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Biases in low-information environments: Understanding for-profit and non-profit salary differentials in Haiti

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Abstract

The Global South contains low-information environments that impose information search costs on organisations. We compare explanations for how employers make decisions in these environments. To do so, we analyse salaries collected from employers in Haiti, including local and international non-profits and domestic and foreign businesses. Although preliminary findings suggest that international non-governmental organisations pay above-market salaries, accounting for alternative explanations from behavioural economics causes the organisational form's importance to dissipate. We find that anchoring and framing mechanisms separately influence decision-making. These findings direct us to focus more on the actions and tools managers use to make decisions in low-information environments.

KEYWORDS
behavioural economics, decision-making, Haiti, labour economics, NGOs

1 | INTRODUCTION

A standard critique in developing countries is that employees at international non-governmental organisations (INGOs) get paid more than equally qualified individuals employed by governments (Cailhol et al., 2013; Kuah-Pearce & Guiheux, 2014; Lemay-Hébert et al., 2020; Warne Peters, 2013; Zanotti, 2010). Yet there is little discussion given to how INGOs' salaries compare to other private employers—such as local NGOs and international businesses—that provide livelihoods, services and tax revenue. Employers in all sectors face incentives that justify higher salaries as a means to attract the personnel necessary to achieve organisational success. Such premiums, or 'efficiency wages' (Yellen, 1984), are believed to prevent employee shirking, reduce turnover and training costs,

attract high-calibre employees and induce higher morale. Efficiency wages are an essential starting point, but they do not explain why INGOs seem to be the only organisational form accused of paying unnecessarily high salaries. Haiti is our entry point for understanding salary disparities in low-information environments. We chose the country because it has an INGO sector sufficiently large to permit comparisons between non-profit and for-profit employment.

The situation in the Global South offers unique advantages for some employers. In countries such as Haiti, international employers enjoy a resource advantage over many local organisations that they can use to attract more capable employees (Brass, 2016; Chege, 1999; Pickup, 2018; Schuller, 2009). Not only might foreign firms have larger budgets, but they may also finance themselves with more stable currencies such as US dollars and euros. INGOs can then pay in denominations other than those susceptible to devaluations, such as the Haitian gourde (1989 and 2015–current), the Zimbabwean dollar (2006–2009) and the Venezuelan bolivar (2018–2019). Stable currencies and other perks[1] may substitute for higher salaries while achieving the same aims as efficiency wages. With this in mind, we might expect INGOs to pay *lower* salaries to local employees than other private employers. For instance, Canadian faith-based INGOs pay employees less than their secular counterparts, suggesting that religious employees willingly sacrifice pecuniary compensation for divine service (Davis, 2019).

While international employers may enjoy certain advantages in such contexts, a low-information environment disadvantages all employers by increasing search costs related to decision-making. While local or long-time operating organisations may experience lower search costs than foreign or new employers, the characteristics of low- and middle-income countries raise an interesting question: How do employers decide what to pay workers in low-information environments? Is it as simple as 'INGOs pay more', or are other factors relevant? Figure 1 presents data that motivate our study. The figure plots salaries from employers with various years of experience operating in Haiti (*x* axis). After comparing INGO and non-INGO salaries of Haitian employees (*y* axis), it does not appear to be the case that INGOs systematically pay higher salaries than non-INGOs. But the scatter plot does not control for position type, employee qualifications or employer characteristics. This analysis considers those factors as it explains how private employers decide what to pay Haitian employees in the country's low-information environment.

Labour statistics and salary information in contexts like Haiti are challenging to find or non-existent. Lemay-Hébert et al. (2020, p. 623) explain that the 'poor quality of available data', inability to access private information and the fact

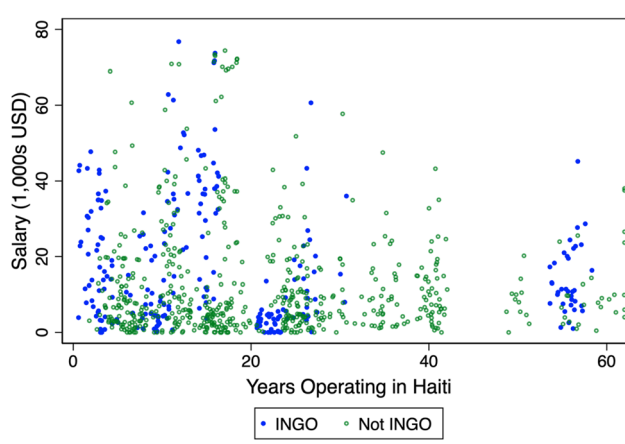

FIGURE 1 Salaries paid by employers in Haiti. The figure plots observations according to the employer's years of experience operating in Haiti (*x* axis) and the Haitian employee's salary (*y* axis). Solid shapes represent salaries collected from INGOs, and hollow shapes are those from non-INGOs. Based on this scatter plot, it does not appear that INGOs systematically pay higher salaries than non-INGOs. However, the scatter plot does not control for position type, employee qualifications or employer characteristics. Source: primary data from Haiti collected in 2011 (843 observations collected from 77 employers) [Colour figure can be viewed at wileyonlinelibrary.com]

that 'salary and allowance surveys are not readily accessible to researchers' hamstring efforts to conduct a rigorous analysis of Haitian employment practices. We overcome these barriers using original data collected from private employers. The data contain employee- and employer-level information that is necessary for the analysis. Unfortunately, the sample does not contain data from public entities such as the Haitian government, embassies or international organisations. Although it is not representative of Haiti's labour market, much less of other developing countries, our research provides a valuable opportunity to examine a relevant and understudied topic.

We apply two mechanisms of behavioural economics to investigate decision-making in low-information environments. The first is local anchoring, which occurs when decision-makers solicit credible information from expert sources. The second is international framing, seen when decision-makers reference endogenous reference points to make decisions. Our initial analysis supports arguments that INGOs pay above-market wages to Haitian employees. However, this relationship diminishes as we account for alternative explanations from behavioural economics. Our analyses show that anchoring and framing robustly predict salaries.

The paper proceeds as follows. The next section explores alternative explanations for how private employers make salary decisions in developing countries. We begin by discussing salaries as a rational decision and review evidence from around the world that suggests INGOs pay higher salaries than other employers. We then discuss theories from behavioural economics that are central to our analysis. For each explanation, we first review the literature and then present formal hypotheses. We describe our research design and data collection procedures in the third section. The section contains a short discussion on the modelling strategy we use to manage the data's nested structure and minimise Type I errors. After reviewing our findings, we conclude with recommendations to public officials, practitioners and researchers.

2 | SALARIES AS A RATIONAL DECISION

Empirical evidence from East Asia (Barr et al., 2005; Huff-Rousselle & Pickering, 2001; Kuah-Pearce & Guiheux, 2014) and Sub-Saharan Africa (Cailhol et al., 2013; Pfeiffer, 2003; Warne Peters, 2013) suggests that INGOs pay significant premiums over other employers in developing countries. In the 'Republic of NGOs' (Fass, 1988, pp. 22–23), many Haitians, foreign aid workers and researchers commonly believe that INGOs pay higher salaries than other employers (Lemay-Hébert et al., 2020) but disagree on how and why such a salary premium exists and what—if anything—should be done about it.

One explanation for excessive financial compensation is to attract and retain employees. In developing countries, employers may find it challenging to find suitable employees and therefore willingly offer above-average compensation to retain those services. Yellen (1984) formalises this possibility as efficiency wages and explains that employers pay workers more than the market-clearing wage required by potential replacements for organisational efficiency reasons: prevent shirking, reduce turnover and training costs, attract high-calibre employees and improve morale. Higher salaries are thus a rational decision to achieve organisational needs. These needs may become more acute in developing countries as skilled labour migrates to the Global North (Agbiboa, 2012).

Some researchers argue that INGO salary practices are rational, harmless and equitable (Stoddard, 2012, p. 347). Yet others disagree. In a cross-national study of developing countries, organisational behaviouralists find the pay ratios between international and national staff exceed acceptable thresholds and create a sense of injustice, demotivation and workplace dissatisfaction (Carr et al., 2010). Critics further observe that INGOs' compensation schema reinforces global structures of inequality when, for example, they choose to pay an inexperienced European 'roughly triple' what an Angolan professional with better credentials and decades more experience receives in the same position (Warne Peters, 2013, p. 280).

