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Sarah Frohnweiler
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IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

Information Frictions, Belief Updating and Internal Migration: Evidence from Ghana and Uganda*

Information frictions about the benefits of migration can lead to inefficient migration choices. We study the effects of a randomly assigned information treatment about regional income differentials in Ghana and Uganda to learn about participants' belief updating and subsequent changes in migration intentions and destination preferences. Participants react to the provided information by correcting their destination preferences towards regions with higher incomes, whereas their intent to migrate changes less. Participants' belief updating follows an asymmetric process restricted to individuals who initially underestimated regional differentials. The results suggest that income differentials matter for where to and less whether to migrate.

JEL Classification: J31, J68, O15

Keywords: income differentials, migration decision, belief updating

Corresponding author:
Cara Ebert
RWI – Leibniz-Institut für Wirtschaftsforschung
Hohenzollernstraße 1-3
45128 Essen
Germany
E-mail: cara.ebert@rwi-essen.de

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1. Introduction

One in eight people around the globe are internal migrants (UNDP 2009). This is four times the number of international migrants, and this figure is even higher in many developing countries. Despite substantial rates of migration, large gaps in income, consumption, and the value of non-monetary factors remain within and across countries (e.g., Acemoglu and Dell 2010; Young 2013). Closing these gaps through further migration is expected to improve overall economic outcomes (e.g., Bryan and Morten 2019; Tombe and Zhu 2019).[1] However, migration frictions — such as legal restrictions, financial constraints, language and information barriers, or uncertainty — limit optimal migration.

We study how information frictions affect internal migration intentions and destination preferences. Because migration decisions are based on the perceived costs and benefits of staying at origin versus moving to a potential destination, information frictions likely cause migration inefficiencies. We measure biases in beliefs about regional incomes and investigate how providing information on regional incomes can affect migration decisions.

First, we introduce a simple theoretical framework for belief updating about incomes at destination in response to regional income information and following changes in migration intentions. Second, we test the predictions empirically using two survey experiments with 6,249 participants in Ghana and Uganda. In the experiment, we randomly provide information on mean regional incomes for the different regions of the respective country, including the region of residence, and measure its impact on individual migration intentions and destination preferences. The income information was drawn from each country's most recent and publicly available official statistics, i.e., the Ghana Living Standards Survey of 2017 and the Uganda National Household Survey 2016/17.

In both countries, internal migration is common. Twenty-five and twenty percent of household heads in Ghana and Uganda, respectively, live in another region or district than their place of birth (IPUMS 2002, 2010). Incomes and wages differ substantially across regions within countries. In Ghana, the average income of the wealthiest region, Greater Accra, is more than six times the income of the poorest Upper East region. In Uganda, average wages are 2.5 times higher in the wealthiest region, Kampala, than in the poorest regions, Western and Eastern Uganda.

Our results show that study participants have biased perceptions about regional incomes at baseline. In Ghana, participants overestimate income for all 10 regions. In Uganda, overestimation is even more pronounced, with baseline beliefs more than doubling the actual value for some regions. Providing participants with information about mean regional incomes partly reduces

1. The equalizing effect of internal migration is likely limited by individuals sorting into specific regions (see Lagakos 2020, for a comprehensive overview).

migration inefficiencies. Migration intentions substantially decrease among Ugandans. But we find no such effect in the total sample of Ghana. In terms of destination preferences, participants from both countries who received the information are significantly more likely to correct their destination preferences towards destinations reported to have higher incomes. In Ghana, the probability of selecting the highest-income region as the first destination increases by 3.3 percentage points (6.3% relative to the control mean) and in Uganda by 12.5 percentage points (46.5% relative to the control mean).

Estimating these effects separately for participants who initially overestimated or underestimated regional income differentials shows that Ugandan's who overestimate regional income differentials – i.e., for whom the provided information should have a discouraging effect – seem to update their beliefs and reduce their intentions to migrate. Whereas in Ghana people who initially underestimate regional income differentials – i.e., for whom the received information should have an encouraging effect – increase their migration intentions. For destination preferences, the updating process towards higher income destinations only occurs among individuals who initially underestimated income differentials in both countries. For individuals who overestimated the income gains from migrating, we do not detect any significant correction of their initial destination preferences towards higher-income regions. The findings on destination preferences are consistent across both countries as well as different outcome definitions and specifications.

The study contributes to the existing literature in three ways. First, we study information frictions as one relevant barrier to optimal *internal* migration. Since internal migration is much more prevalent and less expensive than international migration, information frictions might be more relevant for explaining unexploited returns to internal migration than they are for international migration. However, the literature on information frictions tends to focus on international and especially irregular migration. These studies often find that (potential) migrants have incomplete or biased knowledge of the risks of dying *en route*, the probability of obtaining legal residence status in Europe, wages at destination points, or the quality of placement agencies among other aspects (e.g., Beam et al. 2016; Bah and Batista 2020; Shrestha 2020; Bazzi et al. 2022; Tjaden and Gninafon 2022), whereas Beber and Scacco (2020) show that potential migrants are better informed about international destinations than many information campaigns assume. Bryan et al. (2014) and Baseler (2020) are exceptions as they study information frictions in the context of internal migration in Bangladesh and Kenya, respectively. Both studies randomly provided rural households with information about earnings and employment opportunities at urban destinations. Whereas Baseler (2020) documents an increase in internal migration in Kenya, Bryan et al. (2014) find no impact of the provided information in Northern Bangladesh and argue that households seem well informed about the benefits of internal migration from the outset.

Second, we provide experimental evidence on the importance of economic conditions at destination as a variable in the migration calculus. While income differences have been identified as a key explanation for migration, they are far from the only element in a complex decision (e.g. de Haas 2010) and their specific effects are challenging to identify. Related to the present setting, Ackah and Medvedev (2010) and Duplantier et al. (2017) examine household survey data from the Ghana Living Standard Survey and show a strong positive correlation between mean regional income and the migration rate for each region. A nascent experimental literature uses discrete choice experiments to study trade-offs of different decision factors in moving to a foreign country or place. Baláž et al. (2016) find that among university students in a laboratory in Slovakia, wages and living costs are the main decision factors, but together make up only about 28.2% to 49.0% of decision weights. The remaining weights refer to non-economic factors such as crime, health, climate, security, and life satisfaction at destination. Batista and McKenzie (2021) show that – besides wages, relocation costs, insurance against unemployment, and information constraints – the risk of unemployment and liquidity constrains are the main decision factors of participants in laboratories in Lisbon and Nairobi. In a survey experiment in Bangladesh, Lagakos et al. (2018) find that migrants care most about the probability of unemployment and living conditions, less about wages and not at all about the extent of separation from their families. Our experiment examines only income as a decision factor, but contributes to that literature by testing the importance of income as decision factor for different aspects of the migration decision, i.e., *whether* and *where* to migrate. We show that income beliefs shape individuals' preferences about where to go, but not whether to migrate, in this study context.

Third, our paper speaks to the literature on belief updating. While Bayes' rule is broadly appreciated as a benchmark for updating behavior under uncertainty within the social sciences, extant theory and evidence indicate that individuals sometimes process information asymmetrically by allocating more weight to good than bad news. Several studies have tested this hypothesis across different contexts, with highly heterogeneous results. While some studies suggest stronger responsiveness to good news (e.g., Sharot et al. 2012; Wiswall and Zafar 2015; Möbius et al. 2022), others find stronger responsiveness to bad news (e.g., Coutts 2019), and some do not find any evidence for asymmetrical updating (e.g., Barron 2021). Our results suggest that in the context of migration, encouraging information may be processed differently than discouraging information. Discouraging information reduced migration intentions whereas encouraging information did not. Moreover, encouraging information resulted in a change in destination preferences whereas discouraging information did not.

In migration policy, information campaigns are a common and broadly implemented tool. Between 2014 and 2019, over 100 migration information campaigns were commissioned by EU Member States and the European

Commission addressing origin and transit countries (Hahn-Schaur 2021). Yet, rigorous evidence on their impact is scarce, and researchers have criticized that the implementation of migration information campaigns has outpaced any rigorous assessment of their effectiveness (e.g., Alpes and Nyberg Sørensen 2015; Schans and Optekamp 2016; Tjaden et al. 2018). Our research question is therefore of high political relevance as it can guide the design of future information campaigns. Additionally, different than other information campaigns, which commonly consist of anecdotal, qualitative content and concentrate on migration intentions, we provide income information from official statistics and also assess individuals' destination preferences.

The remainder of the study is structured as follows. Chapter 2 outlines the underlying conceptual framework of the intervention and its expected effects. Chapter 3 explains the design and implementation of the information experiment. Chapter 4 describes the data used for the analysis. Chapter 5 discusses the results of the empirical analysis, and Chapter 6 indicates potential mechanisms. Chapter 7 offers concluding remarks and policy recommendations.

2. Conceptual framework

Income differences have been singled out as one of the key explanatory factors of migration both theoretically and empirically (e.g., de Haas 2010). Yet individuals will not migrate if the fixed costs of migrating are sufficiently high. Such costs include the financial burden of physically moving and the psychological burden of leaving behind familiar surroundings. Classical economic theory predicts that a rational individual intends to migrate to another region if the expected net present value from migrating V^m is positive (e.g., Burda et al. 1998). While this decision calculus depends on a multitude of observable and unobservable characteristics of individuals and households including wealth, employment opportunities, information, abilities, risk preferences, ambitions, and family ties, this study addresses the importance of expected income at destination. An individual i intends to migrate ($Y = 1$) if the expected income differential $\hat{D}_i$ between the destination region z with the highest expected income $\hat{I}_{i,z}$ (i.e., $\max_z \hat{I}_{i,z}$) and the expected income at origin $\hat{I}_{i,o}$ exceeds the associated fixed costs F_i. This decision rule can be formally written as

$$Y_i = \begin{cases} 1 & \text{if } V_i^m = \hat{D}_i - F_i > 0 \\ 0 & \text{otherwise} \end{cases} \tag{1}$$

$$\text{with } \hat{D}_i = (\max_z \hat{I}_{i,z}) - \hat{I}_{i,o} \text{ and } z \neq o.$$

The subsequent decision on *where* to migrate can be formalized by a multi-market Roy (1951) model of mobility and earnings. As done by Borjas (1992) and Dahl (2002) the model can be adapted such that individuals do not choose

among occupations but among different migration destinations z. Further, Lee (1983) showed that in a multi-choice selection model the error terms can be summarized by the maximum order statistic. Drawing on this insight, one can expect only the first-best choice to matter in optimal decision-making (or the next-best among any remaining options). In our setting in which individuals have to indicate their top two destination preferences (Z^1 and Z^2) among all regions excluding the region of origin o, this implies that individuals should select the region with the highest expected income as first preference and the region with the second highest expected income as second preference:

$$\begin{aligned} Z_i^1 &= \arg\max_z \hat{I}_{i,z}, \text{ and} \\ Z_i^2 &= \arg\max_{z \neq Z_i^1} \hat{I}_{i,z}. \end{aligned} \tag{2}$$

In our experiment, we elicit an exogenous updating of income expectations among study participants by providing a random subsample of subjects with information about true regional incomes. We hypothesize that treated individuals update their region-specific income expectations based on the information they receive. If their prior expectations deviated from the true maximum regional income differential, this implies a change in the expected potential income gain (or loss). Formally,

$$\Delta \hat{D}_i = \left[(\max_z I_z) - I_o\right] - \left[(\max_z \hat{I}_{i,z}) - \hat{I}_{i,o}\right]. \tag{3}$$

The first term on the right-hand side gives the true maximum income differential (D_i), and the second term is the initially expected maximum income differential ($\hat{D}_i$). If treated individuals update their beliefs based on the information provided, the expected income differential will increase among individuals whose prior expectation was smaller than the true maximum and decrease if an individual's initial expectation was larger. In turn, this affects migration intent, following equation (1).

We expect migration intentions to intensify among treated individuals whose expected maximum income differential rises, and to lessen among those whose expected maximum income differential declines. The literature on belief updating remains divided on whether individuals process information asymmetrically and if yes whether more weight is allocated to positive or to negative information. We test this by distinguishing individuals who initially underestimate income differentials, and therefore receive migration encouraging information, and individuals who initially overestimate income differentials,

and therefore receive migration discouraging information.[2] We expect that the provided information will change destination preferences if it gives individuals a reason to update the top of their regional income ranking. Destination choices will not change if initial expectations reflect the actual income ranking.

3. Experimental design and data

3.1. The intervention

The information experiment was conducted with study participants of two impact evaluations assessing the effectiveness of separate employment and income-promoting programs in Ghana and Uganda. In Ghana, face-to-face interviews were conducted with artisans in the construction sector in Greater Accra, Ashanti, Western, and Northern regions between November and December 2020 and August and September 2021. In Uganda, the survey was carried out on the phone between November and December 2020 with individuals who had registered their interest in participating in a skills training and internship placement program.

Both surveys contained a mobility section that comprised the information experiment. First, individuals were asked about their intentions to migrate internally on a 4-point Likert scale, their top two destination regions within Ghana or Uganda, and their income expectations for the different regions of Ghana or Uganda. Then, a random half of the sample received the information treatment from the enumerator who was conducting the interview. Randomization was performed in situ using the survey software SurveyCTO. Afterwards each individual was asked again about intentions to migrate internally and the top two destination regions, irrespective of the assigned treatment status.

The information treatment reflected recent representative survey data in both Ghana and Uganda. The treatment implementation differed slightly across countries due to differences in survey methods and available official statistics. In Ghana, treated individuals were shown a map outlining the ten regions of Ghana and depicting the average monthly income in each region based on the 2016-17 Ghana Living Standards Survey (GLSS).[3] To make the information

2. We do not measure belief updating directly. This would have required respondents to provide their regional income expectations after we informed them about regional incomes. However, this could have been perceived as a recall test and might have resulted in discontent among respondents.

3. In 2018, six new regions were added to what had been 10 Ghanaian regions. This was accomplished by splitting up the regions of Brong-Ahafo, Northern, Volta, and Western. Since the 2016-17 GLSS contained income information only for the original ten regions, the infographic only depicted those ten regions. However, individuals could choose among all 16 regions when asked about their destination preferences.

easily comprehensible, monthly income was shown as a number and illustrated with stacks of coins, with one coin for each 100 GHS.

After the implementation of the experiment, we found out that the average per capita income for the Ashanti region is misreported in the GLSS7 main report.[4] The Ashanti region ranks behind the regions of Greater Accra, Brong Ahafo, and Central rather than first. Upon confirmation of this error by the GLSS7 data processing team at the Ghana Statistical Service, we immediately debriefed Ghanaian study participants with a set of text messages correcting the income information for the Ashanti region. For the descriptive statistics we use the corrected Ashanti figure but for the treatment effect analysis, we treat the erroneous information reported in the GLSS7 report and provided in the experiment as correct and discuss the potential implications of doing so in Section 5.2.

In Uganda, treated individuals received gender-specific information on the median monthly wages for Uganda's four different regions plus the capital city Kampala. The income information was provided in absolute terms and relative to the individuals' region of residence, i.e., how many times more or less the income is compared to the region they live in. Due to the survey being conducted over the phone, no map could be shown. The income information was gathered from the 2016-17 Ugandan National Household Survey (UNHS).[5] The infographic for Ghana and an example script for Uganda can be found in Section A of the Online Appendix.

