Understanding Salary Differentials in Developing Countries

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Research Question
How do INGOs set salaries in developing countries?

Brief Abstract
This article evaluates alternative explanations for why salary differentials exist in developing countries. It is generally argued that international nongovernmental organizations (INGOs) pay higher salaries for local employees, disrupting the local labor market and pushing governments to enact policy that limits organizational autonomy. Using original data from 843 position-level observations from 77 formal employers in Haiti, this analysis finds evidence that employers rely on local and international reference points to set salaries in the low-information environments of developing countries. The findings suggest that scholars and practitioners should focus on the actions and tools managers use to make decisions and adapt to low-information and uncertain environments.

Key Findings

- The INGO organizational form is an insufficient explanation for salary differentials as it does not account for the information available to decision-makers.
- Salaries in an employer's home-country are often used as a reference point in determining local salaries.
- Employers with access to credible information regarding local compensation pay similar salaries to others with access to the same information.

Opportunities for Action

- Practitioners should consider associating more with local governments, businesses, and nonprofits so that all sectors can share and learn from each other.
- Professional associations offer members the opportunity to learn and exchange information, especially when the groups are diversified.
- Public leaders should make compensation reports available and expand the scope of compensation consultancy surveys in order to increase the amount of information available for employers.

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KEYWORDS: NGOs, labor economics, decision-making, behavioral economics, labor donation

ABSTRACT: A great deal of scholarship compares employee compensation in different sectors of employment. Yet, most of these studies are conducted in developed countries and provide little insight into developing contexts. While the context of developing countries creates advantages for some organizations, these low-information environments disadvantage most employers by increasing search-costs related to salaries and employee compensation. How do employers set salaries in these low-information environments? I explore this question using an original dataset from Haiti in 2011 of 843 salaries collected from 77 employers. Preliminary analyses support arguments that international nongovernmental organizations (INGOs) pay above-market wages. However, alternative explanations grounded in the theory of behavioral economics cause the importance of the INGO organizational form to vanish. Specifically, I find evidence of two extra-organizational processes that influence managerial decision-making: first, local anchoring when employers solicit specialized information from credible sources. Second, international framing when managers reference information in their home country to make decisions locally. These findings suggest that scholars and practitioners should focus on the actions and tools managers use to make decisions and adapt to low-information and uncertain environments.

INTRODUCTION

A standard critique in developing countries is that employees at nonprofits from the Global North (henceforth INGOs) get paid more than equally-qualified individuals employed by businesses and governments. Employers in all sectors face incentives that justify higher salaries as a means to attract the personnel necessary to achieve organizational performance. Such salary premiums, or "efficiency wages" (Yellen, 1984) are believed to prevent employee shirking, reduce turnover and training costs, attract high-caliber employees, and induce higher morale. Efficiency wages are an essential starting point, but they do not explain why INGOs seem to be the only organizational form accused of paying unreasonably high salaries.

The situation in the Global South offers unique advantages for some employers. In these countries, INGOs enjoy a resource advantage over many local organizations that they can use to attract more capable employees (Brass, 2016; Chege, 1999; Schuller, 2009). Not only might these organizations have larger budgets, but these organizations may finance themselves with more stable currencies such as US dollars, British pounds, and Euros. INGOs are then able to pay local employees in denominations other than those local currencies susceptible to devaluations such as the Haitian Gourde (1989), the Zimbabwean dollar (2006-2009), and the Venezuelan bolivar (2018-2019). While some INGOs may have a resource advantage in these uncertain environments, low-information disadvantages all employers by increasing search-costs related to salaries and employee compensation. The characteristics of low- and middle-income countries raises an interesting question: what explains the salary of a formal sector worker in Haiti? Is it so simple as "foreign-funded INGOs pay more," or are other factors relevant?

Labor statistics and salary information in contexts like Haiti are challenging to find or non-existent. This research relies on original data collected in Haiti in 2011. The data represents 843 salaries collected from 77 local and international employers. This information contains

employee- and employer-level information that is necessary for the analysis at hand. Although it is not representative of the labor market in Haiti, much less other developing countries around the world, it does provide a rare opportunity into an understudied topic.

While the preliminary analysis supports arguments suggesting INGOs pay above-market wages, later analyses that explore alternative explanations cause the importance of the INGO organizational form to vanish. These alternative explanations include two dynamics from behavioral economics: local anchoring, when employers solicit specialized information from credible sources; and international framing, when managers reference information in their home country to make salary decisions locally.

SALARIES AS A RATIONAL DECISION

Official and unofficial sources claim INGOs pay significant premiums over other employers in developing countries. While empirical evidence from East Asia (Barr, Fafchamps, & Owens, 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 a salary premium compared to other organizational forms, the reasons for this phenomenon remain understudied. In the "Republic of NGOs[i]"(Fass, 1988, pp. 22-23), Haitians and foreigners commonly believe INGOs pay higher salaries than other employers but disagree on *how* and *why* such a salary premium exists.