Another explanation for excessive compensation is that certain organisational types have greater resources to attract and retain employees. Ethnographic data from Mozambique describe working for an INGO as 'winning the lottery'; in 1 year, 'one could potentially earn the equivalent of 20yrs' salary in the [National Health Service]'

(Pfeiffer, 2003, p. 732). Analysts identify a similar process in Cambodia, where public agencies serve as a training ground for healthcare workers to earn education and experience (Huff-Rousselle & Pickering, 2001). Once employees possess the necessary skills, they are 'attracted away—in a 'brain drain' phenomenon' by INGOs who 'offer better salaries and fringe benefits' (Huff-Rousselle & Pickering, 2001, p. 44). Similarly, interviews with Médecins Sans Frontières (MSF) staff in China show that salary—alongside the English-language environment and the opportunity to earn new skills—was a key reason for joining MSF and increased their salary overnight by 30–100 per cent (Kuah-Pearce & Guiheux, 2014).

Researchers identify this same pattern in other low- and middle-income countries. In an analysis of sub-Saharan African countries, analysts assess the degree to which global health initiatives (GHI) programmes affected the stock of public-sector employees (Cailhol et al., 2013). All five countries—Angola, Burundi, Lesotho, Mozambique and South Africa—lost valuable employees to INGOs. The drain was so severe that governments took actions to attenuate the 'poaching' of healthcare employees (Cailhol et al., 2013, p. 2). In Angola and Mozambique, governments instituted policy that harmonised salaries across sectors. In South Africa, the state spearheaded ' "anti-poaching" agreements' so that GHI-funded programmes would not deplete the stock of qualified workers (Cailhol et al., 2013, p. 9). In Lesotho, Mozambique and Burundi, governments introduced compensation incentives and 'financial top-up[s]' to dissuade migration from public service (Cailhol et al., 2013, p. 9). Research from Haiti shows that INGOs' higher salaries lead to 'the poaching of local skilled workers' that saps talent from the public sector (Lemay-Hébert et al., 2020, p. 621).

To summarise, researchers argue that INGOs' pursuit of organisational performance and attempt to decrease inequality between foreign staff and national hires, combined with their comparative resource advantage, leads them to pay local employees higher salaries than other private employers. These factors, supported by suggestive evidence from several continents, underpin the organisational form hypothesis:

H1. Organisational form—INGOs pay higher salaries than other private employers.

3 | DECISION-MAKING IN LOW-INFORMATION ENVIRONMENTS

Perhaps relying on the organisational form and the rational calculation of efficiency wages is too simple and overlooks the activity within and among organisations. Aside from the pursuit of high-level performance, what other explanations do INGOs have for paying salary premiums? One is that developing countries contain low-information environments that fog private organisations' decision-making. Watkins et al. (2012, p. 285) support this rationale and explain that INGOs are distinctive organisational forms because of the challenges and uncertainties they face while operating in the Global South (see also Brass et al., 2018). This operational environment is beset with principal–agent problems, asymmetric information, and unfamiliar cultural practices and institutional contexts (Watkins et al., 2012, pp. 294–296). In response, employers adapt to uncertainty in various ways, including paying premiums to hire employees able to navigate uncertainty, such as local staff with connections in government or familiarity with local customs and institutions.

When information on local salaries is scarce or imperfect, private employers may overestimate the premium necessary to attract and retain these services. Such imprecise calculations can result from decision-making under uncertainty and may lead to what Angelides and Caiden (1994, p. 230) argue is 'serious, systematic and often permanent biases'. Recognising that developing countries are ecologies of uncertainty requires us to consider alternative explanations to the organisational form hypothesis (H1). These alternative explanations draw on established literature regarding decision-making's cognitive limits (March & Simon, 1958 [1993]; Simon, 1955) and allow us to consider other private organisations alongside INGOs.

First, in a seminal contribution to behavioural economics, Tversky and Kahneman (1974) introduce the anchoring effect and show that individuals form estimates by starting with an initial value and then adjust away from it. Experimental researchers show that these adjustments away from the starting value are often insufficient

(Barberis & Thaler, 2003) and find that decision-makers anchor to initial values even when the anchor is implausibly large (Thorsteinson, 2011). Researchers also find that current and expected salaries act as anchors that affect future salary decisions (Bazerman, 2006; Major et al., 1984). Scholars studying bureaucracies also find that anchors affect public managers' decision-making (for a recent review, see Webeck & Nicholson-Crotty, 2019). We expect that access to information on the local labour market anchors managers' decisions. Such information exists throughout the world when private consultancy services—for example, Birches Group, Culpepper and Associates, and Mercer—produce professional compensation and benefits reports. We expect that when managers pay to access these reports, that they anchor their future salary decisions to the report's information.

To summarise, employers often lack complete information on labour markets, and the low-information environments amplify this challenge. To compensate, employers seek out information such as benefit consultancy reports. Accessing this information engages the anchoring mechanism that biases managers' future decisions. It is necessary to stress that anchoring does not promise that wages will be closer to the true but unknown market-clearing wage of a larger sample. It only predicts that decision-makers anchor to information available to them and then make intentional adjustments either away or towards this anchor (Barberis & Thaler, 2003; Tversky & Kahneman, 1974). The local anchoring hypothesis is thus non-directional in this analysis. The data we use to test it is from a private consultancy service that surveyed 37 employers and makes no claims that its sample represents the broader market. Thus, the hypothesis only tests whether the salary paid by an organisation is anchored to the information within the professional consultancy report.

It is beyond this article's scope to discuss the size and direction of the anchoring mechanism. Still, some readers may find a discussion concerning these matters relevant to future work. The effect could be positive or negative depending on the employers that participate and the information they report. A positive and significant anchoring effect implies that the 37 employers that participated in the consultancy survey pay higher salaries, on average, than the 77 employers surveyed for this research. In this scenario, those with access to the information pay salaries above the broader market rate. A negative and significant anchoring effect suggests that the group of 37 employers pays lower salaries, on average, than the 77 employers surveyed here. A small and insignificant anchoring effect would indicate that employers with information on salaries do not anchor their pay to that reference point.

The second alternative explanation is 'framing', defined as psychological principles that govern the perception of choices and outcome evaluation (Tversky & Kahneman, 1981, p. 453). Framing causes individuals to evaluate choices and outcomes compared to reference points instead of unbiased absolutes. And individuals who do not update their reference points make decisions that they would typically find unacceptable (Tversky & Kahneman, 1981, p. 456). Researchers find that framing motivates the fair allocation of salaries among hypothetical employees (Mellers, 1982, 1986) and can lead to suboptimal choices and professional bias (Highhouse et al., 1996). 'Narrow framing' is a type of mental accounting in which individuals treat decisions as unrelated events as opposed to a collective series of choices (Barberis & Thaler, 2003, p. 1073; DellaVigna, 2009, p. 347).

In this research, we expect that framing affects managers when they evaluate salary decisions through endogenous reference points, such as salary norms in an employer's country of origin. Because decisions are comparative, altering these reference points changes the nature of the comparison.[2] These reference points frame the manager's possible choices, and what some managers perceive as overpaying is reframed as underpaying by managers with different reference points. This subtle difference is crucial because losses loom larger than gains when deciding between options.

Two hypotheses based on behavioural economics explain how employers make salary decisions in low-information environments:

H2A. Local anchoring—access to the information in consultancy compensation and benefits reports is a significant predictor of salary.

H2B. International framing—position-specific, home-country salaries positively correlate with local salaries.

4 | RESEARCH DESIGN AND METHODS

Several types of data are required to explain how employers make salary decisions for workers in Haiti. Data for the employer (legal form and sector), position (salary and qualifications) and person (skills and experience) are the most relevant. Unfortunately, Haiti has no such publicly available data (Lemay-Hébert et al., 2020, p. 623). Primary data collection was therefore necessary. Between May and November 2011, we collected 843 position-specific salaries from 77 private employers with accompanying information for position and employee qualifications. The sample—which includes local and international NGOs as well as domestic and foreign businesses—allows for several meaningful comparisons between private employers: local charitable to local business, local to international charitable, and international charitable to international business. These employers have headquarters in seven of Haiti's 10 administrative jurisdictions, with 69 per cent of observations from Ouest and the capital city Port-au-Prince. Appendix A contains descriptive statistics for the sector in which employers operate.