We provided information on incomes in order to design an easily understandable intervention based on official statistics, which at the regional level were available for average income in Ghana and sex-specific median wages in Uganda. The income and wage information referred to cross-sector regional averages to ensure that the provided information is relevant even if respondents change sectors.[6] In Uganda, the mobility section was followed by a debriefing in which enumerators explained that not only wages but also costs of living differ across regions and encouraged respondents to obtain additional information before migration decisions will be made. In both countries, income differences remain after controlling for regional consumer price indices reported in the GLSS7 microdata and the Ugandan Bureau of Statistics such that potential income gains from migration are unlikely to be offset by higher living costs. The nominal income rankings used for the information treatment are equal to

4. Average income for the Ashanti region as reported in the GLSS7 is 56,664 GHS, whereas the correct figure was 11,635 GHS.

5. For the sake of brevity, we subsequently refer to income information when we mean average monthly income for Ghana and median monthly wages, i.e., labor income, for Uganda.

6. In Section 5.5 we show that in both countries regional cross-sectoral incomes strongly correlate with the construction sector-specific incomes and incomes of participants in our study sample.

the ranking of real incomes. Additional tests on the relevance of the provided information are outlined in Section 5.5.

Enumerators were instructed to never directly link the provided information to participants' migration preferences and to always present income details in a neutral fashion, without insinuating "right" or "wrong" responses. Low display durations of the infographic for some interviews in Ghana suggest that some enumerators did not always implement the treatment correctly or with varying intensity. We address this issue in a complier average causal effect analysis that defines compliers as participants who were presented with the map for at least 45 seconds in Ghana or who had a display time of the information for at least 60 seconds in Uganda.

Implementing the experiment in both contexts lends external validity to our findings. However, due to the differences in the intervention and the study population, we refrain from drawing conclusions from comparisons of treatment effects across the two countries.

3.2. Sample selection

Participants of the information experiment formed part of two impact evaluations assessing the effectiveness of distinct employment and income-promoting programs in Ghana and Uganda. Both of these programs were implemented by the German agency for international cooperation GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH). In Ghana, GIZ carried out a vocational skills training program for artisans in the construction sector called *Professionalization of Artisans* (ProfArts). Artisans working in the construction sector, aged 18 years and older, and having at least completed an apprenticeship or obtained the formal qualification of *Proficiency I* could register for the program by completing a comprehensive interview. These interviews are used as the baseline survey for a randomized controlled trial on the effectiveness of the training program and included the present information experiment.

In Uganda, GIZ implemented a different skills promoting program called *Skills for Construction* (S4C) consisting of a certified training in soft, life and technical skills required in the construction sector and a subsequent internship placement. The S4C program targeted Ugandan youths aged 18 to 24 years with basic numeracy and literacy skills and, ideally, prior experience in the construction sector and previous training at a technical vocational and educational training (TVET) institute. Participants for the impact evaluation of the S4C program consisted of individuals who registered their interest in participating in the program. One to two years after the S4C training was implemented study participants were followed up for an endline survey, which included the information experiment.

The sampling among program applicants for these technical trainings in the construction sector limits the representativeness of the sample of the

information experiment. In both countries, participants portray a specific subsample of predominantly young men with above average educational attainment (Appendix Table A4).

A total of 5,491 observations in Ghana and 1,158 observations in Uganda were sampled. We dropped 70 observations in Ghana and 34 in Uganda due to missing sociodemographic background characteristics, 11 observations in Ghana that miss all outcome variables, and an additional 296 interviews in Uganda due to procedural deviations.[7] This results in a sample of eligible study participants of 5,410 observations for Ghana and 828 observations for Uganda.

Some of the 6,238 study participants did not provide full information on our outcome variables post-treatment. 254 participants never answered one or more of the outcome-relevant questions and in 76 cases we lack a pre-treatment response. In total, only 0.53% of the Ghanaian respondents and 0.60% of the Ugandan respondents failed to provide post-treatment information, resulting in a sample attrition rate of 0.54% (Appendix Table A1). The response rate neither depends on treatment assignment (Appendix Table A2) nor on pre-treatment outcomes (Appendix Table A3).

3.3. Summary statistics

In Table 1 we compare individuals of treatment and control groups of the estimation sample in Ghana and Uganda. Columns (3) and (7) show only small differences in socio-economic characteristics and pre-treatment outcomes, and only few of these differences are significant, suggesting that the randomization was successful. The last two columns of Table 1 contrast the total samples of Uganda and Ghana and highlight the differences between study participants of the two countries in terms of age, gender, employment status, and education, among others. Subsequent analyses and interpretations of the results are done for the two countries separately.

In both countries, participants are very interested in internal migration already prior to treatment (Appendix Figure A2). In all regions, more than 75% of participants indicate that they want to migrate to another region within their country either “a lot” or “a fair amount”. A large share of respondents was born in another region than the one in which they currently live, although proportions vary substantially across regions (Appendix Figure A3).

7. During the first twelve days of data collection, Ugandan enumerators provided the treatment to all respondents irrespective of the assigned treatment status. We drop all interviews conducted on those days.

TABLE 1. Balance checks across treatment and control groups.

	Ghana				Uganda				Uganda-Ghana	
	Control (1)	Treatment (2)	Diff. (3)	P-value (4)	Control (5)	Treatment (6)	Diff. (7)	P-value (8)	Diff. (9)	P-value (10)
Socio-demographic characteristics										
Age	33.63	33.63	-0.00	0.99	25.93	25.56	0.37	0.19	-7.89	0.00
	(0.18)	(0.17)	(0.24)		(0.20)	(0.19)	(0.28)		(0.32)	
Gender, 1=male 2=female	1.00	1.00	0.00	0.38	1.13	1.13	-0.00	0.98	0.13	0.00
	(0.00)	(0.00)	(0.00)		(0.02)	(0.02)	(0.02)		(0.01)	
Married, binary	0.55	0.52	0.04	0.01	0.21	0.18	0.02	0.37	-0.34	0.00
	(0.01)	(0.01)	(0.01)		(0.02)	(0.02)	(0.03)		(0.02)	
Unemployed	0.02	0.02	-0.00	0.39	0.29	0.26	0.03	0.41	0.26	0.00
	(0.00)	(0.00)	(0.00)		(0.02)	(0.02)	(0.03)		(0.01)	
Employed, employee	0.43	0.41	0.02	0.09	0.51	0.57	-0.06	0.08	0.12	0.00
	(0.01)	(0.01)	(0.01)		(0.02)	(0.02)	(0.03)		(0.02)	
Employed, selfemployed	0.55	0.57	-0.02	0.14	0.16	0.14	0.02	0.50	-0.41	0.00
	(0.01)	(0.01)	(0.01)		(0.02)	(0.02)	(0.02)		(0.02)	
Contract type	1.48	1.44	0.04	0.43	1.18	1.10	0.08	0.30	-0.32	0.00
	(0.03)	(0.03)	(0.05)		(0.06)	(0.05)	(0.08)		(0.05)	
No formal education	0.04	0.04	-0.01	0.35	-	-	-	-	-	-
	(0.00)	(0.00)	(0.01)							
Primary	0.09	0.08	0.01	0.17	0.03	0.02	0.01	0.37	-0.06	0.00
	(0.01)	(0.01)	(0.01)		(0.01)	(0.01)	(0.01)		(0.01)	
Junior secondary	0.48	0.47	0.01	0.55	0.14	0.19	-0.06	0.02	-0.31	0.00
	(0.01)	(0.01)	(0.01)		(0.02)	(0.02)	(0.03)		(0.02)	
Senior secondary	0.33	0.35	-0.02	0.11	0.28	0.26	0.02	0.60	-0.07	0.00
	(0.01)	(0.01)	(0.01)		(0.02)	(0.02)	(0.03)		(0.02)	
TVET	0.03	0.03	0.00	0.47	0.46	0.44	0.02	0.64	0.42	0.00
	(0.00)	(0.00)	(0.00)		(0.02)	(0.02)	(0.03)		(0.01)	
Tertiary	0.03	0.03	0.00	0.42	0.09	0.08	0.02	0.42	0.06	0.00
	(0.00)	(0.00)	(0.00)		(0.01)	(0.01)	(0.02)		(0.01)	
Household asset index (mean)	0.47	0.48	-0.01	0.14	0.43	0.42	0.01	0.51	-0.05	0.00
	(0.00)	(0.00)	(0.01)		(0.01)	(0.01)	(0.02)		(0.01)	
Joint F-stat.	-	-	-	0.693	-	-	-	0.235	-	-
Pre-treatment outcomes										
Migration intention	0.77	0.76	0.01	0.45	0.82	0.83	-0.01	0.50	0.06	0.00
	(0.01)	(0.01)	(0.01)		(0.01)	(0.01)	(0.02)		(0.01)	
1^{st} choice mirrors income ranking	0.44	0.45	-0.00	0.80	0.20	0.22	-0.02	0.42	-0.24	0.00
	(0.01)	(0.01)	(0.01)		(0.02)	(0.02)	(0.03)		(0.02)	
2^{nd} choice mirrors income ranking	0.26	0.25	0.01	0.42	0.23	0.25	-0.01	0.71	-0.02	0.32
	(0.01)	(0.01)	(0.01)		(0.02)	(0.02)	(0.03)		(0.02)	
1^{st} and 2^{nd} choice mirror ranking	0.18	0.17	0.01	0.47	0.03	0.06	-0.03	0.07	-0.13	0.00
	(0.01)	(0.01)	(0.01)		(0.01)	(0.01)	(0.02)		(0.01)	
Ln(monthly income, USD)	6.08	6.05	0.02	0.17	3.64	3.67	-0.04	0.11	-2.41	0.00
	(0.01)	(0.01)	(0.02)		(0.01)	(0.02)	(0.02)		(0.02)	
Income ranking	8.06	8.02	0.04	0.38	7.66	7.77	-0.11	0.11	-0.32	0.00
	(0.04)	(0.03)	(0.05)		(0.04)	(0.05)	(0.07)		(0.06)	
Higher income	0.56	0.56	0.00	0.90	0.38	0.39	-0.01	0.79	-0.18	0.00
	(0.01)	(0.01)	(0.01)		(0.02)	(0.02)	(0.03)		(0.02)	
Joint F-stat.	-	-	-	0.454	-	-	-	0.390	-	-
N	2,586	2,824	5,410		411	417	828		6,238	

Note: Table shows averages for baseline using all observations with full information on control variables. Observations with partially missing information on outcome variables were kept. The values displayed for the differences are the differences in means across control and treatment group and their standard errors in parentheses. The p-values belong to a joint orthogonality test on the treatment arms. Values displayed for F-stat are F-statistics for joint significance of all balance variables.

4. Descriptive analysis

Respondents on average overestimate regional incomes in both countries pre-treatment. The bars in Figure 1 show respondents' expectations for the different regions in Ghana (top) and Uganda (bottom). The black dots indicate the inflation adjusted true mean income for each region.[8] In both countries, study participants overestimate income for all regions. The extent of overestimation

8. We used the GDP deflator of the years 2018, 2019, and 2020 for Ghana and Uganda, respectively. "True" refers to the figures reported in the UNHS main report and the corrected figures of GLSS7.

is stronger in Uganda than in Ghana, with expectations more than doubling the true value for some regions.[9]

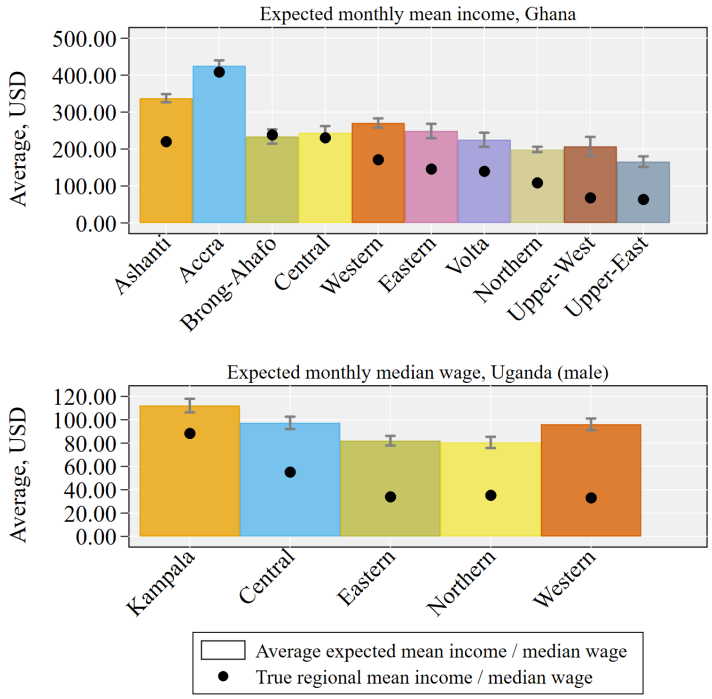

FIGURE 1. Income and wage expectations prior to treatment. The bars indicate the average expected monthly mean income (median wage) for the respective region in USD. The black dots represent the true inflation-adjusted mean income in Ghana and median wage in Uganda in USD from secondary data.

Whether individuals over- or underestimate regional income differentials varies by participant characteristics. While self-employed individuals and those with a written contract are more likely to underestimate maximum income differentials, employees are more likely to overestimate them. Further, those who underestimate the differentials tend to be wealthier than those who overestimate (Appendix Table A5).

The extent to which beliefs are biased varies depending on whether respondents are asked about their home or potential destination region but does not follow one common pattern (Appendix Figure A4). In Ghana, participants residing in Greater Accra underestimate the income in their home

9. In Uganda we provided gender-specific information. We here display expectations of male respondents, because the large majority of respondents were male. Among female respondents, the extent of overestimation is even more pronounced.

region. Conversely, the overestimation of income in the Ashanti, Western, and Northern region is higher among participants residing in the respective regions. In Uganda, overestimation of the home region is less pronounced among participants living in the Central, Eastern, and Northern regions whereas residents from Kampala and the Western region overestimate the income of their home regions to a stronger extent than Ugandans living in other regions. However, differences are only marginal and not significant.

Participants may not only have biased perceptions of incomes but also about income differentials across regions and thereby about the potential monetary returns to internal migration. Ghanaian participants, especially those in the Ashanti region, appear to be quite well informed about the income differentials across most regions (Appendix Figure A5). Whereas participants of the Western region undervalue the potential gains of moving to the Greater Accra, Brong-Ahafo, or Central region, participants of the Northern region tend to overvalue the potential gains of moving. In contrast, Ugandan participants are less well informed about the regional differences (Appendix Figure A6). The potential income gains of moving to Kampala is always underestimated, whereas income gains of moving to the Western region are overestimated.

To assess the relationship of income perceptions and migration decisions pre-treatment, we plot individuals' maximum expected income differentials $\hat{D}$ against their pre-treatment internal migration intentions (Appendix Figure A7).[10] The small correlation coefficient and flat line of the Gaussian kernel smoother in both countries suggest no observational association of perceived income differentials with individuals' intentions to migrate. This could be the result of selection (those exhibiting high levels of perceived income differentials and migration intentions have already left), an omitted variable (e.g., effusiveness could lead to positive attitudes toward both migration and one's current place of residence), or other endogeneity (e.g., if those with high migration intent for non-economic reasons tend to downplay destinations' economic advantages). In contrast, the ranking of regional income expectations is a good predictor for individuals' destination preferences (Appendix Figure A8). Prior to treatment, 67.6% and 47.6% of respondents in Ghana and Uganda, respectively, selected the region as their first destination preference for which they expected the highest income.

