

# Moving to Opportunity Abroad: The Short-term Effects of International Educational Migration

Toman Barsbai, Merve Demirel, Marcello Pérez Alvarez, Matthias Sutter

## PRIMARY OUTCOMES

Here, we focus on short-term outcomes that are measured within the first three years of students' arrival in Germany, i.e., before they complete their degrees and eventually enter the labor market with full-time jobs. We aim to identify the direct effects of the intervention on applicants and the spillover effects on non-applicants who remain in Uganda. Non-applicants include applicants' parents, siblings, and friends. We pool different groups of non-applicants and consider them in a joint sample when estimating spillover effects. Here is an overview of the primary outcomes for applicants and non-applicants:

- 1) Income: Applicants and non-applicants (parents)
- 2) Subjective wellbeing and mental health: Applicants and non-applicants (parents, siblings, and friends)
- 3) Numeracy: Applicants
- 4) Aspirations: Non-applicants (parents, siblings, and friends)

We describe the details of our primary outcomes below. We mark primary outcomes with a number sign (#). For primary outcomes based on an index or a sum, we will also report treatment effects on the individual components (but our focus remains on the aggregate outcome).

### Income

- Sum of all income from the past three months, based on all income sources listed below, converted to real monthly net income and adjusted for purchasing power parity (PPP) #
  - Income from employment, including the monetary value of in-kind payments
  - Business and agricultural income from self-employment, including the value of self-produced food items consumed by the household
  - (Gross and net) remittances income, including the monetary value of in-kind remittances
  - Other transfers received from outside the household, including the monetary value of in-kind transfers
- We will analyze this outcome for applicants and non-applicants. For applicants, we will analyze their individual incomes. For non-applicants, we will analyze parents' per-capita household incomes. We will also consider a combined version, in which we sum up the

incomes of applicants and their parents' households to compute overall (per-capita) incomes.

- We will also use consumption expenditures instead of income as a secondary measure of objective wellbeing.

### Subjective wellbeing and mental health

- Overall index, combining the subjective wellbeing index and the PHQ-8 defined below #
  - Subjective wellbeing index, based on the following items
    - Taking all things together, how happy would you say you are? (reverse coded)
    - All things considered, how satisfied are you with your life as a whole these days on a scale of 1 to 10?
    - Overall, how angry did you feel yesterday? (reverse coded)
    - Overall, how worried did you feel yesterday? (reverse coded)
    - Overall, how happy did you feel yesterday?
    - Overall, how sad did you feel yesterday? (reverse coded)
    - Overall, how lonely did you feel yesterday? (reverse coded)
  - PHQ-8
    - Sum of the following items: Over the last 2 weeks, how often have you been bothered by any of the following problems? (reverse coded)
      - Little interest or pleasure in doing things
      - Feeling down, depressed, or hopeless
      - Trouble falling or staying asleep, or sleeping too much
      - Feeling tired or having little energy
      - Poor appetite or overeating
      - Feeling bad about yourself, or that you are a failure, or have let yourself or your family down
      - Trouble concentrating on things, such as reading the newspaper or watching television
      - Moving or speaking so slowly that other people could have noticed. Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual.
- We will analyze this outcome for applicants and non-applicants. Non-applicants include parents, siblings, and friends.

### Numeracy

- We will use the share of correct responses from a tablet-based assessment measuring numeracy skills. The assessment combines adaptations of test items from various sources: the Programme for the International Assessment of Adult Competencies (PIAAC), the Programme for International Student Assessment (PISA), the Trends in International Mathematics and Science Study (TIMSS), and the numerical reasoning test applied in Groh et al. (Reducing Information Asymmetries in the Youth Labor Market of Jordan with Psychometrics and Skill Based Tests, World Bank Economic Review, 2015). We will evaluate each test item on a binary scale: correct or incorrect.

The assessment will primarily use open-ended questions but also include multiple-choice questions.

- We will analyze this outcome for applicants.