We anticipate that the period in which we collected data—that is, during a time of intense foreign assistance following the January 2010 earthquake—biases our results in predictable ways. First, the post-disaster period coincides with uncharacteristically high levels of funding to INGOs. We anticipate that this enlarges the coefficient testing the INGO organisational form hypothesis (H1), overstating what it would typically be. We anticipate that this oversized estimator makes it harder to find evidence supporting explanations based on behavioural economics. Together, we anticipate that the data we use bias our results against our primary argument (H2A and H2B) and in favour of the organisational form hypothesis (H1). Section 5 revisits these implications.

Though the sample's representativeness of the broader labour market is imperfect, this analysis provides a rare opportunity to examine how organisations make decisions in developing countries. Section 5.1 discusses generalisability and the possibility of bias in the sample. In that section, we explain that bias would need to exceed 50 per cent of the sample, affecting more than 420 observations, to invalidate our findings.

4.1 | Data collection

Data collection used a two-stage survey design. We first scraped online contact information and emailed organisational contacts, inviting them to participate in the academic study. This technique yielded some responses, but contact data were often outdated. Snowball sampling within private-membership organisations proved more effective and yielded additional participants.[3] We contacted association members directly and without discrimination when associations provided their information. Some associations guarded contact information and privately invited members to participate on our behalf.

Two bilingual survey instruments collected the necessary data after an employer agreed to participate. We developed these instruments in English, professionally translated them into French and back-translated them into English for accuracy. The first asked organisational leaders—for example, business owners and INGO country directors—to provide employer information such as size, nationality, legal form and sector. Each employer completed one of these surveys. The second survey collected position-specific information. Organisational managers, such as human resource managers, completed one position survey for each position. This second survey collected information on salary, position responsibilities and qualifications.

Our analysis focuses exclusively on Haitian employees' salaries, as reported by managers of 77 private employers operating in Haiti. Initial data collection resulted in 897 salary observations. Because labour and living costs differ between developed and developing countries, we exclude salaries for international staff that may influence the analysis even after controlling for employees' nationality. Excluding international employees removed 31 observations, and casewise deletion removed additional 23 observations.

4.2 | Model variables

4.2.1 | Dependent variable

Contained in the second survey is the unit of analysis: *Estimated Salary Offer* (henceforth *Salary*), defined as the estimated annual salary a manager budgets for a position filled by an employee with a given skill set. Each position survey asked respondents to identify characteristics they believed an acceptable applicant should possess to deserve the lower salary and qualifications exceptional candidates should have to justify the higher salary. This salary range, or *barème de salaire*, is an administrative device familiar to managers in Haiti. *Salary* is measured in thousands of US dollars and defined as the value budgeted for hires with particular qualifications, with bonus pay and other compensation reported separately. Respondents reported 12-month salaries converted from Haitian gourdes using a 40:1 currency conversion. This rate is generally acceptable at the time of data collection. The average salary is $14 170 and ranges from $450 to $120 200, with a median value of $7500. We repeat all analyses on *ln*(*Salary*) to compare results across estimate alternatives.

4.2.2 | Theoretical variables tested

Organisation is an INGO (*Is INGO* for short) is a dichotomous variable that tests the organisational form hypothesis (H1). The variable takes a value of 1 for all observations from the 21 INGOs (245 salary-level observations). It takes a value of 0 for the referent group of 56 private, non-INGO employers (598 observations). Results are unchanged when an alternative coding strategy uses INGO as a referent group in a categorical variable that includes Haitian NGOs, local businesses and international businesses. Statistical measures of fit indicate that the binary variable is preferred over the categorical measure. Still, INGOs are not a homogenous group (Davis & Swiss, 2020) and a battery of control variables account for differences between them.

Local anchoring represents the anchoring effect of behavioural economics. In this research, local anchoring occurs when managers seek out information and are then anchored to it (H2A). We measure this concept as a binary variable that identifies employers who chose to participate in a professional consultancy survey (participation = 1). We collected this information directly from proprietary consultancy reports. In 2011, 37 employers participated in this professional consultancy survey, including included private companies and also a number of very well-known international NGOs that happen to operate in Haiti. Participation delivered clients immediate access to the firm's proprietary online portal that provides current market conditions within the local labour market.[4] In total, 11 per cent of our sample is from private employers who participated in the professional compensation and benefits survey and had privileged access to its information (Table 1). Of the 21 INGOs in these data, five (73 observations) participated in the consultancy survey and accessed its information. Of the remaining 56 employers, only one (20 observations) participated in the consultancy survey. We group these employers to create the dichotomous variable and test the local anchoring treatment effect. The 750 observations from employers that did not participate in the consultancy survey comprise the referent group.

International framing is a position-level variable that represents the framing bias of behavioural economics. In this research, framing occurs when endogenous reference points bias local decisions (H2B). We measure this concept as a continuous variable that varies by position. The measure is equal to the average compensation for the matching position in the employer's country of origin.

We calculate this position-level measure for the data's American, British, German, Haitian and Mexican employers. We first organise the data according to the International Standard Classification of Occupations 2008 (ISCO-08) classification. The ISCO classification allows for the consistent identification of positions across countries at the same level as the dependent variable.[5] Next, we collect data from Europe and North America. The Eurostat's Structure of Earnings Survey (SES) 2010 survey provides data for European employers. Similarly, the Bureau of Labor

TABLE 1 Descriptive statistics of independent variables

	Employers	Mean	Std. dev.	Min.	Max.
Organisation is an INGO[a,b]	21	27.3%		0	1
Local anchoring[a]					
INGO consultancy[c]	5	6.5%		0	1
All-sector consultancy[c]	1	1.3%		0	1
International framing[d]					
All employers	77	$29 859	$34 459	$1324	$113 520
Haitian employers[e]	52	$8382	$5200	$1324	$17 986
International employers[e]	25	$61 475	$34 888	$10 840	$113 516

Source: Primary data collected from formal employers in Haiti in 2011.
Note: Additional descriptive statistics for other variables are available in Tables A2 and A3.
[a]Organisational-level variable. Analysed as a dichotomous variable.
[b]INGOs coded as 1 and other employers combined and coded as 0.
[c]Combined to dichotomize variable category. Group is coded as 1 and compared to reference group coded as 0.
[d]Individual-level variables. Analysed as a continuous variable.
[e]Presented for descriptive purposes only.

Statistics Occupational Employment Statistics (OES) Survey 2010 provides data from American employers. The BLS survey reports average annual salaries in dollars and organises them according to the seven-digit Standard Occupational Classification (SOC), which easily corresponds with the ISCO classification.[6]

Third, we estimate comparable data for Mexico using the average annual salaries for Organisation for Economic Co-Operation and Development (OECD) countries. Data from OECD member countries—Germany, Mexico, the UK and the USA—reasonably approximate salaries for ISCO-08 positions in Mexico.[7] In 2010, the average annual salary for Mexico was $14 994, which is 36 per cent of Germany's ($41 698), 35 per cent of the UK's ($42 760) and 27 per cent of the USA's ($56 398). Multiplying these percentages with European SES and American OES salary data generates the Mexico-equivalent estimates for each position. This repeated multiplication process produces three Mexico-equivalent estimates for each position—one each from Germany, the UK and the USA. Averaging these estimates for each position generates a comparable Mexico position salary.

The fourth step produces similar data for Haiti. We proxy a Haitian indicator using the January 2011 *bareme de salaire* produced by the Haitian Ministry of Finance and Economy to estimate Haiti's ISCO category salaries. This 'salary grid' uses a three-tier architecture—category, level and class—to assign salaries. We average salaries within the highest tier to estimate ISCO salaries for managers, professionals, technicians, clerical support, service and sales, and elementary occupations. We estimate salaries for manual workers and plant and machine operators using the Haitian minimum wage (200 HTG/day) and assume that employees work 5 days/week, 52 weeks/year, minus the 15 official holidays.