One explanation for excessive financial compensation is to attract and retain employees. Yellen's (1984) lauded efficiency-wage hypothesis explains that firms pay workers more than the reservation, or market-clearing wage required by potential replacements for reasons of organizational efficiency. Thus, any compensation premium is intended to prevent employee shirking, reduce turnover and training costs, attract high-caliber employees, and induce higher morale. In other words, higher salaries are a rational response to long-term organizational needs. Stoddard (2012, p. 347) generally agrees and explains that INGOs pay national and international employees differently but compensate their national staff at levels consistent with local salary levels. Critics observe, however, that INGOs' compensation schema reinforce global structures of inequality. This occurs, for example, when INGOs pay an inexperienced European "roughly triple" what an Angolan professional with better credentials and decades more experiences receives in the same position (Warne Peters, 2013, p. 280).

Additional research suggests that salary differentials exist among employees from the same country. Ethnographic data collected in Mozambique between 1993 to 1998 suggests working for an INGO is like "winning the lottery" (Pfeiffer, 2003, p. 732) because in one year of working for an INGO "one could potentially earn the equivalent of 20yrs' salary in the [National Health Service]." If INGOs pay lottery-like salaries, then employees are incentivized to switch employers. This seems to be the case in Cambodia, where Huff-Rousselle and Pickering (2001) compared healthcare providers and found that public agencies served as a training ground where healthcare workers earned education and experience. Once public employees possess the necessary skills, they are "attracted away—in a 'brain drain' phenomenon" by INGOs who "offer better salaries and fringe benefits" (p. 44). Interview data collected in 2009 from Médecins Sans Frontières (MSF) staff in China shows salary—alongside the English language environment and the opportunity to earn new skills—was an important reason for joining MSF and increased their salary overnight by 30-100% (Kuah-Pearce & Guiheux, 2014). Researchers identified a similar phenomenon in several Sub-Saharan African countries (Cailhol et al., 2013). These analysts used a cross-national study (2007-2011) to assess the degree to which global health initiatives (GHI)

programs affected the stock of public-sector employees in African countries. Five countries--Angola, Burundi, Lesotho, Mozambique, and South Africa--lost valuable public-sector employees to INGOs. The drain was so severe that governments took actions to attenuate the "poaching" (Cailhol et al., 2013, p. 2) of public health care employees. In Angola and Mozambique, governments instituted a formal policy that harmonized salaries across sectors. In South Africa, the state spearheaded informal "'anti-poaching' agreements" (Ibid, p. 9) so that GHI-funded programs would not deplete the stock of qualified public workers. In Lesotho, Mozambique, and Burundi, governments introduced compensation incentives and "financial top-up[s]" (Ibid, p. 9) in an attempt to stem employee migration away from the public sector.

Greater resources, the constant pressures of higher organizational performance, and accountability to donors are possibilities why INGOs pay higher salaries. These factors, supported by suggestive evidence from several countries, underpin the organizational form hypothesis:

> **H_1** Organizational Form—After controlling for employee and employer characteristics, INGOs pay higher salaries than other organizational types.

DECISION-MAKING IN LOW-INFORMATION ENVIRONMENTS

Perhaps relying on the organizational form and the rational calculation of efficiency wages is too simple and overlooks the activity that exists within and among organizations. Aside from reasons to perform at high levels, what other explanations do INGOs have for paying salary premiums? One is that environmental uncertainties and low information fog INGOs' calculations. Watkins, Swidler, and Hannan (2012, p. 285) support this rationale and explain that INGOs are distinctive organizational forms because of the challenges and uncertainties they face while operating in the Global South. This operational environment, or "output boundary" (Watkins et al., 2012, pp. 294-296), is beset with principal-agent problems, asymmetric information, and unfamiliar cultural practices and institutional contexts. As a result, employers may adapt to environmental 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, INGOs may overestimate the premium necessary to retain these services. Such imprecise salaries 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." Thus, recognizing that INGOs operate in organizational ecologies of uncertainty calls for several alternative explanations to the organizational form hypothesis (**H_1**). These alternative explanations draw on established literature regarding cognitive limits of decision-making (March & Simon, 1958 [1993]; Simon, 1955).

First, in a seminal contribution to the theory of behavioral economics, Tversky and Kahneman (1974) introduce an anchoring effect and explain people form estimates by starting with an initial value and then adjust away from it. Existing experimental research provides evidence to show that adjustments away from the starting value are often insufficient (Barberis & Thaler, 2003) and affirms that decision-makers anchor to initial values. Research also indicates that anchoring is a vital mechanism when establishing salary and can take the form of current and expected salaries (Bazerman, 2006; Major, Vanderslice, & McFarlin, 1984) and that the

effect is identifiable even when the anchor is implausibly large (Thorsteinson, 2011). While recent research in public management uses anchors to compare managerial decision-making (for a recent review see Webeck & Nicholson-Crotty, 2019), this study examines whether access to credible salary information on the local labor market anchors managers' salary decisions. Such information is made available throughout the world when private consultancy services—e.g., Birches Group, Culpeppers and Associates, Mercer—produce credible information for clients in the form of professional compensation and benefits surveys. Thus, when managers receive salary information from professional compensation consultants, the anchoring effect biases future salary decisions to that initial salary information[1]. This is known as the anchoring effect.

