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Gender and Credit Access in Nigeria's Formal Sector: Evidence on Financing Constraints and Barriers to Loan Applications

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Abstract
Research on Sub-Saharan Africa has often found that businesses run or owned by women borrow less from formal lenders, but this work mostly concerns small and informal businesses. This paper looks instead at formal Nigerian establishments and asks two questions: whether gender, measured separately by who manages and who owns the firm, is associated with tighter financing constraints, and whether it is associated with the reasons firms give for not applying for loans. The data are the 2025 World Bank Enterprise Survey for Nigeria (1,043 establishments; 150 with a female top manager and 240 with at least one female owner) and its 2014 predecessor. Weighted logit models are estimated with controls added in stages, and are repeated without weights and with design-based standard errors. With full controls, the estimated difference for female-managed establishments in the probability of being credit constrained is +6.6 percentage points (95% CI -5.6 to 18.7), and for holding credit -1.2 points; neither is statistically significant, and the ownership measures give similar estimates close to zero. Among the 81 female-managed establishments that needed credit but did not apply, unfavourable interest rates were cited 21.7 points more often than among comparable male-managed establishments. Collateral was cited 10.6 points less often. Only 6 female-managed establishments gave collateral as their reason. The interest-rate result also holds for establishments with female owners (+27.2 points). In the 2014 data, an apparent credit advantage for female-managed establishments depends on three heavily weighted observations. Formal Nigerian establishments with women as managers or owners are not detectably more credit constrained than others in this sample, although the confidence interval allows a moderate disadvantage. Their stated reasons for staying out of the loan market point to the price of credit more than to collateral, which deserves attention in the design of finance programmes for women in business.

Keywords: *Gender; Female Management; Female Ownership; Access To Finance; Credit Constraints; Loan Applications; Interest Rates; Nigeria; World Bank Enterprise Surveys* ***JEL Classification:*** *G21; J16; L26; O55.*

I. INTRODUCTION

Many development programmes, among them the Women Entrepreneurs Finance Initiative (We-Fi), aim to narrow the difference between women and men in access to finance. Much of the case for this rests on evidence about very small businesses: in developing economies, enterprises run by women tend to be smaller, are more often informal and borrow less from banks. Far less is known about women whose firms have already become formal employers, and whether they still face tighter credit conditions has direct consequences for how such programmes choose whom to serve.

We study this question with the 2025 World Bank Enterprise Survey (WBES) for Nigeria, which samples formal private establishments with at least five employees. Gender is measured in two ways that we keep apart throughout: whether the top manager is a woman, and whether women are among the owners. The two overlap but are not the same. In 2025, 117 establishments have both a female top manager and at least one female owner, 33 have a female top manager but no female owner, and 122 have female owners but a male top manager. We ask three questions. First, are female-managed or female-owned establishments more likely to be credit constrained, less likely to hold credit, or more dependent on informal and supplier finance? Second, among establishments that needed credit but did not apply, are the reasons they give different? Third, did these patterns differ in 2014?

Three findings emerge. We do not detect a statistically significant gender difference in any measure of credit access, under either definition. This should not be read as evidence that access is equal: the confidence intervals exclude large disadvantages but leave room for moderate ones. The reasons for not applying do differ. Female-managed and female-owned establishments that stayed out of the loan market cited unfavourable interest rates much more often, and female-managed ones cited collateral less often, although that second result rests on six responses. Finally, a large credit advantage for female-managed establishments in the weighted 2014 data turns out to depend on a few observations with very large weights.

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Two companion studies use related data for different questions. Apeh (2026) studies business borrowing by individual women in Nigeria and West Africa with the Global Findex 2025, a population in which most businesses are informal. Sani and Apeh (2026a) use the same 2025 Enterprise Survey to study financing conditions and firm performance but do not examine gender. The present paper reuses none of their tables or text. All results here are associations from cross-sectional surveys.

II. RELATED LITERATURE

The international evidence on gender and business finance does not point in a single direction. With firm data from transition economies, Muravyev, Talavera and Schäfer (2009) report that firms managed by women obtain bank loans less often and are charged higher rates. Evidence from Italian small-business lending by Bellucci, Borisov and Zazzaro (2010) points instead to less available credit and more frequent collateral demands for women entrepreneurs, without a clear difference in the rate charged. The terms of credit, as distinct from access to it, have thus been studied mainly outside Africa.