4.2.3 | Employee-level control variables

The survey instrument collected data at the same level as the dependent variable for 17 *positions* and a battery of employee characteristics. *Worker autonomy* controls for the amount of time and energy an organisation expects to spend supervising the employee. *Computer literacy and training* measures the amount of computer literacy and on-the-job computer training required. *Professional experience* measures the amount of prior professional experience employers expect applicants to possess. *Education* indicates the highest educational level employers expect applicants to complete. *Reads English* categorises observations according to the expectation that they read English. Table A1 contains descriptive statistics for these employee-level control variables.

4.2.4 | Employer-level control variables

Tables A2 and A3 contain descriptive statistics for employer-level control variables. *Is INGO* is a dichotomous variable that represents INGO employers. Haitian secular and religious non-profits and local and international businesses comprise the referent group. *Sector* reorganises the 14 subsectors available to respondents on the surveys into three broader categories for analysis: public goods and services, private goods and private services. Non-profits dominate the public goods and services sector, while businesses dominate private goods. Both employer types report activities in the private services sector. Forty-four employers are *located in the Ouest*, which contains Port-au-Prince, and more than two-thirds of employers are *Haitian*. The average organisation employs more than 200 *full-time employees* and has over 20 *years of experience operating in Haiti*.

4.3 | Modelling strategy

The data structure of salaries collected from employers is inherently nested. One implication of this is that observations may cluster as salaries from the same employer are more similar to each other than salaries from other employers. Another implication is that estimates for employer-level variables will unfairly benefit from repeated observations. Unless accounted for, this data structure shrinks standard errors and inflates Type I error rates (Clark & Linzer, 2015; Hox, 2010). Another threat to inference is the presence of unobserved differences between employers of the same type. For example, the emphasis on project documentation (Krause, 2014) coupled with the trend towards project-based planning (Freeman & Schuller, 2020) within the development sector may constrain an INGO's decisions on hiring practices to those stipulated in grant requirements and project plans.[8] Although these institutional arrangements are beyond the scope of our analysis, it is still necessary to control for their effect on our results. Multilevel and hierarchical models parsimoniously manage this clustering while accounting for unobserved, group-level heterogeneity (Gelman & Hill, 2007).

A hierarchical-level model (HLM) appropriately partitions the variance at the employee and employer levels while controlling for differences in organisation, position and employee. The empty model calculates that the data's intra-class coefficient is 0.47, indicating that employer-level variation accounts for 47 per cent of the variance in salary. This justifies using the HLM approach. Further, the number of employers exceeds the recommended 30–50 groups necessary to attenuate Type I errors (Hox, 2010; Lorah, 2017).

Initial analyses compared two HLM models. The first used random intercepts that allowed intercepts to vary by employer. The second used random slopes allowed slopes to vary by position. We use the random-slopes model for three reasons. First, while the random-intercept model explains 62 per cent of the outcome's variance, the random-slopes model explains 67 per cent. These explanation-of-variance values use the Level 1 explained proportion of variance formula (7.2) in Snijders and Bosker (1999). The Bayesian information criterion (BIC) also supports the random slopes as the baseline model. Decreasing BIC values indicate an increasing ability to fit the variation in the outcome, and a decrease of 10 points or more indicates substantial evidence to support one model over another (Raftery, 1995). In our analysis, random slopes reduce the BIC by over 70 points. Finally, while the random-intercept model relies on dummy variables to control for position type, the random-slopes model accomplishes the same control using fewer degrees of freedom.[9]

5 | RESULTS

The following tables show the results of our analyses. Table 2 uses salary (in thousands of US dollars) as the dependent variable, while Table 3 uses the natural logarithm of salary to compare results for consistency across estimate alternatives. We omit controls from each table to save space and provide full results in Appendix A. Our discussion

focuses on Table 2 because results are similar across dependent variables. The baseline specification (Model 1) controls for employer and employee characteristics and provides initial confirmation of the organisational form hypothesis (H1) that INGOs pay higher salaries than other private employers ($p < 0.01$). Model 2 reproduces this finding using a category variable that accounts for differences in employer types. The remaining models test this finding's durability in the presence of alternative explanations.

Variation exists among employers exposed to the local anchoring treatment. Exposed employers participated in a professional consultancy survey and received salary information from the report (Table 1). Specifically, 11 per cent of the sample (93 of 843 observations and 6 of 77 employers) is in this exposed group. The local anchoring hypothesis (H2A) predicts that these employers experience an information anchoring effect that does not affect employers who lack access to the consultancy report. The local anchoring model (Model 3) shows that participation in consultancy surveys is a strong predictor of salaries when controlling for employee qualifications and organisational characteristics. Employers exposed to the anchoring effect report salaries that are, on average, \$13 500 higher than the control group ($p < 0.001$). In initial confirmation of H2A, exposure to the consultancy report's information creates an anchoring effect that biases salary decisions.

The anchoring effect's directionality is beyond the scope of this article but deserves discussion. One possibility is that the organisations that paid to participate in the consultancy report are markedly different than those in our sample. Our working explanation is that the positive directionality suggests that the consultancy participants are resource-rich organisations that generally pay higher salaries than the larger sample studied here. Returning to the organisational form hypothesis (H1), the model suggests that the INGO organisational form remains significant ($p < 0.05$), although the effect size and significance both decrease once we account for the local anchoring. Testing rejects the hypothesis that the local anchoring effect and the INGO organisational form are equal at the 0.01 level ($\chi^2(1) = 7.65$).

Our international framing hypothesis (H2B) predicts that referencing home-country compensation levels engages a framing effect that biases salary decisions and causes local salaries to positively correlate with home-country salaries. The results conform to our predictions and show that the framing effect has a positive relationship with salary (Model 4). For the average employer, for every standard deviation increase in home-country compensation level, about \$34 500, the salary offered locally in Haiti increases by \$3450 ($p < 0.001$), holding other variables constant. This result is insensitive to the inclusion of country fixed effects. In initial confirmation of H2B, the salaries in an employer's country of origin act as endogenous reference points that cause a framing effect that positively correlates with local salaries. The INGO control is insignificant after controlling for the international framing hypothesis.

Model 5 tests all hypotheses simultaneously. When evaluated together, the organisational form hypothesis lacks statistical support. Local anchoring and international framing, by contrast, retain their effect sizes and remain statistically significant at the 0.001 level.[10] The following figures show the effect of local anchoring and international framing across the dataspace. These figures show the average marginal effects (Long & Freese, 2014, pp. 171–295) of local anchoring for all employers (left panel) and INGOs only (right panel). Holding all other predictors at their means, dashed lines represent that the local anchoring effect is present and solid lines indicate that it is absent. These figures show that for an otherwise average position, the salary is generally higher for employers that participate in the consultancy compensation and benefit surveys. In further confirmation of H2A, local anchoring is significant across the dataspace with respect to organisational size (Figure 2) and home-salary reference points (Figure 3). The positive slopes in Figure 3 correspond to the positive coefficients in Table 2 and show that position-specific salaries in an employer's home-country positively correlate with local salaries. This evidence further supports H2B.

The remaining specifications serve as robustness checks comparable to Model 5. We first rerun the full specification on only INGO observations (Model 6). We do this to address the possibility that the model cannot disentangle the organisational form effect from the local anchoring effect because the factors are too highly correlated. The restricted sample contains 245 observations nested within 21 INGO employers. Seventy-three of these observations are from five INGOs that participated in the consultancy report. In this restricted sample, the anchoring ($+13.04$, $p < 0.001$) and framing ($+0.07$, $p < 0.001$) effects retain their significance and effect size.

