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**What traders know: the (mis)perceptions of  
formal and informal cross-border traders**

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**Abstract:** Cross-border traders face a choice between official and unofficial border crossings. The latter allow them to evade taxes, but expose them to other risks, such as bribes, fines, and arrest. We investigate the perceptions of cross-border traders about the risks of trading officially vs unofficially at the border between Kenya and Uganda. We find that traders overestimate the risks of trading officially relative to the same risks when trading unofficially. In reality, the measured risks of trading through the official border are lower.

**Key words:** cross-border trade, formality, informality, beliefs, corruption

**JEL classification:** D73, F13, H26, Q17

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## 1 Introduction

In much of the developing world, a large fraction of cross-border trade is conducted by small-scale traders who are often unregistered (informal) or on the verge of informality. These traders face a common question: *whether to choose official or unofficial routes when crossing the border*. When they use unofficial crossings, they can avoid paying tariffs and limit delays due to official procedures. However, opting for unofficial crossings may result in fines, confiscation of goods, and arrest, or in having to pay bribes to the police to avoid getting caught.

Despite the importance and the scale of this issue, little evidence exists on how traders choose between trading through official and unofficial crossings, and, in particular, on the information set this choice rests upon. It is foreseeable, for instance, that traders may exaggerate the cost of trading officially (especially in contexts where public authorities are associated with corruption) or they may underestimate the cost of trading unofficially. Furthermore, since information on the costs and risks of trading through unofficial crossings is not readily available and traders must largely rely on their own experience (or on the experience of those in close proximity), one could hypothesize the existence of a vicious cycle of low-experimentation and misguided beliefs leading to incorrect beliefs in equilibrium (e.g. Caria and Falco 2022). No empirical test of this hypothesis, however, has been conducted to date.

We bridge this knowledge gap through a novel belief-elicitation exercise among traders at the border between Kenya and Uganda. We survey over 350 traders in key markets close to main border crossings. To ensure knowledge of the process, we select traders who have engaged in some cross-border trade over the past 12 months and plan to engage in cross-border trade in the next 6 months. The survey paints a comprehensive picture of the costs and benefits of trading formally vs informally, including fees paid at the official border, and penalties or bribes at the unofficial border, as well as instances of confiscation and arrest. The survey also details the operations of every single trader (goods traded, turnover, frequency of trading, etc.) to explore heterogeneity and control for potential confounding factors.

Crucially, we measure traders' perceptions of the costs that other 'traders like them' would face when trading through the official and the unofficial border. This includes an extensive set of potential penalties (e.g. fines, arrest) that traders could incur for trading unofficially, as well as expected bribes to avoid getting caught. We can then compare perceptions to the actual experience of the traders in our sample.

Finally, to further corroborate the validity of our findings, we elicit perceptions about a small sample of fictitious traders ('decoy traders') crossing the border *with a specific bundle of goods*. This allows us to anchor beliefs more precisely as we can refer to a well-defined experience of trading. Specifically, we ask respondents what costs those traders would face. We then ask a set of real traders to actually go through the border with that specific bundle of goods, acting as decoy traders, and we can draw a direct comparison between respondents' perceptions and the actual experience of these decoy traders.<sup>1</sup>

We find that a significant share of trade occurs through the unofficial border. Nearly 30% of traders in the sample report using unofficial crossings. Traders are largely women, they are often farmers who sell their own goods, and they transport the goods across the border themselves. Our key result is that traders tend to overestimate the risks of crossing through the official border relative to the risks of crossing through the unofficial border. Most strikingly, traders report similar likelihoods of being asked

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<sup>1</sup> The decoy traders were people who already traded on a regular basis officially and unofficially. It was made clear to them that participating in this exercise was entirely optional and they could opt out at any moment. We conducted a thorough assessment of the risks to make sure we did not expose these traders to any unusual costs or risks. The decoy trips they conducted were very similar to the trips they normally conduct. The difference was the bundle of goods they were carrying, which was fixed by the research team, but included products that are commonly traded across the border between Kenya and Uganda.

to pay bribes at the official and the unofficial crossings, but the actual likelihood of paying bribes at the official borders is significantly lower. These are striking novel findings which suggest that when perceptions of corruption in public authorities are high, as in Kenya, economic agents may overestimate corruption levels and there may be a role for better information to foster learning.

The literature on small-scale cross-border trade in developing countries is still in its infancy, and this paper makes an important contribution by delving into the information and beliefs traders have and base their decisions on. Existing studies include work by Bensassi et al. (2019), Croke et al. (2021), Golub (2015), Siu (2020), Wiseman (2021), Klopp et al. (2022), and Titeca and Celestin (2012). Previous work by Wiseman (2023) is directly relevant to our analysis and finds that traders' choice of trading officially or unofficially shows significant stickiness, pointing to the possibility that once traders acquire knowledge about a certain route, it is difficult for them to update their information set. This is plausibly due to lack of readily available information and due to lack of experimentation with the alternative option. In this context, providing information fosters trading through official routes (Wiseman 2023).

We also contribute to a broader literature on misaligned beliefs among economic agents, which has found evidence of distortions in a range of contexts, including job search (e.g. Abebe et al. 2022; Bandiera et al. 2021; Banerjee and Sequeira 2023), employers' perceptions of employees (Caria and Falco 2022), returns to education (e.g. Jensen 2010), and gambling (Chegere et al. 2022), to cite a few. We are the first to document the existence of such misperceptions in the context of cross-border trading.

The rest of the paper is organized as follows. In Section 2, we describe the context of our survey. In Section 3 we present the survey methodology and outline some key summary statistics. Section 4 presents the results on traders' (mis)perceptions. Section 5 concludes.

## 2 Markets at the border

The data collection was conducted in 20 Kenyan markets located at the border between Kenya and Uganda.<sup>2</sup> We specifically selected markets located close to two border crossing points: Port Victoria and Lwakhakha. Lwakhakha is a land border crossing while Port Victoria is the border point located at Lake Victoria. All the markets are on the Kenyan side in the counties of Busia, Bungoma, and Siaya. The complete list of market locations is available in Table A1 in Appendix A.

Border towns rely heavily on trade exchanges, and markets situated close to the border crossings therefore attract international suppliers, buyers, and traders. A variety of goods are sold in those markets, including many agriculture products and fish. There is significant variation in the size of the trading businesses operating in these markets, which range from large trucks on their way to bigger international markets to small-scale traders who trade in markets located on either side of the border. Small-scale traders in this area tend to be women who cross the border multiple times per week by foot, bike, motorbike, or boat.

Even though traders are required to trade through official border crossings to declare their goods, pay taxes, and pass through quality control, many small-scale traders opt to avoid official customs by using unofficial routes that are located close by. This allows them to avoid taxes and the bureaucracy associated with trading goods;<sup>3</sup> instead, they often pay bribes to the police patrolling unofficial crossings to be allowed to pass.

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<sup>2</sup> The survey was conducted between October 2023 and January 2024.

<sup>3</sup> These are potentially important costs despite the fact that many countries in East Africa, including Kenya and Uganda, have trade agreements limiting tariffs and simplified procedures for small-scale traders aimed at facilitating trade.