For Sub-Saharan Africa, Aterido, Beck and Iacovone (2013) attribute most of the lower formal borrowing of female-owned firms to their size, sector and other characteristics rather than to gender as such. Hansen and Rand (2014), using a similar data source, find that a lower probability of holding a loan persists for female-owned firms after such controls, and Asiedu, Freeman and Nti-Addae (2012) find higher loan denial among female-owned firms in the region. The measure of credit constraint used here follows the Enterprise Survey convention described by Kuntchev, Ramalho, Rodríguez-Meza and Yang (2013), which classifies firms by whether they applied, whether they were rejected and why non-applicants did not apply. Beck, Demirgüç-Kunt and Maksimovic (2005) show that financing obstacles weigh most heavily on small firms, which matters here because female-managed establishments in Nigeria are smaller on average.

Two gaps follow. Country-level evidence for Nigeria, the region's largest economy, is scarce because most studies pool many countries. And the literature has concentrated on whether firms are constrained rather than on the barrier that keeps them out, although the remedy for a collateral barrier, such as guarantees or registries for movable assets, is different from the remedy for a price barrier, such as concessional credit or risk sharing.

III. DATA AND METHODS

Our main source is the Nigeria 2025 round of the World Bank Enterprise Surveys (World Bank, 2025), with 1,043 establishments; 150 report a female top manager and 240 report at least one female owner. For comparison we use the 2014 round (World Bank, 2015), with 2,676 establishments, 309 of them with a female top manager. All estimates use the strict-eligibility sampling weights supplied with the data. The female top manager indicator is our main measure, because the top manager runs the business day to day and is usually the person who deals with lenders. Every main result is also reported for two ownership measures: any female owner, and majority female ownership. The text names the measure each time; "female-managed" refers only to the manager measure and "female-owned" only to ownership.

Table 1. Variable definitions

Variable	Survey items	Definition
Female top manager	b7a	1 if the top manager is a woman
Any female owner; majority female-owned	b4, b4a	At least one woman among the owners; women hold 50% or more of the firm
Credit constrained	k162a, k162b, k17, k20a1 [k16, k17, k20a]	Applied and was rejected, or did not apply for any reason other than having no need (Kuntchev et al., 2013)
Discouraged	k17	Did not apply for a reason other than having no need
Has credit	k82a, k82b [k8]	Holds a loan or credit line from a financial institution
Bank, informal or supplier working capital	k3bc, k3dgh, k3f	Any working capital financed by banks; by friends, relatives or moneylenders; or by suppliers or customers
Finance a major obstacle	k30	Access to finance rated a major or very severe obstacle
Reason for not applying	k17	Main reason given by firms that needed credit but did not apply: complex procedures, unfavourable rates, collateral, size or maturity, did not expect approval, other
Controls	l1, b5, a4a, a2, a3c, d3b, d3c, c22b, k21, b7, a7	Log employment, log age, sector, Lagos and zone, exporter, website, audited accounts, manager experience, multi-establishment firm

Each outcome is modelled with a survey-weighted logit, and results are reported as average marginal effects (AMEs) in percentage points. Controls enter in four steps: none; size, age and sector; location; and finally exporting, a website, audited

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accounts, managerial experience and membership of a multi-establishment firm. Because female-managed establishments are relatively few, we give confidence intervals for every gap and state the largest disadvantage the data are consistent with. As a design-based check, all variances are recomputed by Taylor linearisation within the survey strata.

Samples. Of the 1,043 establishments surveyed in 2025, 1 lacks information on the manager's gender, leaving 1,042. The 2014 figures are 47 missing out of 2,676, leaving 2,629. Models are estimated on complete cases, so an establishment with a missing control drops out of that model. In 2025, 544 establishments needed credit but did not apply; 8 of them have no data on age or employment, so the reasons models use 536. In 2014 the numbers are 1,076 and 994, the shortfall coming mainly from missing firm age (62 cases). Each table reports the N of its own complete-case sample.

