Entrepreneurship training and self-employment among university graduates:
Evidence from a randomized trial in Tunisia

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Ideas4Work: Youth Employability and Entrepreneurship in Africa
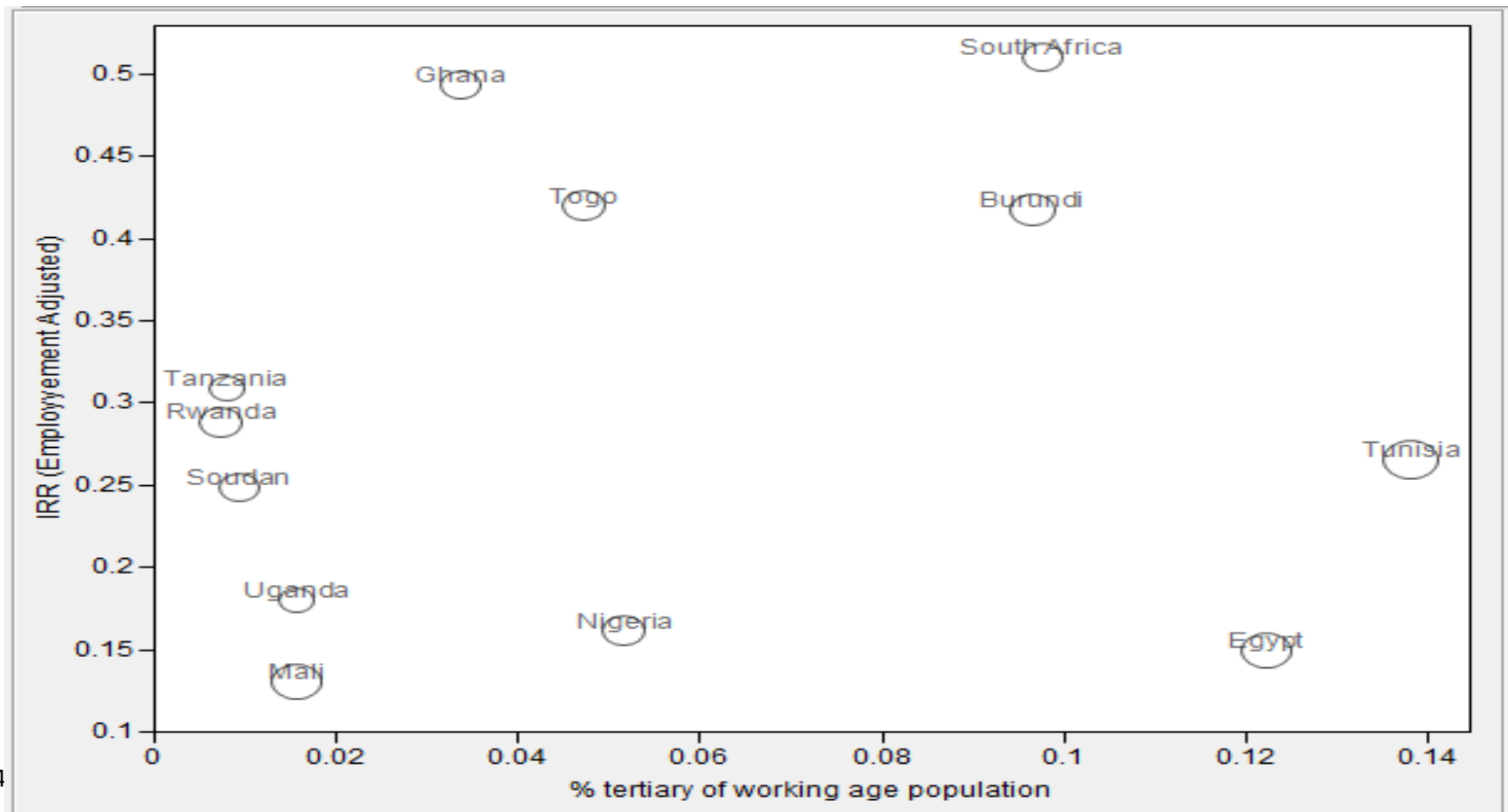Dakar, 24 janvier 2013