### 3 Survey methodology and data

#### 3.1 Survey methodology

In each surveyed market, respondents were selected through a random-walk strategy. Sampling was carried out on weekdays when the market was busier to maximize our chances of meeting the desired sample size of approximately 350. Every person selected through the random walk was asked preliminary questions to establish whether they were indeed traders and eligible for the survey.<sup>4</sup> Through this methodology, we were able to interview 357 traders in total.<sup>5</sup>

#### 3.2 Summary statistics

In this section, we offer an overview of key summary statistics describing the rich data at our disposal.

Table 1 provides a description of our sample of traders. Women make up four-fifths of the sample. This is not uncommon, and it reveals an important gender imbalance in this domain. The average trader is relatively senior (the mean age is close to 44), which underscores that experience and age may not be sufficient to eliminate the biases we investigate in this study. The vast majority of traders are Kenyan nationals.

Table 1: Traders' characteristics

	Mean	SD	N
Male	0.20	0.40	357
Age	43.80	11.30	357
Kenyan nationality	0.76	0.42	357
Kenyan residence	0.69	0.46	357
Household size	6.94	3.32	355
Observations	357		

Note: the table shows summary statistics for key trader characteristics.

Source: authors' compilation.

Table 2 turns to the characteristics of the trading business our respondents conduct. For virtually all traders in our sample, trading is the main source of income. The majority of traders are farmers who sell the products they grow themselves. The businesses are small, with the average number of employees below 1. The majority of traders transport the goods themselves across the border. This is consistent with our priors about this sector being largely populated by small businesses that do not rely on hired transport services. It is therefore meaningful and important to analyse the decision to cross the border officially or unofficially within this population since this decision ultimately rests with the individual traders and not with an external transporter.

Turning to the choice of whether to cross the border officially or unofficially, Figure 1 shows that the majority of traders choose the official border, but a very large share (close to 30%) choose the unofficial border (always or on some occasions). This is likely to be an underestimate since admitting to using the unofficial border may carry some negative stigma and some respondents may be unwilling to reveal it, despite our reassurances that we would treat their answers as fully confidential. In light of this, the large share of unofficial trading we record is all the more significant and worthy of attention, as it results

<sup>4</sup> A trader was defined as someone who buys goods in markets/locations that are different from where they sell the goods.

<sup>5</sup> The data was collected using SurveyCTO. The data collection was administered by IPA Kenya. The data collected was subjected to regular high-frequency quality checks and back-checks were conducted for 10% of all surveys completed. If the quality checks flagged any missing variables or inconsistencies, callbacks were made and corrections implemented promptly.

in a substantial loss of tax revenue and exposes a large fraction of traders to the risks associated with unofficial crossing.

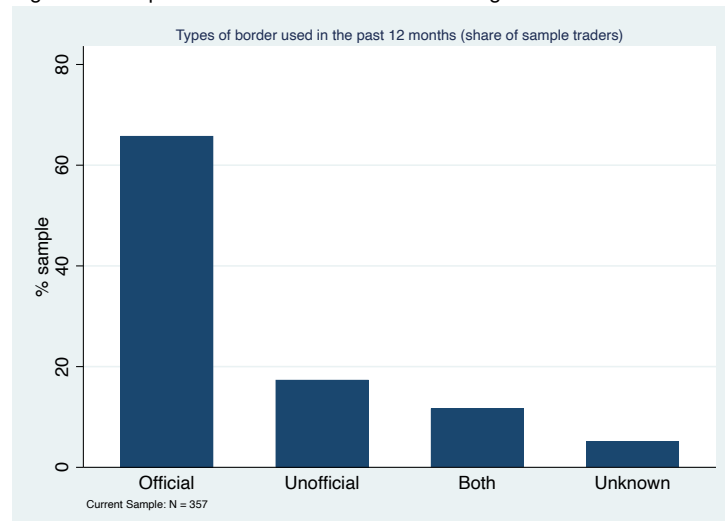
Table 2: Traders' business characteristics

	Mean	SD	N
<b>Trade type</b>			
Importer	0.69	0.46	357
Exporter	0.17	0.38	357
Both	0.14	0.35	357
Some domestic trade in past 12 months	0.79	0.41	357
<b>Trader characteristics</b>			
Trading is main source of income	0.98	0.14	357
Has other sources of income	0.43	0.50	357
Is a farmer	0.84	0.37	357
Sells goods grown on own farm	0.56	0.50	299
Own trading business	0.99	0.07	357
<b>Profitability</b>			
N workers in past 30 days	0.55	1.93	357
Monthly revenue from trade (past 12 months; Ksh)	54,823	77,708	346
Monthly profit from trade (past 12 months; Ksh)]	12,528	17,585	344
<b>Crossings</b>			
N trips across border in typical week	2.01	1.46	352
Value of goods transported in typical trip (Ksh)	13,879	21,680	350
Transport goods themselves—always	0.58	0.49	351
Transport goods themselves—sometimes	0.23	0.42	351
Transport goods themselves—never	0.19	0.39	351
Crosses border with goods themselves—always	0.57	0.50	352
Crosses border with goods themselves—sometimes	0.22	0.41	352
Crosses border with goods themselves—never	0.21	0.41	352
Observations	357		

Note: the table shows summary statistics for key business characteristics of the trading businesses in the sample.

Source: authors' compilation.

Figure 1: Sample traders' choice of border crossings



Note: the figure shows the proportion of traders who report using different types of crossings.

Source: authors' compilation.

Table 3 offers additional insight into the experience of trading formally and informally by looking at monetary values for the average trip. It reports the value of the goods traded, the profits made, the bribe amount to be paid, as well as the waiting time experienced at the official and the unofficial crossings. The volume of goods and the profit they generate is higher, on average, in trips through the unofficial than the official border. The average waiting time is also higher at unofficial crossings and the bribe amount paid is significantly higher.

Table 3: Traders' experiences when crossing borders

	Mean	SD	N
Value of goods when using official crossing	13,345	22,151	250
Profits of goods when using official crossing	2,958	4,152	243
Waiting time when using official crossing	16.30	14.84	250
Bribe amount when using official crossing	33.62	264.75	249
Value of goods when using unofficial crossing	16,450	22,528	86
Profits of goods when using unofficial crossing	3,986	4,225	83
Waiting time when using unofficial crossing	19.40	22.95	87
Bribe amount when using unofficial crossing	131	569	83
Observations	330		

Note: the table shows summary statistics for key variables capturing traders' experiences with cross-border trading in terms of both business results (e.g. profit) and risks incurred (e.g. bribes to be paid).

Source: authors' compilation.

#### 4 Results on traders' misperceptions

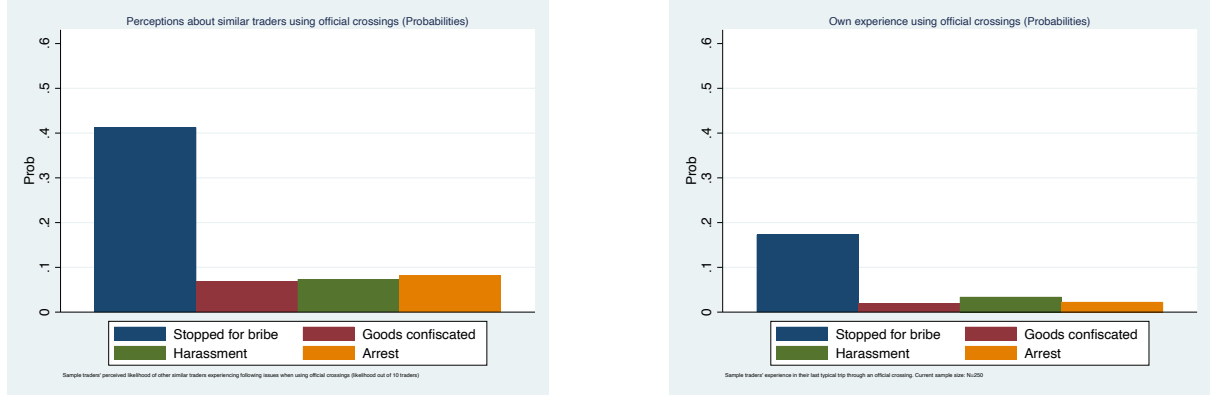
In this section we present the core of our analysis on the (mis)alignment between traders' perceptions of the risks they face when trading through the official vs unofficial border and the actual experience of traders as captured by our survey.