IV. RESULTS

4.1Descriptive comparison

Table 2. Finance and characteristics by gender of top manager and by female ownership, 2025 (weighted per cent)

	Male top manager	Female top manager	No female owner	Any female owner
Credit constrained	51.7	58.5	53.6	48.6
Discouraged from applying	50.2	57.1	52.0	47.4
Applied for a loan or credit line	11.4	16.3	10.8	18.0
Has a loan or credit line	20.9	18.6	20.8	19.4
Bank working capital	8.0	11.3	7.3	13.4
Supplier or customer credit	30.9	36.0	31.2	33.6
Informal working capital	10.3	9.4	10.6	8.4
Personal loans used for the business	7.6	9.7	6.4	15.2
Finance a major obstacle	38.3	44.9	40.0	35.9
Fewer than 20 employees	61.4	72.3	62.5	65.1
Manufacturing	25.6	13.9	24.6	21.1
Exporter	7.3	3.2	6.4	7.7
Lagos	26.1	33.5	23.6	42.5
Audited accounts	33.5	34.6	31.2	44.4
Real sales growth	13.2	13.7	12.2	18.7
Employment continuity	85.9	84.6	85.0	88.4
Establishments	892	150	794	240

Note: weighted shares; establishment counts are unweighted. The manager and ownership groupings overlap and are shown side by side, not as a cross-tabulation.

Under the survey weights, 14.4 per cent of formal establishments have a female top manager, 18.6 per cent have at least one female owner and 10.2 per cent are majority female-owned. Compared with male-managed establishments, female-managed ones are smaller (a median of 10 employees against 18), are in manufacturing less often (13.9 against 25.6 per cent) and are more often located in Lagos. Before any controls, the share that is credit constrained is 58.5 per cent for female-managed and 51.7 per cent for male-managed establishments, and the share holding credit is 18.6 and 20.9 per cent. The corresponding figures by ownership are 48.6 and 53.6 per cent constrained, and 19.4 and 20.8 per cent holding credit.

4.2 Gender differences in credit access

Table 3. Gender differences in finance outcomes, 2025: female top manager (columns 1 to 5) and female ownership (columns 6 and 7)

Outcome	No controls	+ size, age, sector	+ location	Full controls	Full, unweighted	Any female owner (full)	Majority female-owned (full)	N (full)
Credit constrained	+6.8 (7.0)	+5.7 (7.2)	+6.9 (6.5)	+6.6 (6.2)	-1.3 (3.9)	+0.1 (5.3)	-1.2 (6.0)	996
Discouraged	+6.9 (7.1)	+6.0 (7.3)	+7.3 (6.6)	+6.9 (6.3)	+0.2 (3.9)	+0.8 (5.3)	-1.2 (6.1)	996
Has credit	-2.2 (5.2)	-1.4 (5.2)	-1.9 (4.8)	-1.2 (4.7)	+0.9 (3.6)	-0.7 (4.2)	-3.3 (4.9)	1006
Bank working capital	+3.4 (4.0)	+2.9 (4.1)	+1.3 (3.8)	+0.6 (3.2)	-0.6 (2.7)	+3.2 (3.0)	+6.1 (4.1)	998
Informal working capital	-0.8 (3.7)	-1.6 (3.6)	-0.7 (3.9)	+0.3 (4.1)	-1.9 (2.2)	+0.6 (3.7)	+2.7 (5.4)	1000
Supplier credit	+5.0 (6.5)	+4.6 (6.4)	+4.1 (5.8)	+2.2 (5.7)	+0.3 (4.0)	+0.9 (5.1)	+8.2 (6.6)	1000
Finance a major obstacle	+6.6 (7.3)	+7.2 (7.4)	+4.0 (5.7)	+5.1 (5.9)	+1.1 (4.2)	+1.8 (5.2)	-5.8 (6.5)	1005