TABLE 2 Regression results—Primary analysis

	(1) Baseline	(2) Baseline alternate	(3) Local anchoring	(4) International framing	(5) Full model	(6) INGOs only	(7) Full alternate	(8) Religious organisation	(9) Expat. salaries
Outcome: *Salary* ($1000s)									
Is INGO	6.95** (2.218)		4.77* (1.873)	1.70 (2.431)	0.66 (2.157)	N/A			
Local anchoring			13.50*** (2.182)		12.08*** (2.277)	13.04*** (2.422)	12.96*** (2.270)	12.16*** (2.233)	12.30*** (2.272)
International framing				0.10*** (0.021)	0.08*** (0.020)	0.07* (0.027)	0.09*** (0.021)	0.09*** (0.021)	0.11*** (0.022)
Employer type									
Haitian business		Ref.					Ref.	Ref.	Ref.
Haitian NGO		−0.83 (2.899)					−0.48 (2.403)	1.36 (2.530)	−0.30 (2.448)
International NGO		6.86** (2.315)					−0.51 (2.265)	1.23 (2.386)	−0.65 (2.333)
International business		2.18 (3.089)					−5.21^{+} (2.662)	−4.73^{+} (2.587)	−6.61* (2.678)
Is religious organisation								−4.86^{+} (2.494)	
Employer controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Position controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Employee controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AIC	6122	6125	6094	6101	6080	1777	6080	6078	6411
BIC	6221	6234	6198	6205	6189	1854	6198	6201	6530
Degrees of freedom	17	19	18	18	19	18	21	22	21
Observation/ clusters	843/77	843/77	843/77	843/77	843/77	245/21	843/77	843/77	874/77

Source: Primary data—Haiti 2011.

Note: Standard errors in parentheses. HLM model uses random intercept for employer and random slopes for position. Full model not shown. See Table A4 for full results.

$^{+}p < 0.10$.

$^{*}p < 0.05$. $^{**}p < 0.01$. $^{***}p < 0.001$.

TABLE 3 Regression results—Estimate alternative

	(1) Baseline	(2) Baseline alternate	(3) Local anchoring	(4) International framing	(5) Full model	(6) INGOs only	(7) Full alternate	(8) Religious organisation	(9) Expat. salaries
Outcome: *ln(Salary)*									
Is INGO	2.31* (0.402)		1.85^{+} (0.305)	1.26 (0.231)	1.08 (0.190)	N/A			
Local anchoring			4.08*** (0.849)		3.40** (0.715)	1.94 (0.631)	3.66** (0.787)	3.01** (0.618)	3.51** (0.751)
International framing				1.01*** (0.001)	1.01*** (0.001)	1.01*** (0.001)	1.01*** (0.001)	1.01*** (0.001)	1.01*** (0.001)
Employer type									
Haitian business		Ref.					Ref.	Ref.	Ref.
Haitian NGO		1.04 (0.236)					1.09 (0.230)	1.67 (0.361)	1.11 (0.234)
International NGO		2.38* (0.430)					1.05 (0.194)	1.58 (0.303)	1.04 (0.190)
International business		1.58 (0.403)					0.70 (0.175)	0.78 (0.183)	0.68 (0.168)
Is religious organisation								0.30** (0.066)	
Employer controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Position controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Employee controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AIC	1254	1257	1245	1234	1228	353	1232	1227	1288
BIC	1353	1366	1349	1338	1337	430	1350	1350	1407
Degrees of freedom	17	19	18	18	19	18	21	22	21
Observation/clusters	843/77	843/77	843/77	843/77	843/77	245/21	843/77	843/77	874/77

Source: Primary data—Haiti 2011.

Note: Standard errors in parentheses. HLM model uses random intercept for employer and random slopes for position. Full model not shown. See Table A5 for full results.

$^{+}p < 0.10$.

$^{*}p < 0.05$. $^{**}p < 0.01$. $^{***}p < 0.001$.

The remaining specifications retest our findings using additional controls that account for organisational differences. Model 7 substitutes a category variable to control for differences among employer types. Haitian business, the category with the most observations, serves as the referent category. Model 8 does the same and adds a dichotomous control for private employers that self-identified as religious organisations. The results show that the anchoring and framing effects retain their significance and effect size in both models. Religious organisations appear to pay lower salaries ($p < 0.10$), but data limitations prevent us from making strong claims on this relationship.

The final robustness check reintroduces international employee salaries that we omitted from our primary analysis. We do this for two reasons.[11] First, employers who hire expats may be motivated to increase equality among workers by increasing Haitian salaries. We expect that including international salaries positively affects the coefficients controlling for organisational type and absorbs excess Level 2 variation that increases the model's precision. The second reason for including international salaries is that private employers may apply separate logics or access different information when hiring an expat versus a Haitian. In this case, we expect that including international salaries diminishes the size and significance of the anchoring and framing effects because something unobserved predicts those outcomes. Including the 31 international salaries does not affect our primary findings that local anchoring and international framing remain strong predictors of salaries (Model 9).

5.1 | Limitations and threats to inference

Generalisability and bias in the sample are two considerations that deserve attention. Haiti is not representative of all developing countries. Its colonial past, historical march into independence and the long series of unfortunate events that followed make it an outlier in many respects (Fatton, 2006; Jung & Cohen, 2020; Nicholls, 1986). Yet Haiti has much in common with other societies. Foreign interference in Haitian affairs has been a constant feature of its history, profoundly shaping its economic development and political institutions, but not always for the better, unfortunately. And like many developing countries, Haiti has a large and diverse informal economy and a strong presence of INGOs dating back to the mid-20th century (Maguire, 1981; Schwartz, 2008; World Bank, 2012). We acknowledge that our dependence on primary data and Haiti's sizeable informal economy limit the ability to make strong claims regarding the representativeness of the data studied here. Despite the data's limitations, we maintain that this analysis is a valuable contribution to practitioners and researchers because it provides insight into how managers make decisions in low-information environments.

We now assess the threat to inference due to bias and then compare that threat to similar studies using secondary data. Following Frank et al. (2013, p. 439), we assess the risk to validity caused by a biased sample. The baseline model (sample size 843 observations, 77 groups and 17 parameters) estimates that INGOs pay salaries that are, on average, nearly $7000 more than other organisational forms (6.95, $p < 0.01$) with a standard error of 2.218. Combining this information shows that the conservative threshold for statistical significance is 37 per cent.[12] This value means that given the estimated effect's size and precision, invalidation of inference occurs if at least 37 per cent of the effect size is due to sampling bias. Similarly, in the full model (Model 5), the threshold to invalidate inference of the local anchoring effect is 63 per cent. This means that in order to invalidate the inference of the local anchoring effect, 63 per cent of the sample (531 of the 843 observations) would have to be replaced with observations for which the effect is 0. To invalidate inference of international framing, 51 per cent of the sample (429 observations) would have to be replaced with cases for which there is no effect.

How does the threat to causal inference in this study compare to prior scholarship that studies salary differentials between non-profits and for-profits? We calculate that to invalidate the inference in Preston's (1989) seminal work, bias must account for 22 per cent of the effect size in her smaller sample of 311 employees (p. 448) and 84 per cent in her larger sample of 8313 employees (p. 454). Narcy (2011) uses the INSEE French Labour Force Survey (1994–2001) and its sample of 40 073 employees. To invalidate inference in the French study, we estimate that 51 per cent of the total effect size must be attributable to sampling bias. In straightforward terms, the threat to

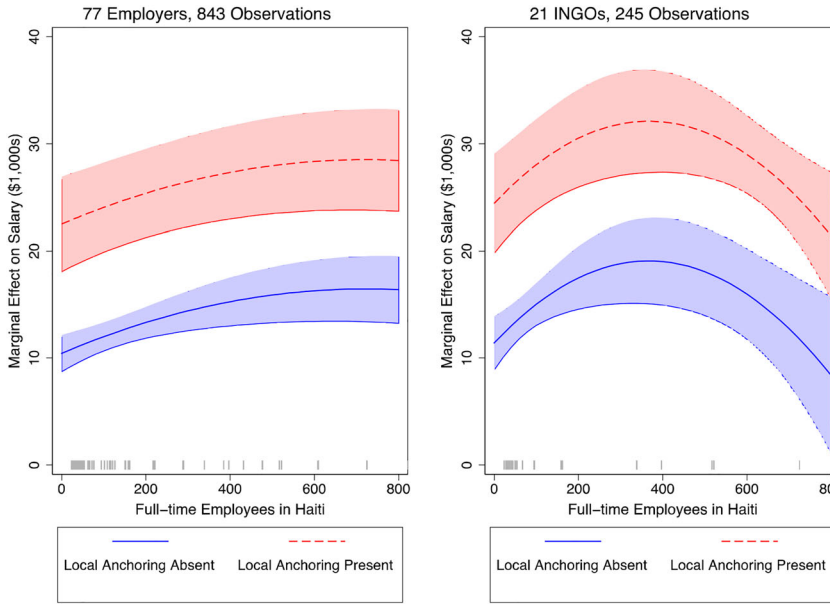

FIGURE 2 Marginal effect of local anchoring across organisational size (95 per cent CI). The figure shows the average marginal effects of local anchoring with respect to each employer's full-time employees in Haiti. The left panel shows the effect for the full sample (Table 2, Model 4), while the right panel shows the effect for a sample restricted to only INGOs (Table 2, Model 5). Rug plots represent the density of observations from organisations of varying sizes [Colour figure can be viewed at wileyonlinelibrary.com]