Figure 2 shows the average of people's perceptions of the likelihood of the most salient risks associated with crossing the official vs the unofficial border: being stopped and asked for a bribe, having goods confiscated, being harassed, and being arrested.<sup>6</sup> Panels (a) and (b) refer to trading through official crossings. Panels (c) and (d) refer to trading through unofficial crossings. For each type of trade, on the left-hand side (panels (a) and (c)) we have perceived risks. On the right-hand side (panel (b) and (d)) we have actual risks as experienced by the respondents in our sample. A number of important results emerge.

First, traders tend to exaggerate the risks associated with trading through both the official and the unofficial borders. Specifically, traders overestimate the likelihood of being stopped for a bribe, of having goods confiscated, and of being arrested. Second, and most importantly, we find that the overestimation of the risks is more significant with respect to official crossings. This is to say that respondents tend to more significantly exaggerate the risks associated with trading formally. It is particularly stark, for instance, that respondents report similar perceived likelihoods of being stopped to pay bribes when crossing formally and informally. In reality, the risk of having to pay a bribe when crossing the official border is significantly lower than when crossing the unofficial border. This is true both among traders who typically trade through the official border and those who trade through the unofficial border, suggesting that biases are deeply entrenched and do not change with experience (see Figures A1 and A2 in Appendix A).

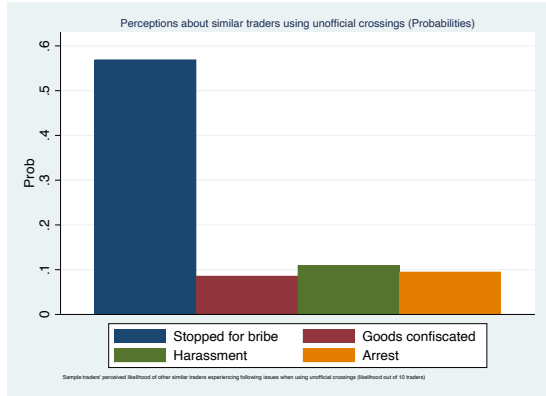
<sup>6</sup> For each variable, we report a likelihood obtained from questions that asked respondents out of ten traders like themselves, how many would face each specific circumstance when trading across the border.

Figure 2: Perceptions and actual costs of crossing officially and unofficially

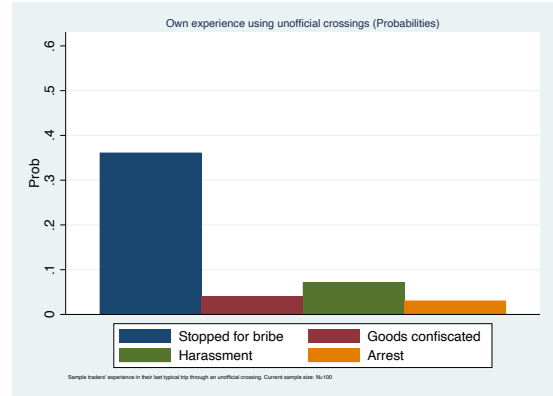


(a) Perception: official

(b) Actual: official



(c) Perception: unofficial



(d) Actual: unofficial

Note: the figure shows the perceived likelihood ((a) and (c)) and actual likelihood ((b) and (d)) of different risks materializing, for official crossings ((a) and (b)) and unofficial crossings ((c) and (d)). Perceived probabilities are based on a belief-elicitation: 'Out of ten traders, how many do you think ...?'. Actual likelihoods are the shares of traders in the sample who actually incurred those risks in the relevant time period.

Source: authors' compilation.

Next, we delve into the determinants of the gap between perceptions and reality at the individual level. Let the perception–reality (P-R) gap for the official and unofficial crossings of an individual trader  $i$  be defined as follows:

$$P-R \text{ Gap}_i^{off} = \frac{C_i^{Perc,off} - C^{Real,off}}{C^{Real,off}}$$

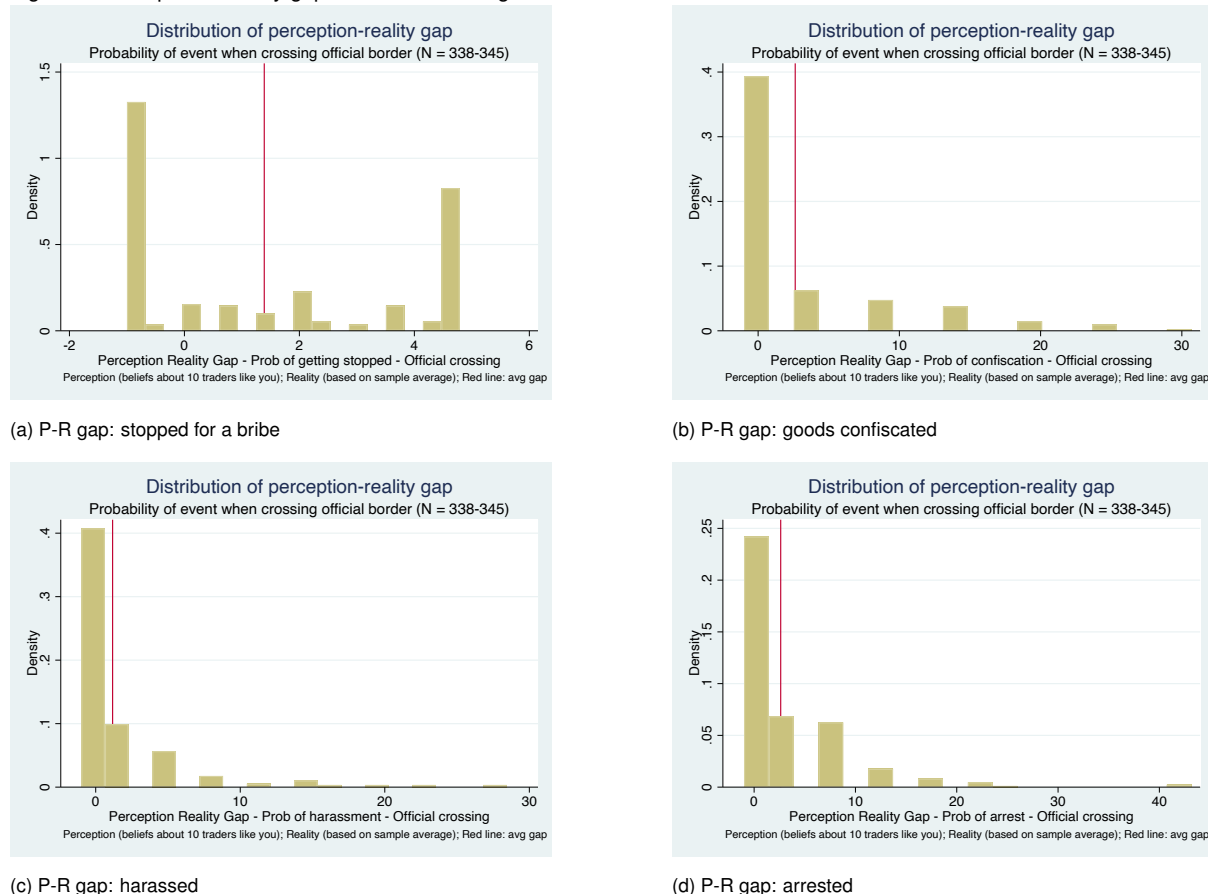
$$P-R \text{ Gap}_i^{unoff} = \frac{C_i^{Perc,unoff} - C^{Real,unoff}}{C^{Real,unoff}}$$

