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Can Information and Alternatives to Irregular Migration Reduce "Backway" Migration from The Gambia?

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Abstract

Irregular migration from West Africa to Europe across the Sahara and Mediterranean is extremely risky for migrants and a key policy concern. We conducted a cluster-randomized experiment with 3,641 young men from 391 settlements in The Gambia to test three approaches to reducing risky migration: providing better information and testimonials about the risks of the journey; facilitating migration to a safer destination by providing information and assistance for migration to Dakar; and offering vocational skill training to enhance domestic employment opportunities. Current migration to Senegal was increased by both the Dakar facilitation and vocational training treatments, partially crowding out internal migration. The vocational training treatment reduced intentions to migrate the backway and the number of steps taken towards moving. However, the backway migration rate from The Gambia collapsed, even in the control group, resulting in no space for a treatment effect on irregular migration from any of the three interventions.

Keywords: Irregular migration, migration deterrence, information interventions, vocational training, cash transfer, randomized experiment.

JEL codes: O15, F22, J61

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1. Introduction

Irregular migration to Europe has become increasingly visible in recent years. According to the European Border Agency (FRONTEX), almost 3 million irregular migrants were detected crossing European borders between 2015 and 2019. Despite this being a relatively small number compared to the size of the EU population (less than 1%), the images of young African men on crowded rubber boats in the Mediterranean Sea have put the phenomenon under the spotlight in a context of growing electoral support for European political parties running on nationalist anti-immigration platforms. In addition to being a topic of key policy interest in Europe, there are important consequences for economic development in Africa. First and foremost are the potential consequences of this journey for the migrants themselves, who face risks of human rights abuses and loss of life. The most common way for youth to migrate from West Africa to Europe is through what is referred to in The Gambia as the "backway". This describes an overland journey through West Africa, across the Sahara Desert, and into Libya or Morocco, from which youth attempt to catch boats to Italy and other European destinations, with each stage involving multiple dangers. More broadly, the potential of migration and remittances to help alleviate poverty and drive economic development in sending countries (e.g. Clemens, 2011) will not be realized, or will be greatly reduced, if potential migrants die along the way or face vulnerable conditions in the destination countries that limit their earnings.

The Gambia provides a good setting to test the effectiveness of different programs designed to reduce risky migration, since in 2017 it had the highest incidence of irregular migration relative to total population among all African countries, at an annual rate of 0.38 percent.[1] Income gaps with European destinations are huge, with The Gambia's GDP in 2018 of $713 representing only two percent of Italy's $34,319,[2] providing a strong incentive to undertake the perilous journey. We conducted a cluster-randomized experiment with 3,641 young males aged 18-30 living in 391 settlements in The Gambia to test the effectiveness of three different interventions designed to reduce the likelihood of backway migration, spur migration to safer alternative destinations, and improve the well-being of potential migrants.

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[1] Calculated from FRONTEX data on illegal border crossings and World Development Indicators data on population.
[2] Source: World Development Indicators (2019).

The first group of treatment settlements received an information and deterrence intervention, designed to provide both hard data and first-hand reports of the different risks faced during backway migration. Youth were shown a video that contained testimonials from Gambian youth who had attempted to migrate irregularly, narrating how they had seen or experienced accidents, deaths, kidnapping, and deportation during their journeys, along with information on the costs and risks of the trip, and the chances of being rejected for asylum status and of being deported should they make it to Europe. This type of policy is one of the most common approaches used in attempting to reduce irregular migration. In 2019 alone, the European Union launched six information and awareness raising campaigns on the risks of irregular migration in Côte d'Ivoire, Niger, Tunisia, Mali, Guinea, and The Gambia. Information campaigns about the risks of unsafe migration are also the most common approach used by the International Organization for Migration (IOM), the United Nations' Migration Agency.

However, youth who are planning on migrating the backway may not respond to information alone, in the absence of seeing viable alternatives to improving their lives. Youth in our second and third treatment groups of settlements were provided interventions that supplemented the informational videos with the offer of an alternative program. We consider two alternatives to irregular migration. The first is attempting to facilitate safer migration to an alternative destination. We provided our second treatment group with information about travelling and working in Dakar, in neighboring Senegal, and offer financing and support to pay the cost of travel to Dakar. This approach of facilitating legal migration alternatives has received less policy attention, but is part of recent efforts to stem irregular migration from Central America, with the Biden administration in 2022 adding additional H2-B visas for temporary non-agricultural migration. Our final treatment instead aims to offer the hope for better jobs at home, through building skills with a tuition-free vocational skills training program. Efforts to reduce irregular migration by providing better job opportunities at home have also been increasing as a policy option, with the European Union (EU) funding large vocational training programs in West Africa with the explicit objective of addressing the economic root causes of irregular migration by supporting youth employment and

entrepreneurship.[3] However, it is unclear whether these programs reduce migration, or instead promote it by giving youth marketable skills that they can use at destination.