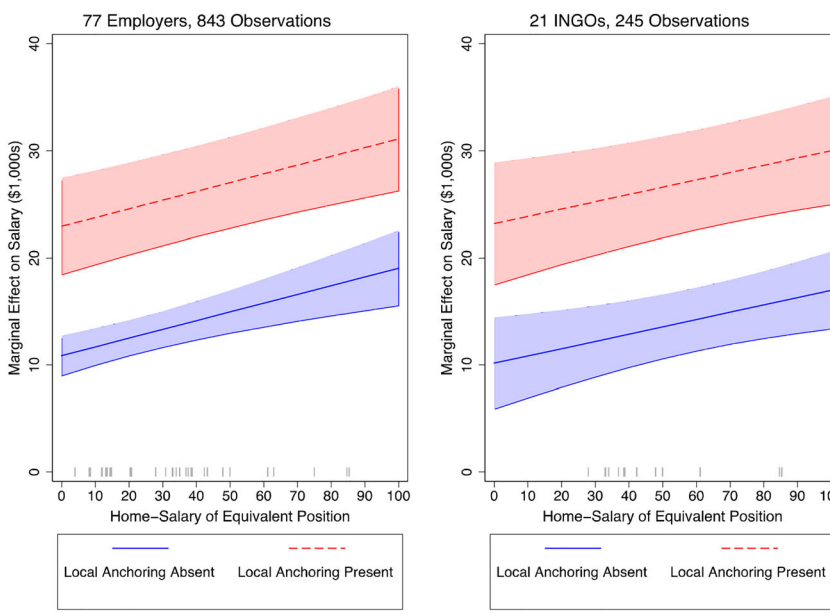

FIGURE 3 Marginal effect of local anchoring across international framing (95 per cent CI). The figure shows the average marginal effects of local anchoring with respect to the salary paid to a similar position in each employer's country of origin. The left panel shows the effect for the full sample (Table 2, Model 4), while the right panel shows the effect for a sample restricted to only INGOs (Table 2, Model 5). Rug plots represent the density of observations [Colour figure can be viewed at wileyonlinelibrary.com]

inference caused by a biased sample is less concerning in our analyses than similar studies that use either cross-sectional or panel data.

One thing to remember when comparing these threats to inference is that our study finds that employer-level clustering of salaries accounts for nearly half of the variance in the dependent variable. When such a considerable amount of variance in the outcome occurs at the group level, the standard errors produced by HLMs are wider than standard OLS regressions, which means estimates from HLMs face a harder test for bias as a threat to causal inference. This is noteworthy because earlier studies using secondary data did not account for intra-employer salary correlation. Not accounting for clustering incorrectly shrinks the standard errors of regression coefficients and understates the threat to validity in existing research caused by a biased sample.

6 | CONCLUSION

We have used this article to evaluate alternative explanations for salary differentials in low-information environments. Practitioners and analysts generally acknowledge that in developing countries, INGOs pay salary premiums that disrupt local labour markets and sometimes lead governments to enact policy that limits organisational autonomy (Cailhol et al., 2013; DeMattee, 2019a, 2019b, 2020; Huff-Rousselle & Pickering, 2001; Kuah-Pearce & Guiheux, 2014; Lemay-Hébert et al., 2020; Pfeiffer, 2003). While it may be true that INGOs' salaries disrupt local labour markets, a lack of reliable information limits our ability to understand why such salary differentials exist. We have attempted to fill this gap by comparing suggestive evidence that INGOs pay higher salaries against theory-driven explanations of decision-making. Our analysis tested these competing explanations using original data of 843 Haitian salaries reported by 77 private employers in Haiti.

We find that access to credible local salary information is a key predictor of salaries in Haiti. This relationship is a manifestation of the anchoring effect on decision-making (Barberis & Thaler, 2003; Tversky & Kahneman, 1974). The data show that employers with access to a consultancy report of local compensation practices pay significantly different salaries—and in this case, higher—compared to employers that lack access to the same information. Our explanation for this is that employers that participate in consultancy reports are resource-rich organisations that generally pay higher salaries than the broader labour market. Participating in these benefits reports and later accessing the information reinforce that behaviour. We expect the anchoring effect would diminish if consultants surveyed a representative sample of all employers. The analyses also show that salaries in an employer's country of origin act as an endogenous reference point for local salaries, which indicates that a framing effect (Barberis & Thaler, 2003; Tversky & Kahneman, 1981) influences salaries in low-information environments.

We find no evidence that the INGO organisational form reliably predicts salaries. The analyses indicate that the INGO organisational form's effect disappears once we account for the information available to decision-makers. This phenomenon may not be limited to Haiti and may replicate in other jurisdictions where information is sparse. The null result does not exonerate INGOs in the debate about their role in an internal 'brain drain'. Public institutions declined to participate in our study, leaving us unable to make strong claims on that matter. Yet our findings allow us to offer three predictions to that research topic. First, the INGO form does not singularly determine salaries. We observe significant between-INGO variation in local salaries even after accounting for organisational, position and employee differences. Second, if INGOs contribute to an internal 'brain drain', we predict it is unlikely that all INGOs are equally complicit. The INGOs that contribute to the 'brain drain' phenomenon likely share some characteristic(s), including nationality, funding expectations or operational focus. Third, the factors that cause some INGOs to contribute to the 'brain drain' could well operate through other employers. In particular, embassies, international organisations, for-profit development organisations such as Chemonics and DAI, and international businesses may also be key actors if they have access to the same information and resources as brain-draining INGOs.

In summary, this analysis finds evidence that employers rely on local and international reference points to make decisions in low-information environments. More broadly, it contributes to our understanding of managerial

decision-making in developing countries by identifying some of the tactics decision-makers use to overcome information shortages, such as paying for access to local knowledge or evaluating endogenous reference points. We stress that such tactics do not ensure rational and unbiased decisions. Indeed, the opposite may be true and tactics may initiate anchoring or framing effects that bias decision-making in suboptimal ways.

This work underscores the importance of available and reliable information. Public leaders—whether elected officials, foreign administrators or representatives of international bodies—should consider ways to increase the amount of information circulating among public and private organisations. One way of doing this for salaries is to expand the scope of compensation consultancy surveys so that the number of participants is more representative of the local economy. Another tactic is to make recent compensation reports available to interested parties to attenuate information asymmetries that disadvantage smaller or cash-strapped employers. Where information is sparse, or the environment becomes less certain, practitioners should consider associating more with local governments, businesses and civil society actors so that all sectors can share and learn from each other. As Nolte and Boenigk (2013) explain in their study of ad hoc networks in Haiti, associations offer members the opportunity to learn and exchange information, and the more diversified the groups, the larger the opportunity to learn new information.

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CONFLICT OF INTERESTS

The authors do not have any financial or non-financial interests related to this study.

ETHICS STATEMENT

Data collection followed IRB protocols set forth by the corresponding author's home institution (at the time, Indiana University). Individuals participated in data collection voluntarily and shared information without compensation. The article does not reference individuals, and we deidentify each organisation's name in the data.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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ENDNOTES

[1] These represent non-pecuniary benefits associated with employment—for example, status, travel, networking, skill development and working for an organisation whose mission aligns with an individual's values or beliefs.

[2] Consider, for example, the wages of a generic employee that we refer to as a 'technician'. Local wages for a mediocre and first-class technician are 1000 and 2000 currency units (CUs), respectively. The mediocre technician is likely capable, while the first-class technician is almost certainly capable. Reference points cause employers to frame these employees differently: the discount/premium label is different for a *local* employer whose reference point tells him technicians earn about 1500 CUs versus a *foreign* employer whose reference point tells her technicians earn approximately 7500 CUs.