10. For the scatterplot, observations were grouped into bins by means of the quantiles of the expected income differentials. Each dot represents one bin and for each bin the mean expected income differential and mean internal migration intention were calculated. Outlier observations, defined by expected income differentials smaller than -300 (GH: N = 91, UG: N = 2) and greater than 1,000 in Ghana (N = 73) or 400 in Uganda (N = 4) were dropped.

5. Effects of information treatment

5.1. Estimation strategy

We estimate the average treatment effect of the information intervention on migration intentions and destination preferences using variations of the following model:

$$y_{i,1} = \beta_0 + \beta_1 Info_i + \beta_2 y_{i,0} + \beta_3 X'_{i,0} + \gamma_o + \varepsilon_i, \tag{4}$$

where $y_{i,1}$ is the outcome for individual i at post-treatment time $t = 1$ and $Info_i$ is an indicator for whether individual i received the information treatment. We control for the pre-treatment outcome $y_{i,0}$ and a vector of covariates $X'_{i,0}$ including age, sex, marital status, employment status, education, and wealth. We additionally control for region of origin fixed effects, γ_o. The average treatment effect of the information treatment is given by β_1. We use robust standard errors to correct for heteroskedasticity.

Our outcome variable for internal migration intentions is interest in moving either temporarily or permanently to another region within the country of residence, which ranges from 0 ("Not at all") to 1 ("A lot") on a 4-point Likert scale. For destination preferences, we consider three outcome variables. One indicator variable each for whether the first, second, or both preferred destinations were selected according to the first-highest, second-highest, or first and second-highest possible income differential between the home region o and all potential destinations z, respectively. To account for the categorical nature of these outcomes, we also run ordered logit regressions to assess effects on migration intentions and multinomial logit and probit regressions for the impact on destination preferences in addition to the main linear probability model estimations. Because the outcome variables were self-reported, Section 5.4 assesses the potential influence of experimenter demand effects on our results.

To examine individuals' belief updating behavior and their subsequent adaptation of migration intentions as described in our conceptual framework, we estimate equation (4) separately for individuals who initially underestimated the true maximum income differential between their region of origin and the destination region with the highest income and for individuals who initially overestimated the true maximum income differential.[11] For individuals who underestimated the true maximum income differential, we anticipate the

11. In Ghana, respondents were only asked about their income expectations for five out of the ten regions, while they could select among all existing regions for their preferred destination preferences. Moreover, some respondents did not indicate their expectations for each of the requested five regions in both countries. These respondents could not be allocated to one of the sub-samples since we lack their initial $\hat{D}_i$. Consequently, the number of observations of the two sub-samples does not sum up to the total sample.

information treatment to cause an increase in the expected differential ($\hat{D}_i \uparrow$) and therefore expect the income information to have an encouraging effect on migration, reflected in an increase in migration intentions. Reversely, for individuals who overestimated the true maximum income differential, we anticipate the information treatment to cause a decrease in the expected differential ($\hat{D}_i \downarrow$) and therefore expect the income information to have a discouraging effect on migration, reflected in a decrease in migration intentions.

In addition to intention-to-treat effect estimations using treatment assignment as an explanatory variable, we use an instrumental variables approach to estimate complier average causal effects to address variation in treatment intensity based on the time spent by enumerators explaining the regional income information to the respondent. The complier average causal effect analysis uses treatment assignment as an instrument for treatment delivery. We set the thresholds for completed treatment delivery at 45 seconds in Ghana and 60 seconds in Uganda.

The pre-analysis plan specified the information intervention, all outcome variables, and the empirical specification as presented above. Sub-sample analyses by country and by whether participants over- or underestimated pre-treatment income differentials were registered as heterogeneity analyses. The estimations of heterogeneous effects by region, correctness of income expectations, intentions to migrate, education, and wealth presented in the main text of the paper were also pre-registered.[12] Complier average causal effect estimations were not specified as they were added in response to the observed variation in treatment intensity. Similarly, the checks for experimenter demand effects, the sample restrictions as part of the robustness checks, as well as the heterogeneity analysis by cognitive skills was not part of the pre-analysis plan.

5.2. Effects on migration intentions

Table 2 presents the results for migration intentions. Panel A shows intent-to-treat OLS estimation results and panel B the complier average causal effect IV estimation results. Columns (1) to (3) refer to the Ghanaian sample and columns (4) to (6) to the Ugandan sample. Columns (1) and (4) include all individuals of the respective country sample, columns (2) and (5) only include individuals who initially underestimated regional income differentials,

12. Additionally, we pre-specified heterogeneity analyses by risk preference, employment status, age, marital status, migration preparations, and beneficiary status in the respective employment program and the results for these analyses are included in the Online Appendix. A heterogeneity analysis by gender was also pre-specified but not conducted because only 0.35% of the Ghanaian and 13.16% of the Ugandan sample were female participants.

TABLE 2. Effect on migration intentions, OLS and IV.

	Ghana			Uganda		
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: OLS estimations						
Treated (assigned)	0.002	0.011*	-0.008	-0.047***	-0.036	-0.056**
	(0.005)	(0.006)	(0.010)	(0.015)	(0.024)	(0.022)
Panel B: IV estimations						
Treated (delivered)	0.011	0.044*	-0.045	-0.061***	-0.048	-0.071**
	(0.021)	(0.026)	(0.056)	(0.020)	(0.031)	(0.028)
1^{st} stage F-stat.	814	535	132	1,291	491	659
Observations	5,389	3,163	1,195	827	378	403
Control mean	0.783	0.793	0.799	0.796	0.798	0.797
Region FE	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results from OLS (Panel A) and IV estimations (Panel B) for the treatment effect on internal migration intentions. Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D}\uparrow$), and the subsample who overestimated the differential ($\hat{D}\downarrow$). IV estimations use treatment assignment as instrument for treatment intensity (display duration of at least 45 seconds in Ghana and 60 seconds in Uganda). The outcome variable varies between 0 (Not at all) and 1 (A lot). Models include pre-treatment outcome, age, marriage, employment situation, education, and household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

and columns (3) and (6) only include individuals who initially overestimated regional income differentials.[13]

The results show no impact of information provision on migration intentions in the total Ghanaian sample. Among Ghanaian participants who initially underestimated regional differences, however, we see a significant increase in internal migration intentions by 1.1 percentage points, i.e., a slight increase of 1.4% relative to the control mean. For Uganda, we observe a significant negative treatment effect in the total sample, driven by the subsample of individuals who initially overestimated regional differences. In this subsample, the provided information lowered interest in internal migration by 5.6 percentage points, a moderate reduction of 7.0% relative to the control mean. Both findings are in line with the theoretical predictions that migration encouraging information (higher maximum income differential) should increase migration intentions, whereas migration discouraging information (lower maximum income differential) should decrease intentions. However, this interpretation is limited by the fact that we observe each effect only in one country. The

13. The sums of the subsamples in columns (2) and (3) and columns (5) and (6) are smaller than the samples in columns (1) and (4), respectively, because of missingness in income expectations.

negative but insignificant coefficient for the subsample of Ugandans who underestimated regional differences suggests different behaviors across the two countries. The fact that the provided information overall showed substantially lower regional incomes than participants' expected could have had a general intention dampening effect in Uganda.

Table 3 presents ordered logit regression estimates for the different categories of migration intent for each country and confirms the OLS estimation results. Among Ghanaians who underestimated the true maximum income differential, the intent to migrate internally significantly increased after being shown and explained the infographic. On average, their probability of indicating that they want to migrate "A lot" increased by 2.0 percentage points compared to the control group, while their likelihood of selecting any of the lower categories significantly reduced. For Ugandans who overestimated income differentials, we observe a significant reduction in migration intentions. The probability of selecting "A lot" significantly reduced by 10.1 percentage points, while the probability of selecting "A fair amount" or "A bit" significantly increased after receiving the income information compared to the control group. There are no treatment impacts among Ghanaians who overestimated and Ugandans who underestimated income differentials.

Due to large income differentials across regions, we also estimate the information treatment effects for each region of residence for the respective total country sample (Appendix Table A6).[14] In Uganda, effects are very homogeneous with negative coefficients in all regions, although they are only significant in Kampala and the Central region. In Ghana, we observe small positive and insignificant coefficients for all regions except for Ashanti as this is the region with the highest average income as shown in the infographic. Thus, the subsample analysis by region suggests that, despite stark income differences across regions in both countries, treatment effects do not significantly vary across regions.

The erroneous income figure for the Ashanti region in Ghana did not seem to have compromised the internal validity of the experiment. Findings are robust to using the corrected value for the sample split in under- and overestimating participants. Further, Ghanaian participants were interviewed again 18 months after the experiment. The large majority of participants who remembered the infographic, indicated that they trusted the provided information, suggesting that the substantially higher income value did not cause participants to mistrust the information.

14. Analyses at the regional level do not separate the sample into individuals with increased $\hat{D}$ and reduced $\hat{D}$ because the direction of the change in $\hat{D}$ strongly correlates with the region of residence.

TABLE 3. Effect on categories of migration intentions, ordered logit.

	Ghana			Uganda		
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)	(4)	(5)	(6)
Treated (assigned)						
Not at all	-0.001	-0.004**	0.004	0.006**	0.004	0.005
	(0.001)	(0.002)	(0.004)	(0.003)	(0.004)	(0.003)
A bit	-0.002	-0.007**	0.003	0.026**	0.017	0.035**
	(0.002)	(0.003)	(0.003)	(0.010)	(0.016)	(0.016)
A fair amount	-0.003	-0.010**	0.009	0.044***	0.026	0.061**
	(0.003)	(0.004)	(0.009)	(0.017)	(0.023)	(0.025)
A lot	0.006	0.020**	-0.015	-0.076***	-0.047	-0.101**
	(0.007)	(0.009)	(0.015)	(0.029)	(0.043)	(0.042)
Observations	5,389	3,163	1,195	827	378	403
Region FE	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results from ordered logit regressions for treatment assignment on internal migration intentions. Models include the pre-treatment outcome, age, gender, marriage, employment situation, education, and household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

5.3. Effects on destination preferences

Table 4 presents the OLS results for destination preferences. The different panels refer to whether the first (panel A), second (panel B) or both destination preferences (panel C) were used as outcomes. The outcome indicates whether the preferred destination matches the region with the highest (first preference) or second-highest (second preference) possible income differential between the home region and all potential destination regions. Also for the updating of destination preferences it likely matters whether the received information is encouraging (i.e. underestimation of income differentials) or discouraging (i.e. overestimation of income differentials). For example, one can imagine that the receipt of migration encouraging information results in participants thinking harder about the right destination choice as their propensity to migrate increases. Whereas migration discouraging information might render the destination choice less relevant. Columns (1) and (4) of Table 4 present results for the respective total country-specific sample, columns (2) and (5) refer to the subsamples of individuals who underestimated and columns (3) and (6) to the subsamples of individuals who overestimated the actual regional income differentials.

The information treatment significantly increased the probability to select the region with the highest income as the first destination preference among individuals whose maximum expected income differential is assumed to have increased through the treatment (Panel A). In Ghana, the probability increased

TABLE 4. Effect on destinations reflecting the maximum income differentials.

	Ghana			Uganda		
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: 1^{st} ***destination preference***						
Treated (assigned)	0.033***	0.047***	0.009	0.073***	0.132***	0.020
	(0.010)	(0.014)	(0.015)	(0.026)	(0.041)	(0.034)
Observations	5,195	3,108	1,125	824	377	403
Control mean	0.525	0.449	0.759	0.159	0.160	0.165
Panel B: 2^{nd} ***destination preference***						
Treated (assigned)	0.005	0.014	-0.011	0.034	0.001	0.072*
	(0.010)	(0.012)	(0.021)	(0.026)	(0.039)	(0.039)
Observations	5,105	3,079	1,105	806	367	398
Control mean	0.330	0.249	0.492	0.218	0.209	0.246
Panel C: 1^{st} ***and*** 2^{nd} ***destination preference***						
Treated (assigned)	0.006	0.018	-0.019	0.036***	0.056**	0.014
	(0.009)	(0.012)	(0.021)	(0.014)	(0.023)	(0.019)
Observations	5,098	3,078	1,102	804	366	397
Control mean	0.264	0.202	0.398	0.025	0.027	0.026
Region FE	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results for OLS estimations for the effect of treatment assignment on the probability of selecting the destination preferences such that it mirrors the highest possible income differential. Panel A only considers the first preference, Panel B only the second preference, and Panel C both preferences jointly. Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D}\uparrow$), and the subsample who overestimated the differential ($\hat{D}\downarrow$). Models include pre-treatment outcome, age, gender, marriage, employment situation, education, and household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

by 4.7 percentage points (10.5% relative to the control mean) and in Uganda by 13.2 percentage points (82.5% relative to the control mean). Individuals who overestimated the maximum expected income differentials do not update their preferences for the first destination. Regarding the probability of selecting the region with the next-highest income as the second destination preference, we only observe a weakly significant increase for Ugandans whose maximum expected income differential is assumed to have declined (Panel B). Taking into account first and second preferences in Panel C, shows that among Ghanaian and Ugandan respondents whose maximum expected income differential is assumed to have increased, the treatment significantly affected the probability of selecting both destination preferences in line with the actual income ranking. Results are almost identical when we use IV estimations instead (Appendix Table A7). Coefficients are slightly higher, but standard errors, too.

Multinomial logit estimations on the probability of selecting each region confirm these results. Treated individuals' probability of selecting the highest income regions of Ashanti (Ghana) and Kampala (Uganda) as their first

destination preference significantly increased compared to the control group and the effect is driven by individuals who underestimated the maximum income differentials (Appendix Figure A9).[15]

Alternative ways to measure destination preferences are (i) the actual logarithmized income in USD of the preferred destinations, (ii) the income rank of the preferred destinations, and (iii) a dummy variable indicating whether the preferred destination has a higher income than the region of residence (Appendix Table A8). The results for all three alternative outcome measures confirm the previous findings. In Ghana, individuals would increase their expected income from moving to a different region due to the received information by 3.1% on average. For Ghanaians who underestimated the income difference, the increase in expected income is 4.2%, whereas the effect is small and insignificant for those who underestimated regional income differentials. The expected income gains for Ugandans are even higher. In the total Ugandan sample, the average expected income gain is 7.4%, it is 12.5% for those who underestimated regional income differentials, and smaller and insignificant for those who overestimated regional income differentials. Assessing the incomes of the first and second destination preference separately shows that, as for the main destination preference outcome, the impacts on the three alternative measures are driven by adaptations of the first destination preference (Appendix Table A10 and Table A11). Results are similar when we use IV estimation (Appendix Table A9).

We further assess whether the impact on destination preferences depends on individuals' prior knowledge about the destinations' income ranking. We split the sample into individuals whose pre-treatment regional income expectations ranked destinations correctly and those who ranked them wrongly. Results show that, as expected, only individuals with incorrect pre-treatment ranking update their destination preferences towards higher-income destinations (Appendix Table A12). The positive but insignificant coefficient for the subsample of Ugandans with correct pre-treatment ranking mirrors the finding of Figure A8. Compared to Ghana, a smaller share of Ugandans selected their destination preferences in line with their income ranking thereby still leaving room for the information treatment to correct the destination preferences though to a lesser extent.

15. For the models to converge we had to add noise to the binary control variables and instead of using different dummies for each educational level as done before we now used one categorical variable for education. Moreover, in Ghana, we combined the destination regions Upper East and Upper West into one category. Moreover, because the different destination regions might not be completely independent of each other, we additionally run multinomial probit regressions (results available on request), and the results are almost identical.