Summary

1. The problem

2. Intervention

3. Impact evaluation

4. Data & Results

5. Conclusions

The Problem

High Youth Unemployment

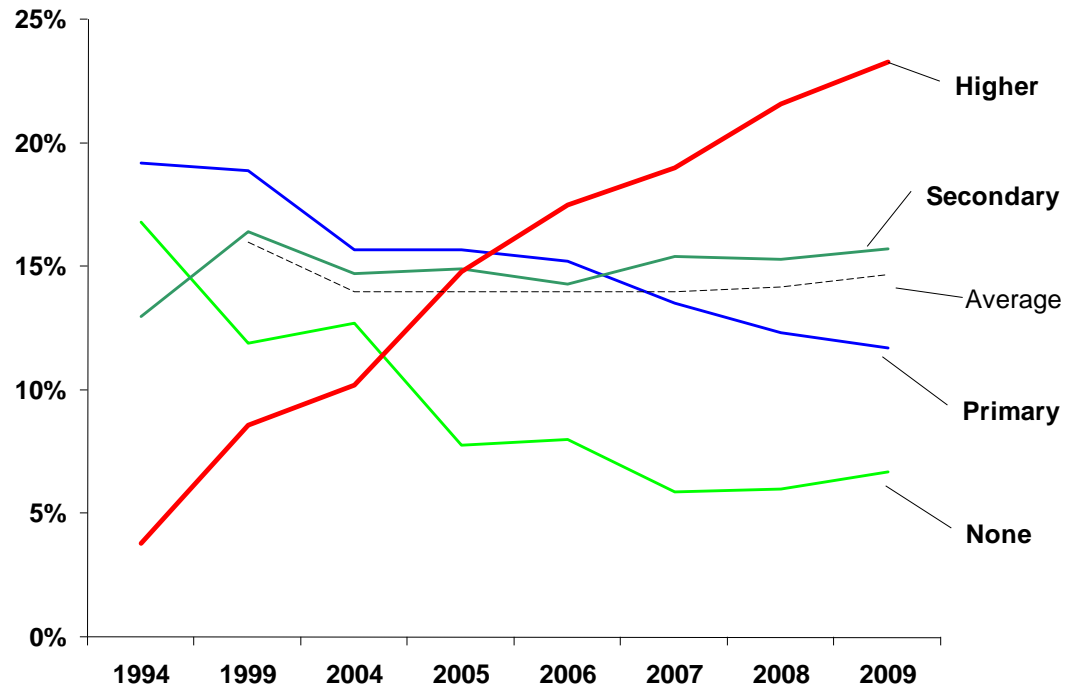- Low return to higher education in Tunisia

High Youth Unemployment

- 23% among all higher education graduates (in 2009)

- And ... hits particularly young women

- Is particularly rampant for recent graduates (reaching 46% 18 months after graduation)

- Catalyst of the Tunisian Revolution.

Unemployment rates by Education Levels

Source: INS, 2009

High Youth Unemployment

- Constraints hindering graduates' labor-market insertion relate with labor demand *and* labor supply:
  - Lack of job relevant skills. Graduate curricula and education often criticized for not addressing private sector needs. And lack of relevant job experience.
  - Queuing for public sector and high wage formal jobs.