We launched these interventions in April and May 2019. Randomizing the placement of the baseline survey questions, to before, or after, the provision of the informational video and offer of the alternative treatments, enables us to measure the immediate impacts of the treatments on knowledge, beliefs, and intentions. We find all three interventions improved knowledge about backway migration, with those treated being more likely to be aware of how expensive it is, and of the possibility of being forced to work without pay. However, we find no significant impacts on beliefs about the riskiness of the journey or expressed intentions to migrate, although this may reflect our baseline measurement of probabilistic intentions not working as anticipated. The Dakar treatment offer increased knowledge about migrating to Senegal, and reduced interest in learning more about wages in Europe in a behavioral task measure.

We then measured impacts on migration intentions, steps, and actions through an endline survey that took place between September and November 2020, approximately 18 months after the baseline and information intervention. We were able to successfully reinterview 89 percent of the youth, and combined with proxy reporting and WhatsApp location sharing, obtain the current location for all but one of our 3,641 youth. We have three main results. First, the interventions had lasting impacts on migration knowledge, and on intentions to migrate in the next five years. Eighteen months after treatment, those given the information treatment were 5 percentage points less likely to say they are considering taking the backway. The Dakar treatment increased knowledge about migrating to Senegal, reduced the intention to migrate to Europe by 3 to 4 percentage points, and increased intentions to migrate to Senegal by 3 to 7 percentage points. The offer of vocational training reduced intentions to migrate via the backway and to Europe by 5 to 10 percentage points.

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[3] In The Gambia, for example, the EU started The Gambia Youth Empowerment Project (YEP) in 2017 through its Emergency Trust Fund for Africa. https://www.yep.gm/ [Accessed on July 13, 2022.]

Second, we examine whether any of the interventions changed internal and regional migration. Take-up of the Dakar travel facilitation was low, with only 16 percent of this treatment group contacting our Dakar representative, and only 12 youth meeting with them in Dakar. We find no impact of this intervention on migration to Dakar. However, the offer of Senegal as a destination appears to have stimulated migration to other parts of Senegal, and we find a 2.5 percentage point increase in the likelihood of the youth being in Senegal at the time of the follow-up survey with this treatment (relative to a control mean of only 1.6 percent), with them doing less internal migration to the capital city of Banjul and other urban areas. Take-up of the vocational training intervention was also low, with 12 percent beginning, and only 5 percent completing training, in part due to delays in implementation and closures in training facilities during COVID-19. The offer of this vocational training also led to an increase in migration to Senegal and reduction in internal migration, with similar magnitudes to the Dakar treatment.

Finally, we test for changes in irregular migration behavior. The vocational training treatment resulted in a statistically significant, but small reduction in the number of steps taken towards backway migration during this period, while there was no significant effect of information or the Dakar offer. None of the three treatments had any significant effect on attempted backway migration or on making it to Europe. Irregular migration from the Gambia dramatically dropped during our study period, with Frontex data showing only 394 irregular migrants in European border data in 2019 and 285 in 2020, compared to 8,522 in 2017.[4] This appears to stem from a change in government in The Gambia reducing the chance of asylum in Europe, coupled with the effects of border closures and a reduction in the desire to migrate due to the COVID-19 pandemic in the second half of our follow-up period (Bah et al, 2021). The consequence was that, despite focusing geographically on the highest migration regions and then studying the demographic group most likely to migrate, only 1.1 percent of our control group attempted backway migration in the 18-month follow-up period. This limited the scope for our interventions to reduce irregular migration, since ex post there was very little to reduce.

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[4] Frontex data may underestimate the total amount of irregular migration by not collecting data on migrants who are not intercepted by border patrol, those who change their country of origin, or who do not file for asylum status upon arrival. However, even if the levels are an understatement, we believe they capture the trend in migration well. Our survey data questions on migration over time closely track the Frontex trends.

This paper contributes to several strands of the migration and development literature. The first is work on barriers to information acquisition by potential migrants, and the relevance of information asymmetries even in transnational households (McKenzie et al., 2013; Ashraf et al., 2015; Batista and Narciso, 2018). Potential migrants may receive imperfect information from others in their network, and this lack of recent information could be more serious in the context of irregular migration from Africa to Europe, where de facto European immigration policy changes rapidly and information flows to isolated rural areas are scarce.[5] Several papers have used randomized controlled trials to investigate the role of information in migration decisions (Bryan et al, 2014; Beam, 2016; Beam et al, 2016; Shrestha, 2020; Baseler, 2019). Generally, the aim of these studies was to assess to what extent the provision of information facilitated migration in contexts where mobility is low despite being welfare-enhancing. What is made clear from this literature is that information matters both in internal and international migration contexts, and that lack of information contributes to explain why migration from some areas remains at suboptimal levels. More recently, lab-in-the-field experiments have also been conducted to investigate the role of various factors (including incomplete information) in migration decisions (Batista and McKenzie, 2018; Barnett-Howell, 2018; Lagakos et al, 2018; Bah and Batista; 2018). These studies are also supportive of the hypothesis that information is an important driver of migration decisions in different contexts.