Unlike the local employer, the foreign employer views both technicians as discounts, with the first-class technician also being less risky.

[3] The American Chamber of Commerce in Haiti (*Amcham Haiti*), Association des industries d'Haïti (ADIH) and Chambre de Commerce et d'Industrie d'Haiti (CCIH).

[4] The private party that performed the compensation and benefits survey provided the 2011 reports voluntarily but asked to remain anonymous. By all third-party accounts, the firm has a positive reputation and many returning clients from the for-profit, non-profit and public sectors.

[5] The categories include managers (OC1), professionals (OC2), technicians and associate professionals (OC3), clerical support workers (OC4), service and sales workers (OC5), manual workers (OC7–9), plant and machine operators and assemblers (OC8), and elementary occupations (OC9).

[6] It was straightforward to cross-classify four employee categories: managers (OC1) = management (11-0000); clerical support workers (OC4) = office and administrative support (43-0000); service and sales workers (OC5) = sales and related occupations (41-0000); and manual workers (OC7–9) = construction and extraction occupations (47-0000). Simple averages cross-classified the remaining categories: professionals (OC2) = average (business and financial operations [13-0000], computer and mathematical [15-0000], architecture and engineering [17-0000], physical and social science [19-0000], and legal occupations [23-0000]); technicians and associate professionals (OC3) = average (community and social services [21-0000], education and library [25-0000], arts and media [27-0000], and healthcare practitioners and technical occupations [29-0000]); plant and machine operators and assemblers (OC8) = average (production occupations [51-0000] and transportation and material moving [53-0000]); and elementary occupations (OC9) = average (healthcare support [31-0000], protective services [33-0000], food preparation and serving [35-0000], building maintenance and grounds cleaning [37-0000], and personal care and service occupations [39-0000]).

[7] OECD.stat data are reported in 2015 constant prices at 2015 USD purchasing power parity (PPP). We converted all data collected for reference salaries into 2015 constant prices at 2015 USD PPP.

[8] We thank the reviewers for reminding us that employers of the same organisational form may face different institutional constraints and incentives.

[9] The model used in this analysis can be specified as follows: $y_{ij} = \gamma_{00} + \gamma_{10}(\text{EXPERIENCE}_{ij}) + \gamma_{20}(\text{AUTONOMY}_{ij}) + \gamma_{30}(\text{COMPUTER}_{ij}) + \gamma_{40}(\text{EDUCATION}_{ij}) + \gamma_{50}(\text{ENGLISH}_{ij}) + \gamma_{01}(\text{LEGALFORM}_j) + \gamma_{02}(\text{ANCHORING}_j) + \gamma_{03}(\text{FRAMING}_j) + \gamma_{04}(\text{YEARSOPERATING}_j) + \gamma_{05}(\text{EMPLOYEES}_j) + \gamma_{06}(\text{SECTOR}_j) + \gamma_{07}(\text{PAP}_j) + u_{1j} + u_{oj} + r_{ij}$, where y_i is the salary for an individual$_i$ nested within employer$_j$; γ_{00} is the random intercept estimate; γ_{10}, ..., γ_{50} are the slope coefficients for the relationship between each Level 1 predictor and the response variable; γ_{01}, ..., γ_{07} are the slope coefficients for the relationship between each Level 2 predictor and the response variable; u_{1j} and u_{oj} are the disturbance terms for the randomly varying slope coefficients and random intercept, respectively; and r_{ij} is the Level 1 standard error.

[10] We anticipate that heightened levels of foreign assistance bias our results against this hypothesis.

[11] We thank the reviewers for raising these possibilities.

[12] For calculations and interpretations, see 'The Robustness of an Inference: Comparing Evidence Against a Threshold' and 'Example' subsections in Frank et al. (2013, pp. 439–440, 443–452).

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APPENDIX A

TABLE A1 Descriptive statistics of employee-level variables

	Mean	Std. dev.	Min.	Max.
Dependent variable: *Salary*[a]	$14 171	$16 463	$450	$120 201
Dependent variable: *ln*(*Salary*)[b]	8.930	1.186	6.109	11.697
Position				
Accountant (OC3)[c]	9.5%		0	1
Administrative assistant (OC4)[c]	22.0%		0	1
Administrator (OC3)[c]	3.3%		0	1
Cleaning staff, cooks, waiters (OC9)[c]	7.5%		0	1
Driver (OC9)[c]	8.2%		0	1
Executive (OC1)[c]	2.7%		0	1
Manager (OC1)[c]	13.4%		0	1
Mechanic/handyman (OC8)[c]	6.3%		0	1
Messenger (OC9)[c]	3.2%		0	1
Office staff (OC4)[c]	2.9%		0	1
Physical labourer (OC7–9)[c]	3.0%		0	1
Professional (OC3)[c]	9.5%		0	1
Programme manager (OC1)[c]	2.4%		0	1
Secretary (OC4)[c]	13.3%		0	1
Security guard (OC9)[c]	2.4%		0	1
Senior manager (OC1)[c]	5.2%		0	1
Specialised professional (OC2)[c]	4.7%		0	1
Worker autonomy				
Requires constant supervision[d]	23.4%		0	1
Requires daily/weekly supervision	29.9%		0	1
Requires weekly/biweekly supervision	22.0%		0	1
Requires little supervision (monthly or longer)	24.8%		0	1
Computer literacy and training				
None required for position[d]	34.5%		0	1
Provided on-the-job training	26.1%		0	1
Must possess skills (given no OTJ training)	39.4%		0	1
Professional experience				
0 to less than 5 years required[d]	67.9%		0	1
5 to 10 years required	24.7%		0	1
More than 10 years required	7.5%		0	1
Education				
Less than university[d]	51.8%		0	1
University	41.5%		0	1
More than university	6.6%		0	1

TABLE A1 (Continued)

	Mean	Std. dev.	Min.	Max.
Reads English	52.7%		0	1

Source: Primary data collected from formal employers in Haiti in 2011.
[a]Analysed as '000s USD. Managers reported 12-month salaries, which were converted from Haitian gourdes using a 40:1 currency conversation in 2011, which were generally acceptable at time of data collection.
[b]Models tested for robustness using *ln*(*Salary*).
[c]Classification codes in parentheses represent International Standard Classification of Occupations 2008 (ISCO-08): managers (OC1), professionals (OC2), technicians and associate professionals (OC3), clerical support workers (OC4), service and sales workers (OC5), manual workers (OC7–9), plant and machine operators and assemblers (OC8), and elementary occupations (OC9).
[d]Used as referent category during analysis.

TABLE A2 Frequency of observations by sector and legal form

Subsector	For-profit	Non-profit	Religious	Total
Public goods and services				
Education	0	17	22	39
Humanitarian assistance	0	64	0	64
International development	0	69	0	69
Private goods				
Agriculture/farming	9	18	0	27
Construction	87	0	0	87
Consumer products production	51	0	6	57
Retail sales	56	0	0	56
Private services				
Banking/finance	65	0	0	65
Energy/utilities	7	0	0	7
Medical	0	27	35	62
Orphanage	0	6	8	14
Restaurant/hotel	107	0	0	107
Services	117	31	3	151
Telecommunication	38	0	0	38
Total	537	232	74	843

Source: Primary data collected from formal employers in Haiti from May to November 2011.
Note: The table summarises observations used in the analysis ($n = 843$; 77 employers).

TABLE A3 Descriptive statistics of employer-level variables

	Employers	Mean	Std. dev.	Min.	Max.
Organisation is an INGO[a]	21	27.3%		0	1
Sector					
Public goods and services[b]	12	15.6%		0	1
Private goods	27	35.1%		0	1
Private services	38	49.4%		0	1
Located in Ouest/Port-au-Prince	44	57.1%		0	1
Organisation nationality[c]					
Haitian	52	67.5%		0	1
Non-Haitian	25	32.5%		0	1
Full-time employees		204.5	352.7	2	1800
Years of experience operating in Haiti		21.8	22.2	2	161

Source: Primary data collected from formal employers in Haiti in 2011.
[a]INGOs coded as 1 and other employers combined and coded as 0.
[b]Used as referent category during analysis.
[c]Presented for descriptive purposes only. Not used in analysis.