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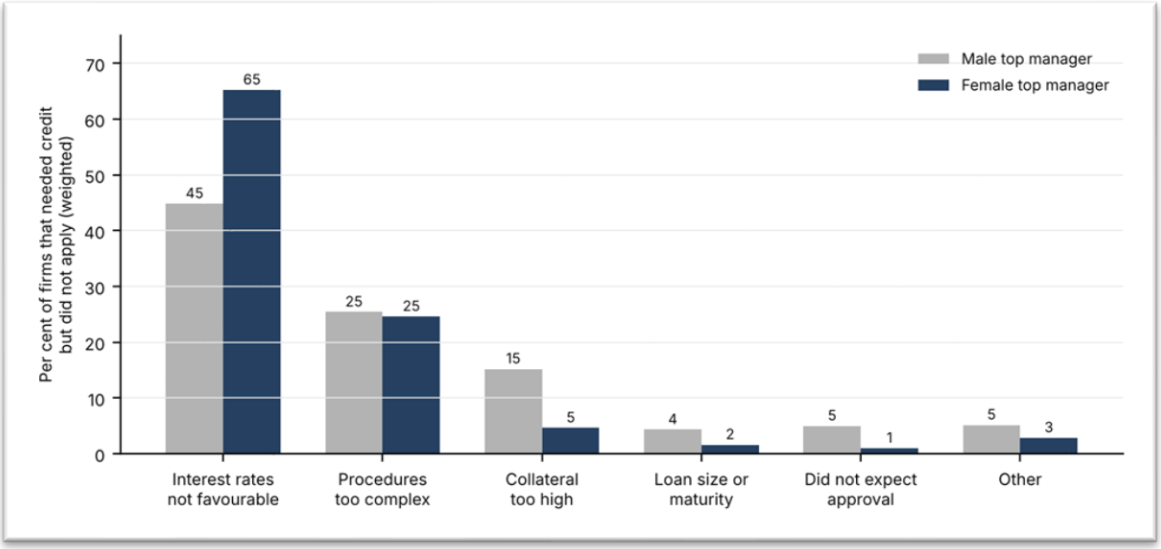
Note: survey-weighted logit AMEs in percentage points of a female top manager (columns 1 to 5) or of the ownership measures (columns 6 and 7); robust standard errors in parentheses. Full controls: log employment, log age, manufacturing, retail, Lagos, zone indicators, exporter, website, audited accounts, log managerial experience and multi-establishment firm. Stratified p-value, credit constrained (full): 0.284. *** p < 0.01, ** p < 0.05, * p < 0.10.

None of the estimated differences in Table 3 is statistically significant, whichever controls are included and whichever gender measure is used. For female-managed establishments with full controls, the AME on being credit constrained is +6.6 points (95% CI -5.6 to 18.7) and on holding credit -1.2 points (95% CI -10.4 to 8.0). For establishments with any female owner the corresponding AMEs are +0.1 points (95% CI -10.2 to 10.4) and -0.7 points (95% CI -9.0 to 7.6). A lack of significance is not a finding of equality. The upper bound for female-managed establishments means that a disadvantage of up to about 19 points in the probability of being constrained remains consistent with the data, although larger disadvantages are not. Splitting the sample at 20 employees likewise yields no significant difference in either group (Appendix Table A1).

Rejection cannot be compared reliably because few establishments applied in FY2024 (22 female-managed and 100 male-managed); among applicants, the weighted rejection rates were 8.9 and 13.6 per cent.

4.3 Reasons for not applying

Figure 1. Main reason for not applying among establishments that needed credit, by gender of top manager, 2025



Note: weighted per cent of establishments that did not apply for a reason other than having no need (n = 463 male-managed, 81 female-managed). Source: authors' calculations from WBES Nigeria 2025.

This analysis covers only a subset of establishments: those that did not apply for a loan or credit line in the last fiscal year and gave a reason other than having no need. Establishments that applied, and those that did not need credit, are excluded. The results therefore describe why establishments that wanted credit stayed out of the market, not the barriers facing every firm. Table 4 gives the size of this subset for each group. The female-managed subset is small: 81 establishments in 2025, of which 51 cited interest rates and only 6 cited collateral. Female-managed and male-managed establishments enter the subset at about the same rate (55.2 and 49.8 per cent, weighted).

