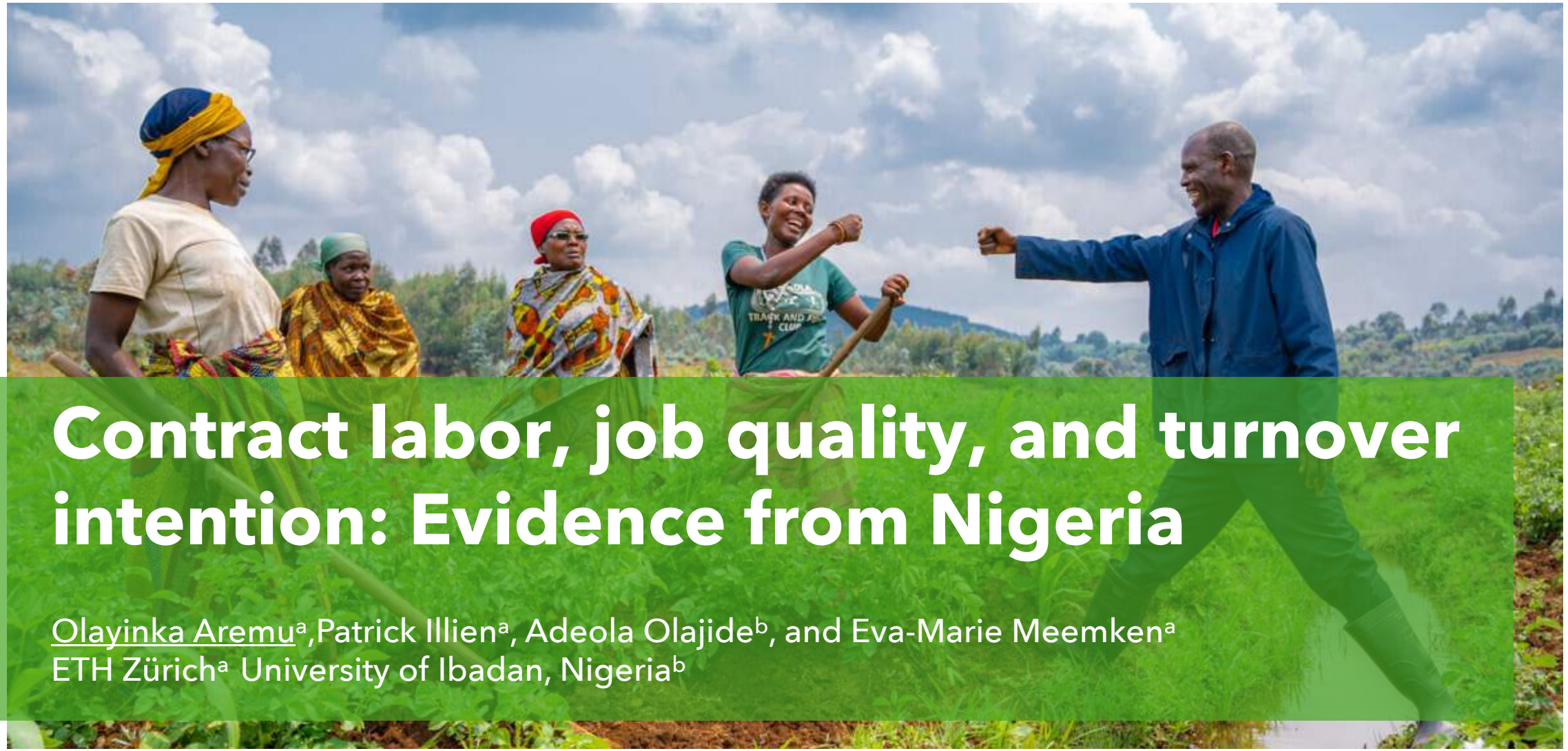


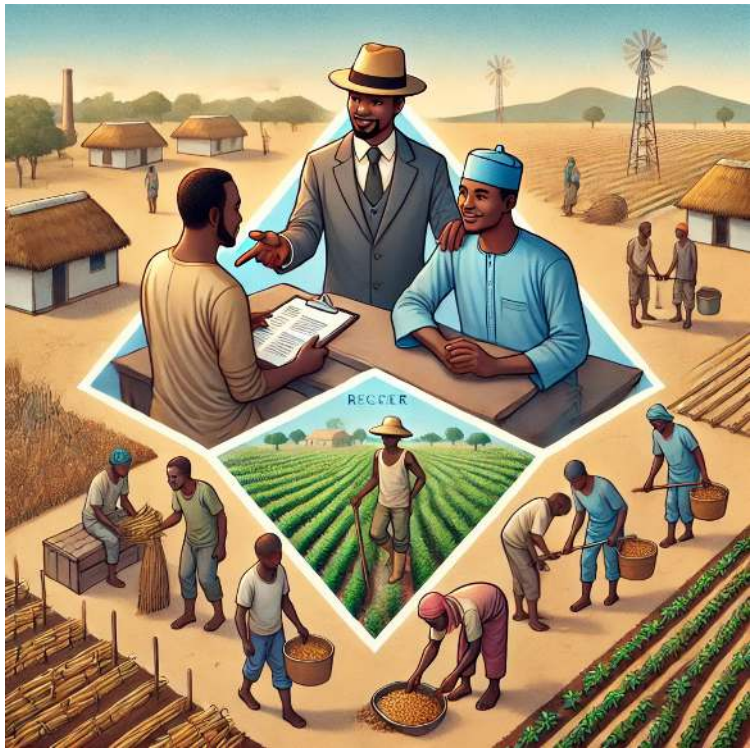
Contract labor, job quality, and turnover intention: Evidence from Nigeria

Olayinka Aremu[a], Patrick Illien[a], Adeola Olajide[b], and Eva-Marie Meemken[a]
ETH Zürich[a] University of Ibadan, Nigeria[b]

Labor Contracting

- A triangular employment relationship where labor intermediaries provide farmers with migrant workers

  (Basu, 2021; Salvia, 2020)



Source. ChatGPT

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- Agriculture remains heavily reliant on manual labor, especially for producing labor-intensive and hard-to-mechanize crops *(Taylor, 2010)*
- However, the precarity of farm jobs makes it less appealing to the domestic workforce *(Charlton et al. 2021; Fabry et al. 2022)*
- While labor contracting plays a key role, it poses under-researched challenges for both workers and farmers

Contract Labor and Job Quality

- A few studies link labor contracting to poor working conditions
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  - Farmwork is generally precarious irrespective of the work arrangement *(Aremu et al., 2024; Fabry et al., 2022; Meemken et al., 2019; Van den Broeck and Maertens, 2016)*
- It remains uncertain whether contract workers are indeed worse off and, if so, if this is attributed to their work arrangement or individual characteristics

Contract Labor, Job Quality, and Labor Turnover

- At the same time, for farmers, poor working conditions pose a production risk if they lead to high labor turnover
  - Such links have been documented in high-skilled or high-income settings *(Benton, 2016; Delfgaauw, 2007; Lambert et al., 2001; Lévy-Garboua et al., 2007)*

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- Only a few quantitative studies assess labor turnover among farmworkers *(Staelens et al., 2018; Taylor and Thilmany, 1993)*
  - Focus on global value chains and evidence for lower-income countries is scarce

