Everything is not sawa sawa: Abuse and informal employment in Kenya

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ABSTRACT

Violence against women and subsequent gender-based violence are issues that plague the world, harming women's wellbeing as well as that of their families. Thirty-nine percent and twenty-one percent of Kenyan women have experienced physical and sexual violence, respectively, in their lifetimes. While there have been contested studies showing that employment can both increase and decrease the risk of suffering from violence, particularly in domestic settings, this study examines how a Kenyan woman's experience of violence is likely to affect her level (formal or informal) of employment in the future. The results of this study indicate that emotional abuse, having a partner that drinks, educational attainment, living in a rural setting, and age are significant factors in a woman's probability of working. Conditioned on working, experiencing controlling behaviors from a partner, educational attainment, justification of violence, ethnicity, income rank, partner's occupation, and age at first marriage influence a woman's probability of working informally. These results vary based on the type of employment studied, but can have wide-ranging consequences for the economic development of Kenya and empowerment of Kenyan women.

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Introduction

Policymakers around the world have increasingly realized that development objectives cannot be achieved unless the crucial role that women play in economic development is recognized (Adepoju and Oppong 1994). Many arguments posit that gender inequality within societies leads to slower or stagnant economic growth. For example, Kevane (2014) argues that gender inequality leads to less aggregate investment, lower-quality human capital, less aggregate savings, and less focus on growth-oriented industries, all leading to a generally lower rate of economic growth. Gender inequality, specifically within labor force participation, in developing nations is sustained through informal norms enforced by greater community and societal structures (Kevane 2014). Specifically within Kenya, these inequalities are often manifested through ethnic and regional politics, contemporary economic systems, and patriarchal structures (Suda 1996). Prominently, violence against women heightens these preexisting inequities.

The most recent numbers collected by the Republic of Kenya show that 39 percent of Kenyan women have experienced physical violence in their lifetime, while 21 percent of women have experienced sexual violence in the same timeframe (KDHS 2010). One can assume that these numbers are underreported, especially given the numerous claims that women in Kenya – and around the world - are socialized to rationalize certain forms of violence (KDHS 2010) and fear facing stigma in the community that could come from reporting their experiences (Saidi, Awori & Odula 2008). Still, these numbers are concerning. Given Kenya's economic rise in recent years and its position as one of the largest economies in Africa, it is important to consider how these high numbers of violence, even underestimated, will translate for the nation's future growth and development. Accordingly, this paper examines how Kenyan women's experience of certain types of gender-based violence in their lifetime influences their labor force participation and employment, specifically regarding the formality of the jobs they hold. Several studies have looked at the various consequences of different types of violence, but often examine how certain factors - such as education, income level, or religion - are likely to lead to the experience of violence. In contrast, this study analyzes a variation of the reverse: how does a woman's experience of violence in her lifetime influence her future employment level? Experiences of

violence have negative mental and physical consequences for survivors, which in turn could influence their ability to attain an education and obtain or maintain a job.

This study examines the relationship between the experience of violence and formality of female employment using data primarily collected in Kenya's 2008/09 Demographic and Health Survey. Controlling for factors that similarly influence employment, such as educational attainment, age, ethnicity, region, etc., this study identifies an association between violence and a woman's likelihood of working in informal employment. Prior to performing any sort of statistical analysis, I hypothesized that a woman's experience of violence would be positively associated with her likelihood of being engaged in informal employment. This could be due to an inability to deal with the physical or mental health consequences of the violence, resulting in lost productivity at work, potential job loss, loss of education, or possible early pregnancy, etc. This study finds that a woman is more likely to work if she experiences emotional abuse, and is more likely to work informally if her partner exhibits controlling behaviors. These insights could have important consequences for the development of national policies in Kenya and other developing countries. If women are disproportionately affected by gender-based violence, and it limits their employment status or level, there will be serious repercussions for the Kenyan economy. It is acknowledged (UN 2015; Duflo 2012) that women are an integral piece of economic development, and the results of this study provide a potential site for policy intervention that could improve Kenya's economy as well as the wellbeing of its female citizens.

Background

Literature Review

The role of women's empowerment has been increasingly realized as a crucial aspect of economic development. Several theories describe a bi-directional relationship between economic development and women's development, allowing each to contribute to the other while emphasizing that continued discrimination against women – as is often realized as violence against women – hinders a nation's development. If constraints on women are loosened, they can

contribute income to households, hopefully lowering poverty levels, reducing maternal and child mortality, and improving child education and health (Duflo 2012).

In the same way, violence against women has been internationally recognized as a human rights violation in need of global attention, as emphasized by its inclusion in the United Nation's (UN) Millennium Development Goals and the new Sustainable Development Goals (United Nations 2015b; United Nations 2015c). The UN defines violence against women as,

> any act of gender-based violence that results in, or is likely to result in, physical, sexual or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life (United Nations 1993).

Violence against women can occur in a variety of unequal gender relation contexts, resulting in battery, rape, sexual abuse, forced trafficking, intimate partner violence (IPV), femicide, female genital mutilation (FGM), honor killings, female infanticide, and forced and early marriage, among many others. Included in this definition is "gender-based violence" (GBV), or the experience of violence due to unequal gender power relations. Women are generally the victims or survivors – depending on the terminology - of GBV, but men can also be victimized when they fail to conform to dominant forms of masculinity (True 2012). Nevertheless, this paper focuses exclusively on female's experience of GBV as predominantly expressed in the forms of physical, emotional, and sexual violence. In my definition of sexual violence, I include the experience of FGM since it is traditionally practiced as a means to limit the sexual enjoyment of women and is often indicative of a girl's availability for (early or forced) marriage (28 Too Many 2013).

Many studies on IPV, or the violence that occurs between individuals in an intimate relationship, show that it can have widespread consequences for the survivors. On top of the physical injuries – such as bruising, lacerations, bleeding (Saidi, Awori & Odula 2008), excluding even more extreme cases – from which one may suffer as a result of physical or sexual violence, the mental health consequences can be equally severe. Rape survivors often experience high rates of post-traumatic stress disorder, depression, anxiety, withdrawal, and substance abuse

(Loya 2014). Additionally, survivors of sexual violence are more likely to engage in future risky sexual behavior, including participating in sex work (Kaudans et. al 2011). Violence against women has various costs associated with it, including direct costs to women, consequences for their children or future generations, and costs to governments, businesses and society as realized in criminal justice, health and social welfare fees (True 2012). A study cited by Loya (2014) estimated that each sexual assault in the United States cost US$5,100 in "tangible losses" – lost productivity, medicine and mental health care, police or fire services and property damage – in addition to another US$81,400 in lost quality of life (equaling US$143,205 in 2014 dollars). Interestingly, other studies posit that children whose mothers have been abused may demonstrate the same emotional and behavioral symptoms that physically abused children experience (Kimuna & Djamba 2008), highlighting additional overlooked consequences of violence against women.

Several studies have extrapolated these costs by measuring subsequent "resource" loss for victims of violence. Survivor's work performance can be disrupted by mental health symptoms, hindering their ability to maintain or secure employment. Furthermore, this can be translated to the educational setting, disrupting educational performance and attainment and thus their future earnings (Loya 2014). On top of these abstract, future losses, post-assault treatments - if survivors are fortunate enough to have access to them - such as medication, doctor's appointments and counseling, can be incredibly costly. In interviews with survivors of rape in the United States, Loya (2014) found that survivors' pre-existing economic situations shaped their future risk of resource loss. Some survivors reported quitting their jobs due to an inability to function, while others were fired for poor performance and taking too much time off work. Extreme outcomes were homelessness and suicide, and most interviewees reported never having been able to economically recover from the assault. Similarly, Monnier et al. (2002) found that rape survivors in the US were less likely to experience subsequent resource loss if they had higher pre-assault levels of resources, and that the level of distress at the time of their first interview was related to subsequent resource loss. Additionally, low resources (defined as two meals a day, money to pay bills, adequate transportation, and access to a phone) increase the risk

of victimization or re-victimization. This is critically important for countries that have inherently lowered standards of "required resources" and higher numbers of poor people, like in Kenya.

In her book *The Political Economy of Violence Against Women*, Jacqui True argues that there are three central elements to the occurrences of violence against women: 1) the gender division of labor; 2) the global economy in which capitalist competition fuels the exploitation of women for cheap labor; and 3) the masculine-protector and feminine-protected identities associated with war and militarism (2012). While these are very dense and complex topics, many other studies also pay particular attention to the gendered divisions of labor and the masculine/feminine identities shaped by societies (Macmillan & Gartner 1999; Chin 2011). As stated by True (2012), "much violence against women is legitimized within wider community and social relations," and this is very much the case within Kenya. Additionally, these masculine/feminine identities are inextricably tied up in the male breadwinner versus female homemaker identities, which can be challenged by women's shifts into the workplace, often resulting in women's prevalence in informal work and the need for men to reassert their masculine identities in other, potentially violent, ways (Macmillan & Ross 1999; Chin 2011).