## Aspirations

- Overall index, combining the index of educational aspirations, the index of earnings aspirations, the index of fertility aspirations, and the index of international migration intentions defined below #
  - Index of educational aspirations, based on the following items
    - Until what educational degree would you like to study?
    - Occupational education score, based on “In which occupation do you want to work when you are 35 years old?” and measured using representative Ugandan survey data
  - Index of earnings aspirations, based on the following items
    - Which amount of earnings would you like to achieve when you are 35 years old?
    - Occupational income score, based on “In which occupation do you want to work when you are 35 years old?” and measured using representative Ugandan survey data
  - Index of fertility aspirations, based on the following items
    - How many children do you want to have? (reverse coded)
    - At which age do you want to have your first child?
  - Index of international migration intentions, based on the following items
    - Ideally, if you had the opportunity, would you like to move permanently to another country outside of Uganda?
    - Where do you want to live when you are 35 years old? (dummy for “Outside of Uganda”)
- We will analyze this outcome for non-applicants, including parents, siblings, and friends. For parents, we consider their aspirations for the siblings of the applicants. For siblings and friends, we consider their own aspirations for themselves.
- In a more exploratory analysis, we will also study how the intervention affects preferred degree programs and occupations of siblings and friends. We will use the following measures:
  - What is your favorite subject at school? (child survey)
  - Which subject would you like to study in a university for a degree program?
  - In which occupation do you want to work when you are 35 years old?

## SECONDARY OUTCOMES

As before, we distinguish between applicants and non-applicants (applicants' parents, siblings, and friends). Here is an overview of the secondary outcomes for applicants and non-applicants:

- 1) Studying at university and residing abroad: Applicants
- 2) Assets: Applicants and non-applicants (parents)
- 3) Discrimination, sexual harassment, and safety: Applicants
- 4) Expectations: Non-applicants (parents, siblings, and friends)
- 5) Perceived benefits and costs of international migration: Applicants and non-applicants (siblings and friends)
- 6) Investment in the future: Non-applicants (siblings and friends)
- 7) Labor market outcomes: Applicants
- 8) Job quality and working conditions: Applicants

We describe the details of our secondary outcomes below. We mark secondary outcomes with a plus sign (+) and outcomes that measure mechanisms with an asterisk (\*). For secondary outcomes based on an index or a sum, we will also report treatment effects on the individual components (but our focus remains on the aggregate outcome).

### Studying at university and residing abroad (first stage)

- Dummy for studying at university in Germany \*
- Dummy for studying at university \*
- Dummy for residing abroad \*
- We will analyze these outcomes for applicants.

### Assets

- Sum of the real value of all non-financial assets (excluding property) and net financial assets, based on all asset categories listed below, adjusted for PPP +
  - Productive assets
    - Farming tools, e.g. rake, spade, plough
    - Wheelbarrow or cart
  - Vehicles
    - Bicycle
    - Motorbike
    - Car, truck, or tractor
  - Furniture
    - Sofas
    - Chairs
    - Table
    - Beds
    - Mattresses

- Cupboards
    - Kitchen cabinets
  - Personal items
    - Jewelry and watches
    - Valuable clothing (e.g. suits, dresses, jackets) and shoes (e.g. dress shoes, sneakers)
    - Mobile phone (not smartphone)
    - Smartphone
  - Household durables
    - Battery or generator
    - Solar panel
    - Television or computer monitor
    - Computer, laptop, or tablet
    - Internet modem or router
    - Microwave oven
    - Kitchen stove and/or oven
    - Fridge
    - Washing machine
    - Dryer
    - Dishwasher
    - Vacuum cleaner
    - High-end electronics such as audio speaker systems or gaming consoles (e.g., X-Box, Playstation)
    - Electrical space heater
    - Musical instruments
  - Other non-financial assets
  - Net financial assets
    - Savings, including investment and pensions accounts
    - Total outstanding balance of money lent minus total outstanding balance of money borrowed minus value of goods not yet paid for
- We will analyze this outcome for applicants and non-applicants. For applicants, we will analyze their individual assets. For non-applicants, we will analyze parents' total household assets. We will also consider a combined version, in which we sum up the assets owned by applicants and the assets owned by their parents' households to compute overall asset holdings. (For interpretation, we will also estimate the treatment effect on the respective per-capita asset measures.)

#### Discrimination, sexual harassment, and safety

- Overall index, combining the measure of discrimination, the measure of sexual harassment, and the safety index defined below \*
  - Sum of the following items measuring discrimination: How many times in the past 3 months have you been discriminated against in each of the following ways because of such things as your race, ethnicity, gender, age, religion, physical appearance, sexual orientation, or other characteristics?