where  $C_i^{Perc,off}$  is a cost perceived by trader  $i$  of trading officially, and  $C_i^{Perc,unoff}$  is a cost perceived by trader  $i$  of trading unofficially. This could be, for instance, trader  $i$ 's perceived likelihood of being stopped for a bribe, having goods confiscated, or being arrested.  $C^{Real,off}$  and  $C^{Real,unoff}$ , on the other hand, are the actual costs faced on average by similar workers when trading through the official and unofficial borders, respectively, as measured by the recent experience of the traders in our survey. The P-R gap is the difference between perceptions and reality normalized by the value of the actual cost. The P-R gap can be computed for different costs and risks (bribes, delays, risk of arrest, etc.). In what follows, it will predominantly take the form of a gap in the likelihood that certain risks materialize.



Figures 3 and 4 show the distribution of the P-R gap for the different risks analysed for official and unofficial crossings, respectively. First, the figures show that there is significant heterogeneity among traders. Some tend to overestimate the risks, while others tend to underestimate them. On average, however, P-R gaps are *positive*, consistent with the above conclusions that risks are exaggerated, and more so for unofficial crossings. This is more clearly visible in Figure A3, where we plot the density of P-R gaps for official and unofficial crossings by type of risk. The average P-R gap is always higher for official than for unofficial crossings, and the difference is especially striking with regard to the risk of paying a bribe, consistent with the hypothesis that traders have an exaggerated perception of the corruption levels at the official border.

Figure 3: Perceptions–reality gap for official crossings



Note: the figure shows the distribution of the P-R gap in our sample of traders for different risks incurred at official crossings. Gaps are normalized to enhance comparability across risks. They should therefore be interpreted as the percentage deviation (positive or negative) from the truth. The vertical line in each subfigure marks the average gap for that risk.

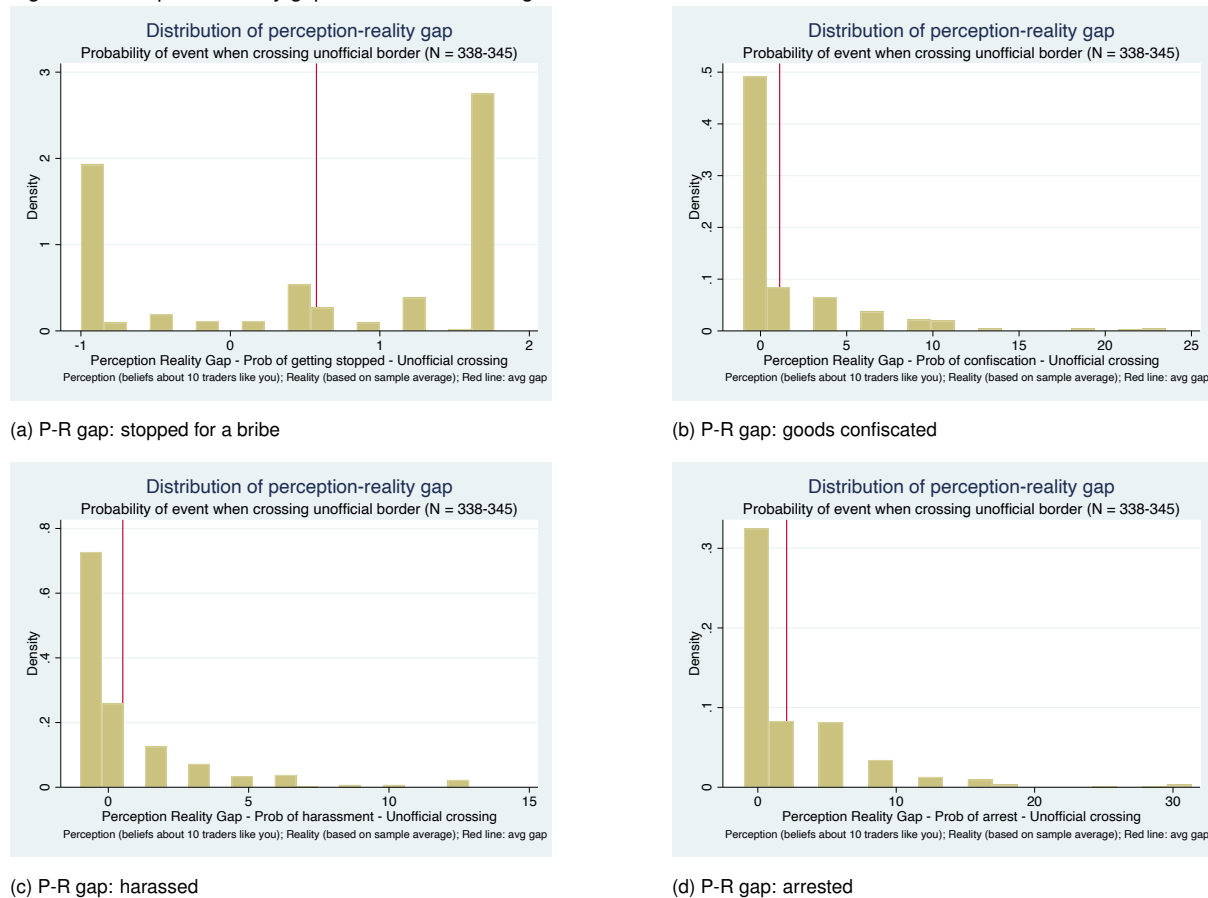
Source: authors' compilation.

A potential concern with the analysis so far is that expectations may not be well-anchored in the sense that respondents may be thinking of a typical trading trip that is not reflective of the average trip in our sample. To overcome this problem, we asked a group of traders to cross the border with a specific bundle of goods composed of two bags, containing 90 kg of maize and 90 kg of beans.<sup>7</sup> In the survey, we asked respondents an additional set of questions to elicit beliefs about the same costs and risks as above, but for someone who traded the specific bundle carried by the decoy traders. Figure A4 shows the comparison of predicted vs actual risks incurred by the decoy traders and highlights an overestimation of most risks,

<sup>7</sup> Each of the decoy traders was asked to cross the border both formally and informally. This is something they routinely do and we made sure we did not expose the traders to any risks they do not normally face. It was also made clear to them that participating in this activity was entirely optional and they could withdraw at any moment.

consistent with the results discussed above. However, due to the limited number of decoy traders in the experiment, this evidence is tentative and will require further scrutiny by expanding the sample in future research.<sup>8</sup>

Figure 4: Perceptions–reality gap for unofficial crossings



Note: the figure shows the distribution of the P-R gap in our sample of traders for different risks incurred at unofficial crossings. Gaps are normalized to enhance comparability across risks. They should therefore be interpreted as the percentage deviation (positive or negative) from the truth. The vertical line in each subfigure marks the average gap for that risk.