Furthermore, the masculine threats perceived by men from female employment are amplified if the man is unemployed. A study examining the relationship between female employment and their experience of "interpersonal" (hitting, slapping), "nonsystematic" (violent acts ranging from kicking and hitting) and "systematic" (high risk of all types of violence, including life-threatening, such as choking) violence, as well as "coercive control" (defined as a partner's need to control the woman's interaction with others, mobility, and access to income), found that the wives' employment was relatively inconsequential for their experiences of violence, yet they were much less likely to be at risk for both nonsystematic and systematic abuse if their husband was employed. Additionally, systematic abuse was seen as a larger part of coercively controlling behaviors. Husband's higher educational attainment and household income had similar effects as well (Macmillan & Gartner 1999).

While the UN and the World Health Organization both suggest that women's economic empowerment is a critical part of violence prevention (True 2012), there are various other studies

that demonstrate increased economic independence may result in higher levels of violence. This can occur through a cyclical relationship between violence and economic resources: if the threat and fear of violence can keep women from seeking employment or force them to accept low-paid, informal work, without some sort of independence, women will have no way to escape from their abuser (Simister 2010). Some research suggests that violence against women may actually increase as women gain greater access to social and economic opportunities (True 2012). A study in Tanzania (Vyas, Mbwambo & Heise 2015) evaluates theories about changes in women's household bargaining power and "fallback positions" from employment. Through interviews with various employed women in two cities in Tanzania, they found that men used violence as a form of correction or as a mechanism to displace their anger or frustration, yet this violence was perceived to be a normal part of family life. Additionally, the women reported that their employment did not increase their ability to make decisions in the household unless it was related to small household needs. Overall, the interviewees indicated that women's independent income acts as a stabilizing component by providing more money for household needs and limiting the number of financial arguments between husband and wife.

Chin (2011) explores whether female employment in rural India provides "exposure reduction" – increased time spent outside of the home reduces the woman's exposure to a potential abuser at home – or "backlash" – when a male commits spousal violence as a way of expressing anger towards female independence. This particular study found that in regions where demand for female labor is high (rice-growing), a shock that led to increased female labor participation (rainfall) eventually led to a reduction in violence towards women, as opposed to regions where the demand for male labor is high (plough cultivation). This suggests, as described by Vyas, Mbwambo and Heise (2015), that violence may reduce if women's financial contribution is perceived to be large by her partner.

When looking at these topics specifically within Kenya, we can see similar patterns. A study examining the labor market in Kenya found that women are often more highly concentrated in self-employment compared to their male counterparts, and often are the majority in less lucrative professions. Additionally, women's education increases the likelihood of formal employment, while having older children discourages participation in the labor market (Kabubo-

Mariara 2002). Female employment in Kenya is a complicated topic determined by many competing influences. Oftentimes, while the man may be the "head of the household," women are responsible for all domestic bills and payments – including school fees for children and water and food expenses- forcing her into the labor force when her husband does not earn or share his income. This can be complicated even further by a girl's inability to finish school – due to high costs of schooling, low anticipation of future benefits of education, teenage pregnancy, early marriage, heavy domestic workload, etc. – resulting in her inability to seek wage employment in the future. As a result, women represented only 30 percent of all wage employees in Kenya in 2014 (Owano 2014).

Several studies have looked specifically at physical and sexual violence in various regions of Kenya. For example, Kimuna and Djamba (2008) conducted a study examining the correlates of physical and sexual wife abuse in Kenya and found that living in poorer households, being Christian, being in a polygamous marriage, male alcohol consumption, and informal or unskilled jobs significantly increased the wife's risk of experiencing physical and sexual abuse. The wife's education also had a significant impact on her experience of both forms of violence, where wives who did not complete high school were at a significantly higher risk. Similarly, Kadudans et al. (2011) looked at the factors associated with forced sex in Kisumu– a region in western Kenya. Out of the women who reported ever having had sex in the study, 13 percent reported having a history of forced sex. Interestingly, these women were more likely to have more years of education and use electricity in their home. The study tried to explained these unexpected results with the possibility that greater empowerment (as seen in greater education and resources) causes women to resist patriarchal norms, in which case men could attempt to use force to regain control over them.

A retrospective survey of girls' childhood experiences of violence in Kenya found that 99 percent of those surveyed had been physically abused, 96.4 percent had been psychologically abused, and 85.2 percent had been sexually abused (Stavropoulos 2006). This study focused on young women currently residing in Nairobi, but was deemed to be representative of the nation because many of the women grew up elsewhere. Parents and relatives represent the majority of

the perpetrators for physical and emotional violence, signaling a key issue in the normalization of violence in childrearing and development that will be difficult to stop.[1]

Many studies have found that domestic abuse if often justified or rationalized in Kenya, both by men (typically perpetrators) and by women (the usual survivors). Often, physical violence is appropriated within societal gender conscripts, so that the husband can "discipline" his wife. In many of these cases, women do not often consider these assaults to be abusive (Kimuna & Djamba 2008). A surprising number of women in Kenya have shown that they do not understand the term "domestic violence" (Simister 2010), while others are unlikely to report violence committed by a husband or partner, especially if it is sexual in nature because marital rape is not socially recognized as a crime (Saidi, Awori & Odula 2008). Low education and occupational status, poverty and rural residency are also associated with higher likelihoods of tolerating IPV among women in developing countries (Lawoko 2008).

Looking at men's attitudes towards IPV in Kenya, Lawoko (2014) found that men who believed that husbands and wives should share household decision-making exhibited a lower likelihood of justifying violence. Additionally, a lack of education among males was associated with a higher likelihood of justifying wife beating. Among those who did justify abuse, they cited issues of challenging a husband's authority and a woman's transgression from traditional roles as motivations for violence.

Evidence from Kenya

Anecdotally speaking, much of this literature is relevant to what I witnessed during my time conducting research on these topics in Kenya in June, July, and August of 2015. In addition

[1] There have been several pieces of legislation, passed in 2001 and 2011, criminalizing all forms of FGM, yet this has done little to prevent its occurrence. Many girls are cut as early as seven years old, in order to avoid detection, increasing its association with incomplete education, early or arranged marriage, and even HIV/AIDS transmission. While the minimum age for marriage in Kenya is 18, as dictated by the Children's Act of 2001, many early marriages that follow the FGM procedure are unregistered or are performed through customary or Islamic Law (28 Too Many 2013). A study looking at the correlates of FGM in Kenya found that it was highly influenced by the girls' mother's education: no respondent experienced the procedure if the average of her own and her mother's education level was over 15 years, indicating the importance of education in mitigating violence for both women and future generations. This study also found higher likelihoods of FGM within certain Kenyan ethnic groups (Kisii, Maasai, and Somali), signaling the potential importance of ethnicity in views about and the prevalence of other types of violence against women (Simister 2010).

to my own observations of thousands of women in informal occupations (usually hawking fruit or secondhand clothes on the street) and high male unemployment, various NGOs, hospitals, and courts confirmed these overarching patterns.

According to Nairobi Women's Hospital Gender Violence Recovery Center, a free clinic equipped to handle specifically domestic abuse and sexual violence cases, 83 percent of patients in 2012/2013 were seen for rape (mostly for "defilement," or child rape) and 17 percent for physical violence. The majority of their clients are female (90 percent; GVRC 2014), highlighting both the disproportionate cases of violence against women, and the stigma associated with reporting as a male. Additionally, strangers perpetrated the majority of sexual violence cases, while partners or ex-partners perpetrated the majority of physical violence cases, demonstrating the accepted notion that marital rape does not exist (GVRC 2012).

Nature of Violence	2010-2011	2011-2012	2012-2013
Rape/defilement	87%	86%	83%
Physical Violence	13%	14%	17%
Total	100%	100%	100%

Table 1. Nairobi Women's Hospital, Gender Violence Recovery Center, "Yearly Stats," 2015.

While not necessarily representative of the entire nation of Kenya, looking at the number of sexual gender-based violence cases that have made it to the District Court in Eldoret, Kenya is illuminating. The number of cases has been steadily increasing per year, starting with 114 in 2010 and currently resting at 276 for 2015. The startling nature of these numbers is that the majority of them are again for "defilement" (Eldoret 2015). This breakdown emphasizes the importance of studying and targeting childhood violence in Kenya, and demonstrates, again, the hesitancy of many to report potential cases of rape within relationships.[2]

[2] These numbers are also underreported due to various issues associated with access to justice. For example, there is only one court in the entire province, making it difficult for poorer people to get to and from the courthouse if they manage to take the case to a courtroom setting.

Year	Nature of the Sexual Offense		
	Rape	Defilement	Total
2010	30	84	114
2011	30	282	312
2012	38	248	286
2013	60	320	380
2014	30	260	290
2015	24	252	276

Table 2. Cases brought to Eldoret District Court, Protus Wafula, 2015.

Many other organizations described women who were forced to work because their husbands were unemployed or because he would not share his income with her. This exacerbates issues of already high school dropout rates for Kenyan children due to expensive school fees or the need to start employment early in order to contribute to family incomes. High male unemployment is worsened by the rampant "illicit brew" trade, which can spur higher rates of violence in and out of households, but also act as poverty traps for women and their daughters. Additionally, rape and forced sex work plague many low-income women, especially immigrants and refugees who have few recognized rights due to documentation issues.

As one can see, there are no studies that look at how a woman's experience of violence will affect her employment level, especially within Kenya. However, this topic is of the utmost importance given the high rates of violence experienced by many Kenyan women and girls. This is where this study comes in to play. By identifying ways in which violence is associated with women's probabilities of working and, more seminally, working informally, policymakers can better understand how to break the factors that push women into informal employment. If violence becomes a poverty trap for women and girls, there is an additional constraint limiting

their development as well as the nation's development as a whole. The importance of the experience of violence needs to be considered when evaluating the importance and relevance of development policies aimed both at women and future economic growth.