- You are treated with less courtesy than other people.
    - You are treated with less respect than other people.
    - You receive poorer service than other people at restaurants or stores.
    - People act as if they think you are not smart.
    - People act as if they are afraid of you.
    - People act as if they think you are dishonest.
    - People act as if they think you are not as good as they are.
    - You are called names or insulted.
    - You are threatened or harassed.
  - Sum of the following items measuring sexual harassment: In the past 3 months, have you ever been in a situation where any individual(s)... (reverse coded)
    - ...made crude and offensive sexual remarks, either publicly (e.g., in the office), or to you privately?
    - ...used, or distributed sexist or suggestive materials (e.g., pictures, stories, or pornography)?
    - ...“put you down” or was condescending to you because of your sex?
    - ...touched you (e.g., laid a hand on your bare arm, put an arm around your shoulders) in a way that made you feel uncomfortable?
    - ...attempted to establish a romantic relationship with you despite your efforts to discourage this person?
    - ...made you afraid you would be treated poorly if you didn’t cooperate sexually?
    - ...made you feel like you were being subtly bribed with some sort of reward or special treatment to engage in sexual behavior?
  - Safety index, based on the following items
    - To what extent do you agree with the following statement: I feel safe walking home at night in my neighborhood or city (reverse coded)
    - In the past 3 months, has anyone hit, slapped, kicked, or done anything else to hurt you physically? (dummy for “No”)
- We will analyze this outcome for applicants.

## Expectations

- Overall index, combining the index of educational expectations, the index of earnings expectations, the index of fertility expectations, and the index of international migration expectations defined below +
  - Index of educational expectations, based on the following items
    - Until what educational degree do you think you will study?
    - Occupational education score, based on “In which occupation do you think you will work when you are 35 years old?” and measured using representative Ugandan survey data
  - Index of earnings expectations, based on the following items
    - How much money do you think you will earn when you are 35 years old?

- Occupational income score, based on “In which occupation do you think you will work when you are 35 years old?” and measured using representative Ugandan survey data
  - Index of fertility expectations, based on the following items
    - How many children do you think you will have? (reverse coded)
    - At which age do you think you will have your first child?
  - Index of international migration expectations, based on the following items
    - Where do you think you will live when you are 35 years old? (dummy for “Outside of Uganda”)
    - On a scale from 0-100, what do you think is the percent chance that you will be living in Uganda when you are 35 years old? (reverse coded)
- We will analyze this outcome for non-applicants, including parents, siblings, and friends. For parents, we consider their expectations for the siblings of the applicants. For siblings and friends, we consider their own expectations for themselves.

### Perceived benefits and costs of international migration

- Overall index, combining the number of reasons to live outside of Uganda and the number of reasons not to live outside of Uganda (reverse coded) \*
  - Number of reasons mentioned: What would be the reasons which might encourage you to live outside of Uganda? (select all that apply)
    - Better chances of finding a job abroad
    - Better chances of earning a high income abroad
    - Better working conditions abroad
    - Better career or business opportunities abroad
    - Better chances of obtaining a university degree abroad
    - To be closer to relatives or friends who live abroad
    - To discover something new and meet new people
    - To improve your qualifications and learn new skills (e.g. learn a new language)
    - To become independent from my family
    - Better quality of life abroad
    - Better political situation abroad
    - Better economic climate abroad
    - Better health care system abroad
    - Better education system abroad
    - Less corruption abroad
    - Other (specify)
  - Number of reasons mentioned: What would be the reasons which might discourage you from living outside of Uganda? (select all that apply) (reverse coded)
    - Your home is in Uganda
    - You do not want to leave your family and friends behind
    - You already have a good job/life/opportunities in Uganda
    - You would not feel safe abroad