Another alternative explanation is "framing," defined as psychological principles that govern the perception of choices and the evaluation of outcomes (Tversky & Kahneman, 1981, p. 453). Framing causes managers to evaluate choices and outcomes compared to endogenous reference points instead of to unbiased absolutes. Research has found that framing motivates the fair allocation of salaries among hypothetical employees (Mellers, 1982, 1986), and can lead to suboptimal choices and professional bias (Highhouse, Paese, & Leatherberry, 1996; Smith, 1988). When managers compare reference points separately, instead of holistically, it is known as “narrow framing” (Barberis & Thaler, 2003, p. 1073; DellaVigna, 2009, p. 347). This narrow framing bias affects salaries when managers evaluate decisions through an endogenous reference point such as the home-country compensations levels of similar positions. Thus, when managers reference home-country salaries, the framing mechanism biases future salary decisions to those reference points. This is known as the framing effect.

These alternative explanations oppose arguments that higher salaries are a rational response to organizations' needs or driven by organizational form. Nevertheless, these hypotheses are testable because the data contains INGOs that did and did not receive the consultancy survey and INGOs from multiple countries in the Global North. Stated formally, the two alternative hypotheses to H_1 are:

H_{2A} Local Anchoring— Participation in consultancy compensation and benefits surveys is a significant predictor of salary. This anchoring hypothesis does not predict higher or lower salaries, only that accessing credible information is a significant factor that explains variation in salaries.

H_{2B} International Framing—Position-specific, home-country salaries positively correlate with local salaries.

RESEARCH DESIGN

Several types of data are required to explain the salary of a formal sector worker in Haiti. Data for the employer (legal form, sector), position (salary, qualifications), and person (skills, experience) are the most relevant. Unfortunately, there is no publicly available data on salaries in Haiti; thus, primary data collection was necessary for this research. I collected data on 843 position-specific salaries from 77 employers with accompanying information for position and employee qualifications. This analysis provides a rare opportunity to test and build theory concerning how employers set salaries in developing countries.

[1] To summarize, managers in all sectors often lack complete information on the labor market, and the low-information environments of developing countries can amplify this challenge. To compensate, managers search for information such as benefit consultancy surveys. These decision-makers then become anchored to credible information within the survey.

Data Collection

The analysis uses original data collected in 2011 using a two-stage survey design. The final dataset contains 843 observations of salaries of Haitian employees collected from 77 formal employers. Data collection proceeded as follows. First, data collection used two techniques to maximize participation from formal employers. I first scraped online contact information and emailed organizational contacts inviting them to participate in the academic study. This technique yielded some responses, but contact data were often outdated. Snowball sampling within several private-membership organizations[ii] proved more effective and yielded additional participants. I contacted association members directly and without discrimination when associations provided accurate contact information. Some associations guarded members' contact information and privately invited members to participate in the study.

Two bilingual survey instruments collected the necessary data. I developed these instruments in English, professionally translated into French, and back-translated into English for accuracy. The first asked organizational leaders such as business owners and country directors to provide employer information such as size, nationality, legal form, and operational sector. Each employer completed one of these organizational surveys. The second collected position-specific information. Organizational managers, such as HR managers and small businesses owners, completed one position survey for each position. This second survey collected position-specific information on salary, position responsibilities, and applicant qualifications.

My analysis focuses only on expected salaries of 843 Haitian employees, as reported by organizational managers of 77 employers operating in Haiti. Data includes responses from 7 of Haiti's 10 administrative jurisdictions, with 69% of observations coming from Ouest and the capital city Port-au-Prince. The appendix contains information on the frequencies of observations by the primary sector in which the organization operates (Table A). Initial data collection resulted in 897 salary observations from 80 employers collected between May and November 2011. Because costs of labor and costs of living are substantially different between developed and developing countries, the inclusion of salaries for international staff may influence the analysis even after controlling for employee's nationality. I removed these observations from the data using a question that asked participants to identify whether an applicant is expected to be "Haitian" or "Foreign/non-Haitian" to earn the salary reported. Excluding international employees removed 31 observations, and casewise deletion removed an additional 23 observations.

Model Variables

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 estimated salary as well as those characteristics *exceptional* candidates should possess to justify the higher salary. This salary range, or *barème de salaire*, is an administrative device familiar to HR 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 twelve-month salaries, which when necessary were converted from Haitian gourdes using a 40:1 currency conversion. This exchange rate is

generally acceptable at the time of data collection. The average salary is $14,170 and ranges from $450 to $120,2000, with a median value of $7,500.

Theoretical Variables Tested

INGO is a dichotomous variable used to test the baseline hypothesis (**H_1**) that organizational form predicts salary differentials. The variable takes a value of *1* for all observations provided by any of the 21 INGO employers (245 salary-level observations) and takes a value of *0* for the referent group of 56 employers (598 observations).

The *Consultancy Survey Participant* variable contains two dichotomous variables (Table 2), which represent separate consultancy interventions that engage the anchoring mechanism and cause the local anchoring dynamic (**H_{2A}**). The first represents INGOs that paid to participate in the sector-specific "NGO Local Pay" report in 2011. Of the 21 INGOs in this data, 5 (73 observations) participated in the professional compensation and benefits survey. The second represents employers who paid to participate in economy-wide "Compensation and Benefits Survey" report in 2011. Of the 77 employers, only 1 (20 observations) participated in the cross-sector survey[iii]. I group these 6 employers to create a category of organizations to test the local anchoring effect, which I compare to a reference group of 71 organizations (55 non-INGOs and 16 INGOs) that did not participate in either consultancy.

