pursuit of economic opportunities absent formal regulations to protect workers as at least somewhat risky.

As such, one source of vulnerability is tolerating the risk of a decision for the potential upside of that decision, as all migrant workers do not fall prey to human trafficking. By no means do I presume or claim that risk-tolerance is the only or even most important source of human trafficking vulnerability. However, risk-tolerance (e.g., throwing caution to the wind and ignoring warnings stemming from news or awareness campaigns that shine a light on human trafficking cases) is one important source of vulnerability that needs to be understood. Consider the question of why laborers take on the risk of accepting jobs in countries known to be exploitative. For example, despite the unparalleled regional conflicts in the Middle East and North Africa (MENA) creating a refugee crisis, the MENA region

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encouraged to apply for a T-1 visa, a special category of visas issued in the United States for human trafficking victims and qualifying family members (Scrutton 2014).

<sup>9</sup>For example, consider the Nepali migrant workers in Qatar, who make up the single largest group of laborers in Qatar in the World Cup infrastructure projects. Investigations have found that there have been cases of forced labor or human trafficking, where wages are not being paid, documents (e.g., passports) are being confiscated, and food and water being withheld. They are essentially being held in labor camps that restrict them from leaving, and in the summer, one worker was dying per day (Pattison 2013).

<sup>10</sup>For example, consider a bonded laborer in eastern India, where he willingly went on to a brick kiln to work with the promise of \$400 advance. The advance became a \$400 debt, and was locked into working to try and paying it off, could not leave without the permission of the brick kiln owner, and would not be told when, or if, they could ever pay off his debt. This form of labor is the most prevalent form of slavery in South Asia (Coorlim, Kapur, and Sidner 2013).

continues to pull in millions of women and men from South Asia, South-East Asia, and sub-Saharan Africa who pay onerous fees and expensive plane tickets to travel to the region for employment in low-paying sectors, such as construction and domestic work, and are often exploited (McCormack, Larsen, and Husn 2014)). Consider the recent finding that even the explicit knowledge of the risk of human trafficking from migration is not stopping migration into exploitative countries; an estimated 3 to 5 million people from Laos, Cambodia, Myanmar, and Vietnam are migrating to countries with exploitative labor conditions despite awareness of human trafficking risks stemming from migrating to the destination countries (World Vision 2014). Certainly, absolute poverty can result in a false choice when accepting risk, but there are many cases in which people who are *not* the poorest individuals in a country take on this risk. For example, given that the cost of pursuing economic opportunities abroad is incredibly high, even those that turn out to be fraudulent and exploitative, the poorest families are priced out.<sup>11</sup>

## Theoretical Background: Relative Deprivation and Risk Behavior

Runciman (1966) specified four conditions for an individual to feel relatively poor or deprived: “We can roughly say that [a person] is relatively deprived of X when (1) he does not have X; (2) he sees some other person or persons (possibly including himself at some previous or future time) as having X (whether or not that is or will be in fact the case); (3) he wants X, and (4) he sees it as feasible that he should have X” (p. 10). Conditions (1) and (3) together conceptualize deprivation and conditions (2) and (4) jointly conceptualize relativity. Implicit in these four conditions is the assumption that social comparisons occur, and individuals have reference groups in society that inform what individuals should aspire for — one’s “reference point” X.

In modeling relative deprivation, one can adopt a traditional neoclassical approach or an aspirations-based approach; however, only the latter would predict that the “reference point” affects choice. While aspiration-based models predict that preference reversals are dependent on social comparisons (i.e., where one is relative to some reference point), standard neoclassical models do not (Grether and Plott 1979). Preference reversals contingent upon a “reference point” are *not* allowed in standard neoclassical approaches. For instance, suppose there are two villages of households whose incomes are as follows:

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<sup>11</sup>For example, migrant long-term care givers paid an average of USD 5,398 in recruitment fees to work in Israel and a migrant Nepali security worker paid on average USD 4,078 in recruitment fees to work in the United Arab Emirates (Verité N.d.), which a person living under the poverty line (USD 2 per day) would not be able to afford.

$A_1 = \{10, 20, 30, 40, 50\}$  and  $A_2 = \{40, 50, 60, 70, 80\}$ . The distribution of incomes in these two settings are such that an income of 50 places an  $A_1$  household at the top of its village income distribution. In contrast, the same income of 50 places an  $A_2$  household near the bottom of its village income distribution. Standard neoclassical theories would not predict that the preferences of an individual would crucially depend upon whether he or she is a part of an  $A_1$  or  $A_2$  household.

Bendor (N.d.) in his work on aspiration-based model of politics forwards that “it is vital to grasp the distinction between comparing outcomes to each other, as in classical utility theory, versus comparing an outcome to an aspiration level” (p. 3). The aspirations-based approach is one *family* of bounded rationality theories in which an “aspiration level” or “reference point” is central, partitioning objects of evaluations into two subsets: good versus bad or gains versus losses. Within this family of theories, the reference point acts as a threshold a person uses as a standard of evaluation (Helson 1964), where the objects of evaluation are in the domain of “good” or “gains” when above the threshold and in the domain of “bad” or “losses” when below the threshold. As such, the reference point partly impacts “how s/he frames (mentally represents) the choice problem at hand” (Bendor N.d., p. 2).<sup>12</sup>

Employing an aspirations-based framework rather than a neoclassical approach is non-trivial given the properties of prospect theory, an aspirations-based model. Recall that the value function  $v(x)$  of prospect theory incorporates the following three principles: (1) a reference point partitions the space of outcomes into regions of gains and losses; (2) there is loss aversion, where  $v(x) < |v(-x)|$ ,  $x > 0$ ; and (3) the function exhibits diminishing sensitivity, where  $v''(x) < 0$ ,  $x > 0$  and  $v''(x) > 0$ ,  $x < 0$ . These three principles lead to a value function that is convex in the domain of losses (risk-seeking) and concave in the domain of gains (risk-averse). As prospect theory holds that people are risk-seeking in the domain of bad (below-aspiration) payoffs, and risk-averse in the domain of good (above-aspiration) payoffs, I predict that when an individual’s aspiration window is open, she will be risk-seeking.

What impacts one’s aspirations or reference point? Recall that conditions (2) and (4) of Runciman’s conception of relative deprivation speak to the centrality of reference groups in affecting one’s reference point. In thinking through the predictions made by prospect theory, this is an important delineation

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<sup>12</sup>Some readers, believing that a person’s reference point is his status quo endowment whereas aspirations need not be, may object to my use of aspirations as reference points. But as noted by Bendor (N.d., p. 2), “a careful reading of Kahneman and Tversky’s seminal 1979 article shows that the idea that reference points are status quo endowments was an auxiliary hypothesis; it was not part of the theory’s axiomatic core. Abstractly, a reference point in prospect theory is simply a payoff that is assigned the value of zero, so that higher payoffs are positive, lower ones are negative, and the other axioms (e.g., loss aversion) hold. The source of the reference point — the status quo, peers’ payoffs, etc. — is not specified by the axiomatic core.” For further discussion of this issue see (Heath, Larrick, and Wu 1999, p. 104).

as an individualistic process of reference point formation has different predictions from a reference point formation that is impacted by one's reference group. Namely, for a poor individual, a purely individualistic process of reference point formation based on their current economic state would mean that the anticipated wages of a child working abroad would put the individual in the domain of gains, and so prospect theory would predict risk-averse behavior when considering economic options that are gainful. But if that parent's reference point has been elevated by information on others' relative affluence such that his/her status quo endowment is below his/her aspirations and economic opportunities are below the new reference point (e.g., an open aspiration window), the individual is risk-seeking when considering these economic opportunities (see Figure 1).

[Figure 1 about here]

What individuals want for themselves, or what parents want for their children, is conditioned by society in fundamental ways, and one such pathway is through the creation of individual aspirations for their own future, or for their children's future. My starting point is a view of individuals that aspirations do not exist in social isolation; rather, an individual's goals and standards of behavior are influenced by the person's own experiences, as well as those of other individuals "around" them. Individuals' aspirations are profoundly affected by the lives, achievements and/or goals of those who exist in their "aspiration window; a person uses the experience of others that are in her zone of "similar" or "attainable" individuals, as well as her own past experiences as the yardstick for setting goals for themselves (Genicot and Ray 2009; Ray 2006).<sup>13</sup>

Certainly, while uncommon in the fields of economics and political science, what Ray (2006) calls an "aspirations window" is an established theme in sociology. Over six decades ago, sociologists asserted that social structure can have influence via *reference groups* (Hyman 1942; Merton and Rossi 1950), defined as individuals in a focal actor's social environment who influence that actor's aspirations. Several lines of research in psychology have focused on the idea of reference groups, where a process of social comparisons with others impact affect and behavior. Social comparison theory (Festinger 1954; Suls and Wheeler 2000), equity theory (Adams 1965), and relative deprivation theory (Crosby 1976; Walker and Smith 2001) all posit that people do not simply evaluate the absolute value of their income,

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<sup>13</sup>I am agnostic on who is in one's "aspiration window" in this study, which neither impacts the theoretical claim or empirical argument; however, I direct interested readers to the rich literature in behavioral marketing, psychology and sociology that discusses structural factors (e.g., physical proximity) that make social comparison more likely (King and Summers 1967). Jones and Gerard (1967) discusses that one is more likely to compare oneself with an individual (or group) who is "at about the same level" on given attributes (e.g., education, employment sector, ethnicity, age, etc.) than with an individual who is either greatly superior to or greatly inferior to oneself on the given attributes.

performance, achievements, etc., but that these evaluations are heavily influenced by comparisons with others. A long history of work suggests that individuals’ goals or aims will be affected by those around them. As such, if one’s reference group is living in conditions of poverty, the person is more likely to suffer from an aspirations failure. If one sees examples of those in a better condition around her “aspirations window,” economic betterment is more likely to be viewed as the salient goal. Examples of possibilities are necessary, as otherwise, an aspirations failure may arise.