- It is difficult to learn a new language
  - It is difficult to integrate into a new society
  - It is difficult to find housing/get settled abroad
  - You or your friends/relatives have had bad experiences abroad
  - You don't feel qualified enough to work abroad
  - The quality of life abroad is worse
  - The attitude towards foreigners is hostile abroad
  - It is difficult to find a job abroad
  - The cost of living is too high abroad
  - It is difficult to adjust to winter and cold weather
  - You would feel lonely abroad
  - Migration is too expensive
  - Migration is too risky
  - You do not want to give up your house or other property
  - Other (specify)
- Suppose, hypothetically, you had completed university education in Germany. From zero to hundred, what is the percent chance that you will be working at the age of 35 if you lived in Germany? \* (For interpretation, we will also compare the treatment effect on this outcome to the treatment effect on these auxiliary outcomes: (i) What is the percent chance that you will be working at the age of 35 if you lived in Uganda and had completed secondary school with a UACE certificate in Uganda? (ii) What is the percent chance that you will be working at the age of 35 if you lived in Germany and had completed secondary school with a UACE certificate in Uganda? (iii) What is the percent chance that you will be working at the age of 35 if you lived in Uganda and had completed university education in Germany? (iv) What is the percent chance that adults born in Germany will be working at the age of 35 if they lived in Germany and had completed university education in Germany?)
  - Suppose, hypothetically, you had completed university education in Germany. How much do you think you will earn in a typical month at the age of 35 if you lived in Germany? \* (For interpretation, we will also compare the treatment effect on this outcome to the treatment effect on these auxiliary outcomes: (i) How much do you think you will earn in a typical month at the age of 35 if you lived in Uganda and had completed secondary school with a UACE certificate in Uganda? (ii) How much do you think you will earn in a typical month at the age of 35 if you lived in Germany and had completed secondary school with a UACE certificate in Uganda? (iii) How much do you think you will earn in a typical month at the age of 35 if you lived in Uganda and had completed university education in Germany? (iv) How much do you think adults born in Germany will earn in a typical month at the age of 35 if they lived in Germany and had completed university education in Germany?)
  - We will analyze these outcomes for applicants and non-applicants. Non-applicants include siblings and friends.

### Investment in the future

- Investment in a future in Uganda +

- Share of positive responses to the following items: Have you done any of the following to find out about future study or types of work...?
  - I looked for information about further studies in Uganda.
  - I looked for information about careers in Uganda.
  - I looked for information about programs that help me study in Uganda.
  - I talked to my family or friends about studying in Uganda.
  - I talked to my teachers about studying in Uganda.
  - I talked to my family or friends about working in Uganda.
  - I talked to my teachers about working in Uganda.
  - I applied for scholarships for higher education in Uganda.
- Investment in a future abroad +
  - Share of positive responses to the following items: Have you done any of the following to find out about future study or types of work...?
    - I looked for information about further studies abroad.
    - I looked for information about careers abroad.
    - I looked for information about programs that help me study abroad.
    - I looked for information about migrating to another country.
    - I talked to my family or friends about studying abroad.
    - I talked to my teachers about studying abroad.
    - I talked to my family or friends about working abroad.
    - I talked to my teachers about working abroad.
    - I applied for scholarships for higher education abroad.
- Have you applied for the Malengo program? (We will validate positive responses with Malengo's application data.) +
- We will analyze these outcomes for non-applicants, including siblings and friends.

#### Labor market outcomes

- Dummy for working for pay +
- Dummy for being self-employed +
- Sum of all labor income from the past three months, based on the income sources listed below, converted to real monthly net income and adjusted for purchasing power parity (PPP) +
  - Income from employment, including the monetary value of in-kind payments
  - Business and agricultural income from self-employment, including the value of self-produced food items consumed by the household
- We will analyze these outcomes for applicants.

#### Job quality and working conditions

- Overall index, combining the job quality index and the working conditions index defined below +
  - Job quality index, based on the following items
    - Do any of your jobs contribute to any pension/retirement fund? (dummy for "Yes")
    - Do any of your jobs entitle you to paid leave? (dummy for "Yes")

- Do any of your jobs entitle you to medical benefits? (dummy for “Yes”)
  - Do you have a written contract for any of your employment agreements? (dummy for “Yes”)
  - Are any of your jobs permanent? (dummy for “Yes”)
  - Is your work interesting and stimulating? (dummy for “Yes”)
  - In the last four weeks, did you look for any kind of job? (dummy for “No”)
- Working conditions index, based on the following items
  - Did you experience the following from your employer or anyone at work?
    - Shouting from employer or anyone at work (dummy for “No”)
    - Any kind of threats (dummy for “No”)
    - Any form of physical violence (dummy for “No”)
    - Sexual harassment (dummy for “No”)
    - Having to work when sick (dummy for “No”)
  - Do you have a rest day every week? (dummy for “Yes”)
  - Do you receive your salary on time? (dummy for “Yes”)
  - Are you currently exposed to any adverse workplace conditions or substances, such as noise, vibrations, temperature, lighting, or chemicals? (dummy for “No”)
  - After work, do you have pain in your body?
- We will analyze this outcome for applicants who are (self-)employed (which itself might be affected by the intervention).