The *Home-Country Reference Salary* variable is a continuous variable (Table 1) and represents the international framing dynamic (**H_{2B}**). The eight categories of the International Standard Classification of Occupations 2008 (ISCO-08) classification organize the data[iv]. The Eurostat's Structure of Earnings Survey (SES) 2010 survey provides data for European employers, and the Bureau of Labor Statistics Occupation Employment Statistics (OES) Survey 2010 survey provides data from American employers. The BLS survey reports average annual salaries in dollars and organizes them according to the 7-digit Standard Occupational Classification (SOC), which easily corresponds with the ISCO classification[v].

Comparable data is unavailable for Mexico, but average annual salaries for Organisation for Economic Co-Operation and Development (OECD) is available. Data from OECD member countries—Germany, Mexico, UK, USA—reasonably approximate salaries for ISCO-08 positions in Mexico[vi]. First, in 2010, the average annual salary for Mexico was $14,994, which is 36% of Germany's ($41,698), 35% of UK's ($42,760), and 27% of America's ($56,398). Second, multiplying these percentages with Eurostat's SES and BLS's OES position salary data generate a Mexico-equivalent. This repeated multiplication process produces three Mexico-equivalent estimates—one each from Germany, UK, USA—for each position. The final step averages these Mexico-equivalent estimates for each position to generate a comparable Mexico position salary.

Similar data are also unavailable for Haiti. I proxy a Haitian indicator using the January 2011 *bareme de salaire* produced by the Haitian Ministry of Finance and Economy (reported in Haitian gourdes) to estimate the ISCO category salaries for Haiti. This "salary grid" uses a three-tier architecture—category, level, class—to assign salaries. I average salaries within the highest tier to estimate ISCO salaries for managers, professionals, technicians, clerical support, service and sales, and elementary occupations. I estimate salaries for manual workers and plant and machine operators using the Haitian minimum wage (200 HTG/day) and assuming employees work 5 days/week, 52 weeks/year and take-off the 15 official holidays.

<<approximately here Table 1 Descriptive Statistics for Independent Variables>>

Level-One Control Variables

The survey instrument collected data for seventeen *Position* categories and systematically collected data at the same level as the dependent variable. *Worker Autonomy* controls for the amount of time and energy an organization expects to spend supervising an employee. *Computer Literacy & Training* measure the amount of computer literacy and on-the-job computer training required. Three categories of variables account for differences in experience. *Professional Experience* measures the amount of prior professional experience employees are expected to possess. *Education* indicates the highest educational level applicants are expected to have achieved. *Reads English* categorizes observations according to the expectation that they read English. The appendix contains descriptive statistics for all level-one control variables (Table B).

Level-Two Control Variables

Table 4 describes Level-2 variables controlling for organizational differences. *INGO* is a dichotomous variable that represents INGO employers. The referent group is a combination of Haitian nonprofits and local and international businesses. *Sector* reorganizes the 14 subsectors available to respondents on the surveys into three broader categories for analysis: public goods and services, private goods, and finally private services. Over half of the employer participants are *Located in the Ouest*, which contains Port-au-Prince. Most employers are *Haitian* (502 observations), and the average organization employs more than 200 *Full-Time Employees* and has over 20 *Years of Experience Operating in Haiti*. The appendix contains descriptive statistics for all level-two control variables (Table C).

Methods

A primary assumption of analysis of variance (ANOVA) models is the independence of observations. Concerning this research, an ANOVA model assumes that each salary is independent of others. However, if the data's dependent observations cluster—for example, salaries from the same employer are more similar to each other than salaries from other employers—then the assumption of independent observations is violated. Ignoring this violation shrinks estimates of the standard errors of conventional statistical tests and can cause inflated Type I error rates (Barcikowski, 1981; Hox, 2010; Kreft & De Leeuw, 1998). Multilevel and hierarchical models effectively manage the interdependence of observations (Gelman & Hill, 2007; Snijders & Bosker, 1999).

The data structure of 843 salaries collected from 77 employers is inherently nested; therefore, a hierarchical-level model (HLM) appropriately partitions the variance at the salary- and employer-levels while controlling for characteristics of the organization, position, and employee. The empty model calculates the data's intra-class coefficient (ICC) of 0.47, which is interpreted to mean that variation at the employer-level accounts for 47% of the variance in salary. This clustering of the dependent variable is a clear violation of the independent observations assumption and justifies the use of HLM models. Further, the number of employers exceeds the recommended 30-50 groups necessary to attenuate inflated Type I error rates (Hox, 2010; Lorah, 2017).

Initial analyses compared two HLM models. The first used a random intercept (RI) model that allowed regression line intercepts to vary by organization. The second used a random intercept and random slopes (RIRS) that allowed regression line slopes to also vary by position. Three reasons justify the use of the RIRS as the base model. First, the RIRS model is desirable for its ability to explain variation in the outcome. While the RI model explains 62% of the

variance in level-one outcomes, the RIRS model increases explained variation to 67%. These explanation-of-variance values use the level-one explained proportion of variance formula (7.2) in Snijders and Bosker (1999). The Bayesian Information Criterion (BIC) also supports the RIRS as the baseline model. Decreasing BIC values indicate an increasing ability to fit the variation in the outcome, and a decrease in the BIC by 10 points or more indicates substantial evidence to support one model over another (Raftery, 1995). Adding random-slopes to the RI model decreases the BIC by over 70 points. Finally, while the RI model relies on dummy variables to control for position type, the RIRS model accomplishes the same using fewer degrees of freedom.