- Challenge: Design and evaluate an intervention that fosters entrepreneurship among cohort of young graduates, by promoting their interest in setting up their own business and eventually creating more jobs.
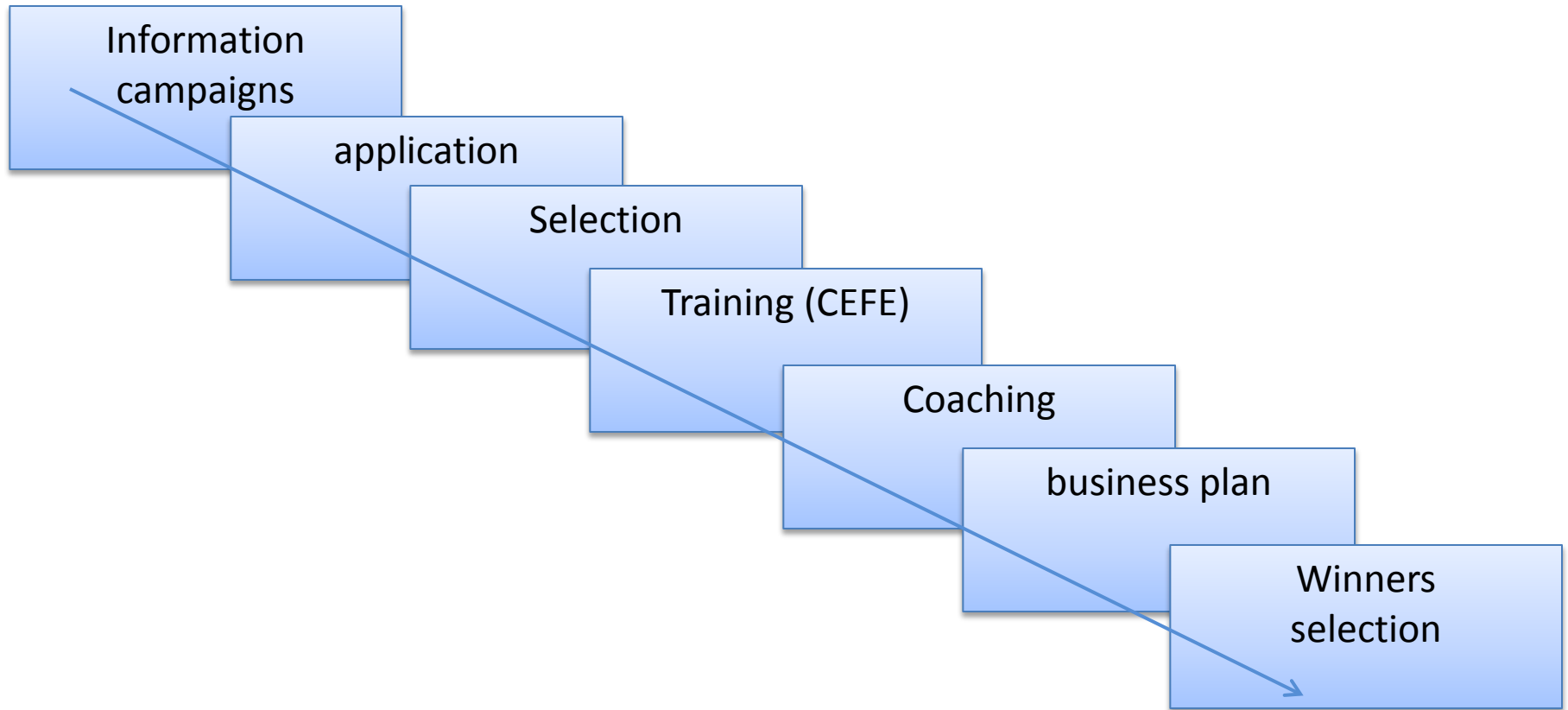
Intervention

Intervention: The "entrepreneurship track"

- National reform during 09-10 academic year (inter-ministerial committee: Min of Vocational Training & Employment; Industry; Education & Higher Education)

- Entrepreneurship track for third year university students in "applied programs"
  - Business training:
    - Entrepreneurship courses offered by the public employment office (21 days/full time, small groups)
    - Practical research on the ground and interactive sessions, aimed at fostering participants': (i) behavioral skills; (ii) business skills; and (iii) networking skills
    - Initial business idea: modified after evaluation by bankers and experts
  - Personalized coaching:
    - Private sector entrepreneurs or specialized coaches (8 sessions, either individually or in small groups)
  - University professors:
    - Supervision in development and finalization of the business plan
  - Graduation and possibility to enter into "business plan thesis competition"

Implementation of the intervention

Information campaigns

application

Selection

Training (CEFE)

Coaching

business plan

Winners selection

Impact evaluation

Objectives of the evaluation

- Assist policy makers in answering a set of core policy questions to inform program scale-up:

    - Are students interested in entrepreneurship training? What is the profile of interested students?

    - Does the intervention promote self employment among university graduates? Are their earnings higher?

    - Who does the intervention benefit most? For which projects and where was it sucessful?