Poverty can be one’s lot due to an aspirations failure (Appadurai 2004; Duflo 2013; Macours and Vakis 2009; Ray 2006); however, this study asks what if an open “aspirations window” can create an unintended failure? What if a drive for economic betterment leads a person to make risky decisions creating a potential for negative outcomes (e.g., being trafficked)? My question derives from a claim that goals or aspirations serve as reference points that systematically alter outcomes in a manner consistent with the value function of prospect theory (Kahneman and Tversky 1979). In other words, an aspiration-level has the same properties as a reference point, and the value function created (in part) by the reference point. Thus, I use ‘reference points’ and ‘aspiration levels’ interchangeably (see Bendor (N.d.); Heath, Larrick, and Wu (1999) for further discussion of this issue) to mean a threshold that a person uses as a standard of evaluation (Helson 1964).

My theoretical claim can be formalized as follows. Let  $S_j$ , be individual  $j$ ’s income level or status quo endowment and  $R_j$  be defined as the set of individuals that individual  $j$  perceives as relevant (members of  $j$ ’s reference group). Drawing from reference group theory, if one’s relative position is made salient, individual  $j$ ’s reference point will be an aspiration level  $A_j$ , which is some weighted average of the incomes of individuals  $i \in R_j$  (the perceived group norm with regards to income) as opposed to one’s status quo:  $A_j = \sum_{i \in R_j} \alpha_i S_i$ , where  $\sum_{i \in R_j} \alpha_i = 1$ . As such, when one’s relative deprivation is made salient and one’s reference point is then aspiration  $A$  rather than one’s status quo endowment  $S$ , “gainful” economic options that would be in the domain of gains (see  $b_S(x)$  in Figure 1) will be in the domain of losses (see  $b_A(x)$  in Figure 1) if these gains are below  $A_j$ .

As such, the magnitude of vulnerability to negative outcomes (e.g., human trafficking) is partially the result of increased risk-seeking behavior. One such risk-seeking behavior could be unsafe migration. The extant literature on immigration is relevant to this work, as many forms of human trafficking is inextricably part of the migration process and traffickers fish in the stream of migration (Thomas 2002). The theoretical predictions I forward comport with established findings that relative deprivation

affect immigration patterns (Bhandari 2004; Stark 1984; Stark and Yitzhaki 1988; Stark and Taylor 1989). Stark (1984) and Stark and Taylor (1989) found that rural-to-urban migration and international migration decisions, respectively, are influenced by relative as well as absolute income considerations. Stark and his colleagues forwarded the relative deprivation hypothesis of international migration, where controlling for households' expected income gains from migration, the decision by households to send migrants to foreign labor markets is influenced by their initial perceived relative deprivation within the reference group. Specifically, given a household's initial absolute income and its expected net income from migrations, more relatively deprived households are more likely to send migrants to foreign labor markets than are less relatively deprived households. And this prediction holds up empirically when studying Mexico-to-U.S. migration decisions (Stark and Taylor 1989). Relative deprivation has also been found to be associated with greater political protest (Gurr 1970) and criminal behavior (Kawachi, Kennedy, and Wilkinson 1999), which can both be viewed as risky behaviors as well. The theory that I forward that marries theories of reference group and prospect theory provides a clear theoretical basis for why the relative deprivation hypothesis of international migration, protest, and criminal behavior holds up empirically.

In sum, when an aspirations window is open, an "exploitation window" for egregious human rights violations like human trafficking also opens. If Merton and Rossi (1950) and Ray (2006) are correct, and an individual's aspirations or reference point is based on the payoffs of people in the person's reference group, we will see greater risk-seeking behavior among those who feel that their wealth falls below that of their reference group. With greater willingness to accept riskier options, a space in which individuals can be taken advantage of opens. For instance, smooth-talking trafficking recruiters, highlighting the possibility of wealth and an improved quality of life for the entire family, can find individuals willing to leave their community with a simple promise of a legitimate employment opportunities. Samarasinghe (2008) finds that in Nepal, "the crossing of the border into India in search of employment opportunities is conditioned by internal household-specific needs *and* the externally created spaces that promise to accommodate their perceived aspirations and expectations of a better life" (p. 60). Certainly, as noted by Ray (2006), the absence of aspirations can lead those in poverty to remain in poverty. However, I claim that the presence of aspirations can have devastating effects, which have real policy implications.

## Nepal Context

An empirical test of the theory is conducted in Nepal, which is a country that has been highlighted as being a major transit point for modern slavery. International agencies have highlighted the fact that the human traffic that begins in Nepal and ends in Indian brothels is the busiest trafficking route of anywhere in the world. In addition, Nepal is a major transit point for other egregious forms of trafficking (e.g., forced child labor, organ trafficking, debt bondage) (ILO 2005*a*; Sanghera 2004). According to Baumann and Dharel (2014), based on a 2014 Gallup World Poll, 229,000 Nepalis were subject to some form of modern slavery in 2014. Given high levels of trafficking vulnerability within Nepal, it is an appropriate context to undergo this research study.

With the vast majority of trafficking stories beginning with a decision to put themselves at risk for exploitation rather than abduction or force at the outset, in this study, I seek to assess whether relative deprivation impacts individual's risk-tolerance, where greater risk-seeking behavior increases trafficking vulnerability. There are many examples of trafficking starting with rather mundane labor decisions, in which individuals have a sense that the decision comes with risk in Nepal. For instance, consider Nepali trafficking victims have often been and are increasingly recruited to work through seemingly legitimate employment agencies or brokerages, which employ a mixed strategy of sorts, sometimes providing the intended service of linking an individual to a legitimate position and sometimes recruiting trafficking victims. The 2009 U.S. State Department Trafficking in Persons (TIP) Report found the following:

Many Nepali men and women migrate willingly with the help of labor brokers and manpower agencies to work as domestic servants, construction workers, or other low-skill laborers, and subsequently face conditions indicative of forced labor such as withholding of passports, restrictions on movement, non-payment of wages, threats, deprivation of food and sleep, and physical or sexual abuse. Many are deceived about their destination country. Many Nepali trafficking victims are subjected to debt bondage, which can in some cases be facilitated by fraud and high recruitment fees charged by unscrupulous agents in Nepal. Many traffickers provide parents of victims a "salary advance" in order to place the victims in a state of indebtedness, which may then be used to compel those victims to perform labor or a service in order to avoid threatened serious harm. In 2008, there was an increased number of reports of Nepali men who had been recruited for work in Gulf States, but were subsequently trafficked into forced labor in Iraq and Afghanistan by manpower agencies.

The 2015 TIP Report mentions a Nepalese man who took a 36 percent interest rate loan and leveraged his family land to pay a recruitment agent \$1,500 for a job abroad (p. 17). Moreover, of the 800 labor recruitment agencies licensed by the Department of Labor in 2008, 220 have had their license revoked

for deceptive practices. The government also reported 400 cases filed under the Foreign Employment Act on behalf of workers for deceptive recruitment practices that may have lead to human trafficking, including 137 cases against manpower agencies (USDS 2009). With manpower agencies sometimes connecting individuals to legitimate work and sometimes facilitating trafficking, the decision to work with a manpower agency is a known risky endeavor. Increased likelihood to work with this type of employment agency is one example of the domain of vulnerability that is the focus of this research.<sup>14</sup>

While the levels victimization of Nepalis is noteworthy, which makes it an appropriate context to study human trafficking, Nepal is certainly not regarded as a unique country, and this study could have taken place in a number of other countries where human trafficking is noted as a major problem. According to the 2014 Global Slavery Index, Nepal ranks 20 out of 167 countries in both modern slavery prevalence (percent of population) and number of people in modern slavery (Foundation 2014). When considering the top five countries with regards to prevalence, Mauritania, Uzbekistan, Haiti, Qatar, and India top the list. With respect to total number of human trafficking victims, India, China, Pakistan, Uzbekistan, and Russia have the highest numbers.

## Study 1: Survey Experiment

To test my theoretical prediction, I first employ a controlled survey experiment conducted in Nepal to find micro-level evidence of whether perceived relative deprivation induces more risk-seeking behavior, potentially making the individual more vulnerable to predatory behavior like human trafficking.

### Data and Methodology

In March 2010, I successfully conducted an original survey experiment with 719 families from 83 villages in two districts — Makwanpur (in the *Pahar* hill region) and Bara (in the *Tarei* lowland region bordering India) — in the Central Development Region of Nepal.<sup>15</sup> Participants were recruited by interviewers, by randomly selecting every tenth home in their assigned village. If a home were empty, interviewers were instructed to go to the home next door. Nine respondents were targeted per village, randomly selecting an available adult within the house. Only respondents who could speak Nepali, were over 16 years of age (Nepal’s national cut off for being considered a legal adult), and had children

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<sup>14</sup>It is worth noting that these employment agencies are not unique to Nepal. For instance, the Deputy Director of EUROPOL noted that deceived victims have often been recruited “through seemingly legitimate employment agencies or brokerages, and once they arrive in the Member States they are forced into prostitution” (Bruggeman 2002).