FINDINGS

Table 2 shows the results of the analysis with some controls omitted (see appendix for full table). The top panel uses salary (in thousands of US dollars) as the dependent variable, while the bottom panel uses the natural logarithm of salary as a robustness check. Because results are similar in both models, the discussion focuses on the top panel only. The baseline model in Table 2 controls for employee and employer characteristics and provides initial confirmation of the organizational hypothesis (**H_1**): holding all else equal, INGOs appear to pay higher salaries than other organizational types ($p<0.01$). This finding matches subjective evidence familiar to many practitioners and INGO scholars. This initial model does not consider alternative explanations, however.

Variation exists among employers who are consultancy survey participants and received credible information on local salary and benefits (see Table 1). Specifically, 6 of the 77 employers in this study paid to receive this consultancy service. The local anchoring hypothesis (**H_{2A}**) argues that these employers experience an information *anchoring effect* that did not affect the referent group of employers that lacked access to such information (55 non-INGOs and 16 INGOs). As shown in the anchoring model (model 2), participation in local consultancy surveys has a positive and statistically significant relationship with salaries. When controlling for employee and organizational factors, employers exposed to the anchoring effect report salaries that are on average higher than the control group ($p<0.001$). The anchoring model fits the data better than the base model, as shown by the sharply lower BIC value (Raftery, 1995). In confirmation of **H_{2A}**, exposure to credible information about local salaries creates an anchoring effect that affects salaries. The model suggests INGO salaries remain statistically distinct from other organizational forms ($p<0.05$), but the effect size and significance both decrease once the model controls for the local anchoring hypothesis. Further testing rejects the hypothesis that the local anchoring effect and the INGO organizational form are equal at the 0.01 level ($X_2(1)=7.65$).

The international framing hypothesis (**H_{2B}**) argues that referencing home-country compensation levels engages an information *framing effect* that biases salary decisions and causes local salaries to have a positive correlation with home-country salary patterns. As shown in Table 2, the framing effect has a positive relationship with salary (model 3). 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 $3,450 ($p<0.001$), holding other variables constant. The BIC statistic shows that the international framing model is preferred over the baseline model but does not fit the data as well as the local anchoring model. In confirmation of **H_{2B}**, salaries in an employer's home country create a framing effect that positively correlates with local salaries. The INGO control is insignificant after controlling for the international framing hypothesis.

<<approximately here Table 2 Regression Table>>

The final model (model 4) tests all hypotheses simultaneously. When evaluated together, the organizational form hypothesis (**H_1**) lacks statistical support. However, the hypotheses for local anchoring (**H_{2A}**) and international framing (**H_{2B}**) remain statistically significant at the 0.001 level. The following figures show the marginal effects of local anchoring for all employers (left panel) and INGOs only (right panel). Solid lines represent predictions where the local anchoring effect is absent and dashed lines when it is present. Rug plots along the x-axis indicate the density of observations, but several observations may occupy the same value because of the nested nature of the data. 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 **H_{2A}**, this difference is consistent across the data space with respect to organizational size (Figure 1) and home-salary reference points (Figure 2). The positive slopes in Figure 2 correspond to the positive coefficients in Table 2 and show position-specific salaries in an employer's home-country positively correlate with local salaries. This additional evidence supports **H_{2B}**.

Fig. 1 Marginal Effect of Local Anchoring across Organizational Size (95% CI)