Impact Evaluation Design

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┌─────────────────────────────────┐
│        1920 Applicants          │
│    (1702 eligible students,     │
│        1506 projects)           │
└─────────────────────────────────┘

            Block
         Randomization

┌──────────────────┐   ┌──────────────────┐
│ Treatment Group  │   │  Control Group   │
│ (856 students,   │   │ (846 students,   │
│  757 projects)   │   │  749 projects)   │
└──────────────────┘   └──────────────────┘
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- No resources to reach all interested students
- Given over-subscription of interested students, randomized selection of 750 projects to participate in the pilot.
- Randomization conducted at project level
  - stratified by gender and subject (15 groups of licences)

Data & Results

Data

- <u>Baseline</u> Application Survey (online and paper, December 2009)

- <u>Baseline</u> Entrepreneurship Survey (phone, January – February 2010)
  - Capture broader range of characteristics, particularly on personal traits, preferences, attitudes towards entrepreneurship,…
  - 90% re-contact rate

- <u>Qualitative work </u>(October - November 2010)
  - To finalize content of follow-up survey instrument and provide feedback on program implementation

- <u>Follow-up survey </u>(face-to-face; April-June 2011)
  - 93% re-contact rate (uncorrelated with treatments status)
  - 1-year after graduation
  - First labor-market survey after the revolution.

Results

- What are the impacts on labor-market outcomes?
    - Self-Employment
    - Employment
    - Quality of Employment

- What are the channels behind the employment results?
    - Business skills
    - Networks
    - Preferences
    - Behavioral Skills (Entrepreneurial Skills, Big 5,…)
    - Attitudes towards the future and opportunities
    - Access to credit

Results: Labor-Market Outcomes

Labor-market Outcomes: Self-Employment

	Mean C	Mean T	ITT	SE	TOT	SE
Self-employed (last 12 months)	0.05	0.09	0.04***	0.01	0.07***	0.02
Self-employed, including seasonal (last 7 days)	0.04	0.08	0.03**	0.01	0.05**	0.02
Self-employed, excluding seasonal (last 7 days)	0.03	0.04	0.01*	0.01	0.02*	0.01
Note: n = 1580.						

- The intervention led to an increase in self-employment
- Small absolute effects
- Effect sizes ranging between 48%-81% for ITT

Labor-market Outcomes: Employment

	Mean C	Mean T	ITT	SE	TOT	SE
Employed (last 7 days)	0,28	0,29	-0,00	0,02	-0,00	0,04
Self-employed (last 7 days)	0,04	0,08	0.03**	0,01	0.05**	0,02
Salaried worker (last 7 days)	0,21	0,18	-0,03	0,02	-0,05	0,03
Unemployed (last 7 days)	0,48	0,49	0,01	0,03	0,01	0,05
Studying (last 7 days)	0,19	0,18	-0,00	0,02	-0,01	0,03
Inactive (last 7 days)	0,03	0,03	0,01	0,01	0,01	0,01

• No evidence that the program significantly affected overall employment

   (note: general equilibrium effects not captured)

• Suggests substitution between employment and self-employment (as in Fairlie et al. (2012) in the US)

Labor-market Outcomes: Quality of Employment

	Mean C	Mean T	ITT	SE	TOT	SE
Monthly labor earnings	74.79	88.97	17.51	33.86	29.80	56.38
Reservation wage (private sector)	473.50	491.20	17.13*	8.73	28.85**	14.68
Reservation wage (public sector)	487.86	491.45	4.15	7.30	6.99	12.00
Has contract	0.12	0.10	-0.02	0.02	-0.03	0.03
Covered by Social Security	0.05	0.06	0.01	0.01	0.01	0.02
Work in large firm	0.07	0.07	0.00	0.01	0.00	0.02
Hours worked in last week	8.55	9.35	0.66	0.98	1.12	1.64
N= 1580						

- No evidence of impacts on earnings

- Increase in reservation wage for private sector wage jobs (but not public sector wage jobs)

- No effects on other measures of "quality" of employment

Results: Channels

What is behind these employment results?