5.4. Demand effects

Experimenter demand effects refer to changes in behavior or survey responses of experimental subjects based on their believes about what is expected of them rather than an intrinsic change in their behavior or response. Treatment effect estimates using self-reported outcomes are in particular prone to demand effect biases. We intended to limit concerns about experimenter demand effects by emphasizing the anonymity of responses. In addition, we asked a random subsample of Ghanaian participants to select the answers on the survey tablets on their own in a way that enumerators could not observe the selected response. For another subsample in Ghana, enumerators emphasized that responses will not affect their chances of being selected for the ProfArts program.[16] The treatment effects for participants who self-selected the answer or received the disclaimer did not differ from those who did not (Appendix Table A13). For all regressions, we observe a small positive but statistically insignificant coefficient of the interaction term. We therefore conclude that experimenter demand effects do not drive our results.

5.5. Moderating factors of belief updating

The theory of change of our experiment is based on two interlinked updating procedures. In a first step, we expect the information campaign to cause an update of region-specific income expectations among treated participants. In a second step, we expect the induced change in income expectations to cause a change in participants' migration preferences. The actual change in participants' income expectations for the different regions post-treatment was not directly measured to avoid participants feeling like they were tested. However, participants in Uganda were asked about their income aspirations in five years. Individuals who received the information treatment indicated monthly earnings that are significantly lower by 78.3 USD than those of control participants (Appendix Table A14).[17] Again, the effect is driven by the subsample of individuals who underestimated the maximum income differential. The information treatment's impact on income aspirations suggests that individuals do use the provided information to update their income expectations.

The updating procedures that mediate the effect of the information treatment on migration preferences are subject to a multitude of moderating

16. In Uganda, the experiment took place after the program completion. Therefore, such an additional disclaimer was not required.

17. Note that the heterogeneity is defined by the income differential as in 1, i.e. actual incomes relative to expectations in home and destination region, but overall participants in Uganda overestimated regional incomes (see 1), so that a relative reduction in income aspirations is what we would expect to see.

factors including (1) participants' prior income expectations, (2) participants' prior migration preferences, (3) participants' understanding of, trust in, and perceived relevance of the provided information, and (4) participants' weighting of income as one relevant factor within the migration calculus.

The first determinant has partly been addressed already by the differentiation between participants who underestimated and overestimated the true maximum income differential. Results have shown that the income expectation updating process indeed seems to differ across these subgroups. As predicted by our conceptual framework, overoptimistic Ugandan respondents reduce intentions to migrate, while pessimistic respondents in Ghana shifted their internal migration intentions towards higher categories of intent. Further, destination preferences are only corrected towards higher-income destinations among initially pessimistic participants. This finding adds to the belief updating literature about asymmetric updating and suggests that also within the migration calculus, individuals might be more responsive to good news, i.e., migration encouraging information, than bad news, i.e., migration discouraging information.

Whether participants change their income expectations likely depends on how accurate their income expectations were already at the outset. We summarize an individuals accuracy of expectations over all regions by calculating an individual level Spearman rank order correlation of the expected and the true income ranking, i.e., for each participant we have 5 observations, one for each region. The Spearman coefficient varies between -1 and +1, where +1 indicates a perfect association of ranks, 0 no association, and -1 a perfect negative association. The results in columns (5) and (12) of Table 5 show that only participants with slighter deviations (Spearman correlation of -0.5 to 0.5) update their destination preferences, whereas participants whose income expectations were very far from the actual ranking (-1 to -0.5) do not update. The effects on migration intentions presented in column (1) show no heterogeneity by participants' accuracy of prior income expectations.

We asses the second moderating factor, initial migration preferences, by estimating effect heterogeneities between participants with higher and lower pre-treatment intentions to migrate internally. For participants with higher migration intentions the information might be more relevant and, thus, updating of migration expectations more salient. We define high migration intentions as wanting to migrate "a lot". Columns (2), (6), (10), and (13) of Table 5 show that the treatment effects for high intention participants do not significantly differ from low intention participants and suggest that belief updating is independent of prior migration intent.

TABLE 5. Moderating factors.

	Ghana								Uganda					
	Internal migration intentions				Ln(income) at 1st destination				Internal migration intentions			Ln(income) at 1st destination		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Treated (assigned)	0.001	0.004	0.000	0.009	0.028	0.037*	0.021	0.042**	-0.035	-0.038	-0.059**	0.025	0.036	0.053*
	(0.005)	(0.008)	(0.006)	(0.006)	(0.019)	(0.021)	(0.021)	(0.021)	(0.024)	(0.025)	(0.023)	(0.029)	(0.029)	(0.030)
Treatment X spearman (-1 to -0.5)	0.015				0.091				-0.082			0.012		
	(0.024)				(0.086)				(0.055)			(0.096)		
Treatment X spearman (-0.5 to 0)	-0.023				0.157**				0.002			0.024		
	(0.023)				(0.070)				(0.043)			(0.056)		
Treatment X spearman (0 to 0.5)	0.017				0.072				-0.029			0.077		
	(0.014)				(0.056)				(0.037)			(0.049)		
Combined p-value, spearman (-1 to -0.5)	0.504				0.155				0.019			0.000		
Combined p-value, spearman (-0.5 to 0)	0.333				0.006				0.354			0.702		
Combined p-value, spearman (0 to 0.5)	0.171				0.059				0.022			0.964		
Treatment X high intentions		-0.003				0.020				-0.016			0.018	
		(0.009)				(0.024)				(0.031)			(0.033)	
Combined p-value		0.804				0.004				0.006			0.027	
Treatment X higher education			0.005				0.070**				0.022			-0.010
			(0.010)				(0.034)				(0.031)			(0.041)
Combined p-value			0.489				0.001				0.070			0.128
Treatment X higher cognitive skills				-0.023**				0.020						
				(0.010)				(0.035)						
Combined p-value				0.078				0.028						
Control mean	0.783	0.783	0.783	0.783	5.874	5.874	5.874	5.874	0.796	0.796	0.796	3.532	3.532	3.532
Region FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results from OLS estimations. Coefficients in each column belong to a separate regression. Regressions are run only on the total sample without differentiating between over- and underestimation. Models include the pre-treatment outcome, age, gender, marriage, employment situation, education, and household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

The third group of moderating factors regards the understanding of, trust in, and perceived relevance of the provided income information. To a large extent these factors are addressed by the consistency of our main results as well as the subsample analysis results by initial under- or overestimation. If individuals would not understand, trust or perceive the information as relevant at all, we would expect to observe no impact on migration intentions, destination preferences or income aspirations. Approximately 18 months after the intervention, 2,451 treated Ghanaian participants were followed up for another interview. About one third of the treated individuals remembered the infographic and among those 72.3% indicated that they trusted the provided information and 68.0% perceived the information as relevant (Appendix Figure A10). To further examine to what extent the understanding of the information matters, we look at effect heterogeneities by participants' cognitive skills (Ghana only, column (4) and (8) of Table 5) and educational level (columns (3), (7), (11), and (14) of Table 5). There are no significant differential treatment effects by educational status on migration intentions in either country. For higher educated Ghanaians, the information treatment has significantly higher effects on expected income gains from their preferred destination than for lower educated Ghanaians. However, we do not observe the same in Uganda. Effect heterogeneities by cognitive skills are insignificant for destination preferences. For intentions to migrate, the information treatment impact for Ghanaians with higher cognitive skills is significantly lower than for Ghanaians with lower cognitive skills. These results suggest that individuals with higher cognitive skills or educational status do not update more consistently than individuals with lower cognitive skills or educational status. Therefore, insufficient understanding of the provided information does not seem to mute treatment effects.

Low perceived relevance of the provided information might render the treatment ineffective, irrespective of the importance of income at destination as a decision factor in the migration calculus. Mean incomes and median wages may not be specific enough to the individual. Participants might consider the income figures as either out of their reach or far below their income expectations, or they believe that the sector-, position- and task-independent wages are just not informative about their personal income potential at destination. To address this concern, we compare the provided cross-sectoral incomes with construction sector-specific incomes (Appendix Figure A11) and incomes of participants in our study by region (Appendix Figure A12). In Ghana, the variation of incomes across regions is lower when looking only at the construction sector but regional income differentials persist. On average, the monthly construction sector-specific per capita income is 41.1 USD lower than the cross-sectoral income. The deviation reduces to 16.3 USD when we exclude Accra and Brong-Ahafo, which have construction sector incomes that are substantially higher than the other regions. In Uganda, deviations are minimal

with wages being 5.6 USD lower in the construction sector than the cross-sectoral average and the regional ranking changes only slightly. The highest income region of both countries does not differ when either cross-sectoral or construction sector incomes are used. A similar picture emerges when looking at the income variation across regions in our study sample. Overall, it seems that the cross-sectoral incomes are relevant also for construction workers. Using cross-sectoral information has the advantage that these incomes are relevant for individuals who do not work in the construction sector, too.

The last point we turn to is the weighting of income at destination as a factor in the migration calculus. For example, the probability to be employed might be a more relevant decision factor than income conditional on employment. The decision factor weighting is an effect moderator situated at the link between income expectations and migration decisions. If income is a low rather than a high weighted factor in the migration calculus, then, all else equal, income expectations will be updated to the same extent, but the change in migration preferences will be lower. To examine the relevance of income as a decision factor, we asked Ghanaian participants in a follow-up survey 18 months after the information treatment about the aspects they consider before they decide to migrate in a multiple-response question. 58.8% indicated that income is one of the aspects they would consider within their migration calculus. While this does not speak to the relative importance of income compared to other decision factors, it is reassuring that the majority of respondents does mention income at destination as a relevant factor. On the contrary, a large share, 41.2%, does not mention income at all. Our treatment effects estimates do suggest that the migration calculus may differ for different dimensions of migration decisions. The results are consistent with income being a low weight factor for the decision whether to migrate, but a high weight factor for where to migrate.

6. Conclusion

We conducted an information experiment in Ghana and Uganda to study the role of information frictions for suboptimal migration decisions. The information we provided was about regional income differentials. Based on the underlying theoretical framework, we expected participants to adapt their migration intentions and destination preferences due to an update in regional income expectations provoked by the provided information.

The results of our analysis show that study participants of both countries have biased perceptions about regional income differentials. The information treatment only led to small changes in migration intentions in Ghana whereas in Uganda migration intentions decreased by 5.9% relative to the control mean as a result of respondents' strong overestimation of expected income gains. In both countries, the provided information significantly impacted destination preferences towards regions with higher incomes. The effect on destination

preferences is concentrated among individuals who previously underestimated the existing income differentials, whereas no significant change in destination preferences occurs among initially overoptimistic individuals. This suggests that individuals update their beliefs asymmetrically and put more weight on migration-encouraging information and less weight on migration-discouraging information.

Our results speak to the importance of decision factors in the migration calculus. Regional income differentials seem to play a salient role for decisions about *where* to migrate and a smaller but still significant role in the decision of *whether* to migrate. Thus, the weighting of factors in the migration calculus moderates the efficacy of information friction reductions.

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Online Appendix

A. Intervention design

Male respondents of the information experiment treatment group living in Northern Uganda received the following description: *Here is how much a median man earned per month from his main job in each region, in Ugandan Shilling. This data is from when it was last collected by the Uganda Bureau of Statistics in 2016/2017.*

- *In **Northern** Uganda, where you currently reside, the median wage in the main job is **160,000** Ugandan Shilling.*
- *In **Kampala**, the median wage in the main job is 400,000 Ugandan Shilling, that is **2.5 times** as much as the median wage in Northern Uganda, where you reside.*
- *In **Central Uganda**, the median wage in the main job is 250,000 Ugandan Shilling, that is **1.56 times** as much as the median wage in Northern Uganda, where you reside.*
- *In **Eastern Uganda**, the median wage in the main job is 154,000 Ugandan Shilling, that is **0.96 times** as much as the median wage in Northern Uganda, where you reside.*
- *In **Western Uganda**, the median wage in the main job is 150,000 Ugandan Shilling, that is **0.94 times** as much as the median wage in Northern Uganda, where you reside.*

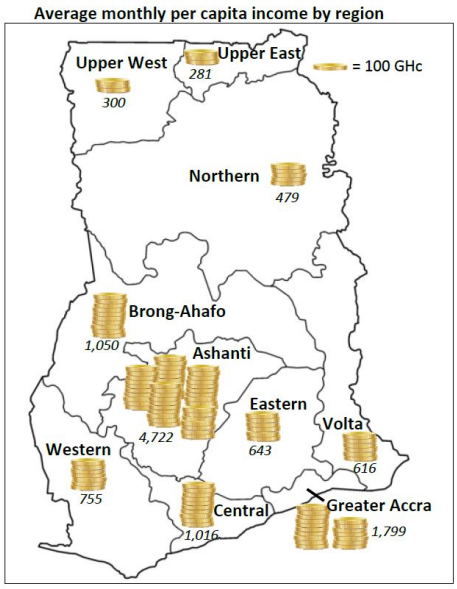

FIGURE A1. Infographic of information experiment in Ghana.

B. Sample attrition and external validity

TABLE A1. Attrition in study sample.

Available information	Ghana	Uganda	Total
Pre- and post	5,081	804	5,885
	(93.73%)	(97.04%)	(94.18%)
Pre only	29	5	34
	(0.53%)	(0.60%)	(0.54%)
Post only	68	8	76
	(1.25%)	(0.97%)	(1.22%)
Never answered	232	11	254
	(4.48%)	(1.33%)	(4.06%)
Total	5,410	828	6,238

Note: Table shows how many individuals in each sample provided information on any of the outcome variables before and after the treatment (row 1), only before the treatment (row 2), only after the treatment (row 3), and never (row 4).

TABLE A2. Test differential attrition rate.

	Ghana	Uganda
	(1)	(2)
Treatment	0.002	0.009
	(0.002)	(0.006)
Observations	5,110	809
Control mean	0.005	0.002
Region FE	✓	✓

Note: Table shows OLS estimation results for the effect of treatment assignment on sample attrition, conditional on having answered prior to treatment (excludes 300 observations). Models include age, gender, marriage, employment situation, education, and household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

TABLE A3. Test selective attrition.

	Ghana				Uganda			
	Non-attriters (1)	Attriters (2)	Diff. (3)	P-value (4)	Non-attriters (5)	Attriters (6)	Diff. (7)	P-value (8)
Pre-treatment outcomes								
Migration intention	0.78	0.72	0.05	0.00	0.83	0.53	0.30	0.00
	(0.00)	(0.06)	(0.05)		(0.01)	(0.17)	(0.10)	
1^{st} choice mirrors income ranking	0.45	0.28	0.17	0.16	0.21	0.20	0.01	0.98
	(0.01)	(0.08)	(0.09)		(0.01)	(0.20)	(0.18)	
2^{nd} choice mirrors income ranking	0.26	0.17	0.08	0.58	0.24	0.00	0.24	0.24
	(0.01)	(0.07)	(0.08)		(0.02)	(0.00)	(0.19)	
1^{st} and 2^{nd} choice mirror ranking	0.18	0.07	0.11	0.06	0.05	0.00	0.05	0.86
	(0.01)	(0.05)	(0.07)		(0.01)	(0.00)	(0.10)	
Ln(monthly income, USD)	6.06	6.03	0.03	0.50	3.65	3.47	0.18	0.40
	(0.01)	(0.11)	(0.11)		(0.01)	(0.18)	(0.14)	
Income ranking	8.04	8.00	0.04	0.33	7.72	7.70	0.02	0.96
	(0.02)	(0.26)	(0.32)		(0.03)	(0.34)	(0.43)	
Higher income	0.59	0.62	-0.03	0.00	0.39	0.20	0.19	0.00
	(0.01)	(0.09)	(0.09)		(0.02)	(0.20)	(0.22)	
Joint F-stat.				0.454				0.390
N	5,081	29	5,110		804	5	809	

Note: Table shows baseline averages using observations with full information on control variables and excluding observations for which pre-treatment outcomes are missing. The values displayed for the differences are the differences in means across attriters and non-attriters sand their standard errors in parentheses. The p-values belong to a joint orthogonality test on the groups. Values displayed for F-stat are F-statistics for joint significance of all balance variables.