Research Question and Contribution

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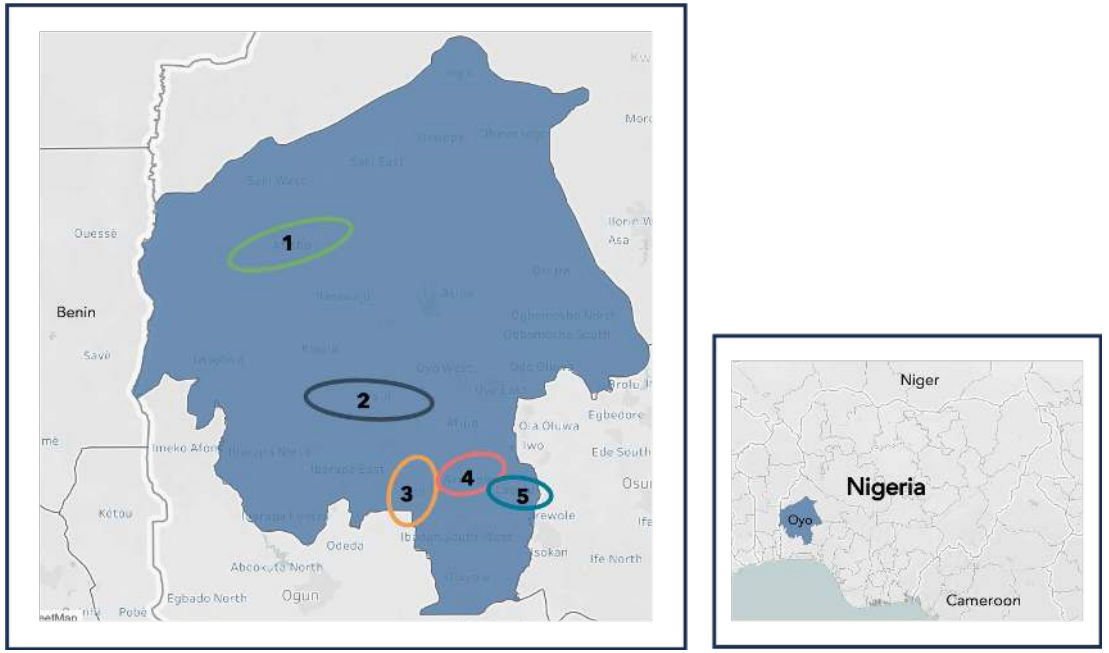
Contributions

- First quantitative assessment of the links between contract labor and job quality in the rural farm sector
- Address a gap where even descriptive evidence is lacking by jointly assessing the links between contract labor, job quality, and labor turnover

Case Study: Tomato Sector in Oyo State



Map of the research area: (1) Atisbo, (2) Iseyin, (3) Ido, (4) Akinyele, (5) Lagelu

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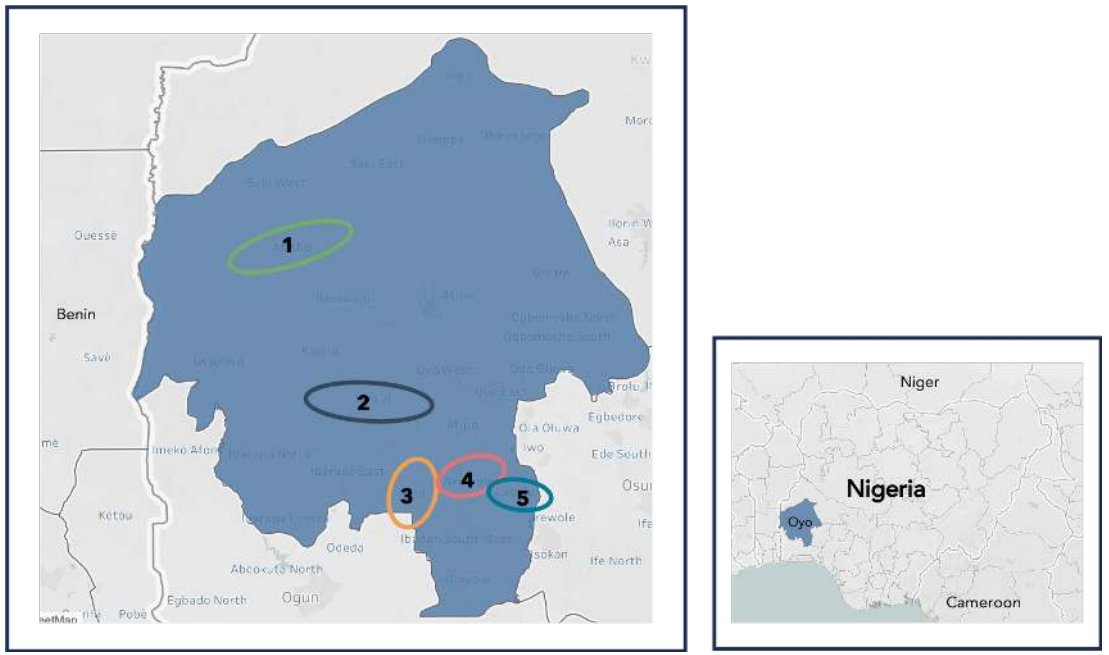