Table 4. Denominators for the reasons for not applying, by gender of top manager and by female ownership

Group	All establishments	Did not apply	Needed credit but did not apply	Share of all (weighted %)	Cited interest rates: n (weighted % / unweighted %)	Cited collateral: n (weighted % / unweighted %)
2025, male top manager	892	777	463	49.8	226 (44.8 / 48.8)	76 (15.2 / 16.4)
2025, female top manager	150	125	81	55.2	51 (65.2 / 63.0)	6 (4.6 / 7.4)
2014, male top manager	2320	1877	936	34.2	249 (22.4 / 26.6)	217 (24.0 / 23.2)
2014, female top manager	309	256	140	34.8	42 (24.7 / 30.0)	26 (7.1 / 18.6)
2025, no female owner	794		417		206 (43.5 / 49.4)	67 (14.3 / 16.1)

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Group	All establishments	Did not apply	Needed credit but did not apply	Share of all (weighted %)	Cited interest rates: n (weighted % / unweighted %)	Cited collateral: n (weighted % / unweighted %)
2025, any female owner	240		125		70 (70.1 / 56.0)	14 (8.2 / 11.2)

Note: counts are unweighted. Percentages for reasons are shares of establishments that needed credit but did not apply. Columns not reported for the ownership rows are left blank.

Table 5. Gender and the main reason for not applying

Reason	Female top manager, 2025 weighted	Female top manager, 2025 unweighted	Any female owner, 2025 weighted	Female top manager, 2014 weighted	N 2025	N 2014
Interest rates not favourable	+21.7** (9.6)	+14.8*** (5.7)	+27.2*** (7.3)	+9.9 (7.3)	536	994
Collateral requirements too high	-10.6*** (3.7)	-9.5*** (3.3)	-7.1* (4.3)	-19.0*** (3.5)	536	994
Procedures too complex	-2.9 (9.4)	-3.4 (4.6)	-18.1*** (5.5)	+14.3* (7.5)	536	994

Note: logit AMEs in percentage points among establishments that needed credit but did not apply; controls for log employment, log age, sector, Lagos and zone. Robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.10.

Within this subset, 65.2 per cent of female-managed establishments named unfavourable interest rates as their main reason, compared with 44.8 per cent of male-managed ones, while 4.6 per cent named collateral, compared with 15.2 per cent. After controls (Table 5), having a female top manager is associated with a 21.7-point higher probability of naming interest rates ($p = 0.024$; unweighted +14.8 points) and a 10.6-point lower probability of naming collateral ($p = 0.005$). The collateral estimate rests on the six female-managed establishments that cited it, so it should be read with caution even though the weighted and unweighted shares agree.

The ownership measure gives the same picture for interest rates: establishments with any female owner are 27.2 points more likely to name them ($p < 0.001$). Their difference for collateral, -7.1 points, is smaller and not significant at the 5 per cent level ($p = 0.097$). In 2014 the weighted collateral difference for female-managed establishments was also large (-19.0 points), but the unweighted shares were much closer (18.6 against 23.2 per cent), so we do not draw on the 2014 comparison here. Between the two rounds, interest rates became the most common reason for all establishments, in line with the rise in Nigerian lending rates after 2022, and the increase was larger among female-managed establishments.

The interest-rate result admits two interpretations. Women-managed and women-owned establishments may receive, or expect to receive, offers on worse terms. Or women who have built formal firms may already have collateral, or have organised their businesses to need less of it, and react more strongly to a high price of credit that every firm faces. The survey records the reason given, not the rate, fees or other terms offered, so it cannot establish that price is the binding constraint or tell the two interpretations apart.

4.4 Firm performance

We find no statistically significant difference between female-managed and male-managed establishments in performance over FY2021 to FY2024. The AMEs are +0.7 points for real sales growth ($p = 0.873$) and -1.3 points for employment continuity ($p = 0.765$), and the estimated difference in the partial operating margin is +1.4 points ($p = 0.826$). Holding credit is not associated with higher growth in either group (it is associated with lower employment continuity overall), and its interaction with female management is not significant.

4.5 Robustness: the 2014 round

Taken at face value, the weighted 2014 data show female-managed establishments as much more likely than male-managed ones to hold credit (+24.8 points), which would imply a sharp change by 2025. The weights explain this. Only 28 female-managed establishments held credit in 2014, and three of them account for 89 per cent of that group's weight. Without weights the 2014 difference is +2.7 points, and the change to 2025 is -1.1 points (Appendix Table A2 reports both versions). We treat the 2014 round as a warning about weights in small subgroups rather than as evidence on how gender differences have changed.