Table A4. External validity.

	Ghana		Uganda	
	Sample	GLSS7	Sample	UNHS 19/20
	(1)	(2)	(3)	(4)
Female, %	0.35	51.50	13.16	50.90
Household size	4.46	3.80	4.96	4.60
Age group, %				
— 0 - 14	0.00	40.29	0.00	47.01
— 15 - 19	1.31	11.78	1.33	12.25
— 20 - 29	36.34	15.29	83.21	16.93
— 30 - 39	38.13	12.19	14.98	10.12
— 40 - 49	18.48	8.26	0.36	6.48
— 50 - 59	4.86	5.99	0.12	3.93
— 60+	0.87	6.20	0.00	3.28
Never married, %	46.69	52.20	80.56	50.60
Highest education, %				
— None	4.25	11.10	0.00	51.53
— Primary	8.47	30.20	2.66	16.26
— JHS	47.76	31.90	16.55	18.95
— SHS	33.66	16.10	26.93	2.12
— TVET	2.85	5.30	45.17	8.73
— Degree and above	3.01	4.90	8.70	2.41
Unemployment, %	1.66	7.49	27.66	8.70
Status among employed				
— Employee, %	42.63	52.80	74.46	56.70
— Self-employed, %	57.37	47.00	20.70	45.00
— Other, %	0.00	0.20	4.84	0.40
Banking				
— Bank account, %	47.08	22.70	47.34	13.00
— Savings, %	30.74	82.80	-	-
— SACCO	-	-	3.99	6.1
— Mobile Money	-	-	92.63	26.40
— VSLA	-	-	6.52	14.8
Household assets				
— Land/plot,%	42.13	13.20	54.23	70.60
— Generator, %	5.23	0.50	-	-
— Radio, %	-	-	57.00	36.20
— TV, %	-	-	47.22	20.20

Note: Age distribution, marital status, educational attainment, employment status, and asset ownership refer to the male population only. Data were taken from the main reports of GLLS7 and UNHS 2019/20. Data on the Ugandan age distribution were taken from the single year mid year projections of the Ugandan Bureau of Statistics. Data on the share of population that owns land from UNHS 2016/17 since it was not provided in the main report from 2019/20.

C. Additional sample description

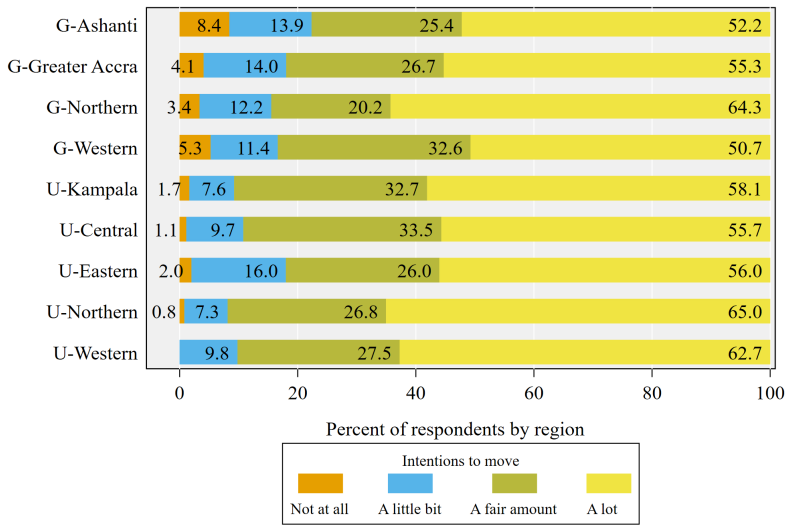

FIGURE A2. Internal migration intentions prior to treatment across regions.

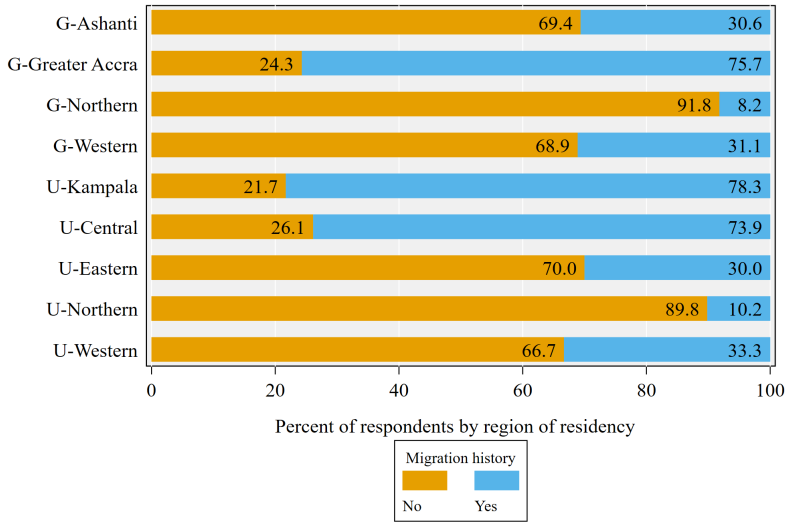

FIGURE A3. Migratory background across regions.

TABLE A5. Baseline differences between individuals who under- and overestimate the maximum income difference.

	Ghana				Uganda			
	Overestimated ($\hat{D}\downarrow$)	Underestimated ($\hat{D}\uparrow$)	Diff.	P-value	Overestimated ($\hat{D}\downarrow$)	Underestimated ($\hat{D}\uparrow$)	Diff.	P-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Socio-demographic characteristics								
Age	33.69	33.48	0.22	0.20	25.66	25.78	-0.13	0.65
	(0.26)	(0.16)	(0.30)		(0.18)	(0.22)	(0.28)	
Gender, 1=male 2=female	1.00	1.00	-0.00	0.08	1.18	1.07	0.11	0.00
	(0.00)	(0.00)	(0.00)		(0.02)	(0.01)	(0.02)	
Married, binary	0.51	0.55	-0.04	0.01	0.15	0.23	-0.08	0.01
	(0.01)	(0.01)	(0.02)		(0.02)	(0.02)	(0.03)	
Unemployed	0.01	0.02	-0.00	0.59	0.30	0.27	0.03	0.09
	(0.00)	(0.00)	(0.00)		(0.02)	(0.02)	(0.03)	
Employed, employee	0.37	0.42	-0.04	0.00	0.52	0.56	-0.04	0.42
	(0.01)	(0.01)	(0.02)		(0.02)	(0.03)	(0.04)	
Employed, selfemployed	0.61	0.56	0.05	0.00	0.16	0.13	0.03	0.38
	(0.01)	(0.01)	(0.02)		(0.02)	(0.02)	(0.03)	
Contract type	1.77	1.39	0.39	0.00	1.09	1.20	-0.11	0.41
	(0.05)	(0.03)	(0.06)		(0.06)	(0.06)	(0.08)	
No formal education	0.03	0.04	-0.02	0.00	-	-	-	-
	(0.00)	(0.00)	(0.01)					
Primary	0.07	0.08	-0.01	0.07	0.01	0.04	-0.03	0.03
	(0.01)	(0.00)	(0.01)		(0.01)	(0.01)	(0.01)	
Junior secondary	0.54	0.45	0.09	0.00	0.16	0.18	-0.02	0.54
	(0.01)	(0.01)	(0.02)		(0.02)	(0.02)	(0.03)	
Senior secondary	0.31	0.36	-0.04	0.00	0.31	0.24	0.07	0.03
	(0.01)	(0.01)	(0.02)		(0.02)	(0.02)	(0.03)	
TVET	0.02	0.03	-0.01	0.33	0.42	0.47	-0.05	0.06
	(0.00)	(0.00)	(0.01)		(0.02)	(0.03)	(0.04)	
Tertiary	0.02	0.04	-0.01	0.00	0.10	0.07	0.03	0.33
	(0.00)	(0.00)	(0.01)		(0.02)	(0.01)	(0.02)	
Household asset index (mean)	0.52	0.47	0.05	0.00	0.43	0.41	0.02	0.52
	(0.01)	(0.00)	(0.01)		(0.01)	(0.01)	(0.02)	
Joint F-stat.				0.000				0.001
Pre-treatment outcomes								
Migration intention	0.78	0.78	-0.00	0.00	0.83	0.83	0.01	0.90
	(0.01)	(0.01)	(0.01)		(0.01)	(0.01)	(0.02)	
1^{st} choice mirrors income ranking	0.72	0.34	0.38	0.00	0.19	0.23	-0.04	0.31
	(0.01)	(0.01)	(0.02)		(0.02)	(0.02)	(0.03)	
2^{nd} choice mirrors income ranking	0.40	0.18	0.22	0.00	0.27	0.22	0.06	0.03
	(0.01)	(0.01)	(0.01)		(0.02)	(0.02)	(0.03)	
1^{st} and 2^{nd} choice mirror ranking	0.29	0.12	0.17	0.00	0.05	0.05	-0.01	0.64
	(0.01)	(0.01)	(0.01)		(0.01)	(0.01)	(0.02)	
Ln(monthly income, USD)	5.97	6.08	-0.12	0.00	3.58	3.74	-0.16	0.00
	(0.02)	(0.01)	(0.02)		(0.01)	(0.02)	(0.02)	
Income ranking	8.25	7.90	0.35	0.00	7.62	7.82	-0.21	0.01
	(0.05)	(0.03)	(0.06)		(0.05)	(0.05)	(0.07)	
Higher income	0.04	0.77	-0.73	0.00	0.25	0.53	-0.28	0.00
	(0.01)	(0.01)	(0.01)		(0.02)	(0.03)	(0.03)	
Joint F-stat.				0.000				0.000
N	1,202	3,172	4,374		404	378	782	

Note: Table shows baseline averages using observations with full information on control variables across subsamples. The values displayed for the differences are the differences in means across participants who underestimated and who overestimated the maximum income differential. The standard errors are displayed in parentheses. The p-values belong to a joint orthogonality test on the groups. Values displayed for F-stat are F-statistics for joint significance of all balance variables.

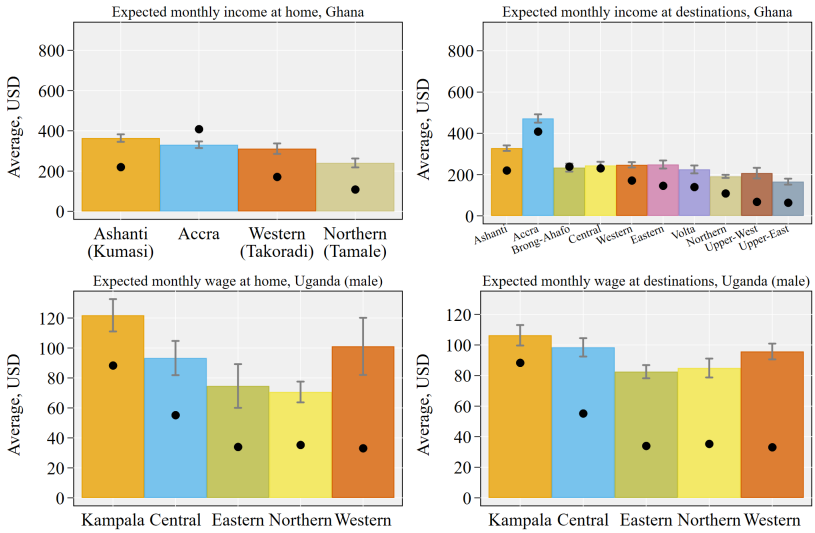

FIGURE A4. Income expectations prior to treatment. The bars indicate the average expected monthly mean income (median wage) for the respective region in USD. The black dots represent the true inflation adjusted mean income (median wage) in USD from secondary data. The left graphs show expectations for respondents' home region and the right ones for potential destinations.

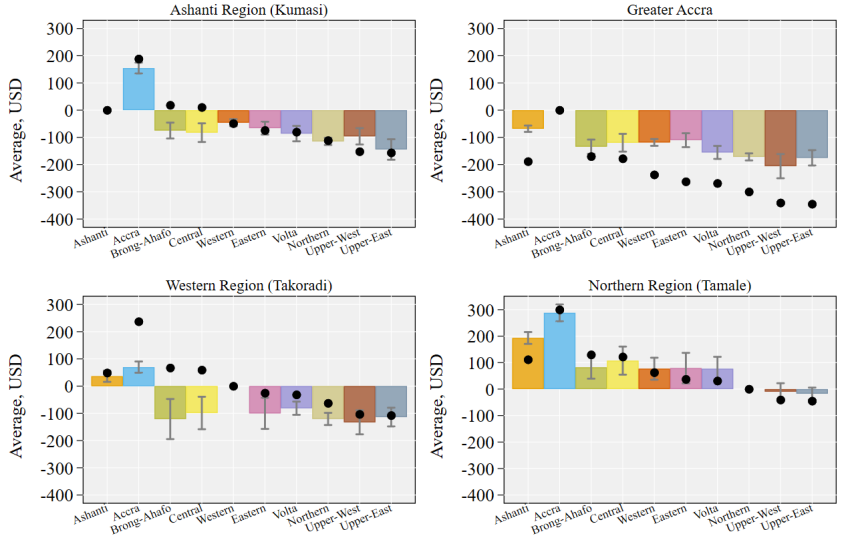

FIGURE A5. Expected income differences (destination - home) in Ghana. The bars indicate the average expected income differential for the respective destinations. The black dots represent the true maximum income differential based on inflation adjusted secondary data.

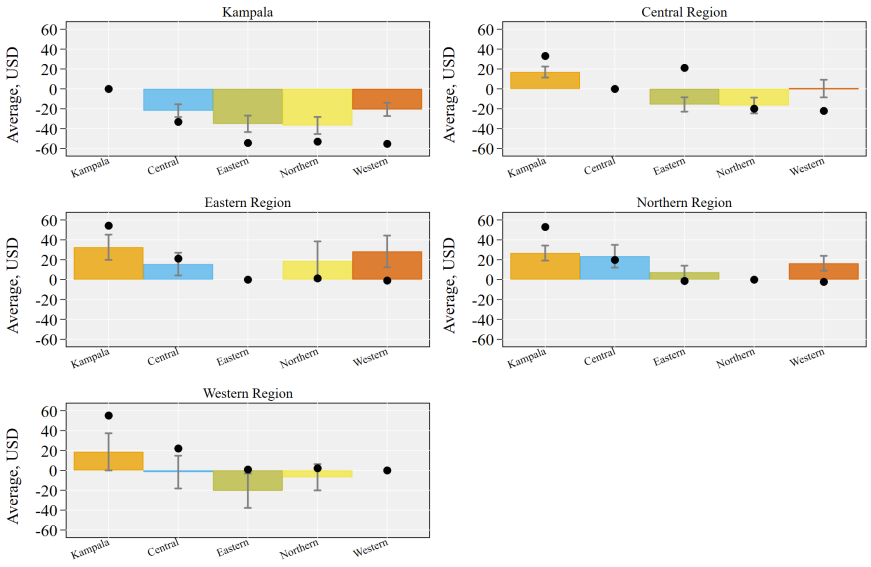

FIGURE A6. Expected income differences (destination - home) in Uganda. The bars indicate the average expected income differential for the respective destinations. The black dots represent the true maximum income differential based on inflation adjusted secondary data.