<sup>15</sup>See the Nepal ISRC Factbook for district-level characteristics.

were interviewed. Each participant was promised 50 NRS (0.70 USD) for participating in the survey. To put this amount in perspective, at the time of data collection, the average individual in Nepal made approximately 3 USD per day, and the average daily wage among individuals in the sample was 155 NRS (2.21 USD).<sup>16</sup>

To determine whether increasing feelings of relative deprivation impacts risk tolerance, study participants were exogenously manipulated to feel more or less poor than others. In other words, I assess the effects of having a standard of evaluation or reference point that is higher (as opposed to below) than one’s status quo endowment by observing individual’s choices after priming individuals to feel that their wealth falls below (as opposed to above) some point of reference. I asked respondents the following question: “How much money did your family earn in cash/goods (e.g., value of your crops) last month? I then randomly assigned respondents to receive one of the following two sets of response options with different income brackets: (1) [Control Condition] “0-500 NRS,” “500-1000 NRS,” “1,000-2000 NRS,” and “More than 4,000 NRS”; and (2) [Relative Deprivation Treatment Condition] “0-25,000 NRS,” “25,000-50,000 NRS,” “50,000-100,000 NRS,” and “More than 200,000 NRS.”

Respondents assigned to the “control” group (50.21 percent of respondents) were induced to feel that their income was on the middle to upper part of the income range. Indeed, only 15.40 percent classified themselves as being in the lowest bracket and 53.79 percent classified themselves as being in the highest bracket. I refer to the group that received this question as the control group, as they were not primed to feel relatively deprived. Individuals that received the relative deprivation prime were the “treatment group” (48.12 percent of respondents), and induced to feel that their income was on the lower end of the income range. Among participants, 88.89 percent classified themselves as being in the lowest income bracket. However, an inspection of their respondents’ landholdings and other assets reveal that almost 100 percent are really in the lowest bracket.

The design of the prime is a variation of the prime used in Haisley, Mostafa, and Loewenstein (2008), and the logic of the design is based on extant research that has shown that offered response options for ordinal or interval questions can send unintended signals to respondents about what responses are customary for respondents to give. Many respondents assume that the ranges offered by a question are not arbitrarily selected by the researchers and instead are intended to collect a normal distribution of responses, and as such, most responses are in the middle of the offered ranges and fewer responses

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<sup>16</sup>The exchange rate noted here are based upon the exchange rate and wage levels during the time of data collection.

are in the most extreme ranges offered. Studies have demonstrated that response items have this intended impact; many respondents focus on the middle of the set of ranges offered in order to appear conventional. As such, when different ranges are offered, people provide different answers to the question. This has been demonstrated for a range of outcomes, like amount of television viewing (Shwarz et al. 1985), students' time spent studying (Rockwood, Sangster, and Dillman 1997), frequency of loneliness-related experiences (Richardson 2004), regular and irregular consumer behaviors (Menon, Raghurir, and Schwarz 1997), feeling annoyance by television commercials (Gaskell, O'Muircheartaigh, and Wright 1994), and frequency of exercise (Courneya et al. 2003). As such, the different income brackets that are offered in the treatment versus control group provide respondents with a different set of expectations on what the average person *should* have, and acts as a subtle prime to induce those in the treatment group to feel relatively deprived. The midpoint response provided in the income question changes the reference point that respondents focus on, and their sense of relative economic well-being is then assessed in relation to this reference point.

This study considers three dependent variables as measures of risk-tolerance asked in a module *after* implementing the prime: (1) participation in a lottery; (2) a choice between a low-paying low risk job and a high-paying high risk job for oneself; and (3) a selection between the same low-paying low risk job and a high-paying high risk job for one's child. To implement the lottery, participants were handed the 50 NRS that was promised to them for participating in the survey in five 10 NRS notes and then presented with the option of participating in a lottery sponsored by a local NGO. They were told that they could keep the money or they could forgo some or all of their earnings to participate in a lottery that would give the winner 5,000 NRS. They were also informed that only respondents in a survey of less than 1,000 individuals were eligible to participate in the lottery, and two trusted NGOs with a large presence in the study areas were overseeing the lottery.<sup>17</sup> Following the lottery participation question, individuals were asked about their experience with lotteries, in order to control for gambling preferences.<sup>18</sup> A quarter of respondents participated in the lottery, and 69

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<sup>17</sup>The experiment was near the end of the survey because I wanted subjects to "earn" the money, instead of merely endowing them with it, to reduce the house money effects — the propensity for people to consume or risk money that they have received as a result of a windfall (Ackert et al. 2006; Henderson and Peterson 1992; Thaler and Johnston 1990). Moreover, for ethical considerations, I did not want participants to spend their own income. As 42 percent of respondents purchased one ticket (retaining 80 percent of their honorarium for participating in the survey) because of the novelty of the lottery, I deem participation to equal purchasing two or more tickets. Many respondents reported that they wanted to purchase one ticket out of curiosity. Given the novelty issue, participation is equated to purchasing more than one ticket (note that people were allowed to purchase up to five tickets).

<sup>18</sup>Question wording: "Have you participated in a lottery before?" (Response Options: "No," "Yes, once," "2-3 times," and "More than three times").

percent had exposure to lotteries before participating in the study (see Table B.1 in Online Appendix B). I use lottery participation as one measure of risk-taking for four reasons. Firstly, participation in a lottery is observable. Secondly, extant literature on why individuals purchase lottery tickets find that participation in a lottery demonstrates risk-taking to, in part, correct for low-income status (Friedman and Savage 1948). Third, pursuing some economic opportunities is analogous to a gamble. Consider a migrant worker. As noted in the section on the Nepali context, Nepalis need to rely on a manpower agency, which is known for being predatory with high fees (Verité N.d.). Hence, the act of becoming a foreign migrant worker can be likened to spending on a gamble, where they may win big with regards to a great job or lose big (in terms of fees, lost wages, and being victimized). There is a purchasing price in the sense that individuals need to pay a broker a fee. This fee is paid with the hope that they will be linked with a job that will pay substantially more than what they could get paid locally. However, they may not be linked with such a job, lose the payment they made to work with the manpower agency, and be in a worse situation than when they first started. Fourth, a true measure of risk-taking that would make an individual susceptible for exploitation (e.g., mimicking a trafficker that offers an employment opportunity) is not ethically feasible.

However, since a hypothetical employment question is feasible and ethically appropriate, as a second measure of risk-taking, I asked respondents a question regarding their preferred occupation for themselves: “Which job would you choose? (Option A: 1,250 NRS/monthly with a low chance of disabling injury or Option B: 6,000 NRS/monthly with a high chance of disabling injury).” Additionally, as a third measure of risk-taking, the same question was posed, asking respondents to think about their child instead of themselves: “Which job would you choose for your child? (Option A: 1,250 NRS/monthly with a low chance of disabling injury or Option B: 6,000 NRS/monthly with a high chance of disabling injury).” It is worth noting that in Nepal, 42 percent of children between the ages of 6 and 14 work, and is part of a household’s strategy for dealing with poverty (UNICEF 2003). Given that all respondents had at least one child, when study participants were asked to think about a job for their child, respondents were not thinking about a hypothetical child. Within the study sample, 28 percent and 16 percent of respondents preferred the “risky” job for themselves and their child, respectively (see Table B.1 in Online Appendix B).

To improve the precision of the estimates, the following demographic characteristics were considered

as control measures: (1) how often foreign programming was viewed;<sup>19</sup> (2) exposure to those who have migrated for work;<sup>20</sup> and (3) a number of demographic characteristics.<sup>21</sup> Descriptive statistics of all measures are presented in Table B.1 in Online Appendix B. While descriptive statistics for raw measures are reported, all survey measures were recoded to lie between 0 and 1 for all analyses reported in the results section, allowing us to interpret all coefficient estimates in linear regressions as representing a  $100\beta$  percentage-point movement in the dependent variable.

## Results

I first conduct a simple difference of means test to assess the impact of one’s relative deprivation on one’s preference for risky options — (1) the high paying and highly unsafe job over the low paying but highly safe job for his/her child and (2) lottery participation, clustering standard errors at the village-level to correct for potential correlation between the disturbances of observations. Note that the observed balance between the treatment and control group allows me to make causal inferences. As presented on Table B.2 in Online Appendix B, tests to assess covariate balance between the treated and control groups show that there is balance on observable characteristics, suggesting that results are internally valid. As shown in Figure 2, being primed to feel relatively poor increases one’s preference for the unsafe job for oneself, the unsafe job for one’s child, and gambling in a lottery by 5.42 percent ( $P=0.09$ ), 7.48 percent ( $P=0.002$ ), and 5.00 percent ( $P=0.06$ ), respectively.

[Figure 2 about here]

Given that each of the outcome variables of interest are binary variables, employ a logistic regression model in estimating the effect the relative deprivation prime on risk tolerance given outcome measures are binary, and consider models with and without a set of control measures. I control for what I call “exposure,” which is are experience factors that are associated with lottery participation (e.g., experience with lotteries) and job preferences (e.g., whether they were exposed to families sending remittances and children being sent away for work). I also include income, as measured by whether one owns land,<sup>22</sup> and the following individual-level demographic characteristics in my regression models:

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<sup>19</sup>Do you watch an international news channel such as CNN, BBC, MSNBC, STAR, etc.?” (Response Options: “Yes,” “No”).