Source: authors' compilation.

Finally, we delve deeper into the heterogeneity in the P-R gap by estimating a regression model with the P-R gap on the left-hand side and a number of trader characteristics on the right-hand side. We use the absolute value of the P-R gap since we are interested in understanding whether specific trader categories are more accurate in their judgement, possibly in relation to socioeconomic background and experience. The results are reported in Table 4. Interestingly, they show that very few individual and business characteristics correlate with misperceptions, pointing to the conclusion that the misperceptions we observe cut across sociodemographic categories and are rather broad-based. We only see some tentative indication that traders who have other sources of income—and are perhaps less invested in and experienced with cross-border trade—tend to have less accurate perceptions. We reach the same conclusions when we regress the perceived probability of different risks materializing on trader characteristics, as opposed to the P-R gap (Table 5).<sup>9</sup>

<sup>8</sup> The number of decoy traders was limited (35 in total) for financial and logistical reasons.

<sup>9</sup> Table A2 further shows the same regressions with the P-R gap as the dependent variable without taking the absolute value. The conclusions are broadly unchanged.

Table 4: Determinants of the perception–reality gap (absolute value)

	Abs. value P-R gap official crossing				Abs. value P-R gap unofficial crossing			
	(1) Stopped	(2) Confiscation	(3) Harassment	(4) Arrest	(5) Stopped	(6) Confiscation	(7) Harassment	(8) Arrest
Male	0.265 [0.251]	0.071 [0.793]	1.348** [0.554]	1.756** [0.745]	0.038 [0.075]	-0.305 [0.488]	0.019 [0.318]	-0.288 [0.624]
Age	-0.002 [0.009]	0.004 [0.028]	0.010 [0.019]	0.036 [0.026]	0.004 [0.003]	-0.021 [0.017]	0.009 [0.011]	0.026 [0.022]
Kenyan residence	0.318 [0.274]	-0.286 [0.871]	-1.050* [0.609]	-0.021 [0.817]	0.054 [0.084]	0.712 [0.548]	0.864** [0.356]	2.239*** [0.701]
Household size	0.010 [0.029]	-0.084 [0.094]	0.012 [0.065]	0.137 [0.088]	0.012 [0.009]	0.124** [0.059]	-0.000 [0.038]	0.045 [0.075]
Exporter	-0.543* [0.312]	-2.571*** [0.976]	-2.266*** [0.685]	-2.188** [0.917]	0.065 [0.097]	0.061 [0.626]	0.330 [0.407]	0.109 [0.800]
Both	0.207 [0.291]	-1.041 [0.926]	-0.791 [0.647]	-0.655 [0.870]	0.061 [0.090]	-0.926 [0.583]	-0.447 [0.379]	-1.151 [0.745]
Has other sources of income	-0.311 [0.194]	4.413*** [0.621]	1.610*** [0.434]	2.914*** [0.583]	-0.145** [0.059]	1.968*** [0.388]	0.405 [0.252]	2.449*** [0.496]
<i>N</i> workers in past 30 days	-0.028 [0.051]	-0.223 [0.164]	-0.019 [0.114]	-0.419*** [0.154]	-0.044*** [0.016]	0.012 [0.102]	0.049 [0.066]	-0.077 [0.130]
Monthly profit from trade business (past 12 months; Ksh)	0.000 [0.000]	0.000** [0.000]	0.000 [0.000]	0.000 [0.000]	0.000*** [0.000]	0.000 [0.000]	-0.000 [0.000]	-0.000 [0.000]
<i>N</i> trips across border in typical week	0.063 [0.072]	-0.133 [0.227]	-0.041 [0.159]	-0.280 [0.213]	-0.037* [0.022]	-0.112 [0.140]	0.130 [0.091]	0.056 [0.178]
Value of goods transported in typical trip (Ksh) 0.000	-0.000 [0.000]	0.000 [0.000]	-0.000 [0.000]	0.000 [0.000]	-0.000 [0.000]	0.000 [0.000]	-0.000 [0.000]	0.000 [0.000]
Crosses border with goods themselves—always	0.587** [0.276]	-1.498* [0.870]	0.177 [0.608]	1.079 [0.817]	0.052 [0.085]	-1.269** [0.547]	-0.088 [0.355]	0.489 [0.699]
Crosses border with goods themselves—sometimes	0.076 [0.301]	0.053 [0.950]	-0.156 [0.664]	1.338 [0.892]	-0.103 [0.093]	-1.022* [0.602]	-0.572 [0.391]	-0.406 [0.769]
Unofficial crossers	0.452* [0.260]	-0.358 [0.823]	0.594 [0.575]	0.173 [0.773]	0.231*** [0.077]	-1.005** [0.506]	0.367 [0.326]	-1.636** [0.642]
Dual crossers	0.572* [0.299]	2.021** [0.940]	0.599 [0.665]	0.993 [0.882]	0.043 [0.090]	-0.395 [0.584]	0.493 [0.380]	-0.453 [0.747]
Don't know which crossing is used	1.053* [0.585]	0.458 [1.865]	2.537* [1.303]	0.307 [1.751]	0.126 [0.169]	0.549 [1.143]	-0.140 [0.718]	-1.030 [1.410]
Constant	1.415** [0.627]	4.068** [1.990]	1.935 [1.390]	-0.174 [1.869]	0.895*** [0.191]	2.750** [1.243]	0.227 [0.806]	-0.292 [1.585]
R-squared	0.087	0.228	0.118	0.17	0.136	0.155	0.06	0.151
Observations	327	331	330	331	323	324	326	326

Note: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Source: authors' compilation.