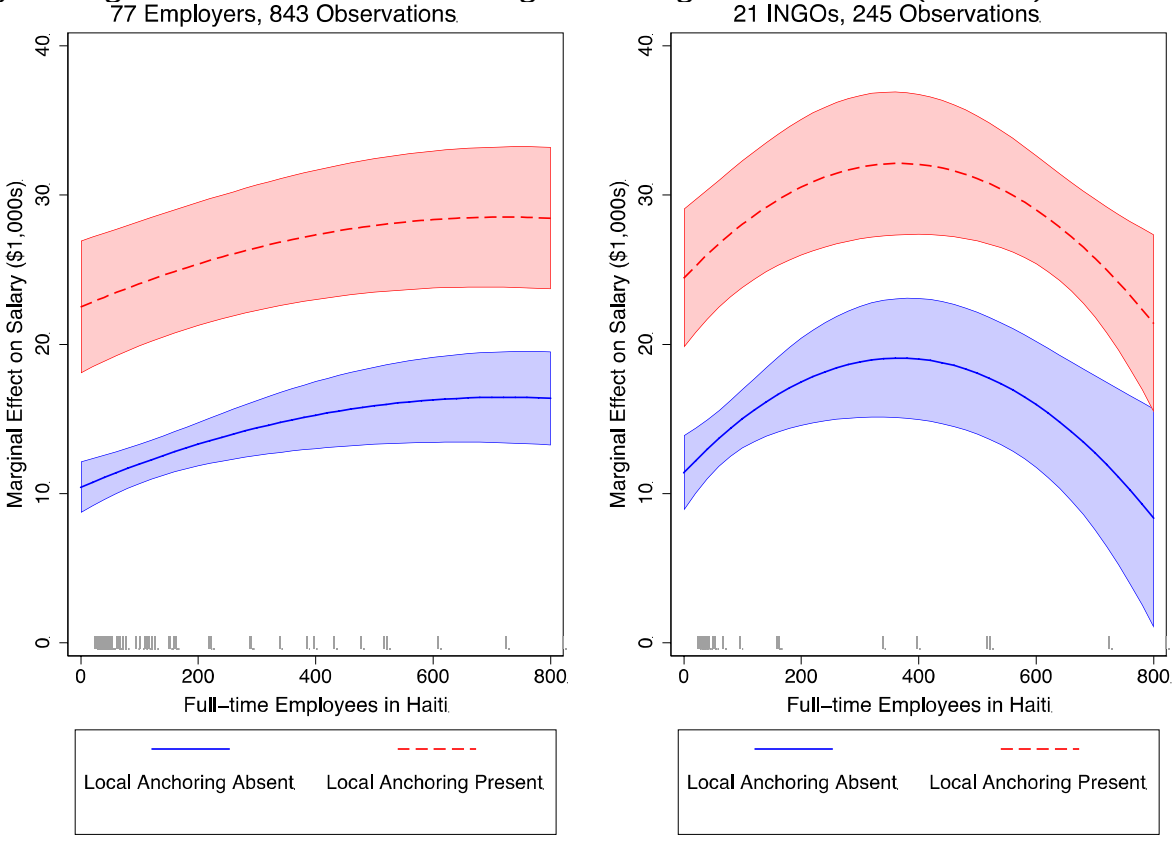
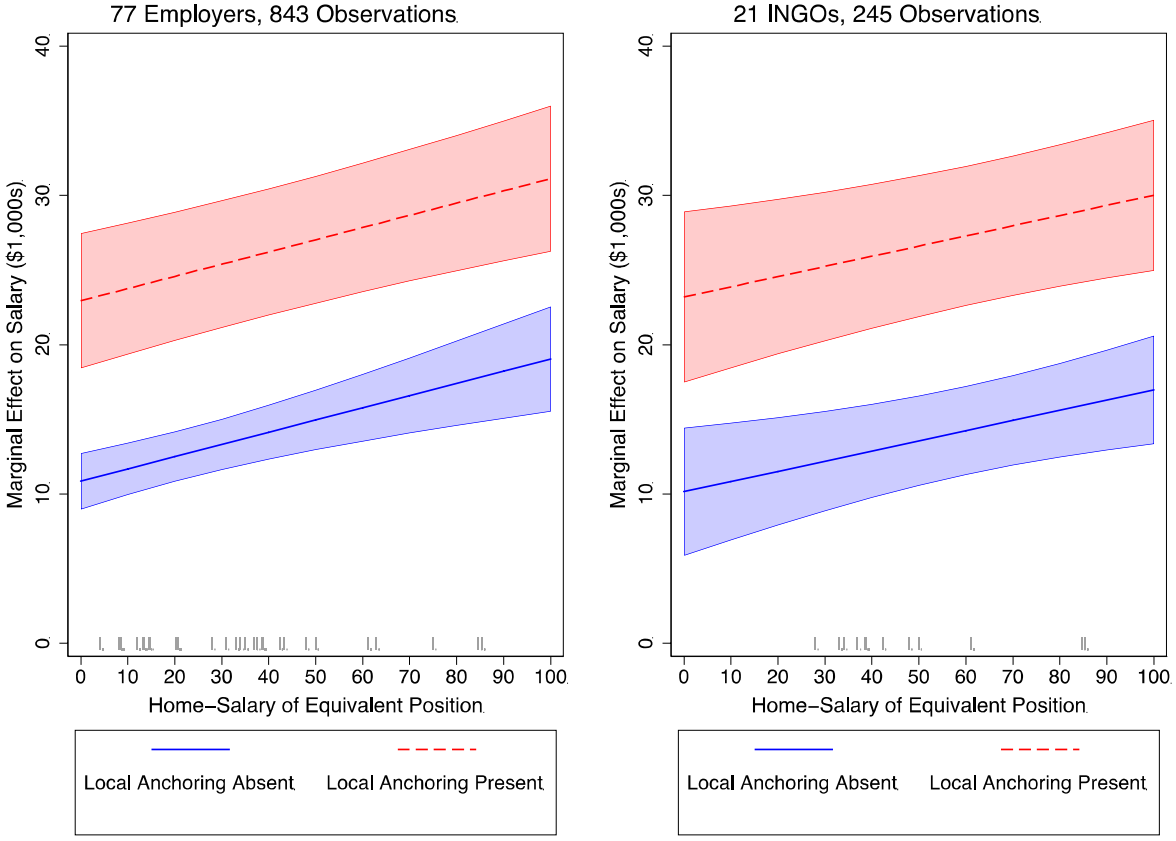


Fig. 2 Marginal Effect of Local Anchoring across International Framing (95% CI)



Limitations and Threats to Inference

Generalizability and bias in the sample are two considerations that deserve attention. Haiti is not representative of all developing countries. Its colonial past, violent march into independence, and long series of unfortunate events that followed make it an outlier in many respects. But, like many low- and middle-income countries, it has a large and diverse informal economy, and a strong presence of INGOs dating back to the mid-20th century (Chambwera, MacGregor, & Baker, 2011, p. 4; Maguire, 1981; Schwartz, 2008; The World Bank, 2012). I acknowledge that my 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. Nevertheless, I argue this analysis provides a rare opportunity to test and build theory concerning how employers set salaries in developing countries.

