

CAN FINANCIAL INCENTIVES TO FIRMS IMPROVE APPRENTICESHIP TRAINING? EXPERIMENTAL EVIDENCE FROM GHANA

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THE POLICY CHALLENGE

Youth unemployment and underemployment are a major policy challenge in LMICs.

In Ghana youth ages 15-24 are much less likely (52%) to be working than adults 25-65 (89%)

- Large gaps persist even after accounting for schooling
- Gender dimension is important: Female unemployment rate is 50% higher than male rate (World Bank, 2018)

APPRENTICESHIPS

Seen as promising avenue to provide skills and boost the employment prospects of youth.

In LMICs, often occur within small-scale informal enterprises, with the firm-owner serving as the trainer.

- Frazer (2006)- apprentices “replicate” trainer’s firm
- More relevant training for jobs in the large informal sector?
 - In Ghana, 88% of males and 95% of females in (low-productivity) informal sector (WB, 2017).

Common source for skill training in parts of Asia and SSA, far exceeding (formal) traditional vocational training options (ILO 2011).

- In Ghana, trained almost four times as many individuals as all other formal alternatives (Darvas and Palmer 2014)

QUALITY CONCERNS

Potential low quality training (Palmer and Darvas, 2014; Fox and Filmer, 2014; Frazer, 2006)

- Outdated technology in firms
- Lack of monitoring`
- Lack of formal contracting
- Lack of standards/ curriculum
- Lack of certification
- Strategic concerns: fear of training a rival
 - May encourage slower pace of training



POTENTIAL SOLUTION: FINANCIAL INCENTIVES

Strengthen the link between trainer remuneration and apprentice outcomes (such as skills obtained)

- encourage increased training effort and improved skill acquisition
- Better skills → larger labor market returns?
- Evidence of effectiveness of financial incentives for school teachers (K-12 Education) (Breeding, Beteille, Evans, 2021)

Unclear if incentives will be effective in the apprenticeship system

- Large opportunity cost of trainer effort
- Strategic considerations (i.e., training a potential competitor)

Training programs often link trainer payment to trainee outcomes (e.g. employment)

- Limited evidence of the effectiveness of this structure (Filmer and Fox, 2014, Adoho et.al, 2014)

EXPERIMENT

Embedded within a larger RCT on apprenticeships in Ghana

- Larger RCT in collaboration with COTVET in Ghana
- Incentive experiment focuses on training providers within the larger RCT

Apprenticeship training in construction (masonry, carpentry, etc.), cosmetology and hairdressing, garments and tailoring

Incentive program focused on cosmetology and tailoring due to logistical/practical considerations

- National skills qualification framework (syllabi) for construction trades were not completed

RESEARCH DESIGN

Baseline/Randomization larger RCT (Late 2012)

Control (N=1568)

Treatment (N=2031)

Priority (N=329)



Apprentices (N=1197) matched with training firms (Mid-late 2013)

N=797 Apprentices start training

N= 464 Firms provide training



Incentives program for training firms (Early 2015)

Treatment

- 229 Firms, 381 Apprentices

Control

- 225 Firms, 372 Apprentices

RESEARCH DESIGN

Treatment group

- Trainer received financial bonus based on externally administered skills test of apprentice.
- Bonus structure is a within-district tournament
 - Bigger bonuses for better performance within district

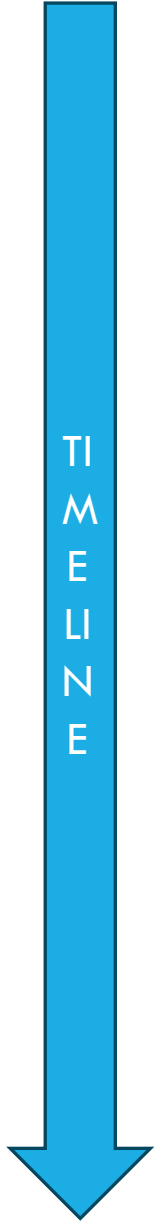
Control group

- Trainer received a fixed payment of 100 GHC if apprentice takes the skills test.