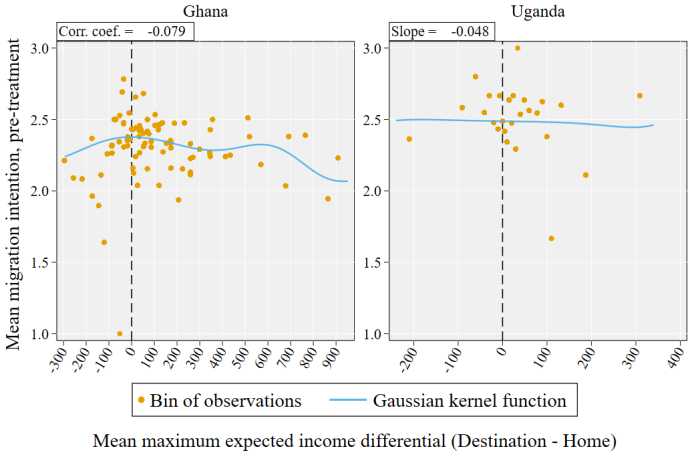

FIGURE A7. Correlation between migration intentions pre-treatment and maximum expected income differential. Observations were grouped into bins based on the quantiles of the maximum expected income differential. Mean migration intentions and mean maximum expected income differential were calculated over all observations belonging to the same bin. Migration intentions range from "not at all" (0) and "a lot" (3).

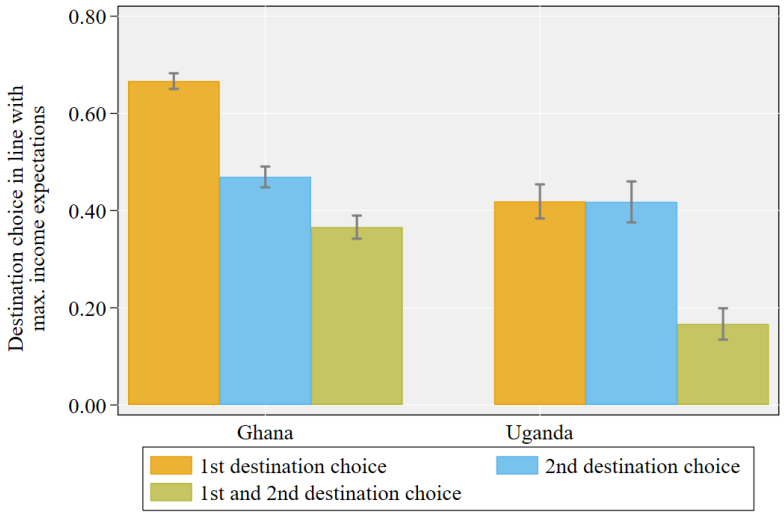

FIGURE A8. Share of respondents whose pre-treatment destination preferences mirror the ranking of their income expectations.

D. Additional results on migration intentions

TABLE A6. Effect on migration intentions across regions, OLS and IV.

	Ghana				Uganda				
	Accra	Kumasi	Takoradi	Tamale	Kampala	Central	Eastern	Northern	Western
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: OLS estimations									
Treated (assigned)	0.013	-0.006	0.003	0.002	-0.047*	-0.072*	-0.085	-0.019	-0.096
	(0.009)	(0.009)	(0.009)	(0.011)	(0.026)	(0.037)	(0.051)	(0.027)	(0.075)
Panel B: IV estimations									
Treated (delivered)	0.043	-0.036	0.011	0.020	-0.061*	-0.089**	-0.122*	-0.026	-0.128
	(0.030)	(0.053)	(0.037)	(0.112)	(0.033)	(0.044)	(0.066)	(0.036)	(0.090)
1^{st} stage F-stat.	384	144	264	35	450	308	41	359	47
Observations	1,692	1,397	1,617	683	303	176	50	246	51
Control mean	0.797	0.751	0.784	0.808	0.790	0.773	0.819	0.807	0.845

Note: Table shows estimation results from OLS (Panel A) and IV estimations (Panel B) for the treatment effect on internal migration intentions. Regressions are run separately for each region of residency. IV estimations use treatment assignment as instrument for treatment intensity (display duration of at least 45 seconds in Ghana and 60 seconds in Uganda). The outcome variable varies between 0 (Not at all) and 1 (A lot). Models include pre-treatment outcome, age, marriage, employment situation, education, and household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

E. Additional results on destination preferences

TABLE A7. Effect on destinations reflecting the maximum income differential, IV.

	Ghana			Uganda		
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: 1^{st} ***destination preference***						
Treated (delivered)	0.151***	0.197***	0.052	0.095***	0.177***	0.025
	(0.047)	(0.060)	(0.087)	(0.033)	(0.054)	(0.043)
Observations	5,195	3,108	1,125	824	377	403
Control mean	0.525	0.449	0.759	0.159	0.160	0.165
1^{st} stage F-stat.	769	522	124	1,288	492	681
Panel B: 2^{nd} ***destination preference***						
Treated (delivered)	0.024	0.057	-0.065	0.044	0.002	0.092*
	(0.045)	(0.052)	(0.121)	(0.033)	(0.050)	(0.048)
Observations	5,105	3,079	1,105	806	367	398
Control mean	0.330	0.249	0.492	0.218	0.209	0.246
1^{st} stage F-stat.	752	512	120	1,286	508	657
Panel C: 3^{rd} ***destination preference***						
Treated (delivered)	0.029	0.078	-0.108	0.046***	0.074**	0.018
	(0.043)	(0.050)	(0.121)	(0.018)	(0.030)	(0.023)
Observations	5,098	3,078	1,102	804	366	397
Control mean	0.264	0.202	0.398	0.025	0.027	0.026
1^{st} stage F-stat.	749	512	119	1,275	498	664
Region FE	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results for IV estimations for the effect of treatment delivery on the probability of selecting the destination preferences such that it mirrors the highest possible income differential. Treatment assignment is used as instrument for treatment intensity (display duration of at least 45 seconds in Ghana and 60 seconds in Uganda). Panel A only considers the first preference, Panel B only the second preference, and Panel C both preferences jointly. Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D}\uparrow$), and the subsample who overestimated the differential ($\hat{D}\downarrow$). Models include pre-treatment outcome, age, gender, marriage, employment situation, education, and household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

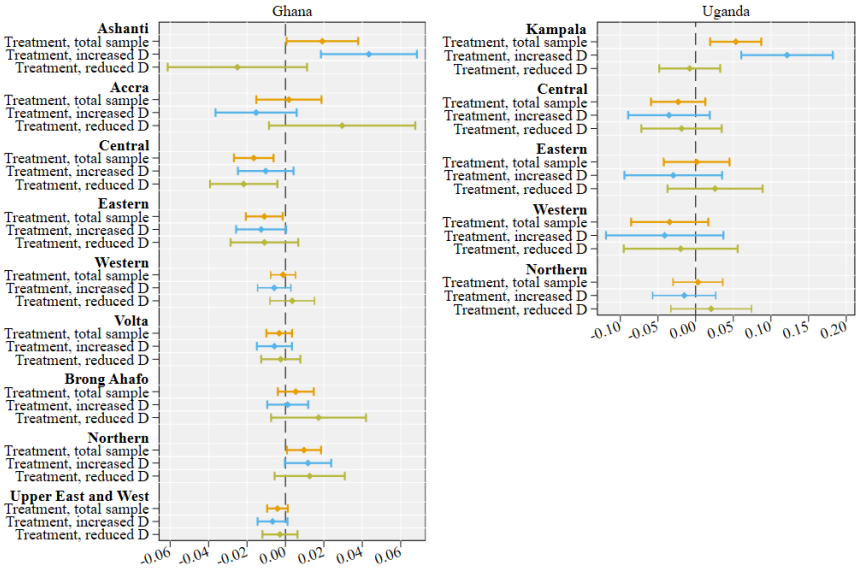

FIGURE A9. Average marginal effects on first destination preference. Results are based on multinomial logit regressions for individuals' first destination preference. The left chart shows results for Ghana and the right one for Uganda. Results for each subsample were calculated in a separate regression and indicates the change in probability to select the respective region displayed on the y-axis as first preference after receiving the income information compared to individuals of the control group. Estimates are displayed together with their 90% confidence intervals.

TABLE A8. Effect on income at average destination preference, OLS.

	Ghana			Uganda		
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Average Ln(income, USD) at destination						
Treated (assigned)	0.031***	0.046***	0.019	0.024*	0.033	0.018
	(0.011)	(0.015)	(0.018)	(0.014)	(0.024)	(0.017)
Observations	5,098	3,078	1,102	805	366	397
Control mean	5.864	5.882	5.820	3.538	3.604	3.483
Panel B: Average income ranking of destination						
Treated (assigned)	0.078***	0.122***	0.024	0.103*	0.124	0.080
	(0.030)	(0.041)	(0.049)	(0.054)	(0.088)	(0.073)
Observations	5,098	3,078	1,102	805	366	397
Control mean	8.283	8.155	8.561	7.648	7.726	7.563
Panel C: Income higher at destination, average						
Treated (assigned)	0.019***	0.032***	-0.000	0.006	0.017	0.002
	(0.007)	(0.010)	(0.002)	(0.019)	(0.034)	(0.023)
Observations	5,410	3,172	1,202	828	378	404
Control mean	0.587	0.810	0.028	0.382	0.505	0.251
Region FE	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results from OLS estimations for the effect of treatment assignment on the income characteristics of the average destination preference. Panel A uses logarithmized income in USD, Panel B the income ranking, and Panel C a dummy indicating whether the destination has a higher income than the region of residence. All outcome variables and pre-treatment controls use the mean over first and second destination preference. Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D}\uparrow$), and the subsample who overestimated the differential ($\hat{D}\downarrow$). Models include pre-treatment outcome, age, gender, marriage, employment situation, education, and a household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

TABLE A9. Effect on income at average destination preference, IV.

	Ghana			Uganda		
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Average Ln(income, USD) at destination						
Treated (delivered)	0.144***	0.194***	0.106	0.031*	0.044	0.023
	(0.051)	(0.064)	(0.105)	(0.018)	(0.031)	(0.022)
Observations	5,098	3,078	1,102	805	366	397
Control mean	5.864	5.882	5.820	3.538	3.604	3.483
1^{st} stage F-stat.	749	513	118	,317	542	663
Panel B: Average income ranking of destination						
Treated (delivered)	0.359***	0.514***	0.135	0.133*	0.162	0.101
	(0.137)	(0.176)	(0.278)	(0.069)	(0.113)	(0.091)
Observations	5,098	3,078	1,102	805	366	397
Control mean	8.283	8.155	8.561	7.648	7.726	7.563
1^{st} stage F-stat.	749	513	119	1,299	541	665
Panel C: Income higher at destination, average						
Treated (delivered)	0.085***	0.133***	-0.003	0.008	0.022	0.002
	(0.031)	(0.044)	(0.011)	(0.025)	(0.045)	(0.028)
Observations	5,410	3,172	1,202	828	378	404
Control mean	0.587	0.810	0.028	0.382	0.505	0.251
1^{st} stage F-stat.	819	538	133	1,313	509	681
Region FE	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results from IV estimations for the effect of treatment delivery on the income characteristics of the average destination preference. Treatment assignment is used as instrument for treatment intensity (display duration of at least 45 seconds in Ghana and 60 seconds in Uganda). Panel A uses logarithmized income in USD, Panel B the income ranking, and Panel C a dummy indicating whether the destination has a higher income than the region of residence. All outcome variables and pre-treatment controls use the mean over first and second destination preference. Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D}\uparrow$), and the subsample who overestimated the differential ($\hat{D}\downarrow$). Models include pre-treatment outcome, age, gender, marriage, employment situation, education, and a household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

TABLE A10. Effect on income at 1^{st} destination preference, OLS.

	Ghana			Uganda		
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Ln(income, USD) at 1^{st} destination						
Treated (assigned)	0.048***	0.083***	0.005	0.046**	0.096***	-0.005
	(0.017)	(0.023)	(0.026)	(0.021)	(0.036)	(0.024)
Observations	5,195	3,108	1,125	825	377	403
Control mean	5.874	5.876	5.876	3.532	3.598	3.490
Panel B: Income ranking of 1^{st} destination						
Treated (assigned)	0.107**	0.192***	-0.008	0.160*	0.317**	0.004
	(0.042)	(0.060)	(0.064)	(0.085)	(0.143)	(0.112)
Observations	5,195	3,108	1,125	825	377	403
Control mean	8.388	8.291	8.653	7.403	7.476	7.345
Panel C: Income higher at 1^{st} destination						
Treated (assigned)	0.030***	0.047***	0.001	0.033	0.093**	-0.031
	(0.008)	(0.013)	(0.001)	(0.022)	(0.039)	(0.024)
Observations	5,195	3,108	1,125	825	377	403
Control mean	0.508	0.693	0.026	0.257	0.326	0.191
Region FE	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results from OLS estimations for the effect on the income characteristics of the first destination preference. Panel A uses logarithmized income in USD, Panel B the income ranking, and Panel C a dummy indicating whether the destination has a higher income than the region of residence. Income ranking ranges from 1-10 in Ghana and from 6-10 in Uganda. All outcome variables and pre-treatment controls use the first destination preference only. Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D}\uparrow$), and the subsample who overestimated the differential ($\hat{D}\downarrow$). Models include pre-treatment outcome, age, gender, marriage, employment situation, education, and a household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

TABLE A11. Effect on income at 2^{nd} destination preference, OLS.

	Ghana			Uganda		
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Ln(income, USD) at 2^{nd} destination						
Treated (assigned)	0.005	-0.001	0.008	0.005	-0.019	0.039*
	(0.016)	(0.022)	(0.029)	(0.018)	(0.030)	(0.023)
Observations	5,105	3,079	1,105	807	367	398
Control mean	5.511	5.502	5.531	3.490	3.550	3.435
Panel B: Income ranking of 2^{nd} destination						
Treated (assigned)	0.044	0.047	0.027	0.053	-0.034	0.144*
	(0.042)	(0.058)	(0.071)	(0.063)	(0.102)	(0.084)
Observations	5,105	3,079	1,105	807	367	398
Control mean	8.165	8.015	8.473	7.884	7.963	7.780
Panel C: Income higher at 2^{nd} destination						
Treated (assigned)	-0.006	-0.006	-0.003	0.009	-0.017	0.040*
	(0.008)	(0.013)	(0.003)	(0.020)	(0.036)	(0.022)
Observations	5,105	3,079	1,105	807	367	398
Control mean	0.444	0.583	0.031	0.252	0.321	0.157
Region FE	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results from OLS estimations for the effect on the income characteristics of the second destination preference. Panel A uses logarithmized income in USD, Panel B the income ranking, and Panel C a dummy indicating whether the destination has a higher income than the region of residence. Income ranking ranges from 1-10 in Ghana and from 6-10 in Uganda. All outcome variables and pre-treatment controls use the second destination preference only. Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D}\uparrow$), and the subsample who overestimated the differential ($\hat{D}\downarrow$). Models include pre-treatment outcome, age, gender, marriage, employment situation, education, and a household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

TABLE A12. Effect on destination reflecting the maximum income differential, OLS with alternative sample split.