Map of the research area: (1) Atisbo, (2) Iseyin, (3) Ido, (4) Akinyele, (5) Lagelu

- Labor-intensive nature and farmers' reliance on both labor contractors and personal networks in recruiting seasonal farm workers

Data

- 555 seasonal workers hired across 389 farms (July and August 2023)
  - 200 contract workers (workers hired through labor intermediaries)
  - 355 non-contract workers (workers directly recruited by farmers)
- Complemented with semi-structured interviews (February 2025)
  - 8 labor contractors, 4 contract workers, and 4 farmers

Methods (1)

RQ1. To assess disparities in job quality between contract and non-contract workers, we begin with a linear regression model:

$$Jobquality_{ifj} = \beta_0 + \beta_1 CL_{ifj} + \beta_2 W_{ifj} + \beta_3 F_{ifj} + \delta_j + \varepsilon_{ifj} \qquad (1)$$

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- $Jobquality_{ifj}$: Hourly wage earnings, decent work index, and job satisfaction
- CL_{ifj}: Dummy variable for contract labor
- W_{ifj}: Worker characteristics
- F_{ifj}: Farm employer characteristics
- δ_j: Local government area fixed effects

- Objective measures: Wage earnings (Naira/hr); Decent work index (0-1)

  (Fabry et al., 2022; ILO, 2022)

- Subjective measure: Self-reported job satisfaction level (1-5)

Methods (1)

- To assess disparities in job quality between contract and non-contract workers, we begin with a linear regression model

- We then extend the linear model for objective measures of job quality using the Oaxaca-Blinder (-Kitagawa) model

$$D_{mean} = \left[\sum_{k=1}^{k}(E[V_{1k}] - E[V_{2k}])\,\widehat{\beta_k}\right] + \left[\sum_{k=1}^{k} E[V_{1k}]\left(\widehat{\beta_{1k}} - \widehat{\beta_k}\right) + \sum_{k=1}^{k} E[V_{2k}]\left(\widehat{\beta_k} - \widehat{\beta_{2k}}\right)\right] \quad (2)$$

Endowment effect

Structural effect

- Primarily attributed to differences in measured characteristics, or contract workers are rewarded differently despite having similar characteristics

Methods (2)

RQ2. To assess whether workers with poorer working conditions and lower job satisfaction have higher turnover intention:

$$TI_{ifj} = \alpha_0 + \alpha_1 CL_{ifj} + \alpha_2 Jobquality_{ifj} + \alpha_3 CL_{ifj} \times Jobquality_{ifj} + \alpha_4 W_{ifj} + \alpha_5 F_{ifj} + \delta_j + \varepsilon_{ifj} \quad (3)$$

- Reported turnover intention
- Main variable of interest (1)
- Main variable of interest (2)

- Turnover intention: three-item tool *(Abbas et al., 2014; Vigoda, 2000)*
  - We compute raw scores by summing the responses to these 3 questions (0-12)

Results

Descriptive Statistics by Worker Type (1)