Table 5: Determinants of perceived risk

	Risk perceived for official crossing				Risk perceived for unofficial crossing			
	(1) Stopped	(2) Confiscation	(3) Harassment	(4) Arrest	(5) Stopped	(6) Confiscation	(7) Harassment	(8) Arrest
Male	0.064 [0.062]	0.001 [0.017]	0.051** [0.021]	0.041** [0.019]	0.002 [0.062]	-0.015 [0.024]	-0.004 [0.028]	-0.012 [0.022]
Age	-0.000 [0.002]	0.000 [0.001]	0.000 [0.001]	0.001 [0.001]	0.001 [0.002]	-0.001 [0.001]	0.001 [0.001]	0.001 [0.001]
Kenyan residence	0.102 [0.068]	-0.008 [0.019]	-0.040* [0.024]	0.004 [0.021]	0.151** [0.070]	0.031 [0.026]	0.089*** [0.032]	0.080*** [0.025]
Household size	0.002 [0.007]	-0.002 [0.002]	0.001 [0.003]	0.004* [0.002]	0.013* [0.007]	0.005* [0.003]	0.003 [0.003]	0.002 [0.003]
Exporter	-0.154** [0.078]	-0.060*** [0.021]	-0.094*** [0.027]	-0.056** [0.023]	-0.042 [0.080]	-0.006 [0.030]	0.005 [0.036]	-0.002 [0.028]
Both	0.066 [0.073]	-0.020 [0.020]	-0.030 [0.025]	-0.021 [0.022]	0.008 [0.074]	-0.044 [0.028]	-0.042 [0.034]	-0.038 [0.026]
Has other sources of income	-0.017 [0.048]	0.093*** [0.013]	0.073*** [0.017]	0.080*** [0.015]	0.001 [0.049]	0.101*** [0.019]	0.059*** [0.022]	0.092*** [0.017]
<i>N</i> workers in past 30 days	-0.000 [0.013]	-0.004 [0.004]	-0.001 [0.004]	-0.011*** [0.004]	-0.019 [0.013]	0.002 [0.005]	0.002 [0.006]	-0.003 [0.005]
Monthly profit from trade business (past 12 months; Ksh)	0.000 [0.000]	0.000** [0.000]	0.000 [0.000]	0.000 [0.000]	0.000** [0.000]	0.000 [0.000]	-0.000 [0.000]	-0.000 [0.000]
<i>N</i> trips across border in typical week	0.008 [0.018]	-0.003 [0.005]	-0.003 [0.006]	-0.007 [0.005]	-0.032* [0.018]	-0.004 [0.007]	0.011 [0.008]	0.002 [0.006]
Value of goods transported in typical trip (Ksh)	0.000 [0.000]	-0.000 [0.000]	0.000 [0.000]	-0.000 [0.000]	0.000** [0.000]	-0.000 [0.000]	0.000 [0.000]	-0.000 [0.000]
Crosses border with goods themselves—always	0.144** [0.069]	-0.028 [0.019]	0.007 [0.024]	0.027 [0.021]	0.097 [0.070]	-0.053** [0.026]	0.011 [0.031]	0.025 [0.024]
Crosses border with goods themselves—sometimes	0.033 [0.075]	0.002 [0.020]	-0.003 [0.026]	0.030 [0.023]	-0.055 [0.077]	-0.047 [0.029]	-0.047 [0.035]	-0.012 [0.027]
Unofficial crossers	0.066 [0.065]	-0.010 [0.018]	0.014 [0.022]	-0.001 [0.020]	0.067 [0.064]	-0.059** [0.024]	0.026 [0.029]	-0.070*** [0.022]
Dual crossers	0.125* [0.074]	0.040** [0.020]	0.025 [0.026]	0.026 [0.022]	-0.020 [0.074]	-0.024 [0.028]	0.037 [0.034]	-0.021 [0.026]
Don't know which crossing is used	0.213 [0.146]	0.012 [0.040]	0.098* [0.051]	0.006 [0.044]	-0.056 [0.140]	0.012 [0.055]	-0.023 [0.064]	-0.038 [0.049]
Constant	0.182 [0.156]	0.071* [0.043]	0.052 [0.054]	-0.017 [0.047]	0.274* [0.158]	0.096 [0.060]	-0.071 [0.071]	-0.041 [0.055]
R-Squared	0.084	0.223	0.137	0.182	0.12	0.163	0.085	0.177
Observations	327	331	330	331	323	324	326	326

Note: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Source: authors' compilation.

## 5 Conclusions

Small-scale cross-border trade constitutes a large fraction of total trade in developing countries, but much of it goes unrecorded and untaxed. Governments invest significant efforts and money to reduce unofficial cross-border trade and improve trade facilitation. They simplify official procedures for small-scale traders and create one-stop border posts with the goal of increasing transparency and reducing bureaucracy for traders crossing the border. However, very little is known about the choice of a trader to cross the border through the official or the unofficial crossing, and we lack a clear understanding of the extent to which traders are well informed about the costs and benefits involved.

This project makes an important contribution by providing the first evidence on the misperceptions of cross-border traders through a novel belief-elicitation exercise embedded within a rich survey conducted at the border between Kenya and Uganda. Our key finding is that, on average, cross-border traders tend to overestimate the risks of crossing through the official border relative to the risks of crossing through the unofficial border. These misperceptions cut across sociodemographic and business characteristics, suggesting that existing biases are entrenched and not mitigated by experience.

These results have important implications for policy-makers, most notably in the domain of information provision to enhance transparency and improve traders' understanding of the costs they face. Our evidence also underscores the inherent difficulty of fostering official trade in a context where citizens are distrustful of public institutions and have a strong perception of corruption and inefficiencies.

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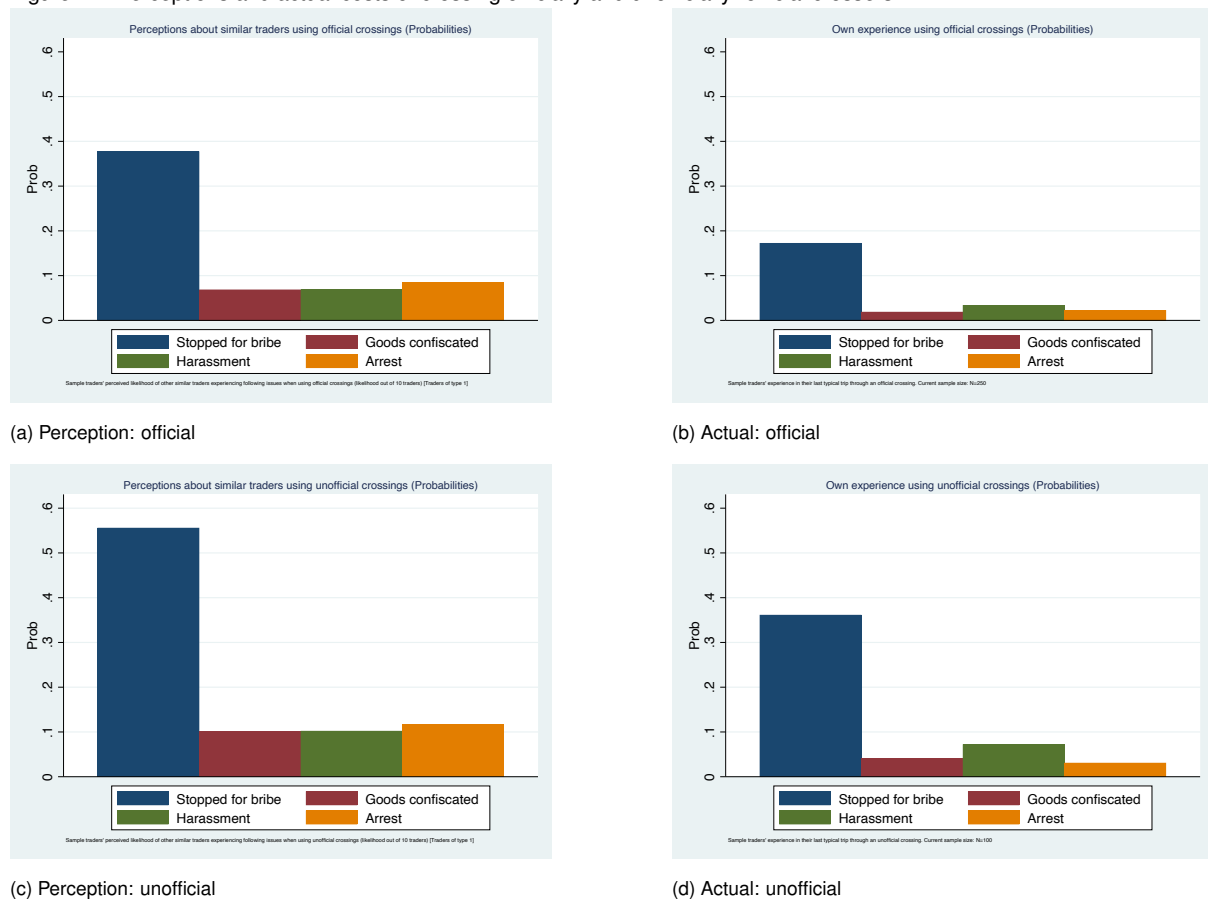
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# Appendix A