Data and Methodology

The dataset used in this study comes from the 2008/09 Kenya Demographic and Health Survey. This survey was distributed to a sample of 10,000 households that sought to represent the eight provinces within Kenya at the rural and urban levels. This was done through a two-stage process in which 400 clusters from the national sample were chosen, plus a systematic sampling of households from within those clusters. All women ages 15 to 49 years old that were either usual residents or visitors in the sampled households on the night before the survey were eligible to be interviewed, and in every second household, all men ages 15 to 54 years were also eligible to be interviewed. All data reported in the KDHS sample have been weighted. Of primary interest is the domestic violence module, which was administered to one woman per eligible household, and, in cases where multiple women lived in one household, a special procedure ("Kish grid") was followed to ensure that the women interviewed were random. In total, 9,057 households, 8,444 women, and 3,465 men were successfully interviewed (KDHS 2010). Out of the 8,444 women surveyed, 6,318 were successfully interviewed for the domestic violence module, which is the main sample used in this study.

In its original form, the data retained from this survey were presented in three separate files: household, women, and men. The dataset used in this study has combined the responses from the women and men's surveys, although it mainly draws from the domestic abuse module, and all of the edits and reformatting decisions are detailed in the Appendix of this paper. However, there are some meaningful decisions that have been made in preparation for the model that will be described.

Variable	Obs	Mean	Std. Dev.	Min	Max
selfemp	7,722	.3636364	.4810768	0	1
selfempwa	7,722	.5071225	.4999816	0	1
selfempag	7,722	.2817923	.4499018	0	1
tradfem	4,684	.4378736	.4961783	0	1
violence	6,310	.6023772	.4894455	0	1
control	4,851	.6295609	.4829721	0	1
emotion	4,903	.2853355	.4516201	0	1
physical	4,901	.382575	.4860654	0	1
sexual	6,308	.2011731	.4009089	0	1
drinks	4,901	.3503367	.477124	0	1
mabuse	5,747	.3661041	.4817803	0	1
educ	11,908	7.757222	4.281647	0	24
incrank	11,909	3.224872	1.48596	1	5
ethnic	11,907	11.64265	22.00207	1	96
urban	11,909	.6893946	.4627609	0	1
attd	11,722	.49036	.4999284	0	1
stdoccup	5,672	4.403914	3.017191	0	9
parteduc	5,898	1.373347	.8606375	0	3
age	11,909	28.79822	9.927678	15	54
page	5,021	38.98466	10.93927	17	96
firstmar	7,867	20.20885	4.780031	9	48
childb	11,909	2.542615	2.77398	0	30
fgm	8,038	.3161234	.4649906	0	1
hhsex	11,909	.3079184	.461652	0	1

Figure 1. Summary of selected variables

First and foremost, because this study hopes to examine which factors influence an individual's probability of working informally, a variable was created from the existing data to proxy informal employment. Using information on employment (whether the respondent was currently working), for whom the respondent worked (isolating self-employed individuals), and the type of profession (ruling out agricultural work[3]) an individual participated in, a variable hoping to capture informal employment was created. This binary variable takes on the value of 1 if the individual is self-employed in the non-agricultural sector, and 0 if otherwise. Around 21 percent of the women in this sample fall into this category, compared to 21 percent for total women in the survey and 31 percent of men in the survey.

[3] Although agricultural work can be considered informal employment, it is mostly applicable to rural regions only and can be complicated by the existence of women who work on farms but receive no compensation for it.

The data on domestic violence within the survey were compiled by collecting answers to a series of yes or no questions, like the following:

Does/Did your (last) husband/partner ever:

(a) Push you, shake you, or throw something at you?
(b) Slap you?
(c) Twist your arm or pull your hair?
(d) Punch you with a fist or something that could hurt you?
(e) Kick you or drag you or beat you up?
(f) Try to choke you or burn you on purpose?
(g) Threaten or attack you with a knife, gun, or any other weapon?
(h) Physically force you to have sexual intercourse even when you did not want to?
(i) Force you to perform any sexual acts you did not want to?
(j) Say or do something to humiliate you in front of others?
(k) Threaten to hurt or harm you or someone close to you?
(l) Insult you or make you feel bad about yourself? (KDHS 2008); [4]

Further questions regarding the amount of control a husband or partner tries to exert in the relationship as well as indicators of emotional abuse were also answered. Variables indicating whether *any* type of abusive control, emotional, sexual or physical abuse was experienced were created, taking on a value of 1 if any of the survey questions received a "yes" response, and 0 if otherwise.[5]

There are other important variables that have been controlled for within the model. "Drinks" is a binary variable indicating that the respondent's partner drinks, which could increase tensions within households possibly due to unemployment or a lack of money (as I

[4] Women were also asked if anyone other than their current or last husband/partner ever did the following as well, although the study mostly focused on intimate partner violence.
[5] Sexual violence is widespread in the US; the Center for Disease Control cites that one in five women will be raped at some point in their lives (National Sexual Violence Resource Center 2015). This statistic serves as a point of comparison.

heard about in Kenya), and lower men's inhibitions towards abusing their wives. Around 64 percent of women in the sample claim that their partner or husband is sometimes drunk, while another 35 percent claim theirs is often drunk. Furthermore, past studies have indicated that there is a correlation between those who suffer from abuse and if their mothers were abused. Such a correlation could hint at either the justification of violence within a household or a greater generational cycle of violence. Approximately 36 percent of women in the sample said that their mothers were abused.

Education (educ) is measured in single years of education completed by the respondent. The mean for the women in the domestic violence sample is approximately 7.7 years of school, indicating that most women have not completed Standard 8, or the US equivalent of 8^{th} grade. The average years of completed schooling for the greater sampled number of women is 7.4 years, compared to 8.6 years for men.

Income (incrank) is divided into wealth quintiles by the KDHS. Surprisingly, wealthier individuals were oversampled in the overall population of the survey, with 28.4 percent of individuals falling into the richest quintile. However, the sample this study focuses is more evenly spread, although the top three quintiles represent higher shares than the rest by around three to four percentage points. Ethnicity (ethnic) is a widely discussed topic in Kenya, justifying its inclusion in this model as individuals from certain tribes could possibly behave differently from those of other ethnicities. While there are over 40 tribes in Kenya, the KDHS has only identified twelve: Embu, Kalenjin, Kamba, Kikuyu, Kisii, Luhya, Luo, Masai, Meru, Mijikend, Somali, and Taita/Turkana. The ethnicity indicator variable takes on a value of 1 if an individual is a certain ethnicity, and 0 if otherwise. Urban is an indicator variable that identifies whether an individual lives in a rural or urban region, and takes on unity if it is an urban region. About 75 percent of the sample lives in rural areas, compared to 69 percent of the broader female observations and 69 percent of the male observations.

Another variable that was imputed from the data captures respondents' attitudes towards violence. This variable (attd) takes on a value of 1 if the respondent believes a man is justified in hitting or beating his wife for any of the following reasons: if she "burns the food," "argues with

him," "goes out without telling him," "neglects the children," or "refuses to have intercourse with him."[6] The variable takes on a value of 0 if otherwise. This variable could be important in establishing if violence exists in households where women justify its existence or agree it is appropriate as a punishment for wrongdoing, as has been documented in previous literature. Of the sample, approximately 53 percent of women agree that some sort of violence is acceptable within the household.

Whether a respondent's partner is employed will also be controlled for, as violence could exist in a household as a result of frustrations over money. However, the type of employment a respondent's partner participates in could also reveal interesting information about the existence of violence. Accordingly, the variable "stdoccup" categorizes the standardized occupation groups of the respondents' partners, if they are employed. Around 47 percent of women in the broader survey context reported being unemployed, while only 15.5 percent of men did, indicating the traditional gender norms in employment. As an aside, during my time in Kenya I found that it appeared as if a much greater number of men were unemployed at the time than women, as I oftentimes saw women performing a lot of informal jobs while men would be sitting on the side of the road. Additionally, a respondents' partner's education level may influence both the likelihood of violence in a household due to their attitudes towards violence, as well as if the respondent needs to work or not because of the educational requirements necessary for certain types of employment. The variable "peduc" measures the years of completed education for the respondent's partner.

The age of the respondent will be accounted for using a variable that measures the respondents' ages in individual years. The mean age of the respondents in our sample is 28 years old, which is the same as the overall females surveyed. Additionally, age of the respondent's partner (page) is also be isolated for evaluation. As it happens, the mean age of the respondent's partner is 39 years old, about ten years older than the respondent. There are fairly strong correlations between the respondent's age and the partner's age. The variable "hhsex" indicates the biological sex of the head of the household, in this case either male or female, and is only used in part of the model.

[6] There is also available information on men's attitude towards violence included in this variable as well.

Other variables that could be important are the age at first marriage or union, represented by the variable "firstmar." The average age of first marriage in the sample is 19, and most women interviewed were currently married. Additionally, the number of children a woman has had may influence her likelihood of working, whether formally or informally. The case of informal employment may capture complicated situations where women may need to work to support their children but are unable to afford a type of caretaker for their children. Informal employment may provide a compromise in which a woman can earn money while watching her children, yet may limit potential for career growth and mobility, as well as perpetuate violence across generations if the violence takes place in the workplace. The average number of children these women report ever having is around three.