	Ghana			Uganda		
	Total	Rank correct	Rank wrong	Total	Rank correct	Rank wrong
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A:* 1^{st} *destination preference						
Treated (assigned)	0.033***	-0.009	0.042***	0.074***	0.064	0.079**
	(0.010)	(0.042)	(0.011)	(0.026)	(0.048)	(0.031)
Control mean	0.525	0.623	0.522	0.159	0.225	0.128
Panel B: Ln(income, USD) at* 1^{st} *destination						
Treated (assigned)	0.049***	-0.037	0.066***	0.047**	0.059	0.040
	(0.017)	(0.068)	(0.019)	(0.021)	(0.037)	(0.026)
Control mean	5.874	6.119	5.855	3.532	3.588	3.513
Panel C: Income ranking of* 1^{st} *destination						
Treated (assigned)	0.108**	-0.068	0.147***	0.167*	0.151	0.151
	(0.042)	(0.160)	(0.049)	(0.085)	(0.155)	(0.107)
Control mean	8.388	8.922	8.338	7.403	7.473	7.368
Panel D: Income higher at* 1^{st} *destination						
Treated (assigned)	0.030***	0.008	0.034***	0.036*	0.055	0.026
	(0.008)	(0.033)	(0.009)	(0.022)	(0.038)	(0.027)
Control mean	0.508	0.604	0.512	0.257	0.287	0.241
Observations	5,195	337	4,036	825	266	533
Region FE	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results from OLS estimations for the effect on the income characteristics of the first destination preference. Panel A uses the probability of selecting the first destination preference such that it mirrors the highest possible income differential, Panel B the logarithmized income in USD, Panel C the income ranking, and Panel D a dummy indicating whether the destination has a higher income than the region of residence. Income ranking ranges from 1-10 in Ghana and from 6-10 in Uganda. All outcome variables and pre-treatment controls use the first destination preference only. Regressions are run on the total sample, the subsample of individuals whose pre-treatment income ranking of regions was correct, and the subsample whose ranking was wrong. Models include pre-treatment outcome, age, gender, marriage, employment situation, education, and a household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

F. Experimenter demand effects

TABLE A13. Check for existence of experimenter demand effects.

	Ghana					
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Internal migration intentions						
Treated (assigned)	-0.000	0.007	-0.012	-0.001	0.008	-0.015
	(0.005)	(0.007)	(0.011)	(0.005)	(0.007)	(0.011)
Treatment X self-selected	0.006	0.014	0.009			
	(0.013)	(0.019)	(0.024)			
Treatment X additional disclaimer				0.007	0.010	0.038
				(0.013)	(0.018)	(0.025)
Observations	5,229	3,050	1,162	5,229	3,050	1,162
Control mean	0.783	0.793	0.799	0.783	0.793	0.799
Combined p-value	0.673	0.242	0.888	0.610	0.308	0.328
Panel B: 1^{st} destination preference mirrors income ranking						
Treated (assigned)	0.029***	0.044***	0.006	0.032***	0.040***	0.009
	(0.011)	(0.015)	(0.016)	(0.011)	(0.015)	(0.016)
Treatment X self-selected	0.031	0.032	0.014			
	(0.031)	(0.045)	(0.049)			
Treatment X additional disclaimer				0.006	0.058	-0.029
				(0.030)	(0.043)	(0.050)
Observations	5,038	2,996	1,094	5,038	2,996	1,094
Control mean	0.525	0.449	0.759	0.525	0.449	0.759
Combined p-value	0.037	0.071	0.677	0.172	0.016	0.686
Panel C: Ln(income, USD) at destination of 1^{st} preference						
Treated (assigned)	0.042**	0.078***	-0.004	0.045**	0.079***	-0.001
	(0.018)	(0.025)	(0.028)	(0.018)	(0.026)	(0.027)
Treatment X self-selected	0.058	0.084	0.016			
	(0.051)	(0.073)	(0.084)			
Treatment X additional disclaimer				0.023	0.066	-0.029
				(0.050)	(0.071)	(0.096)
Observations	5,038	2,996	1,094	5,038	2,996	1,094
Control mean	5.874	5.876	5.876	5.874	5.876	5.876
Combined p-value	0.035	0.019	0.872	0.148	0.028	0.747
Panel D: Income ranking of 1^{st} destination preference						
Treated (assigned)	0.086*	0.173***	-0.030	0.101**	0.198***	-0.045
	(0.046)	(0.064)	(0.069)	(0.046)	(0.065)	(0.069)
Treatment X self-selected	0.173	0.275	0.010			
	(0.126)	(0.186)	(0.209)			
Treatment X additional disclaimer				0.045	0.072	0.071
				(0.128)	(0.181)	(0.216)
Observations	5,038	2,996	1,094	5,038	2,996	1,094
Control mean	8.388	8.291	8.653	8.388	8.291	8.653
Combined p-value	0.028	0.011	0.918	0.223	0.110	0.902
Panel E: Income of 1^{st} destination preference is higher						
Treated (assigned)	0.027***	0.049***	0.002	0.030***	0.043***	-0.000
	(0.009)	(0.014)	(0.002)	(0.009)	(0.014)	(0.002)
Treatment X self-selected	0.031	0.013	-0.006			
	(0.025)	(0.038)	(0.010)			
Treatment X additional disclaimer				0.012	0.045	0.010
				(0.026)	(0.039)	(0.008)
Observations	5,038	2,996	1,094	5,038	2,996	1,094
Control mean	0.508	0.693	0.026	0.508	0.693	0.026
Combined p-value	0.011	0.086	0.619	0.084	0.016	0.172
Region FE	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results from OLS estimations. Panel A shows the effect of treatment assignment on internal migration intentions, Panel B on the probability that the first preference mirrors the highest possible income differential, Panel C on logarithmized income in USD at the first preference, Panel D on the income ranking of the first preference, and Panel E on a dummy indicating whether the first preference has a higher income than the region of residence. Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D}\uparrow$), and the subsample who overestimated the differential ($\hat{D}\downarrow$). Models include the pre-treatment outcome, age, gender, marriage, employment situation, education, and household asset index as controls. Observations include individuals from both survey rounds in Ghana but experimenter demand checks took place only in the second round. Experimenter demand checks were not incorporated in the Ugandan sample. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

G. Results on moderating factors

TABLE A14. Effect on expected earnings potential, OLS.

	Uganda								
	Expected earnings			Expected earnings, △			Expected earnings among employed, △		
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treated (assigned)	-78.252**	-104.015**	-46.707	-0.871	-1.150	-0.738	-1.610	-1.558*	-1.838
	(37.729)	(50.158)	(61.269)	(0.912)	(0.935)	(1.646)	(1.066)	(0.899)	(1.985)
Observations	792	365	390	674	296	350	497	223	250
Control mean	468.281	439.227	511.505	5.705	5.359	6.199	5.581	5.006	6.342
Region FE	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results for OLS estimations for the effect of treatment assignment on expected earnings potential for in five years (columns (1) to (3)), percentage change between expected earnings and current or last income (columns (4) to (6)), and percentage change between expected earnings and current income (columns (7) to (9)). Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D}\uparrow$), and the subsample who overestimated the differential ($\hat{D}\downarrow$). The outcomes are only available for Uganda and for columns (7) excludes individuals without zero earnings. Models include age, gender, marriage, employment situation, education, and household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

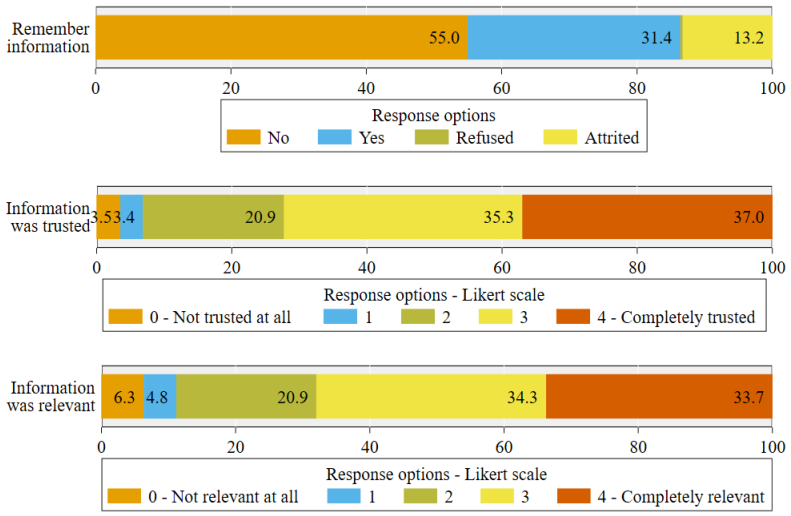

FIGURE A10. Follow-up questions for 2,451 Ghanaian study participants of the treatment group. The upper graph shows the share of treated study participants who remember having seen the infographic in the interview 18 months ago. The middle and bottom graphs show response rates for the questions "To what extent did you trust the information provided by the map?" and "To what extent did you consider the information being relevant for your personal life?", respectively, among follow-up participants who remembered the infographic.

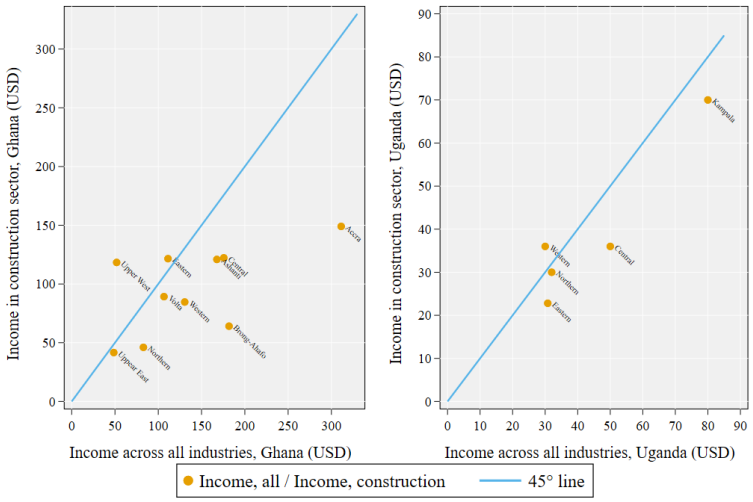

FIGURE A11. Correlation between cross-sectoral and construction sector income information. The left chart compares the average monthly income across all sectors with the average monthly income of people employed in the construction sector based on the GLSS7 micro dataset from Ghana. The right chart compares the median wage across all sectors reported in the UNHS7 main report with the median wage of people employed in the construction sector based on the UNPS 2015/16 micro dataset from Uganda.

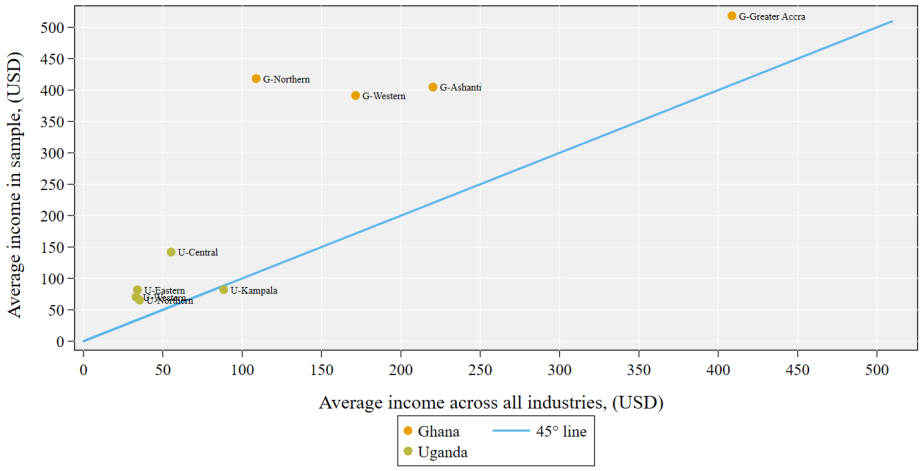

FIGURE A12. Correlation between secondary cross-sectoral income and income distribution of study sample. The secondary income information is based on the GLSS7 micro dataset (Ghana) and the UNHS7 main report (Uganda).

H. Alternative sample compositions

Additionally, we check whether the results are driven by specific subsamples of the data. The provided information might be less relevant for individuals who already reside in the region with the highest income, i.e., the Ashanti region in Ghana and the region of Kampala in Uganda. Similarly, individuals who responded to the question about their interest in internal migration with "Not at all" might care less about the provided information than those who have at least some interest. Neither the exclusion of individuals from Ashanti and Kampala (Table A15) nor individuals who do not want to migrate internally at all (Table A16) do substantially change the overall result of reduced migration intentions in Uganda and correction of destination preferences towards higher-income destinations. The results remain virtually identical when limiting the sample to observations with complete information not only on control but also on all assessed outcome variables (Table A17). Finally, the computation of the logit and probit regressions required adding some random noise to the binary control variables to allow the models to converge. Even though the added noise was marginal, we also repeated all other regressions applying the same modification of the data and results remain exactly the same (Table A18).

TABLE A15. Exclusion of observations from highest income regions.

	Ghana			Uganda		
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Internal migration intentions						
Treated (assigned)	0.007	0.011*	-0.016	-0.044**	-0.033	-0.051
	(0.006)	(0.006)	(0.063)	(0.019)	(0.025)	(0.031)
Observations	3,992	3,158	58	524	319	168
Control mean	0.794	0.794	0.810	0.799	0.790	0.809
Panel B: 1^{st} destination preference mirrors income ranking						
Treated (assigned)	0.047***	0.047***	0.019	0.094***	0.143***	0.025
	(0.016)	(0.014)	(0.026)	(0.035)	(0.046)	(0.062)
Observations	3,893	3,103	57	521	318	168
Control mean	0.439	0.448	0.381	0.185	0.167	0.232
Panel C: Ln(income, USD) at destination of 1^{st} preference						
Treated (assigned)	0.072***	0.085***	0.029	0.066**	0.108**	-0.012
	(0.021)	(0.023)	(0.082)	(0.032)	(0.043)	(0.054)
Observations	3,877	3,103	57	522	318	168
Control mean	5.865	5.876	5.503	3.586	3.627	3.559
Panel D: Income ranking of 1^{st} destination preference						
Treated (assigned)	0.154***	0.195***	0.056	0.230*	0.363**	0.015
	(0.052)	(0.060)	(0.269)	(0.121)	(0.164)	(0.213)
Observations	3,877	3,103	57	522	318	168
Control mean	8.274	8.290	6.905	7.655	7.603	7.817
Panel E: Income of 1^{st} destination preference is higher						
Treated (assigned)	0.041***	0.047***	0.051	0.060*	0.108**	-0.054
	(0.011)	(0.013)	(0.048)	(0.036)	(0.048)	(0.066)
Observations	3,877	3,103	57	522	318	168
Control mean	0.683	0.694	0.667	0.402	0.391	0.451
Region FE	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results from OLS estimations. Panel A shows the effect of treatment assignment on internal migration intentions, Panel B on the probability that the first preference mirrors the highest possible income differential, Panel C on logarithmized income in USD at the first preference, Panel D on the income ranking of the first preference, and Panel E on a dummy indicating whether the first preference has a higher income than the region of residence. Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D}\uparrow$), and the subsample who overestimated the differential ($\hat{D}\downarrow$). Models include the pre-treatment outcome, age, gender, marriage, employment situation, education, and household asset index as controls. Samples were reduced to individuals who do not live in the regions with the highest per capita income. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

TABLE A16. Limitation to individuals with at least some intentions to migrate internally prior to treatment.