<sup>20</sup>(1) “How many families do you know that have migrated for work?” (Response Options: “11+ individuals,” “6-10 individuals,” “1-5 individuals,” “No one”)

<sup>21</sup>Gender, age, age squared, education-level, marital status, religious identity, and asset (land) ownership.

<sup>22</sup>Given that the question on household income was designed to be the treatment, a non-standard income question is employed.

gender (female = 1), age, education level (years of education), marital status (married = 1), religion (Hindu and Buddhism make up over 90 percent of the sample, and other religions are the omitted category), and whether they are Tamang, an indigenous minority group in Nepal considered to be low caste, and particularly vulnerable to exploitation (non-Tamang is the omitted category). Adjusted estimates continue to cluster standard errors at the village-level.

[Table 1 about here]

As shown in columns (1), (3), and (5) of Table 1), absent any control measures, the relative deprivation prime translates to greater risk-tolerance with respect to both of the labor option questions ( $P=0.06$  and  $P<0.001$ , respectively), as well as the behavioral lottery measure ( $P=0.05$ ). The effect of the relative deprivation prime on an individual’s preference for the risky job option for oneself and one’s child when adjusting for a battery of controls and interviewer fixed effects is 5.48 ( $P=0.07$ ; see column (2) of Table 1) and 7.13 percent ( $P=0.001$ ; see column (4) of Table 1), respectively. The effect of the relative deprivation prime on lottery participation is 4.26 percent ( $P=0.08$ ; column (6) of Table 1). Note that marginal effects were computed at the means of each of each of the control variables.<sup>23</sup>

As a manipulation check, each individual was asked the following question prior to receiving the experimental prime and the outcome risk measures of interest: “In your opinion, relative to others in your community, how poor is your household? (Response Options: Very Poor, Somewhat Poor, Slightly Poor, Neither Rich nor Poor, Slightly Rich, Somewhat Rich, Very Rich).”<sup>24</sup> If the proposed mechanism is at work, the prime should only affect lottery participation and risky job selection among those who did not already feel relatively poor. A prime that affects people’s sense of relative economic position to feel relative deprived should not have had an impact on those that felt relatively deprived to begin with, and as such, we empirically should not be able to detect a difference in risk-seeking behavior between the control group and the treatment group for those in which the treatment should have no impact. In other words, in an experimental exercise to tease out the causal impact of relative deprivation on engaging in risky behavior, we should only see differences in risk-seeking behavior between the control

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<sup>23</sup>As a robustness check, I assessed whether treatment effects differed depending on the interviewer, and found no such interaction was present.

<sup>24</sup>I note “community” in this question to direct respondents to think about individuals that are physically or socially proximal, and hence, a relevant reference point for wealth. However, the exact reference group that individuals consider when thinking about their economic condition could be more narrow (e.g., friends) or more broad (e.g., other individuals of the same age). There were no respondents who selected the “Very Rich” option, and the summary statistic for this measure can be found in Table B.1 in Online Appendix B. Again, this measure was recoded to lie between 0 and 1 for all analyses reported in the here, allowing us to interpret all coefficient estimates in linear regressions as representing a  $100\beta$  percentage-point movement in the dependent variable.

group and the treatment group among those that had their sense of relative deprivation actually altered by the treatment. For those who felt relatively deprived before the treatment, we should not be able to empirically detect a change in risk-seeking behavior as a result of the treatment because even those in the control group would be making their decisions feeling relatively deprived.

[Table 2 and Figure 3 about here]

When the likelihood of selecting the high risk labor option or participating in the lottery is estimated for both the control and treatment groups by perceived relative poverty and wealth, we see just that. The effect of the prime is driven entirely by those who did not already feel relatively deprived (see Table 2). When we look at people’s preferences for the risky job for oneself, we see that the difference in likelihood between the treatment and control condition grows as perceived relative wealth (pre-prime) is higher ( $\beta=1.36$ ,  $P=0.02$ ; see column (1) of Table 2 and Figure 3(a)). We see a similar pattern when looking at preferences for the risky job for one’s child ( $\beta=1.52$ ,  $P=0.03$ ; see column (2) of Table 2 and Figure 3(b)). In other words, the effect sizes are greatest among those who considered themselves relatively rich prior to receiving the prime. We see similar results for lottery participation as well, where the largest differential in lottery participation by treatment condition is among those who felt relatively rich prior to being “treated” ( $\beta=1.79$ ,  $P=0.006$ ; see column (3) of Table 2 and Figure 3(c)).<sup>25</sup>

## Study 2: Relative Deprivation and Trafficking Incidence

The theory of relative deprivation is concerned with the feelings triggered by intragroup inequalities (Runciman 1966). The previous micro-level experiment revealed that a sense of relative deprivation engenders more risk-seeking behaviors in domains that may increase a person’s vulnerability to dangers like human trafficking. To further test this hypothesis, I now turn to a macro-level analysis, assessing whether relative deprivation within a sub-district is linked with higher trafficking incidence in subsequent years. This is feasible due to the work of Yitzhaki (1979), which operationalized how we can measure relative deprivation. Yitzhaki (1979) showed that an interpretation of the Gini coefficient is consistent with relative deprivation, as defined by Runciman (1966). One plausible conception of deprivation in a society can be represented by  $\mu G$ , where  $G$  is the Gini coefficient and  $\mu$  is the income

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<sup>25</sup>While there are more lottery participants within the control group than in the treatment group among those who describe themselves as “very poor” and “somewhat poor” relative to others in their community, this pattern dramatically reverses among those who describe themselves as “slightly poor,” “neither rich nor poor,” “slightly rich,” “somewhat rich.” Recall that there were no subjects that considered themselves relatively “very rich” (see Figure 3(c)).

that each person would have in an egalitarian society (i.e., the average income). Recall that the Gini coefficient is a measure of inequality, where 0 expresses perfect equality (e.g., everyone has exactly the same income) and 1 expresses maximal inequality (e.g., one person has all the income). Online Appendix A provides an overview of this conception.

## Data and Methodology

Study 2 relies upon the the Nepal Living Standards Survey 2003/04 (NLSS II) and the Women’s Cell of Nepal’s Police Department data. NLSS II is a national household survey conducted by the Central Bureau of Statistics, following the methodology of the Living Standards Measurement Study (LSMS) survey developed by the World Bank, providing nationally representative data on different aspects of households’ welfare (consumption, income, housing, labor markets, education, health, etc.). The Women’s Cell of Nepal’s Police Department is responsible for documenting reported trafficking incidents. Between 2003 and 2007, there have been 168,735 documented cases of human trafficking in Nepal, and 72 out of the 75 sub-districts of Nepal have been categorized as prone or non-prone to trafficking on a seven-point scale.<sup>26</sup> Figure 4(a) displays a map of trafficking vulnerability. The ten sub-districts categorized as most and least prone account for 38.7 percent and 0.20 percent of reported trafficking incidents, respectively.

[Figure 4 about here]

We see a glimpse that poverty does not fully explain the variation in human trafficking incidents when observing the map of reported trafficking incidents (Figure 4(a)) and the map of poverty levels, measured by the human development index or GDP per capita levels (see Figure 4(b)). For instance, the northwestern region of Nepal is the most impoverished region of the country, and yet, trafficking levels in the region are among the lowest. Accessibility could be a factor, as the northwestern region of Nepal is not readily accessible by roads; however, this is not a satisfying answer. For instance, Bara, a flat region of the country with a major freeway to India, is substantially more accessible than Makwanpur, which is a hilly mountainous area, and yet, trafficking incidents are substantially higher in Makwanpur than in Bara. Along the seven-point scale, with higher numbers reflecting higher trafficking incidence, Makwanpur is considered a six while Bara is considered a four. Mapping poverty levels against trafficking incidents in Nepal shows only a very weak relationship.

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<sup>26</sup>Indeed, there is likely high levels of underreporting; however, there is no evidence that levels of underreporting systematically differ by sub-district.

To explore the relationship between income levels, relative deprivation, and trafficking data further, I link human trafficking data with national household welfare data at the sub-district level. I operationalize the effect of relative deprivation and poverty levels on human trafficking level by estimating the following regression model:

$$HT_i = \beta_0 + \beta_1 RD_i + \beta_2 RD_i^2 + \beta_3 Y_i + \gamma \Gamma_i + \epsilon_i$$

where  $HT_i$  is the seven-point human trafficking scale in sub-district  $i$ .  $RD_i$  denotes sub-district  $i$ 's relative deprivation level, and  $Y_i$  is sub-district  $i$ 's income level.<sup>27</sup> I include a squared term for relative deprivation to allow for a curvilinear relationship between relative deprivation and human trafficking incidence, given extant research detecting concavity in the relationship between inequality, which is related to relative deprivation (Yitzhaki 1979), and outcome measures like discontent and political instability (Nagel 1974; Panning 1983). I use consumption rather than a monetary indicator of income level for  $Y_i$  and to calculate relative deprivation levels. Consumption may be a better proxy than monetary income for three reasons: actual consumption measures a person's well-being in terms of meeting current basic needs while income is just an element that allows such consumption; consumption is usually measured with more reliability than income; and consumption better reflects a family's long-term welfare, as it captures that family's ability to smooth out income fluctuations.