Table A1: Surveyed markets

Lwakhakha	Malakisi Lwakhakha main Akiriamet Changara Ang'urai Sirisia Cheptais
Port Victoria	Bumbe Mubwayo Budalangi Busembe Bulemia Nyadorera Sega Ugunja Sidindi Sigomre Siaya Modern

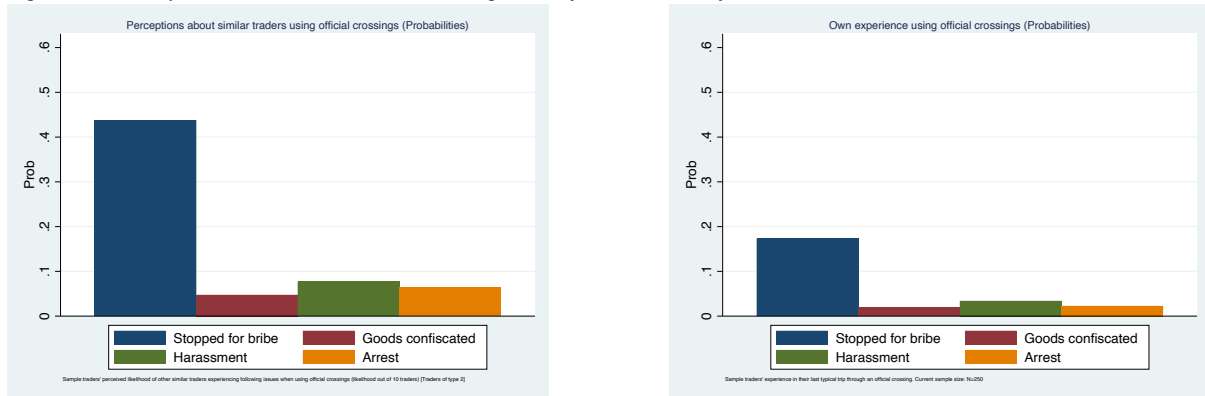
Figure A1: Perceptions and actual costs of crossing officially and unofficially: official crossers



Note: the figure shows the perceived likelihood ((a) and (c)) and actual likelihood ((b) and (d)) of different risks materializing, for official crossings ((a) and (b)) and unofficial crossings ((c) and (d)), confining the sample to respondents who use official crossings. Perceived probabilities are based on a belief-elicitation: 'Out of ten traders, how many do you think ...?'. Actual likelihoods are the shares of traders in the sample who actually incurred those risks in the relevant time period.

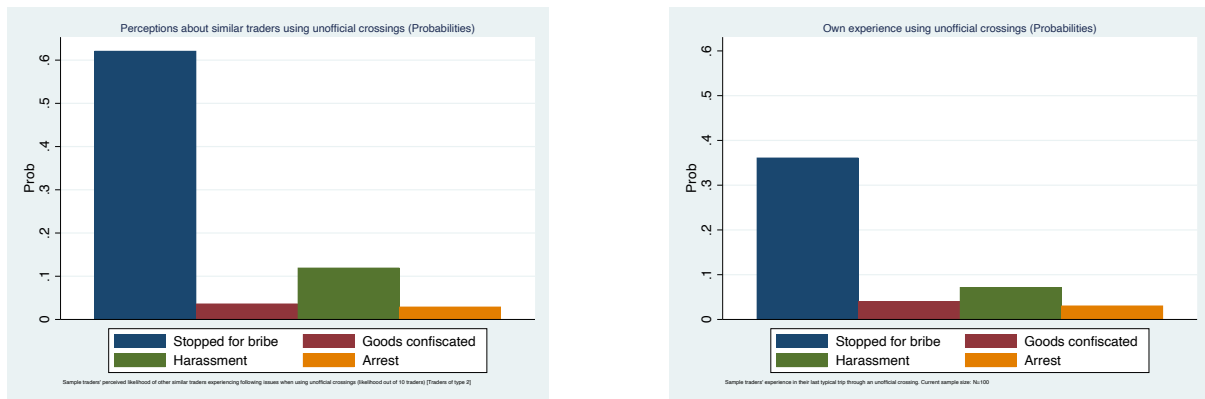
Source: authors' compilation.

Figure A2: Perceptions and actual costs of crossing officially and unofficially: unofficial crossers



(a) Perception: official

(b) Actual: official



(c) Perception: unofficial

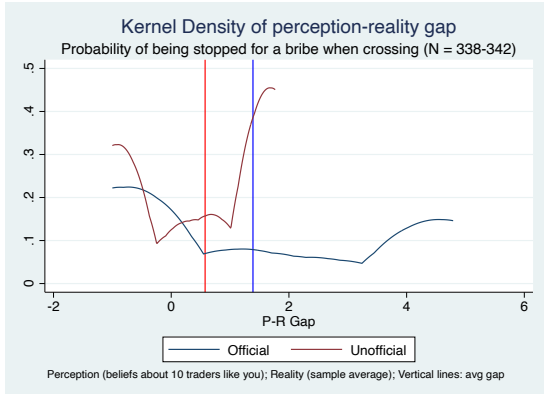
(d) Actual: unofficial

Note: the figure shows the perceived likelihood ((a) and (c)) and actual likelihood ((b) and (d)) of different risks materializing, for official crossings ((a) and (b)) and unofficial crossings ((c) and (d)), confining the sample to respondents who use unofficial crossings. Perceived probabilities are based on a belief-elicitation: 'Out of ten traders, how many do you think ...?'. Actual likelihoods are the shares of traders in the sample who actually incurred those risks in the relevant time period.

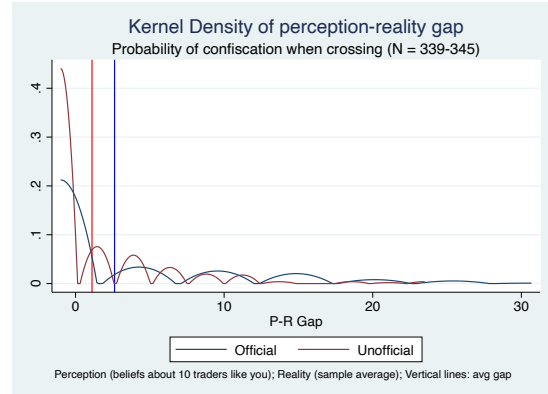
Source: authors' compilation.