TABLE A4 Regression results—Primary analysis (complete results)

	(1) Baseline	(2) Anchoring	(3) Framing	(4) Full model	(5) INGOs only
Dependent variable: *Salary* ($1000s)					
Is INGO	6.95** (2.218)	4.77* (1.873)	1.70 (2.431)	0.66 (2.157)	N/A
Local anchoring		13.50*** (2.182)		12.08*** (2.277)	13.04*** (2.422)
International framing			0.10*** (0.021)	0.08*** (0.020)	0.07* (0.027)
Years of experience operating in Haiti	−0.06 (0.042)	−0.07* (0.035)	−0.06 (0.041)	−0.07* (0.036)	−0.03 (0.056)
Full-time employees (FTE)	0.02** (0.006)	0.02** (0.005)	0.02** (0.006)	0.02** (0.005)	0.04** (0.014)
FTE × FTE	−0.00** (0.000)	−0.00** (0.000)	−0.00** (0.000)	−0.00** (0.000)	−0.00** (0.000)
Sector					
Public goods and services	Ref.	Ref.	Ref.	Ref.	Ref.
Private goods	7.16* (3.095)	8.79*** (2.517)	6.77* (3.035)	8.31** (2.582)	26.16*** (4.695)
Private services	4.71+ (2.635)	6.87** (2.168)	4.32+ (2.585)	6.34** (2.225)	5.14* (2.216)
Located in Ouest/ Port-au-Prince	4.08* (1.731)	3.40* (1.428)	3.79* (1.698)	3.26* (1.459)	4.18* (2.088)
Professional experience					
0 to less than 5 years required	Ref.	Ref.	Ref.	Ref.	Ref.

TABLE A4 (Continued)

	(1) Baseline	(2) Anchoring	(3) Framing	(4) Full model	(5) INGOs only
5 to 10 years required	5.57*** (0.803)	5.61*** (0.796)	5.30*** (0.796)	5.39*** (0.791)	5.88*** (1.553)
More than 10 years required	17.98*** (1.380)	18.09*** (1.368)	17.53*** (1.367)	17.73*** (1.359)	12.30*** (2.475)
Worker autonomy					
Requires constant supervision	Ref.	Ref.	Ref.	Ref.	Ref.
Requires daily/ weekly supervision	−0.25 (0.997)	0.06 (0.976)	−0.06 (0.984)	0.14 (0.968)	−0.37 (1.932)
Requires weekly/ biweekly supervision	1.49 (1.147)	1.79 (1.123)	1.11 (1.134)	1.39 (1.117)	3.70^{+} (2.181)
Requires little supervision (monthly or longer)	7.37*** (1.230)	7.43*** (1.203)	7.25*** (1.212)	7.26*** (1.192)	1.46 (2.368)
Computer literacy and training					
None required for position	Ref.	Ref.	Ref.	Ref.	Ref.
Provided on-the-job training (OTJ)	1.10 (1.099)	1.10 (1.077)	0.66 (1.086)	0.69 (1.070)	1.50 (1.855)
Must possess skills (no OTJ)	4.85*** (1.211)	5.17*** (1.188)	4.45*** (1.196)	4.75*** (1.179)	6.82** (2.137)
Education					
Less than university	Ref.	Ref.	Ref.	Ref.	Ref.
University	4.53*** (0.949)	4.39*** (0.931)	4.05*** (0.942)	4.07*** (0.926)	3.24^{+} (1.905)
More than university	11.57*** (1.626)	11.29*** (1.603)	10.58*** (1.620)	10.58*** (1.600)	10.06*** (2.714)
Reads English	1.92* (0.931)	1.49 (0.919)	1.56^{+} (0.922)	1.26 (0.913)	1.28 (1.676)
BIC	6221.15	6197.94	6205.12	6188.65	1854.22
Degrees of freedom	17	18	18	19	18
Observations/ groups	843/77	843/77	843/77	843/77	245/21

Source: Primary data—Haiti 2011.

Note: Standard errors in parentheses. HLM model uses random intercept for employer and random slopes for position.

$^{+}p < 0.10$.

$^{*}p < 0.05$. $^{**}p < 0.01$. $^{***}p < 0.001$.

TABLE A5 Regression results—Estimate alternative (complete results)

	(1) Baseline	(2) Anchoring	(3) Framing	(4) Full model	(5) INGOs only
Dependent variable: *ln(Salary)*					
Is INGO	2.31* (0.402)	1.85^{+} (0.305)	1.26 (0.231)	1.08 (0.190)	N/A
Local anchoring		4.08*** (0.849)		3.40** (0.715)	1.94 (0.631)
International framing			1.01*** (0.001)	1.01*** (0.001)	1.01*** (0.001)
Years of experience operating in Haiti	0.99 (0.003)	0.99 (0.003)	0.99 (0.003)	0.99 (0.003)	1.00 (0.007)
Full-time employees (FTE)	1.00*** (0.001)	1.00*** (0.000)	1.00*** (0.001)	1.00*** (0.000)	1.01*** (0.002)
FTE × FTE	1.00*** (0.000)	1.00*** (0.000)	1.00*** (0.000)	1.00*** (0.000)	1.00** (0.000)
Sector					
Public goods and services	Ref.	Ref.	Ref.	Ref.	Ref.
Private goods	2.85* (0.707)	3.36** (0.772)	2.71* (0.663)	3.14* (0.725)	90.56*** (55.046)
Private services	1.22 (0.257)	1.54 (0.304)	1.17 (0.241)	1.43 (0.284)	2.72^{+} (0.726)
Located in Ouest/ Port-au-Prince	3.54*** (0.482)	3.36*** (0.424)	3.40*** (0.457)	3.26*** (0.413)	7.58*** (1.883)
Professional experience					
0 to less than 5 years required	Ref.	Ref.	Ref.	Ref.	Ref.
5 to 10 years required	2.36*** (0.102)	2.37*** (0.102)	2.30*** (0.099)	2.31*** (0.099)	2.45*** (0.197)
More than 10 years required	4.85*** (0.360)	4.89*** (0.363)	4.63*** (0.341)	4.68*** (0.345)	3.84*** (0.500)
Worker autonomy					
Requires constant supervision	Ref.	Ref.	Ref.	Ref.	Ref.
Requires daily/ weekly supervision	1.20^{+} (0.066)	1.21^{+} (0.067)	1.23^{+} (0.067)	1.24^{+} (0.067)	1.11 (0.113)
Requires weekly/ biweekly supervision	1.82*** (0.116)	1.83*** (0.116)	1.76*** (0.111)	1.77*** (0.111)	1.80* (0.214)
Requires little supervision (monthly or longer)	2.46*** (0.169)	2.45*** (0.167)	2.45*** (0.166)	2.43*** (0.164)	1.37 (0.172)
Computer literacy and training					
None required for position	Ref.	Ref.	Ref.	Ref.	Ref.
Provided on-the-job training (OTJ)	2.15*** (0.132)	2.14*** (0.131)	2.04*** (0.124)	2.04*** (0.124)	2.30*** (0.229)
Must possess skills (no OTJ)	3.52*** (0.238)	3.55*** (0.239)	3.36*** (0.225)	3.40*** (0.227)	3.01*** (0.344)

TABLE A5 (Continued)

	(1) Baseline	(2) Anchoring	(3) Framing	(4) Full model	(5) INGOs only
Education					
Less than university	Ref.	Ref.	Ref.	Ref.	Ref.
University	1.85*** (0.096)	1.85*** (0.096)	1.75*** (0.091)	1.75*** (0.091)	1.50^{+} (0.154)
More than university	2.60*** (0.230)	2.59*** (0.229)	2.34*** (0.206)	2.35*** (0.207)	2.10* (0.311)
Reads English	1.59*** (0.081)	1.56*** (0.080)	1.53*** (0.078)	1.51*** (0.077)	1.47* (0.131)
BIC	1353.09	1349.39	1338.38	1337.20	429.88
Degrees of freedom	17	18	18	19	18
Observations/groups	843/77	843/77	843/77	843/77	245/21

Source: Primary data—Haiti 2011.

Note: Standard errors in parentheses. HLM model uses random intercept for employer and random slopes for position.

$^{+}p < 0.10$.

$^{*}p < 0.05$. $^{**}p < 0.01$. $^{***}p < 0.001$.