Channels	
Business skills	+++
Networks	++
Preferences	
Behavioral skills: Big Five	++
Behavioral skills: Entrepreneurial skills	+
Attitudes towards the future	+++
Access to credit	

Behavioral skills (Big Five Personality traits)

- Measures of Behavioral Skills (10-item Big Five Scale from Gosling, 2003)

	Mean C	Mean T	ITT	SE	TOT	SE
Agreeable	-0.00	-0.23	-0.24***	0.05	-0.40***	0.08
Extraversion	-0.00	0.11	0.10**	0.05	0.18**	0.07
Conscientiousness	-0.00	-0.14	-0.14**	0.05	-0.24***	0.08
Emotionally Stable	0.00	-0.11	-0.11**	0.04	-0.18***	0.07
Openness	0.00	-0.02	-0.03	0.04	-0.05	0.06

N = 1580; controls include behavioral measures from baseline phone survey.

- Suggests the intervention affected a range of behavioral skills (personality traits)
- Consistent with Cobb-Clark and Tan (2010): agreeableness negatively associated with probability of being a manager or business professional

Attitudes towards the future

• Subjective measures of optimism and attitudes towards the future (inspired by de Mel et al. (2010) and positive items from a depression scale)

	Mean C	Mean T	ITT	SE	TOT	SE
Optimism	1,578	-0.00	0.12	0.13***	0.04	0.21***
# days during which subject felt moving forward (last week)	1,578	3.79	4.09	0.28**	0.11	0.47***
# days during which subject thought about how to move forward (last week)	1,578	5.62	5.87	0.23**	0.11	0.39**
Higher faith in future now than last year	1,574	0.52	0.57	0.04*	0.02	0.08*

• Suggests beneficiaries have higher optimism and more positive attitudes towards the future

Access to credit?

- Entrepreneurship track did not directly aim to alleviate credit constraints (clients' main hypothesis was that skills are the constraint, not credit)
- Training involved providing information to students about credit applications, as well as connecting them to bankers

	N	Mean C	Mean T	ITT	SE	TOT	SE
Knows how to apply for credit	1,580	0.20	0.22	0.02	0.02	0.03	0.03
Expect to be able to obtain credit	1,568	0.30	0.39	0.08**	0.04	0.14**	0.06
Has applied for credit (| business idea)	674	0.04	0.08	0.04**	0.02	0.06**	0.02

- Treatment group more confident to be able to obtain credit and more likely to have actually applied for credit (conditional on business idea)

- However, not more likely to report knowing how to apply for credit

- Many applications remain pending, too few observations to identify impact on access to credit at follow-up

Conclusions

Conclusions

- Business plan reform promoting entrepreneurship attracted attention and interest from Tunisian graduate students, especially females, with very diverse course backgrounds.

- In spite of the implementation challenges, the program reached a reasonable group of students (approx 800) allowing a rigorous evaluation through a small randomized pilot. Data was collected before and after the program started for both beneficiaries and interested applicants not selected.

- Although we only observe short term effects of the program (less than one year after the intervention), the program is associated with higher self employment activity among selected beneficiaries. There is no evidence of the program yielding higher earnings though.

Thank you

Ideas4Work: Youth Employability and Entrepreneurship in Africa
Dakar, 24 janvier 2013

Annex

Intent-to-Treat Estimates (ITT)

Impact of *offering* business training and coaching:

$$Y_i = \beta T_i + \gamma X_i + \pi_{is} + \varepsilon_i$$

With:
  Y_i = employment outcomes
  T_i = randomized assignment to entrepreneurship track
  X_i = baseline controls
  π_{is} = strata fixed effects (by gender and subject)
  Standard errors clustered by strata

Robustness checks:
  Different sets of baseline controls
  Standard errors clustered by governorate

Treatment on the treated Estimates (TOT)

Impact of actually *completing* entrepreneurship training and coaching:

IV estimation:

(1st Stage) $\quad U_i = \beta T_i + \gamma X_i + \pi_{is} + \eta_i$

$\qquad\qquad\qquad$ With: U = Actual program take-up (from administrative data)

(2nd Stage) $\quad Y_i = \phi \hat{U}_i + \xi X_i + \pi_{is} + \varepsilon_i$

$\qquad\qquad\qquad$ With: Û = Predicted Program take-up (from (1))

- Actual take-up considered as *completing* training and coaching (59%)
- Local-average treatment effects (LATE) to be interpreted as impact on compliers (those who complete the training if offered, and do not complete if not offered)
- In practice, take-up among control very low (3.4%)