Finally, an interesting addition to this model is a variable that indicates whether the respondent has been circumcised or experienced female genital mutilation (FGM) of any sort. While FGM is becoming less prevalent in Kenya, it does exist widely in some communities, and its existence could be correlated with attitudes and realities of other types of violence within households, as well as general opinions about women. This FGM variable takes on the value of 1 if the respondent has experienced any sort of genital mutilation and 0 if otherwise. In this sample, around 27 percent of women have experienced some sort of FGM, which makes sense considering the high percentage of these women that live in rural areas where FGM is more common. "u" is an error variable.

The Model

This evaluation uses a binomial probit with selection model. In this type of model, we have a binary outcome that is only observed when a previous selection model requirement has been satisfied.

$$y_1 = 1[\boldsymbol{X_1\beta_1} + u_1]$$

$$y_2 = 1[\boldsymbol{X_2\gamma} + u_2]$$

In this case, y_1 represents the binomial model of particular interest: is a female self-employed in the non-agricultural sector or not? This is dependent on a series of explanatory variables depicted

here as $\boldsymbol{X_1\beta_1}$. This binary model can be seen below, and the summary statistics of these variables were presented in the previous section.

$$\begin{aligned} selfemp = \ & \beta_0 + \beta_1 control + \beta_2 emotion + \beta_3 physical + \beta_4 sexual + \beta_5 drinks \\ & + \beta_6 mabuse + \beta_7 \, educ + \beta_8 \, incrank + \beta_9 ethnic + \beta_{10} urban + \beta_{11} attd \\ & + B_{12} stdoccup + \beta_{13} parteduc + B_{14} age + \beta_{15} page + B_{16} firstmar \\ & + \beta_{17} childb + \beta_{18} FGM + u \end{aligned}$$

Within the sample, the women interviewed for the domestic violence module, women can only self-identify as being self-employed in the non-agricultural sector if they are employed. This is where the y_2 (selection) model becomes important because women will only be represented in $y_1$if

$$y_2 = 1[\boldsymbol{X_2}\gamma + u_2 > 0].$$

In the context of this evaluation, this selection model outlines a woman's decision to work or not work, as is based on a series of explanatory variables ($\boldsymbol{X_2}\gamma$) that include the explanatory variables of y_1 plus an additional factor(s). Because this analysis is seeking to identify how violence affects formality of employment, a woman's employment status – employed or not – is dependent on the explanatory variables detailed in the previous section, as well as the sex of the head of household, whom could be assumed to have influence on a woman's choice to work.[7] This decision has been modeled as follows:

$$\begin{aligned} work = \ & \beta_0 + \beta_1 control + \beta_2 emotion + \beta_3 physical + \beta_4 sexual + \beta_5 drinks + \beta_6 mabuse \\ & + \beta_7 \, educ + \beta_8 \, incrank + \beta_9 ethnic + \beta_{10} urban + \beta_{11} attd + B_{12} stdoccup \\ & + \beta_{13} parteduc + B_{14} age + \beta_{15} page + B_{16} firstmar + \beta_{17} childb \\ & + \beta_{18} FGM + \beta_{19} hhsex + u \end{aligned}$$

[7] This can be a bit complex because not everyone is in complete control of whether they are employed or not. Because this study is specifically looking at informal employment, I assume that there are not necessarily the same external boundaries (things that we typically tend to think of when evaluating unemployment) keeping these women from doing some sort of informal work other than household constraints.

This relationship is important because the errors in both models could be correlated, and decisions not to work are likely to be nonrandom (Baum 2006). Due to the nature of the underlying latent variable assumptions that make up the foundation of binary outcome models (y_1 is our observance of informal employment, based on the unobserved net benefit of being in doing that type of work, y_1^*), the interesting features of this model will not be the reported coefficients - although their signs and significance can still be indicative – but the marginal effects of the individual regressors (Wooldridge 2013).[8] This will tell us the individual effect of regressors on the probability of $y_1 = 1$. With this approach, I have drawn conclusions about how specific explanatory variables, particularly those related to violence, influence a woman's probability of being informally employed.

There are possible issues with any interpretation of causation in this model. From the literature review, one can see that many studies have looked at the effects that employment has on women's experience of violence, many of which provide contrasting evidence. It can be difficult to distinguish whether women work to avoid violence, either through exposure reduction (Chin 2011), to decrease financial troubles that could spark conflict, or if they suffer from violence because they may challenge traditional gender roles (Macmillan & Garner 1999). There may also be some interactions between variables that need to be accounted for to represent real-life situations. Additionally, using this type of created-variable as a measure of informal employment is difficult because there are many factors that go into the definition of informal employment that may be overlooked by any sort of formal reporting mechanism.

Results

Informal Employment

Running several different versions of this model has provided mixed, yet informative, results. Factors that influence a female's probability of working "formally" or "informally," as

[8] We observe a $y_1 = 1$ when $y_1^* > 0$. Accordingly, a positive y_1^* would correspond to $\boldsymbol{X_1\beta_1} > 0$ as well. However, the coefficients reported will be measuring the effect on y_1^* due to a change in an explanatory variable, yet we are more interested in the change in the probability of our observed outcome y_1 due to a change in the explanatory variables, so we look at the marginal effects. For more explanation, please see Baum 2006 or Wooldridge 2013.

well as working in different occupational sectors, vary, yet the factors that influence whether a woman works or not have become quite clear. Some of these results seem quite surprising upon a first glance, but they are much more informative when understood along with the qualitative context of the Kenyan economy and society.

Original Model: "Informal Employment"

When looking at the original binomial probit model with selection focused on the probability of a female working informally (self-employed, not in agriculture), fewer explanatory variables are significant than expected. The coefficients for the probit with selection are not explanatory in terms of magnitude, as explained in the previous Model section. As one can see in Table 3, the variables "control," "educ," "attd," and "firstmar" are significant with at least 90 percent confidence for the probability of being self-employed. After performing Wald Tests for joint significance, we find that the "stdoccup," "ethnic," and "incrank" variables are also significant with at least 95 percent confidence. In the selection model (the probability of a female being employed), "emotion," "drinks," "educ," "urban," and "age" are all significant – in addition to the "stdoccup," "ethnic," and "incrank" variables – with at least 90 percent confidence.[9]

Based on the variables controlled for within this model, if a woman's partner exhibits controlling behaviors (control), she is .05493 (or around 5.5 percent) more likely to be informally employed. This is the only individual violence variable that indicates a significant impact on her probability of working informally. Similarly, this probability also increases if she is in the poorer, richer, or richest income groups, compared to being in the poorest, which poses very interesting questions about the significance of income effects. Additionally, a woman's probability of being self-employed decreases if she is more educated, if she justifies the use of violence in the household, and if she was older when she first got married.[10] A woman's partner's occupational group is also significant in this decision, probably absorbing most of the

[9] To be more specific, her probability of working increases if she experiences emotional abuse (0.2140), has a partner that drinks (0.1930), is more educated (0.0530), lives in a rural setting (0.2744), and is older (0.0367). Importantly, her probability of working decreases if she identifies as any ethnicity other than Kisii, compared to being Embu.

[10] The magnitudes of these relationships can be seen in Table 3.

effects of a partner's educational attainment. In all cases except for if her partner works in services, her probability of working informally increases compared to if her partner does not work.[11] The relationship that has been the most surprising is that of ethnic groups. Although a woman is less likely to work if she identifies as most ethnicities, her probability of informal work increases for all ethnicities (compared to being Embu).[12] These numbers may seem very small in magnitude, but it is important to keep in mind that probabilities can only lie between 0 and 1, so even a seemingly small magnitude can be significant.

To summarize, if a woman identifies as most of the ethnicities included in the model, she is less likely to work, perhaps due to more traditional expectations for women in particular ethnic groups. However, she is more likely to work if she experiences emotional abuse (maybe to avoid this abuse or to try and reduce it by contributing to the family income), if her husband drinks (various women reported that drinking and spending time in brew houses were the downtimes of unemployed men), if she is more educated (more jobs are available to her), if she lives "up country" (possibly necessitating more income overall), and if she is older (indicating that she could have more children that she would need to support or that she is no longer in school).

A woman is more likely to work informally if her husband exhibits controlling behaviors, possibly indicating that this is the only type of employment that she is *allowed* to do. For example, being a "house girl" is a common form of informal employment for Kenyan women. In this role, they perform a variety of household tasks for other people, including cooking, cleaning, laundry, and picking children up from school. In the home where I was staying, our "house girl" had been forbidden to work by her husband. She wanted to make money to send to her parents, but he would only allow her to mend clothes for their neighborhood. In response, she told him that she spent everyday taking sewing lessons when she was really working for my host. This is a clear example of a woman with a controlling husband who limited her ability to work, and who

[11] This probability increases by 0.3621 if her partner works in professional, technical or managerial positions, by 0.3943 if her partner works in a clerical position, by 0.4386 if her partner works in sales, by 0.223 if her partner is self-employed in agriculture, by 0.1413 if her partner works for someone else in agriculture, by 0.4070 if her partner works in domestic services, by 0.2719 if her partner works in skilled manual labor, and by 0.3293 if her partner works in unskilled manual labor.