While most experiments have investigated to what extent providing information *facilitates* migration, information campaigns launched in Sub-Saharan Africa in recent years have mainly sought to *deter* migration, irregular migration in particular, by emphasizing the deadly dangers associated with it.[6] Until recently there was very little evidence on the effectiveness of these information campaigns. Tjaden et al. (2018) conducted a systematic review of 60 studies of

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[5] For example, as we were launching the program in 2019, the context in which migrants cross the Mediterranean sea was becoming increasingly riskier, with migrant smuggler boats likely to be intercepted by Libyan army boats with migrants then being kept in Libyan migration detention centers in vulnerable conditions, while humanitarian support had virtually disappeared from the Mediterranean, likely resulting in increased death risks, according to reports by the United Nations. https://www.theguardian.com/world/2019/jun/09/mediterranean-sea-of-blood-migrant-refugee-rescue-boats-un-unhcr [last accessed on July 23, 2019] https://www.france24.com/en/20190704-libya-un-security-council-attack-tajoura-libya-migrant-centre [last accessed on July 23, 2019] https://www.theguardian.com/world/2019/apr/25/libya-detention-centre-attack-footage-refugees-hiding-shooting [last accessed on July 23, 2019]

[6] Nieuwenhuys and Pécoud (2007); Carling and Hernández-Carretero (2008, 2011).

information campaigns targeting potential migrants. They note most of these are in the grey literature, relying on small sample cross-sectional samples with no robust strategy for identification, with only 2 peer-reviewed studies. They conclude that while the majority of information campaigns claim to have been "successful" in inducing a change in knowledge, perceptions, attitudes or even intended behavior, these findings do not rely on rigorous identification designs, and that the goals of many campaigns are often vague and restricted to "awareness-raising". Moreover, other work suggests that many information campaigns have had very limited effects on the decision to leave. Ethnographic work and case studies (Carling and Hernández-Carretero, 2008; Browne, 2015; Schans and Optekamp, 2016) highlight some reasons for this lack of impacts, including a lack of trust in information disseminated through mass-media campaigns, and they suggest that effectiveness may be higher if campaigns include real-life testimonies from returned migrants and also direct migrants to alternative legal opportunities. We incorporated these lessons into account in designing our information interventions.

Since launching our project, several recent studies also attempt to more rigorously evaluate information campaigns in different African countries. Tjaden and Dunsch (2021) conducted an experiment in Senegal, and Tjaden and Gninafon (2022) difference-in-differences analysis in Guinea, of IOM movie screenings and community discussions. In both cases they find a change in awareness and migration intentions in first few months after the intervention, but do not go on to measure longer-term changes in migration behavior. Mesplé-Somps and Nilsson (2021) implemented an experiment in rural Mali which showed documentaries depicting either negative or positive portraits of migrants, or portraits of local people who have successfully set up businesses. They find no change in aspirations to migrate, which they attribute to the local context where hopes placed in the beneficial effects of migration are high and difficult to change. Battiston et al. (2022) provide information about the risks of migration, the economic conditions abroad, or both, to classes of secondary school students in Guinea. They find changes in beliefs about the risks, and do go on to measure impacts on migration outcomes. Like us, their overall international migration rate is very low (1.6 percent of the control group migrate in one year), and they find a significant reduction in migrating from this already low rate in one of their three information treatment arms.[7] Taken together, these results along with ours show the potential of information

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[7] Preliminary results from Bernd Beber and Alexandra Scacco for an information experiment in Benin city, Nigeria, also show impacts on intentions and attitudes, but very low rates of irregular migration behavior in the control group.

campaigns to change intentions, but that the vast majority of people typically exposed to these campaigns were not going to migrate in the short term anyway.

There is much more limited evidence in the literature on whether providing alternatives to irregular migration will reduce it. McKenzie and Yang (2014) survey the literature for evidence on policies to improve the development impacts of migration, and find no examples of well-identified impacts of offering alternative destinations or domestic training instead. We therefore rely more on a mix of related literature on migration facilitation as well as current policy efforts to motivate our alternative interventions. Bryan et al. (2014) found that paying for a $8.50 bus ticket spurred significant rural-urban seasonal migration flows in the lean season in Bangladesh. It is less clear whether such an approach can succeed with international migration in an African context, although Gazeaud et al. (2021) find that cash transfers in Comoros did increase migration rates to the neighboring richer island of Mayotte, suggesting that alleviating financial constraints may facilitate regional migration. Giambra and McKenzie (2021) re-analyze seven experiments that generated domestic job opportunities in self-employment, and find these programs generate modest reductions in domestic migration. They note that most of the existing programs have not been specifically targeted at individuals with high propensities to migrate, especially potential international migrants, raising the question of whether such policies would be more successful if this targeting was done. Our experiment was designed to focus on the demographic group most likely to migrate in the regions of the country with highest migration rates. Our results show that even more specific targeting is likely to be needed to have much impact on international migration.