	Whole sample		Non-contract		Contract		
	(1)		(2)		(3)		
	Mean	SD	Mean	SD	Mean	SD	T-Stat.
Hired workers characteristics							
Age (years)	24.21	4.91	24.20	4.79	24.23	5.14	
Married (0/1)	0.17	0.38	0.17	0.38	0.17	0.38	
Secondary Education or higher (0/1)	0.15	0.35	0.12	0.33	0.19	0.39	**
Domestic migrant (0/1)	0.34	0.47	0.32	0.47	0.38	0.49	
International migrant (0/1)	0.63	0.48	0.64	0.48	0.59	0.49	
Family relocation (farm community 0/1)	0.22	0.41	0.27	0.44	0.12	0.33	***
Farmwork experience (months)	89.15	71.48	92.17	72.07	83.80	70.30	
Experience outside farm sector (0/1)	0.28	0.45	0.25	0.44	0.34	0.47	**
Job characteristics							
Remuneration type (in-kind 0/1)	0.61	0.49	0.59	0.49	0.66	0.48	
Farm task (supervision 0/1)	0.06	0.25	0.09	0.28	0.03	0.16	***
Farm task (technical 0/1)	0.06	0.24	0.08	0.27	0.03	0.17	**
Wage earnings from other casual jobs (0/1)	0.28	0.45	0.25	0.43	0.34	0.47	**
Observations	555		355		200		

Notes: *p < 0.1; ** p < 0.05;*** p < 0.01. T-statistics compare non-contract workers (column 2) and contract workers (column 3).

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Descriptive Statistics by Worker Type (2)

	Whole sample		Non-contract		Contract		
	(1)		(2)		(3)		
	Mean	SD	Mean	SD	Mean	SD	T-Stat.
Farm and operator's characteristics							
Operator's age (years)	41.26	10.36	40.19	10.21	43.16	10.36	***
Operator has secondary education (0/1)	0.40	0.49	0.39	0.49	0.42	0.49	
Larger farms (0/1)[a]	0.53	0.50	0.48	0.50	0.63	0.48	***
Hired seasonal workers (count)	2.75	1.65	2.66	1.53	2.91	1.85	*
Observations	555		355		200		

Notes: *p < 0.1; ** p < 0.05;*** p < 0.01. T-statistics compare non-contract workers (column 2) and contract workers (column 3). [a]Small farms (< 5ha) are the reference category.

Job Quality by Worker Type

	Whole sample		Non-contract		Contract		
	(1)		(2)		(3)		
	Mean	SD	Mean	SD	Mean	SD	T-Stat.
Job quality							
Wage earnings (Naira/hour)	169.40	67.99	174.68	73.44	160.03	56.00	**
DW-index (0-1)	0.40	0.12	0.40	0.12	0.38	0.10	*
Job satisfaction (1-5)	4.06	0.75	4.05	0.72	4.08	0.81	
Observations	555		355		200		

Notes: *p < 0.1; ** p < 0.05;*** p < 0.01. T-statistics compare non-contract workers (column 2) and contract workers (column 3).

Contract Labor and Job Quality

	Log of wage earnings (Naira/hour)	DW-index (0-1)	Job satisfaction (1-5)
	(1)	(2)	(3)
Contract labor (0/1)	-0.087***	-0.021**	0.179
	(0.033)	(0.010)	(0.112)
Constant	4.517***	0.296***	-
	(0.217)	(0.045)	
R Square	.37	.12	-
All control variables	Yes	Yes	Yes
Model	OLS	OLS	Ordered Probit
LGA fixed effect	Yes	Yes	Yes
Observations	555	555	555

Notes: *p < 0.1; ** p < 0.05;*** p < 0.01. Robust standard errors are in parentheses. Average marginal effects are reported for the ordered probit model (column 3)

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"…but our lives have changed. In my four years of working, I now have machines (motorcycles) and an improved living condition" (Contract Worker 2)

Structural Disparity in Working Conditions

	Wage earnings (Naira/hour)	DW-index (0-1)
	(1)	(2)
Mean difference	14.654***	0.019**
	(5.553)	(0.010)
Aggregate decomposition		
Endowment effect	-2.634	-0.002
	(3.952)	(0.005)
Structural effect	17.288***	0.021**
	(4.740)	(0.010)
Constant	-24.604	-0.100
	(35.266)	(0.073)
Observations	555	555

Notes: *p < 0.1; ** p < 0.05;*** p < 0.01. Robust standard errors are in parentheses. Additional controls are included.