[12] If a woman is Kalenjin, Kikuyu, Kisii, Luhya, Luo, Masai, Mijikenda/Swahili, Somali, or other, her probability increases by 0.1909, 0.1305, 0.2095, 0.3003, 0.2691, 0.2478, 0.2597, 0.4742, and 0.2932, respectively.

could also face serious backlash if he ever discovered she had been lying. Similarly, a woman is less likely to work informally if she is more educated, indicating that she may be able to hold a more formal type of job. Interestingly, if a woman justifies violence in some way, she is less likely to work informally; this could be tied into why the physical and sexual violence variables are insignificant in this model. A woman is less likely to work informally if she was older when she was first married, following a logical explanation that this woman then had more time to complete more education and hold a more formal job. In terms of a woman's partner's occupation, she is more likely to work informally if her partner works in anything other than services, compared to being unemployed. This relationship could possibly reflect some sort of volatility in partners' employment in different types of professions. Finally, although in almost all cases, women of all ethnic groups are less likely to work despite significance level, it appears that these women, if they do work, are more likely to work informally. This, too, ties into the idea that this may be the only type of profession that these women are *allowed* to do, given the social constraints of their household and community.[13]

Limited Model

Running the model after taking out variables that are insignificant changes the results, as could be expected. I removed the variables "urban," "mabuse," "drinks," "peduc," "age," "page," "childb" and "fgm" from the informality model. Income ranks lose significance, yet ethnicity and partner's standard occupation groups are still very significant. In the selection model, "emotion," "urban," "drinks," "educ," "urban," and "age" are all significant, indicating that we have some very clear variables that factor into a woman's employment decision. In the informality decision, "control" is no longer significant, along with "attd" and "firstmar." The only things that remain significant are ethnicity and years of education, adding more strength the explanation of constraints imposed by ethnic traditions.

Violence Variable

[13] During my time in Kenya, I heard several stories about women not being allowed by their husbands to work outside of the home. In one extreme case, I even heard about a man who stole his wife's identification card so she could not apply for a job. In other cases, more typically conservative ethnic backgrounds, like Somalis, tend to be much more conservative in gender scripts.

In order to correct for some possible multicollinearity between the individual violence variables (see correlation tables in the Appendix), the same models were run using an individual "violence" variable that takes on the value of 1 if the female respondent experienced any sort of physical, sexual, emotion abuse or controlling behaviors. When running this model using the single violence variable, the same variables remain significant. However, when running a limited model with the single violence model, violence remains significant, whereas before the significant "control" variable dropped out. This lends weight to the significance of violence overall, in addition to ethnic group and partner's occupational group.

Other Types of Employment

While I originally sought to evaluate the factors that influence a woman's decision to work informally in Kenya, specifically focusing on violence, other interesting questions have arisen. From the two previous models described (the original self-employment not in agriculture and limited model), one can see that there are consistent factors that influence a woman's general decision to work, but the variables that influence her choice to work informally are more sensitive. By looking at the women's probabilities of working in other types of employment, we may be able to better understand the culture of violence in Kenya, as well as come to a more solid understanding of what prompts Kenyan women to work in general.

General Self-Employment

The first alternative model I have examined looks at a woman's decision to be self-employed, including any sort of agricultural work. Looking at the probability of being self-employed as a whole, only "stdoccup" is significant, whereas before so were "ethnic" and "incrank."[14] This is interesting, given how important ethnicity was in the previous model. Additionally, one can see that a woman's probability of being self-employed decreases if her partner drinks and if she is more educated. While these relationships make logical sense, based on the relationship between a partner drinking and a respondent's level of autonomy, they are much more limited than were recorded in the previous model.

[14] In this case, compared to having an unemployed husband, a respondent's with husbands in any occupation had an increased likelihood of being self-employed.

In the same way as with the original informal employment model, this model was run again using a singular violence variable to discern if there was any significance on general violence on the probability of being self-employed in general. While the general violence variable was not significant, a female's probability of being self-employed decreases if her partner drinks, if her mother was abused, if she has more education, if she is older, and if she was older when she was first married. Additionally, partner's occupation was significant (compared to an unemployed partner), generally increasing her probability of being self-employed.

Self-Employed in Agriculture

Another specific type of way to look at this, since originally I focused on individuals who were self-employed in the non-agricultural sector, is to look at women's probability of being self-employed only in agriculture.[15] Looking at the marginal effects, it appears that none of the violence variables are significant in this context. Also, "stdoccup" and "ethnic" were significant, but "incrank" has dropped out. This could indicate that an individual will work her own land if she owns it, regardless of income level. A woman's probability of being self-employed in agriculture decreases if she has more education and increases if she lives in a rural area, both of which make sense. Additionally, her probability of working in this way decreases for almost every partner's occupational group, suggesting that individual female ownership of land is quite rare.[16] Similarly, identifying as most of the ethnic groups results in a decreased probability of being self-employed in agriculture, again reinforcing the idea of ethnic community restraints.[17] It is possible that these results would be quite different if it were looking her probability of working specifically in agriculture, but not as a self-employed individual.

Again, this model was run again using a singular violence variable to discern if there was any significance of general violence on the probability of being self-employed in agriculture. As it is, the violence variable is not significant, but having more education decreases the probability

[15] This is a difficult concept to fully understand, as there is no guarantee that this woman would actually be making money from this type of employment.
[16] Her probability of being self-employed in agriculture decreases by 0.0158, 0.3196, 0.2687, 0.3459, and 0.1532 if her partner works in professional/technical/managerial jobs, clerical jobs, sales, agriculture for someone else, and unskilled manual labor, respectively (compared to having a partner that does not work).
[17] A woman's probability of doing so decreases by 0.1459 if she is Kamba, 0.1719 if she is Luo, 0.4384 if she is Mijikenda/Swahili, 0.4384 if she is Somali, and 0.2552 if she is another ethnicity, compared to being Embu.

of being self-employed in agriculture, while living in a rural area and having more children increases it. Both of these relationships make sense, as living in a rural area increases the likelihood of having agricultural land, and having more children could either necessitate the flexibility of being able to watch them or having them help do the work. Ethnicity, income rank, and partner's occupation are insignificant in this model with a single violence variable.

Employment and Traditional Gender Roles

In the original model, controlling behaviors within the home and general violence seem to indicate an increased probability of working informally. This, coupled with the significance of ethnicity, leads me to posit that ingrained social constraints may be bigger limiting factor in these women's decisions of professions. Accordingly, if women are more limited by social expectations, emotional abuse, and controlling behaviors, or violence more generally, we could expect that there might be different experiences for the women who work within professions that line up with the expectations of their gender (as dictated by their ethnic community or spouse) and those that do not. To evaluate this, I have created a variable that indicates whether a woman works in a traditionally female sector, specifically in agriculture or domestic services, or not.[18]

In the model using individual violence variables, "stdoccup," "ethnic," and "incrank" are significant. Looking at the average marginal effects, it appears that a woman's probability of working in traditionally feminine professions decreases if her partner exhibits controlling behaviors. Additionally, the probability increases if she lives in a rural area and if she justifies the use of violence, both of which follow the reasoning behind examining this model. A woman is less likely to work in feminine positions in all income ranks, but significantly so in the richer (0.0978) and richest (0.2519) categories. This could indicate that having a higher income level allows an individual greater freedom to choose professions. All of the partner's professional occupations reduce the likelihood of a woman working in these "feminine" professions.[19] Finally, identifying with all ethnic groups also reduces a woman's likelihood of working in these

[18] These two "sectors," so to speak, maintain the closest alliance to the types of roles that women would have held in a pre-industrial society.

[19] The probability decreases by 0.3813 if her partner works in professional/technical/managerial jobs, 0.4491 if her partner works in clerical jobs, 0.4377 if her partner works in sales, 0.3279 if her partner works in skilled manual labor, and 0.3242 if her partner works in unskilled manual labor, compared to having an unemployed partner.

typically feminine sectors.[20] These happen to be the same groups of ethnicities that increased a woman's likelihood of working informally, so it could be that our definition of "informal employment" lies outside of the traditionally feminine realm. To summarize, the divide between those women working within traditionally feminine professions and those that do not is still ambiguous, but it does seem that there are certain factors that might indicate constraint (ethnicity, controlling behaviors, attitude towards violence, etc.) that keep her in this realm.

Again, this model was run again using a single violence variable. With this approach, the violence variable is not significant, whereas the control variable was. However, in its place, increased education significantly decreases one's probability of having a traditionally feminine job, while living in a rural area and justifying violence both significantly increase it. With more education, we can assume that one has the credentials and potential autonomy to break out of gender constraints. Living in a rural area increases the probability of working in agriculture, and justifying violence indicates a potential acceptance of outside constraints on one's autonomy. Additionally, ethnicity, income rank, and partner's occupation group are significant. Generally speaking, identifying as any ethnicity (as compared to Embu) decreases one's probability of working in a traditionally feminine job. This could indicate that if a woman does work, she has already broken out of the constraints imposed by ethnic traditions. Similarly, being in any income rank compared to the poorest ranking also decreases this probability (more money meaning more autonomy), as does having a partner in any occupation compared to being unemployed.