2. Context and sample

2.1 Context: Backway migration from The Gambia and migration trends

The Gambia is a small Western African country of population 2.4 million, surrounded by Senegal on three sides, and with a narrow western coast on the Atlantic Ocean. Kebbeh (2013) provides a historical overview of the long tradition of migration. He notes that prior to, and after independence in 1965, many Gambians migrated to the United Kingdom for study and work. Natural disasters and economic instability in the 1970s and 1980s made emigration to Europe and North America a common coping strategy. In 1994, a military coup led to the government of President Jammeh, who was in office from 1994 to 2016. This coup was accompanied by an increase in asylum

seekers, and led many European governments to require Gambians to have a visa before travelling. Faced with more restrictive immigration policies, many Gambians wishing to migrate increasingly turned to irregular migration.

This irregular migration typically takes place through what is known as the "backway", which involves travel overland through the Sahara Desert, through Morocco or Libya, and then across the Mediterranean Sea to Spain or Italy. Each stage of this journey involves many dangers. Travel through the Sahara Desert typically takes place in crowded open trucks (from which migrants often fall and are left behind to die) to get to Libya, where they face a variety of serious challenges, including abductions for ransom, slavery, torture and other ill-treatments.[8] Considering the additional risks of drowning in the Mediterranean, having the smuggler boat caught and being brought back to Libya,[9] and being deported upon arrival in Europe,[10] results in an estimated overall 4% success rate of attempted backway migration journeys.[11]

Despite these risks, the irregular emigration rate from The Gambia to Europe grew substantially in the first half of the 2010s. These trends can be seen in data from the European border agency, Frontex, shown in Figure 1.[12] Recorded irregular migration flows from The Gambia grew from

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[8] Numbers on the death rates of irregular migration from West Arica to Italy through the Central Mediterranean route are very scarce and hence have limited reliability. According to our calculations combining the evidence collected by the North Africa Mixed Migration Hub (MHub) with the existing numbers on death rates in the Mediterranean, 22% of those attempting to cross the Saharan desert and other transit countries to reach Libya died in the process. Of those who reached Libya successfully, another 23% died mostly due to physical violence. http://www.mixedmigrationhub.org/wp-content/uploads/2017/02/Italy-MHub-Survey-Snapshot-Jan-2017.pdf [Last accessed on July 23, 2019.]

[9] Respectively 7.6% and 46.7% of crossing attempts, according to a report by the Washington Post: https://www.washingtonpost.com/world/europe/fewer-migrants-are-making-it-to-europe-heres-why/2018/07/23/80b56082-8c57-11e8-9d59-dccc2c0cabcf_story.html?utm_term=.b55d2511d50e [Last accessed on July 23, 2019.]

[10] According to the Eurostat, in 2017 the probability of being deported upon irregular arrival to Italy from Gambia was 57.6%. However, this deportation rate increased very strongly, reaching 86.6% in the last quarter of 2018, according to the Eurostat. These updated numbers were used as a component of the information and deterrence intervention we implemented.

[11] The 4% success rate is a lower bound that we used in the absence of information on multiple Mediterranean crossing attempts. Note that even if migrants attempted to cross the Mediterranean one more time after being brought back to Libya, their overall success rate would still be only 5%.

[12] As mentioned before, Frontex numbers may not be capturing all irregular migration, since those who are not intercepted or do not claim asylum status will not be recorded in any statistics. However, while the levels may be an undercount, we believe the trends are informative. In Bah et al. (2021), we use retrospective questions on migration

less than 1,000 per year in 2010-2012 to reach a peak of 12,927 migrants (about 0.60 percent of the country's population) in 2016, and 8,522 in 2017. These rates in 2016/17 were the highest among all African countries on a per-capita basis. This surge in migration rates appears to be due to two main factors. The first was political events in The Gambia, where there was an attempted coup in 2014, and the autocratic President Jammeh had the country leave The Commonwealth and cracked down on political opposition, with political and economic instability acting as push factors for migration. Second, instability in Libya made it easier for people to transit through Libya on the backway to Italy, instead of facing more border enforcement when attempting to go through Morocco to Spain.

At the time of designing our intervention, the risks of travelling the backway were increasing for several reasons. In addition to a worsening political situation in Libya, changes in European migration policies made it more dangerous to attempt the crossing, and less likely to get asylum status when crossing successfully. As a consequence, the Washington Post reports that the share of migrants leaving Libya who reached Europe fell from 78 percent in January 2017 to 45 percent in June 2018 (Harlan, 2018). On top of this, deportation rates from Europe increased dramatically. Our prior was that the relatively recent increase in this risk, even if it is large enough to be somewhat transmitted through migrant networks, combined with the longer-term tendency of migrants to over-inflate how successful they are abroad, may result in many Gambian youth having overly optimistic expectations about both the ease of migrating to Europe, and the conditions they will face once they get there. This overall context suggests a potential role for information interventions in providing accurate information on the risks and outcomes of irregular migration.