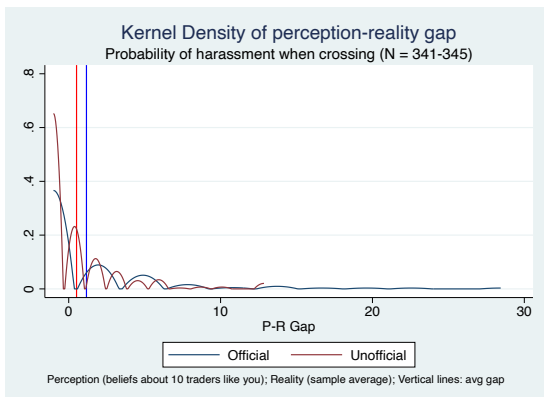
Figure A3: Perception–reality gaps



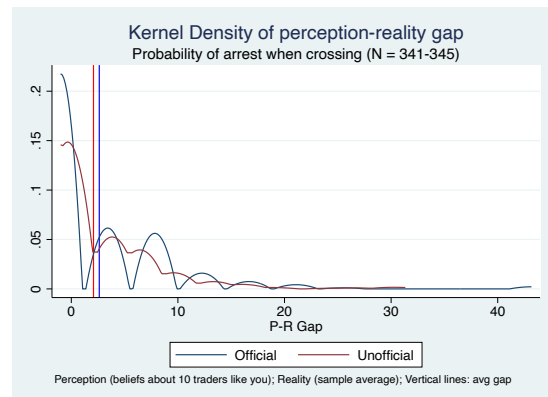
(a) P-R gap: stopped for a bribe



(b) P-R gap: goods confiscated



(c) P-R gap: harassed

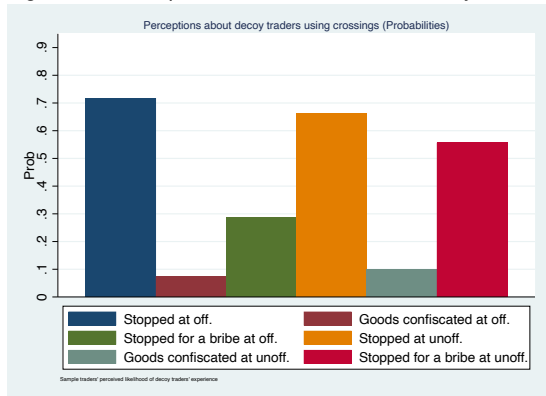


(d) P-R gap: arrested

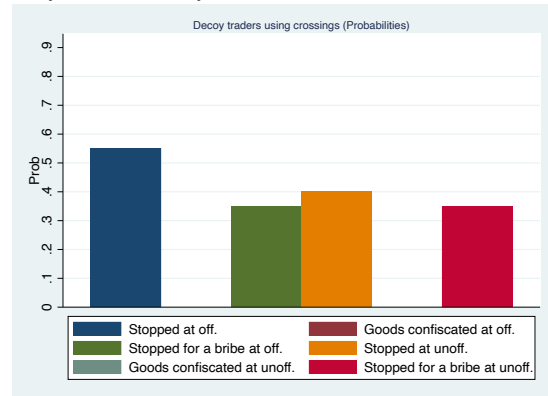
Note: the figure shows kernel densities of the P-R gap for official (blue line) and unofficial (red line) crossings for different types of risks. The vertical lines mark the average P-R gap for each risk.

Source: authors' compilation.

Figure A4: Perceptions and actual costs of decoy traders crossing officially and unofficially



(a) Perception: decoy



(b) Actual: decoy

Note: the figure shows respondents' perceived likelihood that the decoy traders in our experiment would incur different types of risks (a), and the actual likelihood that such risks materialized (b).

Source: authors' compilation.

Table A2: Determinants of the perception–reality gap (not in absolute value)

	P-R gap official crossing				P-R Gap unofficial crossing			
	(1) Stopped	(2) Confiscation	(3) Harassment	(4) Arrest	(5) Stopped	(6) Confiscation	(7) Harassment	(8) Arrest
Male	0.371 [0.362]	0.044 [0.897]	1.506** [0.633]	1.820** [0.834]	0.005 [0.172]	-0.374 [0.576]	-0.056 [0.390]	-0.399 [0.707]
Age	-0.002 [0.013]	0.002 [0.031]	0.007 [0.022]	0.033 [0.029]	0.003 [0.006]	-0.022 [0.021]	0.015 [0.014]	0.032 [0.025]
Kenyan residence	0.590 [0.396]	-0.407 [0.985]	-1.169* [0.695]	0.192 [0.916]	0.419** [0.193]	0.752 [0.647]	1.227*** [0.437]	2.584*** [0.793]
Household size	0.009 [0.042]	-0.082 [0.106]	0.031 [0.075]	0.172* [0.098]	0.037* [0.021]	0.135* [0.069]	0.042 [0.047]	0.070 [0.084]
Exporter	-0.894** [0.449]	-3.183*** [1.104]	-2.763*** [0.782]	-2.481** [1.027]	-0.116 [0.221]	-0.154 [0.738]	0.069 [0.499]	-0.059 [0.905]
Both	0.381 [0.420]	-1.030 [1.048]	-0.872 [0.739]	-0.927 [0.975]	0.023 [0.205]	-1.068 [0.688]	-0.582 [0.465]	-1.237 [0.844]
Has other sources of income	-0.096 [0.280]	4.896*** [0.702]	2.136*** [0.496]	3.524*** [0.653]	0.003 [0.136]	2.485*** [0.458]	0.822*** [0.310]	2.982*** [0.561]
<i>N</i> workers in past 30 days	-0.001 [0.074]	-0.221 [0.185]	-0.020 [0.131]	-0.477*** [0.172]	-0.053 [0.036]	0.057 [0.120]	0.030 [0.081]	-0.104 [0.147]
Monthly profit from trade business (past 12 months; Ksh)	0.000 [0.000]	0.000** [0.000]	0.000 [0.000]	0.000 [0.000]	0.000** [0.000]	0.000 [0.000]	-0.000 [0.000]	-0.000 [0.000]
<i>N</i> trips across border in typical week	0.047 [0.104]	-0.157 [0.257]	-0.076 [0.181]	-0.301 [0.239]	-0.090* [0.050]	-0.107 [0.165]	0.151 [0.111]	0.059 [0.202]
Value of goods transported in typical trip (Ksh)	0.000 [0.000]	-0.000 [0.000]	0.000 [0.000]	-0.000 [0.000]	0.000** [0.000]	-0.000 [0.000]	0.000 [0.000]	-0.000 [0.000]
Crosses border with goods themselves—always	0.836** [0.398]	-1.479 [0.985]	0.200 [0.695]	1.199 [0.916]	0.268 [0.194]	-1.298** [0.646]	0.152 [0.436]	0.823 [0.791]
Crosses border with goods themselves—sometimes	0.193 [0.434]	0.102 [1.075]	-0.088 [0.758]	1.324 [1.000]	-0.151 [0.212]	-1.164 [0.710]	-0.658 [0.480]	-0.399 [0.871]
Unofficial crossers	0.384 [0.375]	-0.520 [0.931]	0.423 [0.657]	-0.053 [0.866]	0.185 [0.177]	-1.449** [0.597]	0.361 [0.400]	-2.260*** [0.726]
Dual crossers	0.723* [0.430]	2.135** [1.063]	0.749 [0.760]	1.163 [0.989]	-0.055 [0.205]	-0.599 [0.690]	0.507 [0.466]	-0.664 [0.846]
Don't know which crossing is used	1.236 [0.843]	0.614 [2.110]	2.880* [1.488]	0.261 [1.962]	-0.156 [0.386]	0.293 [1.349]	-0.319 [0.880]	-1.238 [1.596]
Constant	0.057 [0.904]	2.733 [2.251]	0.534 [1.588]	-1.746 [2.094]	-0.242 [0.438]	1.349 [1.468]	-1.987** [0.989]	-2.329 [1.793]
R-Squared	0.084	0.223	0.137	0.182	0.12	0.163	0.085	0.177
Observations	327	331	330	331	323	324	326	326

Note: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Source: authors' compilation.