Tables

Table 3. Original Model Variations and Marginal Effects

Independent Variables	***Original selfemp***	***Limited selfemp***	***selfemp with "violence"***	***Limited selfemp with "violence"***
Violence	-	-	0.0781523*	0.0493044*
Control	0.0549334*	0.0294835	-	-
Emotion	0.0349102	0.025933	-	-

[20] The probability decreases by 0.2432, 0.2996, 0.3273, 0.4406, 0.3580, 0.5615, and 0.4709 if a woman identifies as Kalenjin, Luhya, Luo, Masai, Mijikenda/Swahili, Somali, or another ethnicity, compared to being Embu.

Physical	-0.0109916	-0.0075675	-	-
Sexual	0.0379005	0.0366827	-	-
Drinks	-0.0333151	-	-0.0274262	-
Mabuse	-0.0237727	-	-0.0246133	-
Educ	-0.0209263*	-0.011526*	-0.0213573*	0.0811904
Ethnic	*(positive)	*(positive)	* (positive)	* (positive)
Urban	-0.0925037	-	-0.0944364	-
Attd	-0.0559066*	-0.0207326	-0.0531384*	-0.0174261
Incrank	*(positive)	(positive)	*(positive)	(positive)
Stdoccup	*(positive)	*(positive)	* (positive)	* (positive)
Peduc	-0.0025487	-	-0.0030476	-
Age	0.0006952	-	0.0006181	-
Page	-0.0010858	-	-0.0011501	-
Firstmar	-0.0104503*	-0.002635	0-0.0107304*	-0.0030557
Childb	-0.0149359	-	-0.0141246	-
Fgm	-0.0530426	-	-0.0541678	-

***Indicates significance at the 10% level.**

Table 4. Alternative Employment Model Variations and Marginal Effects

Independent Variables	***Selfempwa***	***Selfempwa with***	***Selfempag***	***Selfempag with***	***Tradfem***	***Tradfem with "violence"***
Violence	-	0.0270141	-	-0.040489	-	-0.523358
Control	0.0325238	-	-0.0211602	-	-	-
Emotion	0.0142885	-	-0.0198503	-	0.0190574	-
Physical	-0.0090902	-	-0.0017873	-	0.0146679	-
Sexual	-0.0035647	-	-0.0416216	-	-0.0400436	-
Drinks	-0.0510027*	-0.0527999*	-0.0339714	-0.0431826	0.0110779	0.002108
Mabuse	-0.0442619	-0.0361971*	-0.0085977	-0.0133346	0.0058139	0.0046215
Educ	-0.0325486*	-0.0269671*	-0.0180814*	-0.0183676*	-0.0140591	-0.0173752*
Ethnic	(positive)	(positive)	*(negative)	*(negative)	*(negative)	*(negative)

Urban	0.0102712	-0.0133094	0.2196373*	0.2177333*	0.1452287*	0.1425833*
Attd	-0.0127925	-0.0158156	0.044465	0.0402681	0.0792061*	0.0709349*
Incrank	(varies)	(varies)	(negative)	(negative)	*(negative)	*(negative)
Stdoccup	* (positive)	* (positive)	(negative)	(negative)	*(negative)	*(negative)
Peduc	0.0034468	0.0033285	0.0057131	0.0061311	0.0007497	0.0022238
Age	-0.0025041	-0.0043096*	-0.005329	-0.0055725	0.0000833	-0.001235
Page	-0.0023952	-0.0015463	-0.001194	-0.0011248	-0.0004234	-0.0003599
Firstmar	-0.0080969	-0.005196*	-0.0016541	-0.0013869	-0.0050956	-0.0052024
Childb	0.0064407	0.005693	0.0207646*	0.0194041*	0.0052629	0.0048162
Fgm	0.0059909	0.0043286	0.0286128	0.0291214	0.0501943	0.0518298

***Indicates significance at the 10% level.**

Conclusion

This study examined the relationship between gender-based violence and female employment in Kenya, namely how Kenyan women's experience of violence affects their formality of employment. Using the Kenya Demographic and Health Survey of 2008/09, I used data on female background characteristics such as age, ethnicity, region of residence, educational attainment, etc., in conjunction with information on their experiences of violence and type of employment in order to model a statistical relationship between violence and employment. This study is both relevant and informative in the Kenyan context: Kenya shows consistently high rates of physical and sexual violence and high rates of informal employment amongst women. If these experiences of violence influence the type of employment a woman pursues, then policies aimed at economic development and employment should incorporate this type of knowledge into the solution. Additionally, violence against women is a worldwide issue that infringes upon individuals' basic human right to security. If nation-states exist to provide generally security for their citizens, addressing violence against women should be an integral part of their efforts.

I employed a binomial probit with selection model in order to primarily determine the probability that a female works informally, conditioned on her working at all. In the process of

addressing the probability of informal work, this study looked at the factors that influence the probability of a female working in Kenya. Based on this model, it appears that women are more likely to work if they suffer from emotional abuse, if their partner drinks, if they are more educated, if they live in a rural area, and if they are older. They are overall less likely to work specifically due to their ethnic identification, a particularly important finding. The effects of income rank and partner's occupation are significant, in varying directions for the informal employment model, but are ambiguous otherwise.

When looking at the main model of this study, both general violence and isolated controlling behaviors increase a woman's probability of working informally, while increased educational attainment, justification of violence, and a higher age at first marriage reduce it. One of the key takeaways of this study is the significance of ethnicity in a woman's probability of certain types of employment. If the respondent identifies as any ethnic group, compared to Embu (the automatic base group), she is less likely to work, but if she does work, she is more likely to work informally. This highlights the important ways in which a woman's autonomy might be restricted, aside from violence. While violence indicates a physical restriction of her abilities to work (or a possible threat of doing so), the significance of ethnicity indicates a societal restriction that may directly factor into her own decision to work. This can have huge implications for change when one considers the political context of Kenya. As mentioned before, Kenya has over 40 different ethnic groups which factor prominently in peoples' personal identities, as well as their political affiliations. Looking at the extreme tribal violence that took place during the elections of 2007 and 2008 (around 1,500 killed and 600,000 displace), it would be wise to be cautious and cognizant of the importance of tribalism that still exists within the Kenyan context.[21] This may necessitate different approaches to addressing violence against women and women's empowerment solutions.

In addition to the probability of being informally employed, this study also examined the effects of violence on the probabilities of being generally self-employed, being self-employed only in agriculture, and working in traditionally feminine professions. Each of these models had very different results, indicating the importance of the *type* of employment these women hold. As

[21] Al Jazeera 2013.

we can see in the summary table below, the effects of ethnicity are not important for general self-employment, but they are again significant for self-employment only in agriculture and traditionally feminine employment. This strengthens the conclusion from the previous model that societal constraints, as seen via the ethnic community, are important in a woman's choice of employment, if she does indeed work. In the same way, the only other solid takeaway is that living in a rural area increases the likelihood of working in any sort of agricultural profession, as could be expected. Unfortunately, violence variables of any type are insignificant, except that experiencing controlling behaviors reduces the probability that a woman will work in a traditionally feminine job. This is slightly contradictory to our conclusion from the informal employment model, but may suggest that the effects captured by the informal employment model demonstrate a need to work for income, but only in an informal way in order to abide by a partner's comfortable level of control.

Table 5. Summary of Significance by Independent Variable

Model	Increases Probability	Decreases Probability
Informal employment (self-employed, non-agricultural)	• Controlling behaviors • Ethnicity • Income rank • Partner's occupation	• Educational attainment • Age at first marriage
Limited informal employment	• Ethnicity • Partner's occupation	• Educational attainment
Informal employment using single violence variable	• Experience of any sort of violence • Ethnicity • Income rank • Partner's occupation	• Educational attainment • Justification of violence • Age at first marriage
Limited informal employment using single violence variable	• Experience of any sort of violence • Ethnicity • Partner's occupation	

Self-employment (including agriculture)	• Partner's occupation	• Having a partner that drinks • Educational attainment
Self-employment in agriculture only	• Living in a rural area • Number of children	• Educational attainment • Ethnicity
Employed in agriculture or household & domestic services	• Living in a rural area • Justification of violence	• Experiencing controlling behaviors • Ethnicity • Income rank • Partner's occupation

Understanding these intersections of relationships is complicated and, at times, confusing. Telling these stories and having these explanations be voiced is the first step in gathering how to improve these realities. Violence against women exists, yet these models are saying that it is not necessarily important in their decision to work or how they work. This is not a generalizable truth. In fact, we could interpret this to mean that this sort of violence is normalized within all aspects of society, which then reduces its significance when looking at these sorts of decisions. This does not diminish its greater importance; it only poses a new challenge of how to re-sensitize people to this abuse and work to change the culture in which it exists. As we can see, the data then helps us understand important factors in trying to make this change, namely the importance of controlling behaviors within households as well as the importance of ethnic values. By understanding these varying significances, policymakers can better effect change that can have the potential to be long-lasting.