Figure 1 also shows that irregular migration from The Gambia (as recorded in the Frontex data) fell dramatically during the period in which we designed and implemented our interventions, and particularly during our follow-up period. This drop is driven by several factors. First, after the end of the Jammeh government in 2016, and the country transitioning from a dictatorship to a democratic government, European governments became much less likely to grant asylum status to Gambians on the basis of political repression, and increased deportations (along with providing more aid to projects in The Gambia designed to increase local opportunities). Then, in 2020, border

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from our baseline survey to show trends in survey reports over the 2012-2018 period track well those in the Frontex data.

closures and fears around the COVID-19 pandemic further reduced both the ability and desire to migrate (Bah et al, 2021).

The number of recorded Gambian migrants fell from 8,522 in 2017 to only 394 migrants in 2019 and 285 in 2020. The extent to which this dropped was unanticipated by us, and not well-known in the country, even ex-post. In June 2021, we held a dissemination event at the University of The Gambia, and showed 30 local researchers, aid officials, and journalists the Frontex numbers for each year from 2014-2017, and asked them what they thought rates had been in 2018, 2019, and 2020. The median belief was for the migration numbers to have fallen from 8,522 in 2017 to 7,532 in 2018, and down to 6,000 in 2020. That is, most locals believed there had been a much more gradual decline than recorded. Part of this may reflect underreporting in the Frontex data, since anecdotally we heard accounts of Gambians claiming to be from other countries such as Sierra Leone to increase their chances of asylum status. But the decreasing trends seem to be accurate and in line with the results from our own survey.

2.2 Sample and randomization

Since international migration is a rare event, we aimed to focus on regions of higher migration prevalence, and then within these regions, focus on the demographic group most likely to migrate. Our sample was selected as follows.

Selection of settlements

The Gambia is divided into five administrative regions and the capital city area of Banjul. We selected the two Eastern-most regions of the Upper River Region (URR) with a population of 240,000; and the Central River Region (CRR) with a population of 226,000. These regions are remote, largely rural, and are at a driving distance of 300 km or more from the capital city, and 450 km or more from Dakar, Senegal. These regions were chosen due to their high propensities of irregular migration and poor access to conventional sources of information about migration. According to estimates from the 2018 Gambia Labor Force Survey, URR has the highest share of irregular migrants to working population of all regions (more than 5%), while in CRR about 3% of the population are irregular migrants. Most people work in agriculture, with limited alternative opportunities, making migration to Europe appear particularly attractive. Using estimated population sizes projected from the 2013 Gambian census, we identified settlements that were predicted to have at least 35 males aged between 18 and 30, and that had total population sizes

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below 3,000.[13] We then used data from the 2015/16 integrated household survey to exclude two districts with the lowest shares of households receiving remittances, to ensure we focused on areas with higher likelihoods of migration. We then randomly selected 404 settlements from a pool of 580 eligible settlements to conduct a listing exercise. Figure 2 plots the settlements by treatment assignment (see below).

Selection of households and individuals

Settlements are divided into enumeration areas (EAs), consisting of at most 500 individuals (50 households), and most settlements consist of only one EA. We randomly chose up to 2 EAs per settlement and conducted a door-to-door listing exercise of all households in these 404 settlements to record whether they have at least one male aged 18 to 30. In addition, a quick survey was conducted among village elders in each of these settlements to elicit village level characteristics such as the fraction of households in the village that have a migrant in Europe, in Senegal, and in Banjul; whether any vocational training program had been made available in the village; the cost of a bus to Dakar from that village; and whether any information campaign against irregular migration had already been conducted in the village. Interviewees were also asked to select the 11 males aged 18-30 most likely to migrate from the village in the next 12 months out of a list of 20 males 18-30.[14]

Listing took place from March 26, 2019 to April 11, 2019 (see study timeline in Appendix A5) and listed 5,597 households with males aged 18 to 30 in the 404 villages. The baseline survey then took place between April 19, 2019 and May 18, 2019.[15] Data collection was conducted in 391 settlements, after dropping 13 small settlements that had fewer than 4 eligible households. Within the eligible households, the baseline interview took place with a male 18 to 30. We focused on this age as the most at risk of migrating the backway. If the household had more than one male in this

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[13] These excluded settlements include one city (second largest city in the country, Basse) and the rest are predominantly Sarahuli communities all with low irregular emigration rates.

[14] Our initial plan was to use this information to oversample the youth that community leaders identified as most at risk of migrating. However, the EAs ended up with smaller numbers of youth listed than anticipated, and so in order to meet our sampling target of 10 youth per EA, we did not have much scope for oversampling.