I introduce a vector of sub-district-level covariates, which I denote as  $\Gamma_i$ . I account for the civil conflict between 1996 and 2006, by including a control for conflict-affectedness, as measured by the Institute for Conflict Management.<sup>28</sup> I also consider the number of telephone lines and kilometers of roads in a sub-district, as well as the sub-district's literacy level (percent literate), population size and geographic belt (e.g., Mountain, Hill, or Terai).<sup>29</sup> Despite the analysis being a correlational exercise, reverse causality concerns are mostly addressed because all key right-hand-side measures (e.g., relative deprivation and income) along with all control measures, apart from conflict levels, were drawn from the NLSS survey where data collection was conducted prior to our outcome measure of interest.

In 2003, the average sub-district in Nepal had a Gini index value of 0.32 (1.0=maximum inequality); a per capita annual consumption level of 15,663.48 NRS (224 USD); and had 30 percent of its population

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<sup>27</sup>Panel analysis was not possible as the human trafficking incidence measure is not available annually.

<sup>28</sup>The measure was on a three-point scale: high, medium, and low. For greater information on the classification and a map of conflict-affectedness, see

<http://www.satp.org/satporgtp/countries/nepal/database/conflictmap.htm>.

<sup>29</sup>NLSS defines literacy rates as the percent of the population aged 6 years and older is literate. Being literate is defined as those who answer "Yes" to the following two questions: (1) Can you read a letter? (2) Can you write a letter?

living below the poverty line as estimated by the Central Bureau of Statistics.<sup>30</sup> Additionally, the average sub-district had 4,681 telephone lines, about 245 kilometers of roads, and a population of 320,298. Nineteen percent of the regions are located in the northern “mountain” region, 27 percent are located in the central “hilly” region, and the remaining 53 percent are considered to be within the southern “Terai” region. Finally between 1996 and 2006, the average subdistrict was considered to have a medium level of conflict (1.51 on a three-point-scale). Table B.3 in Online Appendix B reports descriptive statistics for all measures included in the analysis. Again, while descriptive statistics for raw measures are reported, all survey measures were recoded to lie between 0 and 1 for all analyses reported in the results section, allowing us to interpret all coefficient estimates in linear regressions as representing a  $100\beta$  percentage-point movement in the dependent variable.

## Results

Indeed, when I look at nationally representative data on household welfare in Nepal and trafficking reports, relative deprivation is strongly associated with reported trafficking incidents. This association remains robust even after controlling for average per capita consumption levels, the share of the population living below the poverty line, whether or not the area was affected by the conflict, number of telephone lines, access to roads, population size, and geographic location.

When I link reported trafficking levels and relative deprivation, there is a strong positive relationship between relative deprivation and trafficking incidence ( $\rho = 0.13$ ,  $P < 0.001$ ; see Figure 5). When I account for absolute income levels, as measured by average per capita consumption and the share of individuals living below the poverty line, relative deprivation remains a strong predictor of trafficking incidents ( $P < 0.001$ ; see column (1) of Table 3). When controls for conflict level, the number of telephone lines, availability of roads, population and geographic belt (e.g., Mountain, Hill or Terai) are included, relative deprivation remains a significant predictor of trafficking incident levels ( $P = 0.02$ ; see column (2) of Table 3).<sup>31</sup>

[Table 3 and Figure 5 about here]

When analyzing observational data, we worry that the assumption that the effect of our treatment

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<sup>30</sup>The detailed methodology of constructing price indexes and poverty lines is provided in “Poverty Trends In Nepal (1995-96 and 2003-04), His Majesty’s Government of Nepal, National Planning Commission Secretariat, Central Bureau of Statistics, September, 2005, available from the Nepal CBS or from the World Bank.

<sup>31</sup>Table B.4 in Online Appendix B presents ordered logistic regression results. Significance of the relationship between relative deprivation and human trafficking levels remain significant.

is exogenous when conditioned on a set of observed covariates is not realistic. Could the results we report be accounted for by unobserved sub-district characteristics that explain both trafficking incidence and relative deprivation rather than a result of relative deprivation? To increase our confidence that unobserved selection effects do not account for the key results, I consider the following thought experiment: model a hypothetical unobserved variable  $U$ ; how influential would the unobserved measure need to be in order to reduce the substantive impact associated with relative deprivation on trafficking incidence? This  $U$  essentially represents endogeneity, which may bias the result. The question is then how much bias, relative to the observed covariates, would be enough to negate our conclusion?

To answer the above question, we conducted a sensitivity analysis based on Imbens (2003). The downward sloping curve in Figure 6 represents how strongly  $U$  would have to be correlated with (1) our measure of relative deprivation and (2) our outcome measure (trafficking incidence level) to reduce the impact of relative deprivation on trafficking incidence to a level indistinguishable from zero. As such, the curve represents a threshold beyond which the hypothetical  $U$  can annul the substantive estimated effect associated with relative deprivation. In other words, the curve provides an omitted variable bias threshold that would cause the significance of the correlation (at a 10 percent significance level) to disappear. To judge whether the threshold is high or low, let us turn to observed covariates. As the graph indicates, apart from absolute poverty (as measured by income levels and the share of the population living below poverty line) and population size, no observable covariate that is correlated with trafficking incidence (the “+” on the figure) comes close to exceeding this threshold, implying that the results are not highly sensitive to the unconfoundedness assumption, and hence, generally robust to endogeneity concerns. Note that relative deprivation, by definition is correlated to absolute poverty as relative deprivation is defined as  $\mu G$ , where  $G$  is the Gini coefficient and  $\mu$  is the average income in the society. It is also not surprising that population is highly correlated with trafficking incidence level, as the human trafficking incidence measure is based on an absolute count of human trafficking cases rather than cases per capita. Ideally, data on the exact number of human trafficking incidents in a region would be known, and an incidence per capita measure computed as the outcome measure. However, only data on whether a sub-district was categorized as prone or non-prone to trafficking on a seven-point scale is available, and hence, population has to be considered in the model as a predictor variable.

[Figure 6 about here]

## Discussion

Through an examination of aspiration-based models of decision-making, I claim that fostering relative deprivation can cause greater vulnerability to exploitation. Solving the human rights problem of contemporary slavery is not simply a matter of improving awareness or legal protection in the form of stronger laws (Kelley and Simmons 2015; Lloyd and Simmons 2015) or intensifying state commitment to implementing laws (Lupu 2013) or strengthening law enforcement (Bolkovac and Lynn 2011). While improving awareness, legal protections and enforcement is certainly important, in considering policy levers to combat human trafficking, it is important to consider how potentially vulnerable individuals make decision. Informing families about human trafficking is insufficient if they are willing to accept the risk of being exploited given a potential upside (e.g., a better job).

My claim has implications for how processes like globalization should be managed. Indeed, globalization has facilitated great prosperity. However, the forces of globalization have the power to foster increased inequality and therefore, increased relative deprivation, within and between countries (e.g., Mazur 2000; Milanovic 2002). Moreover, it can blur physical boundaries, making communities that were once entirely foreign a part of individuals' reference group. While modern information technology has not yet penetrated every remote region, information about employment opportunities and the largess that exists outside their neighborhood has filtered through to even the most removed communities through many avenues (Samarasinghe 2008).

With images of the wealth that exists outside their community, coupled with greater mobility of individuals, the types of individuals in a person's reference group may change. With new images of families flaunting their newly acquired consumer goods and money being within people's cognitive window, more individuals may feel an aspirations gap — their reference point or standard of evaluation will be higher than their current situation — and place them in the domain of bad (below-aspiration) payoffs.

Globalization has been highlighted as instrumental in the escalation of world's slave trade, with decreased border controls, cheaper international travel, an increased demand for the cheapest products and a lack of regulation so that flows of goods are determined by worldwide competition and under worsening conditions, increased travel and tourism, and the use of child servants in the wider tourist industry (Van Den Anker N.d.). One factor that is not underscored enough is the impact of relative deprivation and the increased information or misinformation about life in other regions being affluent.

I argue that a surge in perceived relative deprivation, deriving from people's access to information or misinformation about wealth within and outside one's community, can shift people toward risky decisions in a way that creates a "bumper crop of potential slaves" (Bales 2001).

This research helps clarify limitations of two popular policy arms to reduce human trafficking: poverty alleviation programs, as well as awareness campaigns. Poverty alleviation programs may have an unintended consequence and awareness campaign programs may have limited effects. Investments in communities that raise aggregate incomes, but increase relative deprivation, could result in an increase in risk-seeking behavior among the relatively deprived. Additionally, mass media campaigns that may serve to inform individuals about the risks of unsafe migration and certain labor opportunities will have limited effect if individuals are simultaneously becoming more risk-tolerant. Acknowledging that potential human trafficking victims often take immense economic risk, especially when perceived relative deprivation is salient, is important when devising policy instruments and programs that can help reduce human trafficking incidents. This study points to the importance of programs and policies that can help individuals navigate choices that are risky. For instance, regulating manpower agencies that help link individuals to job abroad, creating formal credit options in developing countries so that people are less likely to fall prey to bonded labor, offering safer pathways for migration. Additionally this study points to the fact that relative deprivation should be another criterion when identifying locations that should be targeted for human trafficking programming and policy shifts.