This evaluation is not the final word in understanding the relationship between violence against women and their employment. As discussed in the Results section, the significance of individual violence variables and a single violence variable change according to employment type, and they also influence the significance of other variables in the models. This ambiguity should be further explored in order to partial out the impacts of violence types and generalized violence on employment, along with its correlations with other variables. It would also be telling

if the violence module allowed for more information regarding lifetime violence instead of only domestic violence. Additionally, including interactions of variables was beyond the scope of this level of study, but could provide valuable insight into the realities of employment and types of employment. Many of these variables do not exist alone, and this interaction could have significant important effects for the models' interpretations. Similarly, due to the nature of this data (survey collection), several values were said to be "missing" because a respondent did not answer, or a response was misplaced, etc. One could impute these values in order to see if they significantly alter the significance of these variables. Finally, in a broader context, this study could be improved with improvements in data collection, specifically in regards to employment. While this study gains a lot from the emergence of information about domestic violence, there are many assumptions that have to be made to sort out relationships of employment due to the limited amount of employment information that exists. As discussed before, we cannot truly separate a woman who sells fruit out of a shack on the street from a woman that owns a functioning grocery store (ignoring income, for example), making it difficult to truly detect "informal employment." Improving flexibility of employment definitions could clear up some of this confusion, and possibly contribute to more concrete conclusions, especially in developing world contexts.

Although they can be expanded upon, these results provide a variety of policy platforms that can be explored. A main takeaway of this study is that controlling behaviors, emotional violence, and ethnic constraints are significant in women's decisions to work and to work informally. In response, it could be important to explore how to develop a dialogue in ethnic communities about women's rights, especially in regards to employment. If women are more generally accepted as income-earners and are praised as such, there will be fewer societal constraints limiting their abilities to pursue better occupations. Additionally, this could encourage school attendance if it somehow changed communities' perceptions about the value of female education. Tied into this sort of conversation could be education about the negative consequences that comes from violence against children, in addition to strengthening enforcement of laws that exist to protect children. Finally, and possibly most challenging, would be limit the levels of corruption in law enforcement in order to ensure that when these crimes do

occur, individuals can feel safe reporting them, and be confident that justice will be realized. Currently, police officers are some of the main obstacles between survivors and a court ruling, and if this obstacle can be overcome, the justice system may be one step closer to functioning the way in which it is intended: to deter crime.

Appendix

Appendix I: Graphics and Tables of Variables used in the Model

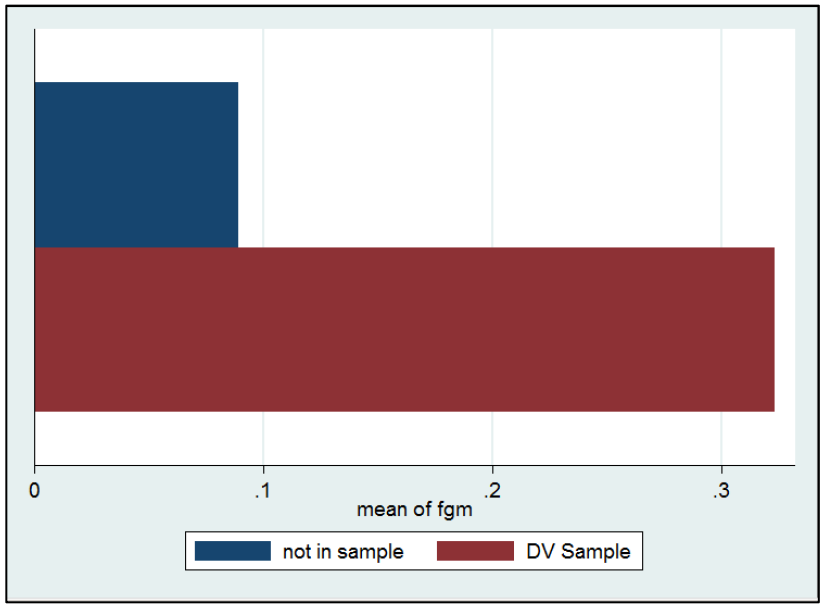

Figure 2 Percentage of individuals who have experienced FGM

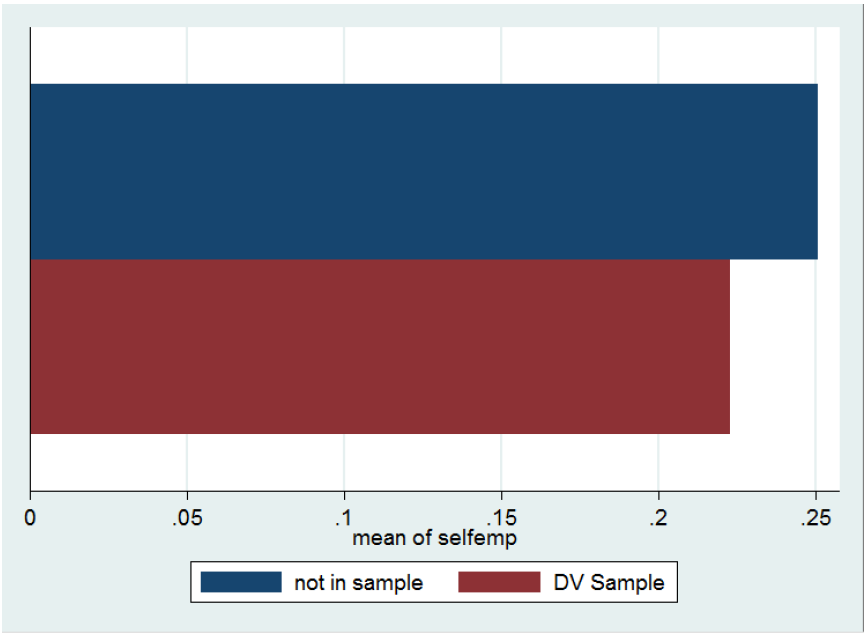

Figure 3. Percent of individuals who are self-employed in the non-agricultural sector

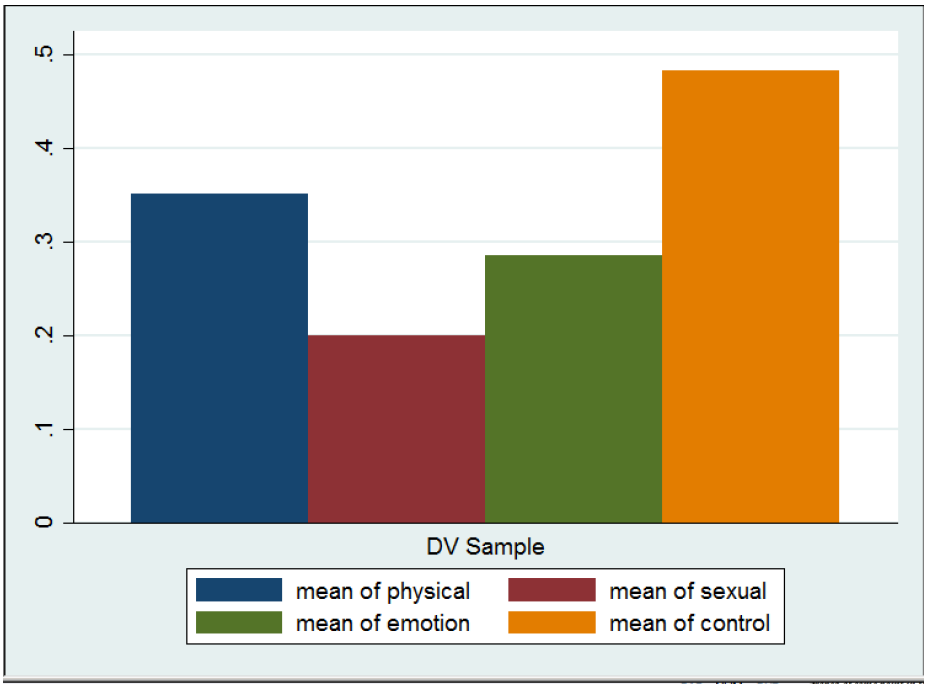

Figure 4. Percentages of women who have experienced violence or abuse

Experiences of Violence among the Broader Female Sample			
Age	Physical Violence	Sexual Violence	Physical & Sexual Violence
15-19	21.8	6.3	5.1
15-17	19.9	6	5.3
18-19	24.6	6.7	4.7
20-24	23.7	5.7	13.8
25-29	28.6	7.2	13.5
30-39	25.6	6	18.1
40-49	23	8.1	20.5
Total	24.5	6.6	14

Table 4. *Kenya Demographic and Health Survey 2008/09 (Table 16.6)*

Type of Employment among Women			
Characteristic	Agricultural Work	Non-agricultural Work	Total
Type of Earnings			
Cash only	33.2	84.6	64.5
Cash and in-kind	14.7	8.3	10.7
In-kind only	3.7	0.5	1.7
Not paid	48.5	6.7	23
Total	100.1	100.1	99.9
Type of employer			
Employed by family member	16.8	3.4	8.7
Employed by non-family member	14.8	39.1	29.6
Self-employed	68.3	**57.4**	61.6
Total	99.9	99.9	99.9
Continuity of employment			
All year	49.9	70.1	62.2
Seasonal	44.9	23.4	31.7
Occasional	5.2	6.5	6.1
Total	100	100	100
Number of employed women	1941	3017	4981

Table 5. Kenya Demographic and Health Survey 2008/09 (Table 3.7)

Appendix II: Changes Made to the Raw Data

To begin with, the original data came in separate forms (broken down by Household, Female, and Male raw datasets), and this dataset was created from the responses to the women and men's questionnaires, in case information on men wanted to be used in the future. Several steps led to their merge.