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V. DISCUSSION

Not detecting a difference among formal establishments is compatible with the larger gaps reported for individuals and very small businesses, and the result should not be extended to women in business generally. Women who have built formal firms with five or more employees have already overcome many of the obstacles that keep other women's businesses small and informal, so the establishments in this survey are probably a positively selected group. For them, the terms on which credit is available may matter more than whether it is available at all. Because female-managed and female-owned establishments that stayed out of the loan market more often named interest rates, it would be useful to test whether instruments that reduce the effective cost of credit reach them better than collateral reforms alone. Possible instruments include concessional on-lending through banks by development finance institutions such as the Bank of Industry and the Development Bank of Nigeria, partial credit guarantees priced below market, and risk-sharing facilities similar to those of NIRSAL. Each could be assessed by comparing application rates, approval rates and offered interest rates by gender, either between eligible and ineligible firms or across a phased rollout. These are proposals for evaluation, not results of this study. They also bear on Nigeria's National Financial Inclusion Strategy (CBN, 2022), which set a 95 per cent inclusion target for 2024: a target framed in terms of access alone would not register differences in the terms on which women-managed or women-owned firms borrow.

5.1 Limitations

- There are only 150 female-managed establishments, so moderate differences cannot be ruled out; confidence intervals are reported throughout.
- The reasons analysis covers a selected subset of non-applicants, and the collateral result for female-managed establishments rests on six responses.
- The survey records whether and why firms did not apply, not the terms they were offered or would have been offered.
- Coverage is limited to formal establishments with five or more employees, so the findings do not describe women's micro and informal enterprises.
- The 2014 and 2025 rounds are separate cross-sections with different coverage and weights.

VI. CONCLUSION

In this sample of formal Nigerian establishments with five or more employees, we do not detect a statistically significant difference in credit constraints or credit holding by gender of the top manager or by female ownership; moderate differences remain possible. Among establishments that needed credit but did not apply, those with female managers or female owners more often named interest rates as the reason, and female-managed ones named collateral less often, a result based on very few responses. Because these are stated reasons for a selected group of firms, they suggest rather than demonstrate that the cost of credit matters more than collateral for women in formal business. Surveys that record loan offers and terms by gender, and larger samples of female-managed firms, would allow a direct test.

APPENDIX

Table A1. Female top manager and credit outcomes by firm size, 2025

Subgroup	Credit constrained (AME)	N	Has credit (AME)	N
Fewer than 20 employees	+8.4 (7.8)	555	-4.3 (5.5)	559
20 or more employees	-5.8 (9.6)	441	+0.5 (7.7)	447

Note: survey-weighted logit AMEs in percentage points with the full controls of Table 3 except log employment. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table A2. Female top manager and finance outcomes in 2014 and 2025

Outcome	2014 weighted	2014 unweighted	2025 weighted	Change 2014-2025, weighted	Change 2014-2025, unweighted
Credit constrained	+1.7 (6.4)	+0.8 (3.6)	+6.3 (6.5)	+4.8 (9.4)	-2.2 (5.7)
Has credit	+24.8*** (9.2)	+2.7 (2.3)	-0.6 (4.7)	-13.5*** (3.5)	-1.1 (3.1)
Bank working capital	+32.3** (13.5)	-0.4 (2.8)	+2.2 (3.4)	-10.3** (4.7)	+3.2 (5.0)

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Outcome	2014 weighted	2014 unweighted	2025 weighted	Change 2014-2025, weighted	Change 2014-2025, unweighted
Finance a major obstacle	+12.3 (8.6)	+2.6 (2.9)	+3.4 (5.7)	-8.1 (10.0)	+3.0 (4.9)

Note: logit AMEs in percentage points with identical controls in both years (log employment, log age, sector, Lagos, zone, exporter); the change is the AME of the interaction between female top manager and 2025 in a pooled model with year-specific strata. Robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.10.

DECLARATIONS

Data availability. The Enterprise Survey microdata can be downloaded from the World Bank after free registration; under the provider's terms we do not redistribute them. The replication material submitted with this paper rebuilds all tables, the figure and the manuscript from the downloaded files and includes a guide to how each variable was constructed.

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