[15] The baseline survey was conducted by 2M Corp/RTA using survey tablets. It collected youth's socioeconomic characteristics, labor supply, migration history and network, intentions to migrate, beliefs and expectations, knowledge questions, preference questions, and follow-up contact information. Interviews were conducted in the local languages of Mandingo, Fula, and Wolof/Serer.

age group, the interview took place with the individual the household considered the most likely to migrate in the next five years. If the household had multiple males in this age range and said they were equally likely to migrate, or all unlikely to migrate, the interview took place with the person closest in age to age 22. If there were twins equally likely to migrate, then the instruction was to randomly choose one of them for the interview.

The final sample size interviewed is 3,641 individuals in these 391 settlements, for an average cluster size of 9.5 individuals per settlement.[16]

Random assignment

The 391 settlements were divided into 15 geographic regions corresponding approximately to districts. Within each of these geographic regions, we calculated a migration intentions and experience index for each settlement, which was the average of the number of households listed who say they are likely to migrate internationally in the next five years, and of the proportion of households in the settlement who have at least one international migrant member. We then sorted settlements by these migration intentions and experience index to form quadruplets of settlements within each geographic region, forming 98 strata. We then randomly assigned one settlement to each treatment group within each quadruplet (strata). Random assignment was done privately by computer.

2.3 Baseline characteristics of settlements and individuals

Baseline summary statistics for the village-level variables elicited from village elders are shown in Table 1A, socioeconomic characteristics of the young men interviewed at baseline are shown in Table 1B, and migration history and intentions of these young men are shown in Table 1C. These baseline data both serve to help describe the sample that will be subject to the experiment, as well as to show that the sample is generally well-balanced across treatment groups. The last column of each table provides an F-test of equality of means across treatment effects (after controlling for randomization strata and clustering standard errors at the settlement level). Only 4 out of the 36 tests are significant at the 10 percent level or higher, which is in line with what we would expect

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[16] Despite instructions to select only individuals aged 18-30, the final sample contains 89 (2.45%) individuals aged 31-33 that we decided to keep in our analyses.

by chance. As noted in our methods section, we also use post-double selection lasso to boost power and control for any chance imbalance.

Table 1A shows these settlements are ones where migration is generally common. Village elders report 18 percent of households to have a migrant in Europe, 13 percent to have a migrant in Senegal, and 27 percent to have a migrant in Banjul. Despite the launch of The Gambia Youth Empowerment Project (YEP), only 2.7 percent of settlements report any vocational training opportunities, while 21 percent report having previously experienced some form of information campaign around migration. The average cost of a bus to Dakar is 887 Dalasi (approximately $18).

Table 1B shows that the average individual in our study is aged 23. They primarily work in agriculture, with only 28 percent doing any paid work last month, and only 6.4 percent having a main occupation that was non-agricultural paid work during the rainy season. Education levels are very low, with 49.5 percent having no schooling, and an average of only 3.4 grades completed. The main languages spoken at home are local languages: Fula (43%), Mandingo (31%), and Wolof/Serer (18%), with only 25 percent saying they speak English (the official language) well enough to use in a job in which they would interact with customers, and only 1.4 percent speaking French well enough for this purpose. These characteristics highlight the importance of providing the information interventions in local languages. The low education level also suggests the youth may have difficulty with expressing some answers as percentages. For example, only 25 percent of the sample could correctly state the percent chance that a baby born is a girl. This introduces additional noise into our baseline attempts to measure intentions and beliefs using probabilities.

Table 1C provides details on their migration history and intentions. Very few have previously migrated to Europe (0.3%) or tried migrating to Europe unsuccessfully (2.8%). But desire to migrate to Europe is much higher. 55.7 percent say they would ideally migrate to Europe if they had the opportunity, and 14.7 percent say they would do so the backway. The majority have someone in their network who has attempted the backway: 87 percent say they know someone who made it to Europe the backway, but also 61 percent know someone who died attempting this route, and 42 percent know someone deported from Europe. They view migration to Europe as generating prestige and respect among occupations in their community, ranking it highest out of different occupations asked. However, there is stigma associated with failed migration to Europe, with youth ranking this as less prestigious than migrating to Senegal or Banjul, or to just being a

farmer. This suggests the possibility for youth to be over-optimistic about the odds of succeeding with backway migration, if stigma means that failed migrants do not talk much about their experiences.

3. The interventions

3.1 Details of the interventions

The study randomly assigned males aged 18 to 30 living in rural Gambian settlements (villages) to one of four different groups, with random assignment at the settlement level. The four different groups consist of three different treatment groups (information and deterrence; information and Senegal as a migration alternative; information and vocational training) and a control group, who are delivered the following interventions.