1. In both data files I created a new variable to indicate gender, called female (equal to 1 for women and 0 for men), and saved these as new datasets.

2. For all of the variables that I wanted to have matched in the combined dataset, I had to rename the male variables to match the female variables (replacing the "mv" prefix with "v").
3. Before appending the data, the most recent copies of the men's and female's data were sorted, "sort v001 v002 v003," and saved.
4. Then the male data was appended to the female data, and saved as a new dataset.

Due to the nature of the way in which USAIDS collects and inputs its DHS data, there were several code specifications that needed to be addressed before the data could be properly analyzed. To begin with, the DHS data was originally coded with special codes that indicate data that was missing, inconsistent, unknown, or other. The special codes were 9/99/999/9999/etc., 8/98/998/9998/etc., 7/97/997/9997/etc., or 6/96/996/9996/etc., respectively. To manage these circumstances in the data while maintaining the significance of their codes, these values were recoded into .a, .b, .c, and .d, respectively. Additionally, all data that had originally been coded as "." I recoded into ".a" in order to maintain consistency among general "missing" observations. In some cases, the data appeared to be continuous but had the maximum value represent a top-coded grouping, such as "95+." In these cases, I made the decision to let the highest set of values take on the value of the limit. Anything other changes to specific variables were made to keep the observations as consistent as possible, and can be provided if asked.

As this data comes from a survey, it was necessary to use a survey format in order to analyze the data so that sampling weights, cluster sampling, and stratification are taken into account. Because of the design of this DHS survey, my survey options were set as follows:

```
. svyset [pweight=dvsampwt], psu(v021) strata(region)

      pweight: dvsampwt
          VCE: linearized
  Single unit: missing
     Strata 1: region
         SU 1: v021
        FPC 1: <zero>
```

As mentioned in the "Data" section of this paper, I created several variables in order to have specific variables that indicated certain types of violence experienced by respondents, as well as respondent's type of employment.

The process for creating the physical violence model was as follows:

```
generate physical=1 if d105a==1
recode physical .=1 if d105a==2
recode physical .=1 if d105a==4
recode physical .=1 if d105b==1
recode physical .=1 if d105b==2
recode physical .=1 if d105b==4
recode physical .=1 if d105c==1
recode physical .=1 if d105c==2
recode physical .=1 if d105c==4
recode physical .=1 if d105d==1
recode physical .=1 if d105d==2
recode physical .=1 if d105d==4
recode physical .=1 if d105e==1
recode physical .=1 if d105e==2
recode physical .=1 if d105e==4
recode physical .=1 if d105j==1
recode physical .=1 if d105j==2
recode physical .=1 if d105j==4
recode physical .=1 if d105k==1
recode physical .=1 if d105k==2
recode physical .=1 if d105k==4
recode physical .=0 if d105a==0
recode physical .=0 if d105a==3
recode physical .=0 if d105b==0
recode physical .=0 if d105b==3
```

```
recode physical .=0 if d105c==0
recode physical .=0 if d105c==3
recode physical .=0 if d105d==0
recode physical .=0 if d105d==3
recode physical .=0 if d105e==0
recode physical .=0 if d105e==3
recode physical .=0 if d105j==0
recode physical .=0 if d105j==3
recode physical .=0 if d105k==0
recode physical .=0 if d105k==3
recode physical .=.a
recode physical 0=1 if d115y==0
```

Where d105e-d105k are questions of whether or not a spouse or partner ever did these things to the respondent: slapped, punched with a fist or something harmful, kicked or dragged, tried to strangle or burn, twisted her arm or pulled her hair, or threatened or attacked with a knife or gun or other weapon. Additionally, the variable d115y indicates if the respondent had ever experienced physical violence from someone other than their spouse or partner.

The process for creating the sexual violence variable follows a similar pattern:

```
generate sexual=1 if d108==1
recode sexual .=1 if d105h==1
recode sexual .=1 if d105h==2
recode sexual .=1 if d105h==4
recode sexual .=1 if d105i==1
recode sexual .=1 if d105i==2
recode sexual .=1 if d105i==4
recode sexual .=1 if d123==1
recode sexual .=1 if d124==1
recode sexual .=1 if d125==1
```

```
recode sexual .=0 if d108==0
recode sexual .=0 if d105h==0
recode sexual .=0 if d105h==3
recode sexual .=0 if d105i==0
recode sexual .=0 if d105i==3
recode sexual .=0 if d123==0
recode sexual .=0 if d124==0
recode sexual .=0 if d125==0
recode sexual .=.a
```

Variable d108 was a general measure of if the individual had ever experienced any sexual violence or not, and should have captured all of the other variables, but the subsequent commands were made just in case there were holes. Where the variables d105h and d105i are whether the respondent's spouse or partner ever physically forced sex when she did not want it, or if the spouse or partner ever forced other sexual acts when she did not want them. Variables d123, d124 and d125 capture whether the respondent's first time having intercourse was wanted or forced, if anyone other than the respondent's partner or spouse forced the respondent to have sex in the past year, and if anyone had forced the respondent to perform sexual acts, respectively.

The variable for emotional violence was already captured in the data as d104, or if the respondent had ever suffered from any emotional violence, and was only renamed to emotion.

The variable for controlling behaviors was created in this way:

```
generate control = 1 if d101a==1
recode control .=1 if d101b==1
recode control .=1 if d101c==1
recode control .=1 if d101d==1
recode control .=1 if d101e==1
recode control .=1 if d101f==1
recode control .=0 if d101a==0
```

```
recode control .=0 if d101b==0
recode control .=0 if d101c==0
recode control .=0 if d101e==0
recode control .=0 if d101f==0
recode control .=.a
```

Where the variables d101a-d101f correspond to the following realities for the respondent: her husband or partner is jealous if she talks to other men; her husband or partner accuses her of unfaithfulness; her husband or partner does not permit her to meet with her female friends; her husband or partner tries to limit her time with her family; her husband or partner insists on knowing where she is; or her husband or partner doesn't trust her with money.

Additionally, the variable attd, representing a respondent's attitude towards violence, was created in the following manner:

```
generate attd=1 if v744a==1
recode attd .=1 if v744b==1
recode attd .=1 if v744c==1
recode attd .=1 if v744d==1
recode attd .=1 if v744e==1
recode attd .=0 if v744a==0
recode attd .=0 if v744b==0
recode attd .=0 if v744c==0
recode attd .=0 if v744d==0
recode attd .=0 if v744e==0
recode attd .=.a
```

The variables v744a-c indicate certain situations in which the respondent justifies violence against a female partner. If any of these variables received a "yes" answer, then the person indicates some sort of acceptance or tolerance of violence within the household.

The process used to create a variable to represent self-employment was more complex. Using the variable the detailed which type of employment an individual had and the variable expressing whom the respondent worked for, I created a binary variable that would indicate non-agricultural self-employment.

```
generate selfemp = 1 if emp==1
recode selfemp 1=0 if stemp=="agric-employee"
recode selfemp 1=0 if stemp=="agric-self employed"
recode selfemp .=0 if emp==2
recode selfemp .=0 if emp==3
recode selfemp .=.a
```

Where stemp is broken down into: not currently working; professional, technical, managerial; clerical; sales; agriculture self-employed; agriculture employee; household and domestic; services; skilled manual; unskilled manual. Additionally, employer is broken down into working for family, others, or self.

The same process has been repeated to identify other types of work: self-employment, including agriculture, working for a family member, or working for someone else.

```
generate selfempwa = 1 if emp==1
recode selfempwa .=0 if emp==2
recode selfempwa .=0 if emp==3
recode selfempwa .=.a
```

The process for creating the variable for self-employment in agriculture:

```
generate selfempag = 1 if emp ==1
recode selfempag .=0 if emp==2
recode selfempag .=0 if emp==3
recode selfempag 1=0 if stemp==”clerical”
```

recode selfempag 1=0 if stemp==”household & domestic”

recode selfempag 1=0 if stemp==”prof., tech., manag.”

recode selfempag 1=0 if stemp==”sales”

recode selfempag 1=0 if stemp==”services”

recode selfempag 1=0 if stemp==”skilled manual”

recode selfempag 1=0 if stemp==”unskilled manual”

recode selfempag .=.a

Appendix III: Correlation Tables

```
. corr physical sexual emotion control
(obs=4,849)
```

	physical	sexual	emotion	control
physical	1.0000			
sexual	0.2907	1.0000		
emotion	0.4378	0.3598	1.0000	
control	0.2696	0.2198	0.2732	1.0000

```
. corr violence mabuse drinks ethnic fgm
(obs=4,255)
```

	violence	mabuse	drinks	ethnic	fgm
violence	1.0000				
mabuse	0.1734	1.0000			
drinks	0.1487	0.0539	1.0000		
ethnic	-0.0220	-0.0009	-0.1117	1.0000	
fgm	0.0078	0.0804	-0.0565	0.0966	1.0000

```
. corr peduc stdoccup incrank
(obs=5,584)
```

	peduc	stdoccup	incrank
peduc	1.0000		
stdoccup	-0.1845	1.0000	
incrank	0.5308	-0.0805	1.0000

```
. corr ethnic urban incrank
(obs=11,907)
```

	ethnic	urban	incrank
ethnic	1.0000		
urban	-0.0009	1.0000	
incrank	-0.0921	-0.6554	1.0000

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