Bias is a threat to inference in all domains of social science research (Ioannidis, 2005; Ioannidis, Stanley, & Doucouliagos, 2017). This section openly assesses the threat to causal inference due to bias in the data sampled and then compares that threat to similar studies using secondary data. Following Frank, Maroulis, Duong, and Kelcey (2013, p. 439), I assess the risk to validity caused by a biased sample. The baseline model (sample size 843 observations, 77 groups, 17 parameters) calculates an estimated effect on the INGO salary premium of 6.95 ($p <$ 0.01) with a standard error of 2.218. Combining this information shows the conservative threshold for statistical significance is 37%[vii]. These calculations mean, given the size and precision of the estimated effect, invalidation of inference occurs if at least 37% of the effect size is due to sampling bias. Similarly, in the full model, the threshold to invalidate inference of the

local anchoring effect—with a coefficient of 12.08 ($p < 0.001$), a standard error of 2.277, a sample size of 843, and uses 19 parameters—increase to 63%.

How does the threat to causal inference in this study compare to prior scholarship that studies salary differentials between for-profit and nonprofit employers? I calculate that to invalidate the inference of the seminal work by Preston (1989), bias must account for 22% of the effect size in her smaller 1980 sample of 311 employees (p. 448) and 84% in her larger 1979 sample of 8,313 employees (p. 454). Narcy (2011) used the INSEE French Labour Force Survey (1994-2001) and its sample of 40,073 employees. To invalidate inference in the French study, I estimate 51% of the total effect size must be attributable to sampling bias.

One thing to remember when comparing these threats to causal inference is that the Haitian study found employer-level clustering of salaries accounts for a considerable 47% of the variance in Haitian salaries. This feature of the data is notable because earlier studies using secondary data were unable to account for intra-employer salary correlation and thereby shrinks the standard errors of their regression coefficients (Barcikowski, 1981; Hox, 2010; Kreft & De Leeuw, 1998; Luke, 2004) and understates the threat to validity caused by a biased sample (Frank et al., 2013). In other words, when a considerable amount of variance in the dependent variable occurs at the group level, the standard errors produced by a hierarchical-level model are wider than standard OLS regressions. Under such conditions, estimates from HLM specifications face a 'harder' test for bias as a threat to causal inference.

CONCLUSION

This article evaluated alternatives explanations for why salary differentials exist in developing countries. In such contexts, practitioners and analysts generally argue INGOs pay a premium for local employees that disrupts local labor markets and sometimes leads governments to enact policy that limits organizational autonomy (Cailhol et al., 2013; DeMattee, 2019a, 2019b, 2019c; Huff-Rousselle & Pickering, 2001; Kuah-Pearce & Guiheux, 2014; Pfeiffer, 2003). While many of these studies argue that INGOs' salaries disrupt local labor markets, a lack of reliable information limits our ability to understand why such salary differentials exist. I have attempted to fill this gap. My analysis compared suggestive evidence that INGOs pay higher salaries against theory-driven explanations of decision-making in low-information environments. This analysis used original data from 843 position-level observations from 77 formal employers in Haiti to test these competing explanations.

The study makes several meaningful contributions. First, I find strong evidence that employers with access to credible information regarding local compensation practices pay salaries that are significantly similar to other employers with the same information. This relationship is yet another manifestation of the anchoring effect (Barberis & Thaler, 2003; Tversky & Kahneman, 1974) that affects decision-making. Access to this local, credible information is a significant predictor of salaries in Haiti. Next, analyses suggest salaries in an employer’s home-country act as a reference point for local salaries. This finding indicates an international framing effect (Barberis & Thaler, 2003; Tversky & Kahneman, 1981) influences salaries in low-information environments. Most importantly, I show the INGO organizational form is an insufficient explanation for salary differentials in developing countries. As the analyses indicate, the effect of the INGO organizational form vanishes once we account for the information available to decision-makers. Presumably, this phenomenon is not limited to Haiti and may replicate in other jurisdictions where information is sparse.

In summary, this analysis finds evidence that employers rely on local and international reference points to set salaries in the low information environments of developing countries. More broadly, it contributes to our understanding of managerial decision-making in developing countries by identifying some of the tactics used to overcome information shortages. Such tactics include paying for access to local knowledge or evaluating endogenous reference points. These tactics do not ensure rational and unbiased decisions; in fact, these tactics may initiate anchoring or framing effects that bias decision-making.

Moving forward, analyses of public, for-profit, and nonprofit salary differentials should not assume salaries are independent of each other. Instead, as these data show, salaries are likely correlated within organizations that empirical analyses should accommodate. This study also highlights the importance of available and reliable information. Practitioners might consider associating more with local governments, businesses, and nonprofits so that all sectors can share and learn from each other. Professional associations offer members the opportunity to learn and exchange information, and the more diversified the groups, the larger the opportunity to learn new 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 employers. One tactic for doing this is to expand the scope of compensation consultancy surveys so that the number of participants is more representative of employers in the local economy. Another tactic is to make prior years' compensation reports available to interested parties to attenuate information asymmetries of smaller organizations and cash-strapped businesses.