Treatment 1 (information and deterrence) consists of providing information about the risks involved in migrating irregularly to Europe. Information was conveyed in the form of a video documentary. All videos were dubbed into the three major languages spoken in the regions: Mandinka, Fula, and Wolof. Respondents were shown the videos in their preferred spoken language towards the end of the baseline survey on tablets. This way we could monitor and ensure the video was watched by each study participant in this treatment group. The video participants included members of an NGO, Youth Against Irregular Migration (YAIM) formed by failed irregular migrants to Europe, deportees, and Gambian irregular migrants residing in Italy. They narrated their individual migration experience en route to Europe. The main information conveyed included reasons for migrating, how they obtained information about the trip, duration of the trip, and experience during the trip including witnessing accidents, deaths, kidnapping and general advice to prospective migrants. The video documentary was supplemented with an animation video that conveyed facts about the migration journey. The facts include the average cost of the migration, duration of the trip, probabilities of dying en route, probability of obtaining residence/asylum status, and the chances of being deported back to The Gambia. This information was gathered from reports published by North African Mixed Migration Survey (MHub, 2017) and the Washington Post. The reports document information on deaths of migrants along the route and the detailed reasons for the deaths, abuse and kidnapping incidences experienced by migrants through the Central Mediterranean Route. Information about residence/asylum status was obtained

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from Eurostat. Appendix A provides more detailed description of the content of the video, and example screenshots, as well as more details on the other interventions.

The theory underlying this type of intervention is that potential migrants underestimate the risks of migrating the backway for at least two reasons. The first is that they are likely to receive a selective picture of the journey, with news of failures and other stigmatized events becoming less likely to be shared with others than successes. Second, as discussed above, the context of our intervention is one where there were rapid changes in policies that had increased the risks of the journey. While some substantial policy changes (like a sharp increase in deportation risk) may quickly be transmitted to potential migrants, other migration journey events or outcomes may be less frequent and more stigmatized and hence less well-known (as attested by our own survey knowledge questions). This context will create knowledge gaps and an information set including outdated facts. This intervention may then provide new information, as well as potentially increase the salience of these risks.

Treatment 2 (information and Senegal alternative) was shown the same videos as the information and deterrence group, given additional information about migration to Dakar, Senegal, and offered financing and support to pay the cost of travel to Dakar. The information about Senegal was also conveyed through a video documentary towards the end of the baseline, including testimonies of Gambian migrants residing in Dakar. These migrants narrate their migration experience to Dakar, conveying information on the cost of migrating, type of job opportunities and earnings, and general advice to prospective Gambian migrants. Moreover, respondents in these settlements were provided with the opportunity to migrate to Dakar for free. They were asked if they were interested in migrating to Dakar for the purpose of looking for jobs. Respondents in this group were then given (i) a labelled cash transfer of 1,200 GMD (about 20 Euros) that could be used to pay for the cost of a bus journey to Dakar[17]; (ii) information on the bus routes and timetables for travelling to Dakar; (iii) contact information for a representative of The Gambian migrant association in Dakar who could be asked any question about travelling to Dakar and help connect them to opportunities upon arrival; and (iv) a Dakar voucher entitling the respondent to an additional 10,000 CFA (about

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[17] Our initial plan was to provide bus vouchers and a dedicated bus service to transport respondents to Dakar. However, this had to be amended because of the difficulties in coordinating transport across respondents, and to bus maintenance problems with our selected bus company. The provision of labeled cash corresponds to the approach used by Bryan et al. (2014) in Bangladesh.

15 Euros) cash transfer upon arrival to Dakar (see appendix A3). Once in Dakar, this money could be obtained from the migrant representative, and was intended to be used to help cover the initial costs of establishing oneself in Dakar. However, it was also sufficient to pay for the cost of returning to The Gambia if needed.

There are several pathways through which this second treatment may influence potential migrant behavior on top of that of treatment 1. First, youth who are planning on migrating the backway may not respond to information about riskiness alone, in the absence of seeing viable alternatives to improving their lives. This intervention should increase the relative attractiveness of Senegal as a destination choice by providing more information about it, increasing its salience and including role models who have made this journey, and lowering the cost of trying this alternative.

Treatment 3 (information and vocational training alternative) was shown the same information as the information and deterrence group, and additionally given the opportunity to enroll in a tuition-free vocational skill training program. Individuals in this group were given leaflets (see appendix A4) that enumerated the list of courses and instructions on how to register for the training. The courses included building construction (block work), carpentry and joinery, electrical installation, plastering and tiling, plumbing and gas fitting, refrigeration and air conditioning, small engine maintenance and repair, and welding and fabrication. Those that were given the training vouchers were instructed to send text messages indicating the courses they wanted to be trained on. In collaboration with The Gambia Technical Training Institute (GTTI), the training was scheduled to start in November 2019 at the Julangel Skills Training Center, URR, and to last for six months.

As with the Senegal alternative, the theory of change here is that providing a viable alternative to risky migration may change the cost-benefit calculation, as well as making youth more responsive to information on the risks. In addition, it is possible that providing the list of courses (which are linked to non-rural jobs typically available in urban areas of The Gambia, as well as in Senegal) made this type of jobs more salient, which could open new migration possibilities for the young men being offered treatment.