Average payment is equalized between the two groups

BONUS SCHEDULE

Group	Payment to MCP (Ghana Cedis)
1	200
2	140
3	130
4	120
5	105
6	90
7	80
8	70
9	35
10	25



DATE	ACTIVITY
Aug- Dec 2012	Baseline data / Apprentice application
Jan-Feb 2013	Randomization
May-Oct 2013	Placement meetings
Oct-2013-Jan 2014	Training starts
Jun 2014-Aug 2015	Midline Surveys (Firms)
Jan-Mar 2015	Incentives offered
Sept- Nov 2015	Skills Test
Aug 2017-Mar 2018	1st follow-up survey
Jun 2022-July 2023	2nd follow-up survey

DATA

Baseline data ~ 2012

Skills data from externally administered assessment ~ 2015

- Assessment is administered by independent experts

Phone survey with trainers during intervention ~2015

- Trainer and apprentice labor supply/time-use

First follow up data Labor market outcomes ~2017-18.

- Skills quiz (verbal)
- Labor supply
- Labor earnings

Second follow-up data ~ 2022

BASELINE CHARACTERISTICS (2012)

Apprentices	
Age	23
Yrs of school	7.5
Married	37%
Female	92%
Employed in wage job	4%
Self employed	22%
Wage income (last month)	1.44 GHC
Self employment profit (last month)	11 GHC

Firms	
Trainer age	35
Firm age	11.22
Trainer yrs of schooling	8.5
Firm size (# workers)	4.4
Trainer is Female	86%
# previous apprentices	12.4
Profits (last month)	187.7 GHC

SKILLS ASSESSMENT

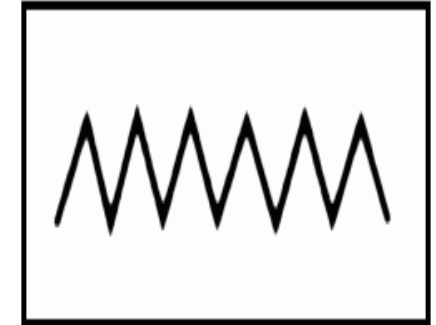


Assessment conducted by external experts

Practical and theoretical portions

~2/3 of apprentices in study participated in assessment

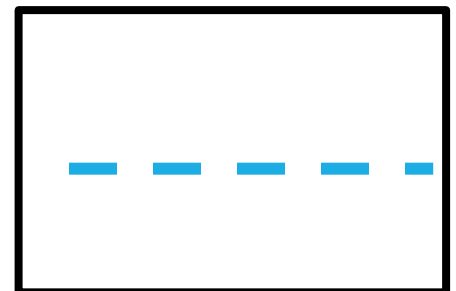
Balanced across T and C



Zig-Zag
(VV)



Scallop
(MM)



Straight
-edge

RESULTS — 1ST FOLLOW-UP (2017)

Skills	
Practical assessment	0.13 SD↑
Theoretical assessment	Insignificant
Earned certificate	Insignificant
Skills Quiz	0.15 SD↑
Sales skills index	0.12 SD↑

Labor market	
Labor Supply	Insignificant (suggestive increase in self employment for women)
Total earning (past month, average over 12 months)	↑10.43 GHC (25%↑)
Self employment earnings (past month, average over 12 months)	↑8.41 GHC (34%↑)
Wage	insignificant

MECHANISMS (1ST-FOLLOW-UP)

Skills ↑

- Some suggestive evidence that women more likely to gain certification

Effort ↑

- Apprentices worked more hours

Standardization ↑

- trainers in the treatment group were more likely to use formal syllabi such as the occupational standards.

Pace of training ↑

- apprentices in the treatment group were 20% more likely to complete their training and exit the firm than the control group,
- Can set up their own businesses earlier than their counterparts.

RESULTS- PERSISTENT EFFECTS THROUGH 2022

Total earnings	↑23.3GHC (28%)
Wage earnings	↑13.8 GHC (128%)
Self- employment earnings	Insignificant
Working/Not working	Insignificant
Works for wage	6pct pts (60%)
Self-employment	Insignificant

Earnings effects now driven by wages rather than self-employment profits

POLICY

Well-designed financial incentives could improve apprentice learning and earnings in a cost-effective manner

- Design challenges- easily understood, appropriate bonus size,
- Program pays for itself in terms of increased apprentices' earnings

Unclear if this approach will scale up

- Gaming the system over time
- Incentive structure could attract “different” (better?) trainers (Leaver et al, 2021)

More research will be needed to assess the scale-up potential

POLICY

Strengthen testing and certification and skills qualification framework

- Many theoretical test questions were not informative

Strengthen recruitment and screening of training providers

- Many just want cheap labor!

Pivot from monitoring to support

- “Coaching” approaches could be used to support trainers

Pilot/test approaches to address additional constraints

- Upgrade trainer skills
- Post-training job search
- Start-up capital