Finally, while this study focused on human trafficking vulnerability, my theoretical prediction is quite general. As such, the theoretical claim in this work calls for future research on how relative deprivation can be linked to a wide spectrum of risk-seeking behavior. Comprehensive research on the consequences of relative deprivation on decision-making will allow for a more comprehensive assessment of the potential effects of a wide-range of policies and programs.

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Table 1: Logistic Regression Predicting Risk-Seeking Behavior

	Risky Job for Oneself		Risky Job for Child		Lottery Participation	
	(1)	(2)	(3)	(4)	(5)	(6)
Relative Poverty Prime	0.27*	0.28*	0.55***	0.54***	0.26**	0.23*
	(0.14)	(0.14)	(0.14)	(0.14)	(0.13)	(0.13)
Consume Foreign News		0.11		0.31		-0.04
		(0.30)		(0.36)		(0.30)
Number of Children		-0.00		0.51		0.48
		(0.85)		(0.73)		(0.81)
Gender		-0.25		0.22		-0.49**
		(0.25)		(0.30)		(0.22)
Age		5.54**		3.23		-4.46
		(2.62)		(4.01)		(3.92)
Age <sup>2</sup>		-6.82***		-4.31		3.22
		(2.42)		(4.03)		(3.36)
Education		0.10		0.19		-0.62
		(0.36)		(0.50)		(0.45)
Married		0.56		-0.12		-0.30
		(0.38)		(0.49)		(0.53)
Own Land		-0.38		-0.45		-0.03
		(0.34)		(0.41)		(0.29)
Tamang		-0.40		-0.72*		0.01
		(0.46)		(0.41)		(0.22)
Hindu		-0.14		-0.75*		0.52
		(0.40)		(0.45)		(0.34)
Buddhist		0.54		-0.12		-0.42
		(0.46)		(0.56)		(0.49)
Constant	-1.05***	-2.40***	-1.93***	-1.74	-1.21***	0.40
	(0.18)	(0.86)	(0.23)	(1.16)	(0.22)	(1.18)
<i>N</i>	716	683	715	682	719	678
Pseudo <i>R</i> <sup>2</sup>	0.003	0.04	0.01	0.04	0.003	0.03

*Notes:* The three dependent variables are (1) preference for the riskier job option for oneself (2) preference for the riskier job option for one's child; and (3) participation in the lottery. Exposure to migration were included in columns (2) and (4) and lottery experience was included in column (6). Regression SEs are in parentheses, and were clustered at the village-level. All measures were recoded to be between 0 and 1.

\*P < 0.10, \*\*P < 0.05, \*\*\*P < 0.01 (two-tailed).

Table 2: Logistic Regression Predicting Risk-Seeking Behavior, Manipulation Check

	<b>Risky Job for Oneself</b> (1)	<b>Risky Job for Child</b> (2)	<b>Lottery Participation</b> (3)
Relative Deprivation Prime	-0.28 (0.27)	-0.07 (0.32)	-0.48** (0.22)
Perceived Relative Wealth Pre-Prime	-0.88* (0.48)	-0.79 (0.55)	-1.23* (0.69)
Prime x Perceived Relative Wealth Pre-Prime	1.36** (0.60)	1.52** (0.71)	1.79*** (0.65)
Consume Foreign News	0.12 (0.29)	0.29 (0.35)	0.03 (0.27)
Number of Children	0.03 (0.88)	0.58 (0.73)	0.54 (0.86)
Gender	-0.21 (0.26)	0.23 (0.29)	-0.43* (0.23)
Age	5.31** (2.69)	2.83 (4.18)	-4.42 (3.77)
Age <sup>2</sup>	-6.58*** (2.38)	-3.99 (4.18)	3.30 (3.23)
Education	0.17 (0.34)	0.21 (0.49)	-0.54 (0.46)
Married	0.62 (0.38)	-0.08 (0.47)	-0.28 (0.55)
Own Land	-0.39 (0.34)	-0.50 (0.39)	-0.02 (0.29)
Tamang	-0.42 (0.47)	-0.74* (0.40)	0.05 (0.23)
Hindu	-0.17 (0.41)	-0.80* (0.46)	0.44 (0.34)
Buddhist	0.50 (0.49)	-0.17 (0.55)	-0.54 (0.49)
Constant	-2.08** (0.98)	-1.28 (1.24)	0.75 (1.18)
<i>N</i>	679	678	675
Pseudo <i>R</i> <sup>2</sup>	0.04	0.04	0.04

*Notes:* The three dependent variables are (1) preference for the riskier job option for oneself (2) preference for the riskier job option for one's child; and (3) participation in the lottery. Exposure to migration were included in columns (1)-(2) and lottery experience was included in column (3). Regression SEs are in parentheses, and were clustered at the village-level. All measures were recoded to be between 0 and 1. \*P < 0.10, \*\*P < 0.05, \*\*\*P < 0.01 (two-tailed).

Table 3: Regression Predicting Trafficking Incident Levels (2003-2007)

	(1)	(2)
Relative Deprivation	3.39*** (0.64)	2.08** (0.94)
Relative Deprivation <sup>2</sup>	-0.15 (0.50)	-0.57 (0.40)
Per Capita Consumption	-3.42*** (0.73)	-1.95* (1.06)
Share Below Poverty Line	-0.53*** (0.19)	-0.30 (0.25)
Literacy Level		0.11 (0.16)
Conflict Level		0.01 (0.09)
Telephone Lines		-0.43 (0.36)
Road (km)		-0.04 (0.18)
Population		1.19*** (0.40)
Hill		0.10 (0.08)
Terai		-0.27* (0.21)
Constant	0.81*** (0.12)	0.36* (0.20)
<i>N</i>	72	71
Pseudo <i>R</i> <sup>2</sup>	0.23	0.39

*Notes:* Dependent variable is level of human trafficking incidents, by district. Regression SEs are in parentheses and \*P < 0.10, \*\*P < 0.05, \*\*\*P < 0.01 (two-tailed). District levels were estimated using sampling weights. The omitted region is the “Mountain” region. All measures are recoded to be between 0 and 1.

Figure 1: Status Quo (S) vs. Aspiration Level (A) as Reference Point

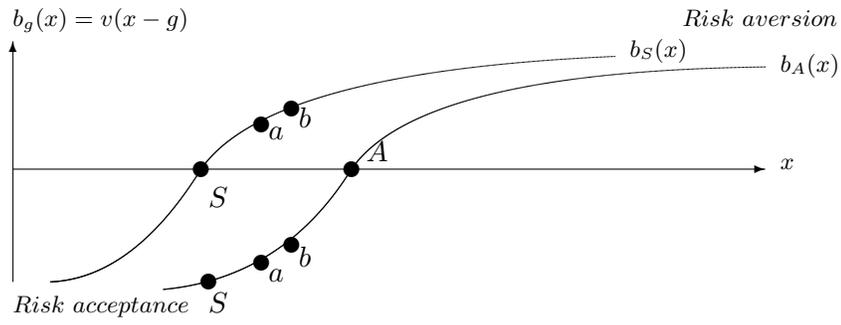
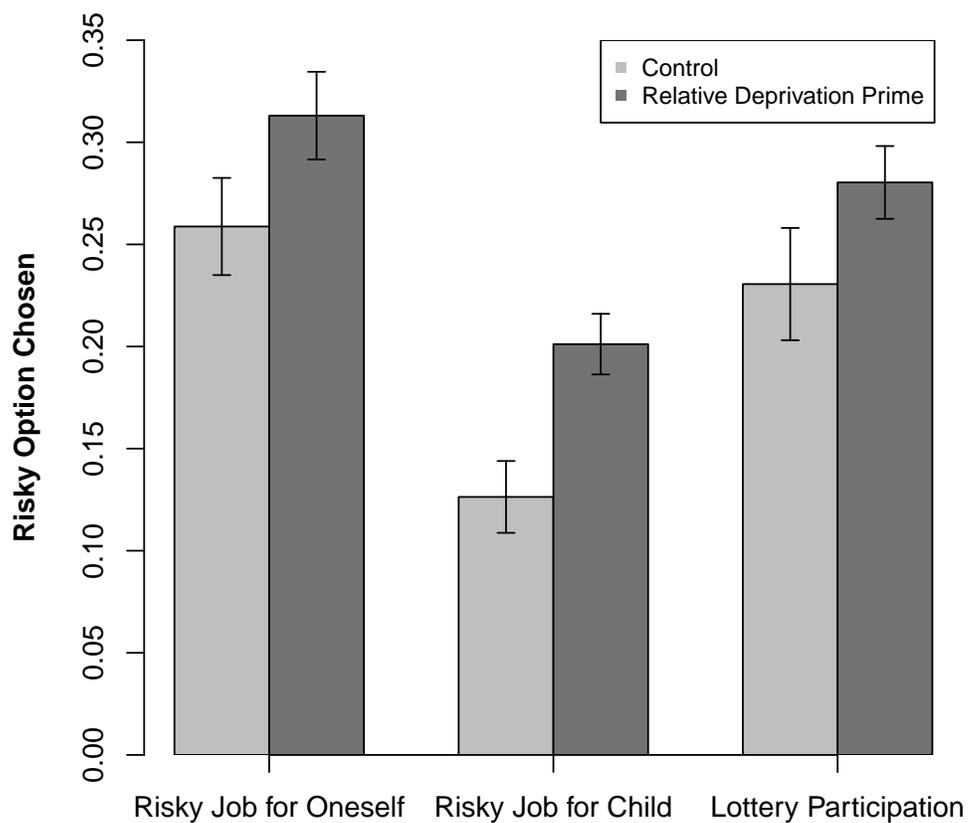
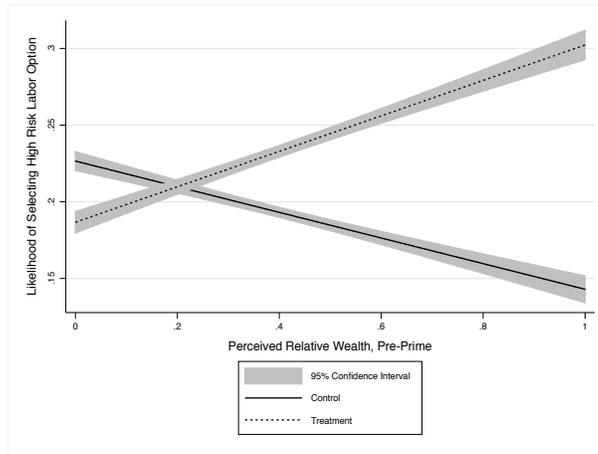