APPENDIX

<<approximately here Appendix Table A Frequency of Observations by Sector and Legal Form>>

<<approximately here Appendix Table B Descriptive Statistics of Level-One Variables>>

<<approximately here Appendix Table C Descriptive Statistics of Level-Two Variables>>

ENDNOTES

[i] See DeMattee (2019c, pp. 148-151) for a recent review of INGOs' role in the politics of Haiti

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

[iii] Participation in the professional survey provides clients access to hardcopy results and immediate access to a proprietary online portal that provides current market conditions within the local labor market. The private party provided the 2011 reports voluntarily but asked to remain anonymous. It has a positive reputation, with many returning clients from the for-profit, nonprofit, and public sectors.

[iv] at the same level as the dependent variable. 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)

[v] 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), healthcare practitioners and technical occupations (29-0000)]; plant and machine operators and assemblers (OC8) = average[production occupations (51-0000), 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), personal care and service occupations (39-0000)].

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

[vii] 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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Table 1 Descriptive Statistics of for Independent Variables (groups=77 employers)

	Employers	Mean	Std.Dev.	Min.	Max.
Organization is an INGO [1, a]	21	27.3%		0	1
Consultancy Survey Participant [1]					
INGO Consultancy [b]	5	6.5%		0	1
All-Sector Consultancy [b]	1	1.3%		0	1
Home-Country Reference Salary [2]					
All Employers	77	$29,859	$34,459	$1,324	$113,520
Haitian Employers [d]	52	$8,382	$5,200	$1,324	$17,986
International Employers [d]	25	$61,475	$34,888	$10,840	$113,516

Source: Primary data collected from formal employers in Haiti in 2011.

[1] Organizational-level variable. Analyzed as a dichotomous variable.

[2] Individual-level variables. Analyzed as a continuous variable.

[a] INGOs coded as 1, other employers combined and coded as 0.

[b, c] Combined to dichotomize variable category. Group is coded as 1 and compared to reference group coded as 0.

[d] Presented for descriptive purposes only. Not used in analysis.

Table 2 Regression Table

	(1) Baseline	(2) Anchoring	(3) Framing	(4) Full Model
Dependent Variable: Salary ($1,000s)				
Is INGO	6.95**	4.77*	1.70	0.66
Local Anchoring		13.50***		12.08***
International Framing			0.10***	0.08***
Years Operating in Haiti	-0.06	-0.07*	-0.06	-0.07*
AIC	6122	6094	6101	6080
BIC	6221	6198	6205	6189
Degrees of Freedom	17	18	18	19
N	843	843	843	843
Dependent Variable: ln(Salary)				
Is INGO	2.31*	1.85+	1.26	1.08
Local Anchoring		4.08***		3.40**
International Framing			1.01***	1.01***
Years Operating in Haiti	0.99	0.99	0.99	0.99
AIC	1254	1245	1234	1228
BIC	1353	1349	1338	1337
Degrees of Freedom	17	18	18	19
N	843	843	843	843

FULL MODEL NOT SHOWN

SOURCE: Primary Data - Haiti 2011 (843 observations nested within 77 groups)

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Appendix Table A: Frequency of Observations by Sector and Legal Form

Subsector	For-Profit	Nonprofit	Religious	Total
Public Goods & 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: table summarizes observations used in the analysis (n=843; 77 employers).

Appendix Table B: Descriptive Statistics of Level-One 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 Laborer (OC7-9) [c]	3.0%		0	1
Professional (OC3) [c]	9.5%		0	1
Program 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
Specialized Professional (OC2) [c]	4.7%		0	1
Worker Autonomy				
Requires Constant Supervision [+]	23.4%		0	1
Requires Daily/Weekly Supervision	29.9%		0	1
Requires Weekly/Bi-weekly Supervision	22.0%		0	1
Requires Little Supervision (Monthly or Longer)	24.8%		0	1
Computer Literacy & Training				
None Required for Position [+]	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				
Zero to Less-than 5yrs Required [+]	67.9%		0	1
Five to 10yrs Required	24.7%		0	1
More than 10yrs Required	7.5%		0	1
Education				
Less than University [+]	51.8%		0	1
University	41.5%		0	1
More than University	6.6%		0	1
Reads English	52.7%		0	1

Source: Primary data collected from formal employers in Haiti in 2011.

[a] Analyzed as '000s USD. Managers reported twelve-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) coding used to test hypothesis 4: 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).

[+] Used as referent category during analysis

Appendix Table C: Descriptive Statistics of Level-Two Variables

	Employers	Mean	Std.Dev.	Min.	Max.
Organization is an INGO [a]	21	27.3%		0	1
Sector					
Public Goods & Services [+]	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
Organization Nationality [b]					
Germany	1	1.3%		0	1
Haiti	52	67.5%		0	1
Mexico	1	1.3%		0	1
United Kingdom	1	1.3%		0	1
United States	22	28.6%		0	1
Full-Time Employees		204.5	352.7	2	1,800
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, other employers combined and coded as 0.

[b] Presented for descriptive purposes only. Not used in analysis.

[+] Used as referent category during analysis