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Structural Disparity in Working Conditions

"…Some [contract] workers will be punished [reprimanded] at home if they work in Nigeria and don't return home with any proceeds…"(Labor Contractor 4)

"In extreme situations, the worker may run away, and the farmer will report it, and I will search and find the worker…" (Labor Contractor 4)

Contract Labor, Job Quality, and Turnover Intention

Job Quality and Turnover by Worker Type

	Turnover intent (0-12)		
	(1)	(2)	(3)
Job quality			
Log of wage earnings (Naira/hour)	0.011	-	-
	(0.140)		
DW-index (0-1)	-	0.859	-
		(0.530)	
Job satisfaction (1-5)	-	-	-0.491***
			(0.102)
Contract labor (0/1)	-0.875	0.175	0.453
	(1.142)	(0.374)	(0.631)
Interaction terms			
Log of wage earnings (Naira/hour) x Contract labor (0/1)	0.192	-	-
	(0.227)		
DW-index (0-1) x Contract labor (0/1)	-	-0.192	-
		(0.917)	
Job satisfaction (1-5) x Contract labor (0/1)	-	-	-0.079
			(0.152)
All control variables	Yes	Yes	Yes
LGA fixed effect	Yes	Yes	Yes
Model	Ordered probit	Ordered probit	Ordered probit
Observations	555	555	555

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- Job satisfaction paradox
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Limitations

- Concerns related to establishing causal relationships

Policy implications

- Extending labor regulations to the informal sector
- Tightening rural labor markets and expanding economic opportunities

Thank you for your attention!

Olayinka Aremu

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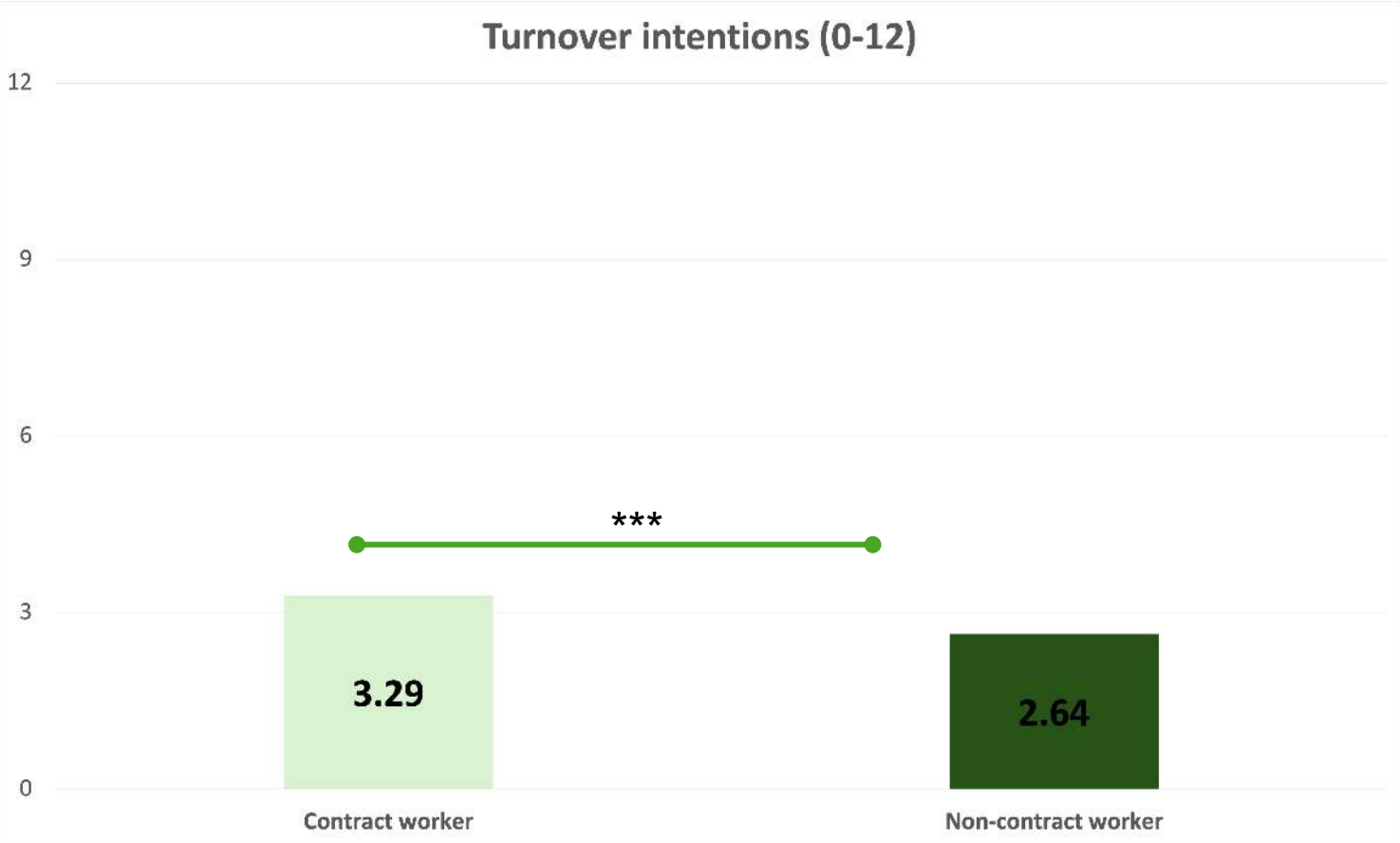
Annex