	Ghana			Uganda		
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Internal migration intentions						
Treated (assigned)	-0.004	0.002	-0.015	-0.045***	-0.036	-0.054**
	(0.005)	(0.006)	(0.010)	(0.015)	(0.023)	(0.022)
Observations	5,094	3,026	1,112	817	374	399
Control mean	0.815	0.816	0.843	0.801	0.801	0.800
Panel B: 1^{st} destination preference mirrors income ranking						
Treated (assigned)	0.034**	0.047***	0.005	0.073***	0.130***	0.026
	(0.013)	(0.014)	(0.016)	(0.026)	(0.042)	(0.035)
Observations	4,982	2,994	1,048	813	373	398
Control mean	0.523	0.448	0.768	0.159	0.162	0.162
Panel C: Ln(income, USD) at destination of 1^{st} preference						
Treated (assigned)	0.046***	0.086***	0.003	0.045**	0.098***	0.000
	(0.017)	(0.024)	(0.027)	(0.022)	(0.038)	(0.025)
Observations	4,950	2,994	1,048	814	373	398
Control mean	5.876	5.874	5.895	3.535	3.600	3.492
Panel D: Income ranking of 1^{st} destination preference						
Treated (assigned)	0.105**	0.201***	-0.020	0.162*	0.320**	0.030
	(0.043)	(0.060)	(0.066)	(0.089)	(0.148)	(0.115)
Observations	4,950	2,994	1,048	814	373	398
Control mean	8.390	8.287	8.691	7.404	7.476	7.346
Panel E: Income of 1^{st} destination preference is higher						
Treated (assigned)	0.029***	0.046***	0.001	0.034	0.100**	-0.028
	(0.009)	(0.013)	(0.001)	(0.024)	(0.042)	(0.026)
Observations	4,950	2,994	1,048	814	373	398
Control mean	0.515	0.694	0.028	0.261	0.330	0.194
Region FE	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results from OLS estimations. Panel A shows the effect of treatment assignment on internal migration intentions, Panel B on the probability that the first preference mirrors the highest possible income differential, Panel C on logarithmized income in USD at the first preference, Panel D on the income ranking of the first preference, and Panel E on a dummy indicating whether the first preference has a higher income than the region of residence. Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D}\uparrow$), and the subsample who overestimated the differential ($\hat{D}\downarrow$). Models include the pre-treatment outcome, age, gender, marriage, employment situation, education, and household asset index as controls. Samples were reduced to individuals who have at least some intention to migrate internally prior to treatment. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

TABLE A17. Limitation to individuals with full information on all outcome variables.

	Ghana			Uganda		
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Internal migration intentions						
Treated (assigned)	0.002	0.010	-0.010	-0.039***	-0.027	-0.049**
	(0.005)	(0.006)	(0.010)	(0.015)	(0.023)	(0.022)
Observations	5,081	3,071	1,096	804	366	396
Control mean	0.793	0.804	0.795	0.801	0.803	0.799
Panel B: 1^{st} destination preference mirrors income ranking						
Treated (assigned)	0.033***	0.045***	0.013	0.071***	0.119***	0.027
	(0.010)	(0.014)	(0.016)	(0.026)	(0.042)	(0.035)
Observations	5,081	3,071	1,096	803	366	396
Control mean	0.525	0.449	0.760	0.157	0.161	0.159
Panel C: Ln(income, USD) at destination of 1^{st} preference						
Treated (assigned)	0.047***	0.082***	0.005	0.040*	0.086**	-0.002
	(0.017)	(0.024)	(0.027)	(0.022)	(0.038)	(0.025)
Observations	5,081	3,071	1,096	804	366	396
Control mean	5.878	5.876	5.877	3.535	3.599	3.490
Panel D: Income ranking of 1^{st} destination preference						
Treated (assigned)	0.105**	0.188***	-0.003	0.146*	0.282*	0.017
	(0.043)	(0.060)	(0.065)	(0.089)	(0.148)	(0.114)
Observations	5,081	3,071	1,096	804	366	396
Control mean	8.396	8.291	8.650	7.405	7.478	7.344
Panel E: Income of 1^{st} destination preference is higher						
Treated (assigned)	0.030***	0.046***	0.001	0.028	0.084**	-0.028
	(0.008)	(0.013)	(0.001)	(0.023)	(0.042)	(0.026)
Observations	5,081	3,071	1,096	804	366	396
Control mean	0.514	0.694	0.027	0.259	0.328	0.190
Region FE	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results from OLS estimations. Panel A shows the effect of treatment assignment on internal migration intentions, Panel B on the probability that the first preference mirrors the highest possible income differential, Panel C on logarithmized income in USD at the first preference, Panel D on the income ranking of the first preference, and Panel E on a dummy indicating whether the first preference has a higher income than the region of residence. Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D}\uparrow$), and the subsample who overestimated the differential ($\hat{D}\downarrow$). Models include the pre-treatment outcome, age, gender, marriage, employment situation, education, and household asset index as controls. Samples were reduced to observations with full information not only on control variables but also on all outcome variables. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

TABLE A18. Addition of noise to binary control variables and region FE.

	Ghana			Uganda		
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Internal migration intentions						
Treated (assigned)	0.002	0.010*	-0.007	-0.045***	-0.035	-0.058***
	(0.005)	(0.006)	(0.010)	(0.015)	(0.023)	(0.022)
Observations	5,389	3,163	1,195	827	378	403
Control mean	0.783	0.793	0.799	0.796	0.798	0.797
Panel B: 1^{st} destination preference mirrors income ranking						
Treated (assigned)	0.033***	0.046***	0.010	0.076***	0.129***	0.025
	(0.010)	(0.014)	(0.015)	(0.026)	(0.042)	(0.034)
Observations	5,195	3,108	1,125	824	377	403
Control mean	0.525	0.449	0.759	0.159	0.160	0.165
Panel C: Ln(income, USD) at destination of 1^{st} preference						
Treated (assigned)	0.048***	0.083***	0.005	0.048**	0.096**	-0.000
	(0.017)	(0.023)	(0.026)	(0.022)	(0.038)	(0.025)
Observations	5,195	3,108	1,125	825	377	403
Control mean	5.874	5.876	5.876	3.532	3.598	3.490
Panel D: Income ranking of 1^{st} destination preference						
Treated (assigned)	0.107**	0.192***	-0.008	0.165*	0.313**	0.019
	(0.042)	(0.060)	(0.064)	(0.088)	(0.148)	(0.114)
Observations	5,195	3,108	1,125	825	377	403
Control mean	8.388	8.291	8.653	7.403	7.476	7.345
Panel E: Income of 1^{st} destination preference is higher						
Treated (assigned)	0.030***	0.047***	0.001	0.036	0.096**	-0.024
	(0.008)	(0.013)	(0.001)	(0.023)	(0.042)	(0.026)
Observations	5,195	3,108	1,125	825	377	403
Control mean	0.508	0.693	0.026	0.257	0.326	0.191
Region FE	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results from OLS estimations. Panel A shows the effect of treatment assignment on internal migration intentions, Panel B on the probability that the first preference mirrors the highest possible income differential, Panel C on logarithmized income in USD at the first preference, Panel D on the income ranking of the first preference, and Panel E on a dummy indicating whether the first preference has a higher income than the region of residence. Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D}\uparrow$), and the subsample who overestimated the differential ($\hat{D}\downarrow$). Models include the pre-treatment outcome, age, gender, marriage, employment situation, education, and household asset index as controls. Random noise was added to binary control variables as well as region fixed effects. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

I. Additional analyses registered in PAP

I.1. Secondary outcomes

TABLE A19. Effect on internal migration intentions without having a secured job at destination, OLS.

	Uganda		
	Total	$\hat{D} \uparrow$	$\hat{D} \downarrow$
	(1)	(2)	(3)
Treated (assigned)	0.004	0.012	-0.014
	(0.025)	(0.037)	(0.035)
Observations	825	375	404
Control mean	0.490	0.492	0.496
Region FE	✓	✓	✓

Note: Table shows estimation results for OLS estimations for the effect of treatment assignment on internal migration intentions without having a secured job at destination. Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D} \uparrow$), and the subsample who overestimated the differential ($\hat{D} \downarrow$). The outcome is only available for Uganda. Models include age, gender, marriage, employment situation, education, and household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

TABLE A20. Effect on minimum wage for internal migration, OLS.

	Uganda		
	Total	$\hat{D} \uparrow$	$\hat{D} \downarrow$
	(1)	(2)	(3)
Treated (assigned)	-17.715***	-17.273**	-22.110**
	(5.570)	(7.330)	(8.886)
Observations	817	371	402
Control mean	141.502	132.962	153.485
Region FE	✓	✓	✓

Note: Table shows estimation results for OLS estimations for the effect of treatment assignment on self-reported reservation wage. Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D} \uparrow$), and the subsample who overestimated the differential ($\hat{D} \downarrow$). The outcome is only available for Uganda. Models include age, gender, marriage, employment situation, education, and household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

TABLE A21. Effect on international migration intentions, OLS.

	Uganda		
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)
Treated (assigned)	-0.009	-0.016	0.002
	(0.019)	(0.028)	(0.029)
Observations	828	378	404
Control mean	0.800	0.816	0.781
Region FE	✓	✓	✓

Note: Table shows estimation results for OLS estimations for the effect of treatment assignment on international migration intentions varying between 0 (Not at all) and 1 (A lot). Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D}\uparrow$), and the subsample who overestimated the differential ($\hat{D}\downarrow$). The outcome is only available for Uganda. Models include age, gender, marriage, employment situation, education, and household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

TABLE A22. Effect on expected employment potential in five years, OLS.

	Uganda		
	Total	$\hat{D}\uparrow$	$\hat{D}\downarrow$
	(1)	(2)	(3)
Treated (assigned)	0.172	-0.442	0.442
	(0.378)	(0.360)	(0.530)
Observations	827	377	404
Control mean	4.556	4.818	4.344
Region FE	✓	✓	✓

Note: Table shows estimation results for OLS estimations for the effect of treatment assignment on expected employment potential for in five years. Regressions are run on the total sample, the subsample of individuals who underestimated the true maximum income differential ($\hat{D}\uparrow$), and the subsample who overestimated the differential ($\hat{D}\downarrow$). The outcome is only available for Uganda. Models include age, gender, marriage, employment situation, education, and household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

I.2. Additional heterogeneity analyses

TABLE A23. Heterogeneous results by additional baseline characteristics, Ghana.

	Ghana															
	Internal migration intentions								Ln(income) at 1st destination							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Treated (assigned)	-0.017	0.002	-0.018	-0.002	0.006	0.006	-0.002	0.003	0.036	0.069***	-0.092	0.055**	0.071***	0.053**	0.021	0.046***
	(0.016)	(0.007)	(0.034)	(0.007)	(0.007)	(0.006)	(0.006)	(0.005)	(0.073)	(0.025)	(0.118)	(0.025)	(0.024)	(0.021)	(0.020)	(0.017)
Treatment X aged 21-30	0.018								0.035							
	(0.016)								(0.073)							
Treatment X aged 31-40	0.016								0.017							
	(0.017)								(0.076)							
Treatment X aged 41-50	0.025								-0.037							
	(0.020)								(0.082)							
Treatment X aged ¿ 50	0.040								-0.019							
	(0.028)								(0.099)							
Combined p-value, aged 21-30	0.856								0.003							
Combined p-value, aged 31-40	0.906								0.027							
Combined p-value, aged 41-50	0.395								0.969							
Combined p-value, aged > 50	0.274								0.780							
Treatment X married		0.001								-0.038						
		(0.009)								(0.033)						
Combined p-value		0.684								0.173						
Treatment X employee			0.017								0.188					
			(0.035)								(0.121)					
Treatment X independent			0.023								0.110					
			(0.035)								(0.120)					
Combined p-value, employee			0.940								0.000					
Combined p-value, self-employed			0.422								0.392					
Treatment X high income				0.005								-0.016				
				(0.010)								(0.035)				
Combined p-value				0.593								0.114				
Treatment X wealth					-0.010								-0.052			
					(0.010)								(0.035)			
Combined p-value					0.578								0.434			
Treatment X risk preferences						-0.008								-0.008		
						(0.007)								(0.024)		
Combined p-value						0.835								0.029		
Treatment X migration history							0.009								0.066*	
							(0.010)								(0.035)	
Combined p-value							0.306								0.003	
Treatment X migration preparations								-0.035*								0.175**
								(0.021)								(0.072)
Combined p-value								0.119								0.002
Region FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results from OLS estimations. Coefficients in each column belong to a separate regression. Regressions are run only on the total sample without differentiating between over- and underestimation. Models include the pre-treatment outcome, age, gender, marriage, employment situation, education, and household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

TABLE A24. Heterogeneous results by additional baseline characteristics, Uganda.

	Uganda																		
	Internal migration intentions									Ln(income) at 1st destination									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14	(15)	(16)	(17)	(18)
Treated (assigned)	0.135**	-0.039**	-0.046*	-0.056**	-0.063***	-0.073***	-0.048**	-0.044**	-0.040*	0.080	0.032	0.001	-0.011	0.051	0.027	0.085**	0.061**	0.041
	(0.064)	(0.017)	(0.027)	(0.028)	(0.023)	(0.021)	(0.023)	(0.019)	(0.023)	(0.081)	(0.023)	(0.038)	(0.040)	(0.033)	(0.027)	(0.033)	(0.026)	(0.034)
Treatment X aged 21-30	-0.184***									-0.039								
	(0.065)									(0.082)								
Treatment X aged 31-40	-0.214***									0.003								
	(0.076)									(0.103)								
Treatment X aged 41-50	0.000									0.000								
	(0.000)									(0.000)								
Treatment X aged ¿ 50	-0.174									-0.127								
	(0.121)									(0.161)								
Combined p-value, aged 21-30	0.003									0.063								
Combined p-value, aged 31-40	0.035									0.143								
Combined p-value, aged 41-50	0.036									0.325								
Combined p-value, aged > 50	0.675									0.706								
Treatment X married		-0.041									0.077							
		(0.038)									(0.057)							
Combined p-value		0.018									0.035							
Treatment X employee			-0.006									0.078						
			(0.034)									(0.047)						
Treatment X independent			0.013									0.027						
			(0.048)									(0.064)						
Combined p-value, employee			0.015									0.004						
Combined p-value, self-employed			0.411									0.596						
Treatment X high income				0.009									0.091*					
				(0.035)									(0.048)					
Combined p-value				0.019									0.003					
Treatment X wealth					0.024									-0.003				
					(0.033)									(0.044)				
Combined p-value					0.097									0.087				
Treatment X risk preferences						0.048*									0.038			
						(0.025)									(0.032)			
Combined p-value						0.175									0.011			
Treatment X migration history							0.001									-0.075*		
							(0.031)									(0.042)		
Combined p-value							0.026									0.680		
Treatment X migration preparations								0.009									-0.049	
								(0.033)									(0.044)	
Combined p-value								0.189									0.741	
Treatment X S4C status									-0.006									0.003
									(0.031)									(0.045)
Combined p-value									0.022									0.022
Region FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: Table shows estimation results from OLS estimations. Coefficients in each column belong to a separate regression. Regressions are run only on the total sample without differentiating between over- and underestimation. Models include the pre-treatment outcome, age, gender, marriage, employment situation, education, and household asset index as controls. Robust standard errors are displayed in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).