Figure 2: Summary of Effects of Relative Deprivation Prime on Risk-Seeking Behavior

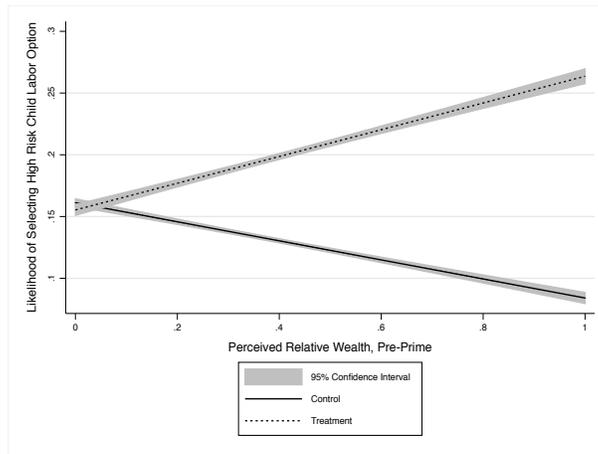


*Note:* Each bar graph includes 95 percent statistical significance bars.

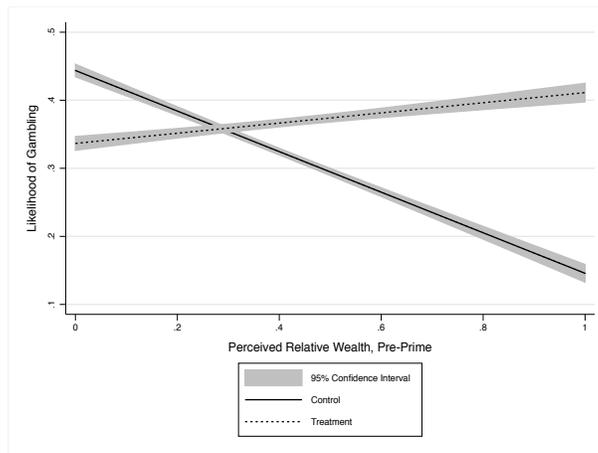
Figure 3: Manipulation Check



(a) Risky Job for Oneself



(b) Risky Job for Child

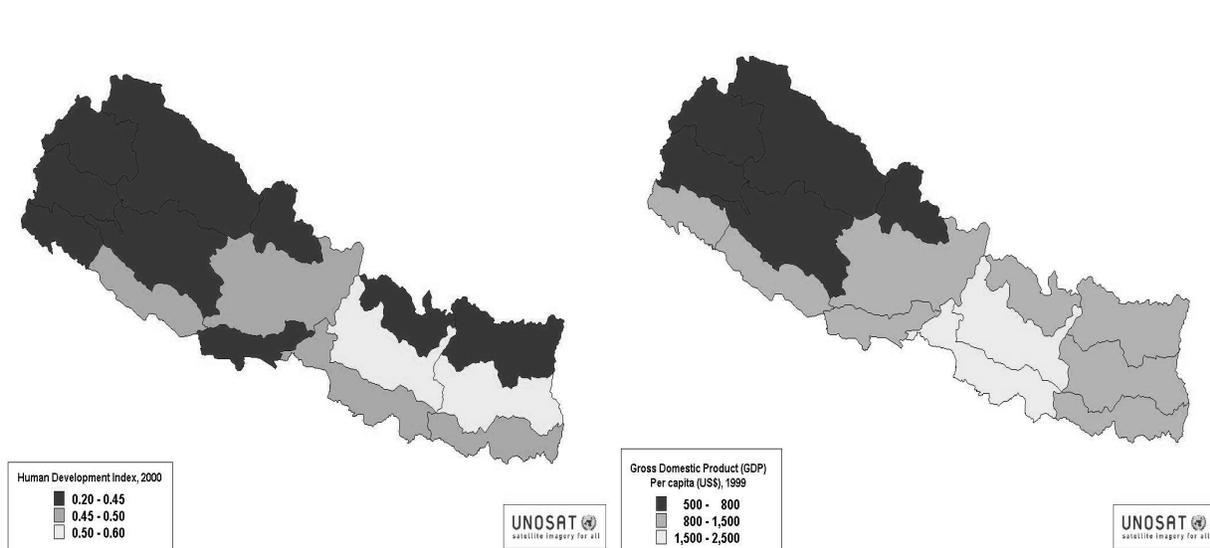


(c) Lottery Participation

Figure 4: Nepal District Mapping



(a) Mapping of Reported Trafficking Incidents, by Sub-District (2003 - 2007)



(b) Mapping of Human Development Index and GDP Per Capita Levels, 2000

Figure 5: Trafficking Levels and Relative Deprivation, by Sub-District (2003 - 2007)

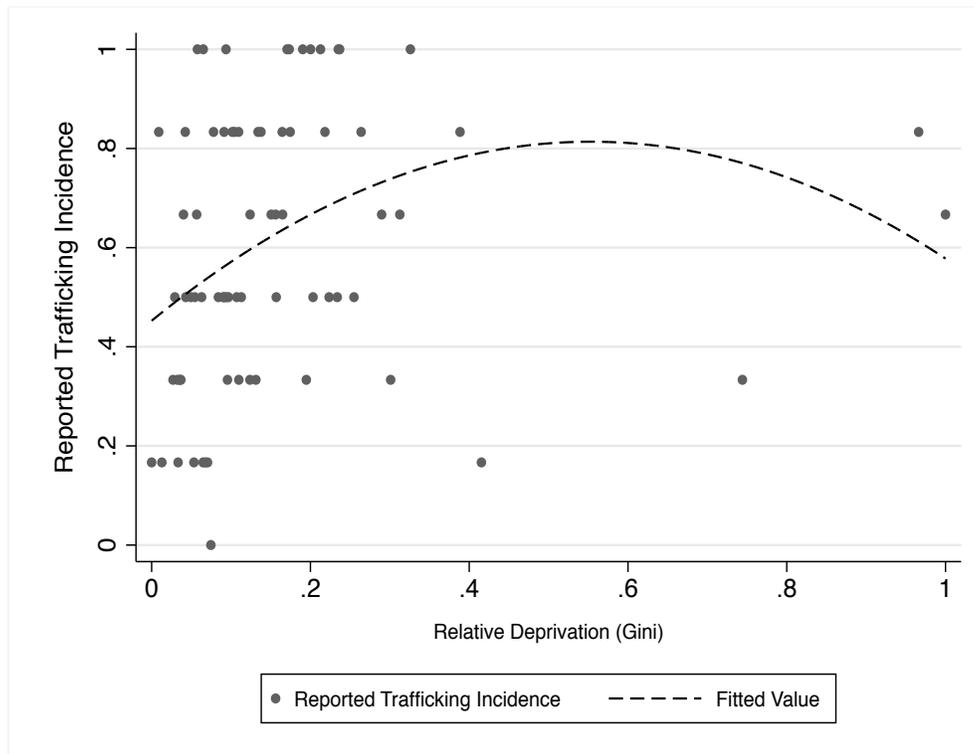
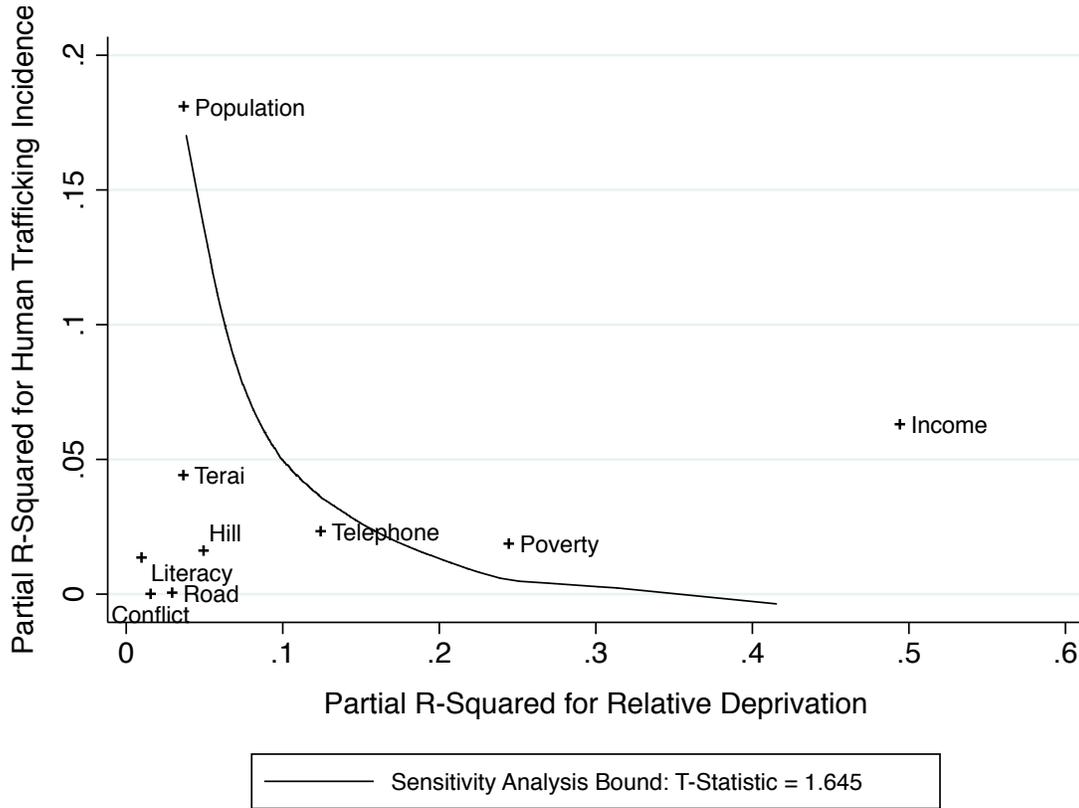