Turnover Intentions



Notes: *p < 0.1; ** p < 0.05;*** p < 0.01. T-statistics compare non-contract workers (dark green) and contract workers (lighter shade of green)

Dimensions and indicators of DW-index

Dimension	Definition	Scoring
1) Adequate earnings and productive work		
Minimum wage	The worker earns at least the national minimum wage (187.5 Naira per hour)	• 1 if the worker earns at least the minimum wage • 0 if otherwise
Non-wage benefits	The worker receives non-wage benefits (transportation, protective clothing, clothing, food, housing, and bonus) in addition to the wage received	• On a scale from 0 to 1, where 1 represents receiving all six non-wage benefits, while 0 means receiving none.
Job training	The worker receives job training	• 1 if training is received • 0 if otherwise
2) Decent working hours		
Work intensity	The worker does not exceed the maximum hours worked • 40 hours per week for seasonal workers • 8 hours per day for casual workers	• 0 if worked more than 40 hours per week or if worked more than 8 hours per day • 1 if otherwise
Unsocial hours	Working at night or on public holidays should be compensated as stipulated in the employment contract	• 0 if worked at night or on public holidays without compensation • 1 if otherwise
3) Stability and security of work		
Type of contract	Type of work contract	• 1 if the work contract is written • 0 if otherwise
Tenure	Employment tenure	• 1 if employed for more than 1 year or has worked on the farm before the current year • 0 if otherwise

Dimensions and indicators of DW-index

Dimension	Definition	Scoring
3) Stability and security of work		
Contract respected 1	Respect for contract and work freedom	• 0 if taking a leave of absence from work leads to a wage reduction or if there has been a reduction in the agreed payment • 1 if otherwise
Contract respected 2	Respect for contract	• 0 if the agreed payment has been withheld • 1 otherwise
4) Work environment and safety		
Health facilities	The worker can benefit from on-site health facilities whenever necessary	• 1 if health facilities are provided • 0 if otherwise
Healthcare benefits	The worker receives healthcare benefits from the employer	• 1 if health care benefits are provided • 0 if otherwise
Occupational safety training	The worker receives occupational safety training	• 1 if training is received • 0 if otherwise
Work accidents	The worker has had any work accidents since the start of his employment for the current employer	• 1 if no work accidents or injuries • 0 if otherwise
Dangerous products	The worker works unprotected with dangerous products (e.g. pesticides, herbicides)	• 1 if worker wears protective clothing or no dangerous products • 0 if otherwise

Turnover Intention

- Self-reported turnover intention level
  - The three-item tool captures workers' commitment to their jobs as reflected in their plans and thoughts about leaving using a 5-point Likert-type additive scale, where 0 indicates "strongly disagree," and 4 indicates "strongly agree."
  - The three items are: (i) I often think about leaving this farm, (ii) I intend to look for a new job on another farm, and (iii) If I could choose again, I would not work on this farm.