Figure 6: Strength of Partial Correlations to Undo Treatment Effect



*Notes:* The figure represents the results of the sensitivity analysis following Imbens (2003). Each + represents a covariate, plotted according to its additional explanatory power for the independent variable of interest — relative deprivation (on the horizontal axis) — and its explanatory power for the outcome — trafficking incidence (on the vertical axis). In essence, each axis measures the increase (or decrease) in the R-squared statistic from adding that covariate to the regression in question. The downward sloping curve represents the locus of points at which any independent covariate (observed or unobserved) would have sufficient association with both the independent variable and outcome to reduce the effect of relative deprivation on trafficking incidence such that the effect is statistically insignificant at a 10% level.

## Online Appendix

# *Perceived Relative Poverty and Risk: An Aspiration-Based Model of Human Trafficking Vulnerability*

## A Relative Deprivation and the Gini Coefficient

Yitzhaki (1979) proves that total relative deprivation  $D$  in a society, as defined by Runciman (1966), can be interpreted as follows:

$$D = \int_0^{y^*} D(z)f(z) dz = \mu G$$

where  $D(z)$  is defined as the relative deprivation function of a given individual.

Let income be the object of relative deprivation. In this project, I focus on what an individual is able to consume. The range of possible deprivation for each person in the society is  $(0, y^*)$ , where  $y^*$  is the highest income in the society. For each person  $i$ , her own income  $y_i$  partitions the possible deprivation into two segments: (1) the range of income for which a person is satisfied  $(0, y_i)$ ; and (2) the range of income for which a person is deprived  $(y_i, y^*)$ .

As Runciman (1966) defines relative deprivation in not having  $X$  as an increasing function of the proportion of individuals in the society who have  $X$ , the degree of relative deprivation of the range  $(y, y + dy)$  can be quantified by  $1 - F(y)$ , where  $F(y)$  is the cumulative income distribution, and  $1 - F(y)$  is the relative frequency of persons with income above  $y$ . With this definition, we can define the relative deprivation ( $D(y_i)$ ) and satisfaction ( $S(y_i)$ ) function of person  $i$  as:

$$D(y_i) = \int_{y_i}^{y^*} [1 - F(z)]f(z) dz \quad (1)$$

$$S(y_i) = \int_0^{y_i} [1 - F(z)]f(z) dz \quad (2)$$

Integrating  $S(y_i)$ , we see that:

$$S(y_i) = y_i[1 - F(y_i)] + \mu\phi(y_i) \quad (3)$$

where  $\mu$  is the average income and  $\phi(y_i)$  is the value of the Lorenz curve, the proportion of total income received by those whose income is less than or equal to the given  $y$ . Note that the Gini coefficient is based on the Lorenz curve. If we define relative deprivation in the society as the average or aggregate deprivation, formally,

$$S = \int_0^{y^*} S(z)f(z) dz \quad (4)$$

Using Equation C.3, and the definition of the Gini coefficient provided in Atkinson (1970), we see that  $S = \mu(1 - G)$ , and hence,  $D = \mu G$ .

## B Data Analysis

Table B.1: Survey Data: Descriptive Statistics

Variable	Mean	Standard Deviation	Min.	Max.	N
Preference for Risky Job (for Oneself)	0.28	0.45	0	1	716
Preference for Risky Job (for Child)	0.16	0.37	0	1	715
Lottery Participation	0.25	0.44	0	1	719
Lottery Experience	0.51	0.94	0	3	708
Exposure to Migration	1.25	1.27	0	3	717
Perceived Relative Wealth Pre-Prime	2.03	1.29	0	5	715
Consume Foreign News	0.56	0.50	0	1	712
Number of Children	3.40	1.80	1	12	718
Gender (=1 if Female)	0.57	0.49	0	1	712
Age	38.91	13.00	0	84	713
Education Level	4.04	4.38	0	15	716
Married (=1 if Yes)	0.96	0.18	0	1	713
Own Land (=1 if Yes)	0.91	0.29	0	1	718
Tamang	0.21	0.41	0	1	718
Hindu	0.71	0.45	0	1	719
Buddhist	0.21	0.41	0	1	719

Table B.2: Survey Data: Balance Tests

<b>Variable</b>	<b>Control<sub>Mean</sub></b>	<b>Treatment<sub>Mean</sub></b>	<b>Difference</b>	<b>P-Value</b>
Lottery Experience	0.48	0.56	-0.08	0.27
Exposure to Migration	1.27	1.23	0.05	0.63
Perceived Relative Wealth Pre-Prime	2.02	2.04	-0.02	0.82
Consume Foreign News	0.56	0.56	-0.01	0.84
Number of Children	3.39	3.41	-0.02	0.87
Gender (=1 if Female)	0.57	0.58	-0.01	0.88
Age	39.48	38.29	1.19	0.22
Education Level	4.12	4.17	-0.05	0.90
Married (=1 if Yes)	0.96	0.97	-0.01	0.69
Own Land (=1 if Yes)	0.91	0.90	0.01	0.55
Tamang	0.21	0.21	-0.01	0.86
Hindu	0.72	0.71	0.01	0.89
Buddhist	0.21	0.21	0.01	0.83

Table B.3: Observational Data: Descriptive Statistics

Variable	Mean	Standard Deviation	Min.	Max.	N
Trafficking Level (2003-2007)	3.58	1.66	0	6	72
Gini Index	0.32	0.11	0.14	0.57	72
Average Per Capita Consumption (NRS)	15,663.48	9,261.92	7,024.36	58,442.55	72
Share Below Poverty Line	0.30	0.19	0	0.83	72
Literacy Level	0.48	0.30	0	1	72
Conflict Level	1.51	0.69	1	3	72
Telephone Lines	4,681.25	21,549.21	0	180,000	71
Road (km)	245.04	265.09	0	1,507	72
Population	320,298	211,044.70	9,587	1,081,845	72
Hill	0.53	0.50	0	1	72
Terai	0.28	0.45	0	1	72
Mountain	0.19	0.40	0	1	72

*Notes:* The level of human trafficking incidents measure is based on reported incidences between 2003 and 2007. All other measures are from the Nepal's Living Standards Measurement Study (2003).

Table B.4: Ordered Logistic Regression Predicting Trafficking Incident Levels (2003-2007)

	(1)	(2)
Relative Deprivation	26.78*** (6.10)	19.27* (9.84)
Relative Deprivation <sup>2</sup>	-0.79 (3.88)	-3.13 (3.67)
Per Capita Consumption	-28.36*** (6.92)	-21.18 (13.12)
Share Below Poverty Line	-4.97*** (1.81)	-3.70 (3.18)
Literacy Level		1.49 (1.51)
Conflict Level		0.41 (0.85)
Telephone Lines		-4.44 (4.06)
Road (km)		-0.33 (1.50)
Population		11.37** (4.86)
Hill		1.09 (0.84)
Terai		-2.38 (1.68)
$\tau_1$	-7.18***	-4.74
$\tau_2$	-4.57***	-1.20
$\tau_3$	-3.31***	0.60
$\tau_4$	-2.07*	2.19
$\tau_5$	-1.47	2.96
$\tau_6$	-0.13	4.52*
$N$	72	71
Pseudo $R^2$	0.09	0.19
$\chi^2(4,10 \text{ df})$	24.19	71.15
Log Likelihood	-117.86	-103.03

*Notes:* Dependent variable is level of human trafficking incidents, by district. Regression SEs are in parentheses and \*P < 0.10, \*\*P < 0.05, \*\*\*P < 0.01 (two-tailed). District levels were estimated using sampling weights. The omitted region is the “Mountain” region. All measures are recoded to be between 0 and 1.