Finally, the ***Control Group*** was shown a video that explained the importance of exclusive breastfeeding. The video was obtained from the National Nutrition Agency (NaNa). This video is not expected to have any effect on migration outcomes.

While it is impossible to blind youth to their interventions, we attempted to minimize the likelihood of Hawthorne/John Henry/experimenter demand effects by not telling subjects that this was an experiment, or that alternative interventions were being offered in other settlements. The baseline survey was described as a research study aimed at understanding the desires and needs of Gambian youth. We asked both the Senegal and vocational training group participants why they thought the intervention was being offered. The two main reasons seen for the interventions were to provide them with more job opportunities, and secondly to reduce backway migration.

3.2 Ethical considerations

Although deterring irregular migration is desired by European countries, revealed preference would suggest that the migrants themselves believe they are improving their lives by making this journey, raising the question of whether policy efforts to deter migration are desirable from a development perspective. There is indeed a vast literature showing that international migration in other settings has been more effective at increasing the incomes of poor people than almost any other development policy (e.g. McKenzie et al, 2010, Clemens et al, 2019). However, there are reasons to believe that revealed preference choices may still be suboptimal if potential migrants are misinformed about the severe risks involved in the migration journey. Indeed, a competing ethical consideration is the risk of accidentally encouraging more youth to attempt this journey and exposing them to these dangers. Finally, an additional ethical consideration arose due to the COVID-19 pandemic, which affected when it was safe to conduct surveys and offer in-person vocational training.

Our general approach to dealing with these ethical issues was to consider interventions that provided youth with more accurate information with which they retained their agency to make informed decisions, and to expand the set of potential opportunities they had available. We sought considerable local feedback on the design of the interventions to ensure they were accurate and appropriate for the context. Consultations with local organizations were done by the Gambian co-author of this paper, and we worked with Gambian youth from the NGO YAIM to develop the content of the information intervention. Formal ethical approval was granted by the Nova School of Business and Economics, and presenting the design for Stage 1 Registered Report approval at the Journal of Development Economics also provided the chance for any ethical concerns to be raised by independent reviewers. We followed local guidelines with respect to the COVID-19

pandemic, postponing the timing of the vocational training sessions as a result. Clearance to conduct an in-person follow-up survey was provided by the Ministry of Health, and the survey team followed masking, social distancing, and outdoor interviewing protocols.

3.3 Take-up rates and implementation

The information interventions were carried out at the same time as the baseline survey, and had 100 percent compliance: all individuals were shown the videos corresponding to their respective treatments.

Facilitation of migration to Dakar, Senegal experienced several logistical problems and low take-up. During the baseline, respondents in this treatment group were asked whether they were interested in migrating to Dakar. Of the 907 respondents in this group, 589 (65 percent) were interested in taking up the bus service to Dakar and were asked to indicate when they wished to travel. An agreement was signed with The Gambia Transport Service Corporation to have buses made available to meet the specific daily demand coming from these young people. Due to failure of GTSC in providing these buses on time, we opted to rent vans as a substitute. After a series of trials in transporting respondents where we learned, for example, that individual migrants disliked taking a publicly visibly bus to Dakar, take up interest was low. This was also explained by timing reasons, with respondents expressing a desire to migrate during the dry season. We therefore altered the design to instead give respondents labeled transport fees that could be used to pay for the cost of the migration. We revisited the Senegal treatment settlements, and gave respondents a cash transfer voucher of 1,200 GMD (about 20 Euros). Respondents were informed that they should visit the nearest JFIN Money Transfer Agency[18] and exchange this voucher for cash. Of the 907 respondents in this group, 316 (about 35 percent) were successfully able to redeem their vouchers for cash. According to the follow up data, about 110 (16 percent of 691 respondents) reported contacting our Dakar representative. However, only 12 beneficiaries migrated to Dakar using this offer. Furthermore, we registered 4 respondents who attempted to migrate but were intercepted by immigration officers due to improper documentations (lack of valid photo identification). The authorities raised questions about the objective of the travels and requested further clarifications to rule out smuggling intents. Respondents explained the objective of the project and gave the contact information of the project. We provided clarification with a supporting

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[18] JFIN has 15 money transfer payment points across the two regions, 8 in CRR and 7 in URR.

letter issued by the Ministry of Youths and Sports approving the study. The issue was resolved, and respondents were informed through text messages that they needed a valid travel document to take up migration to Dakar. According to the follow up survey, the main reasons for not migrating to Dakar included being unable to redeem the vouchers for cash (28 percent), too many responsibilities in the village (13 percent), not enough information about the offer (10 percent), unable to afford the costs of staying (10 percent), not interested in working in Dakar (7 percent), working (5 percent), not trusting the offer (4 percent), and studying (4 percent).

These logistical issues suggest that facilitating large regional international migration flows may require offering potential migrants more assistance than was needed to facilitate internal migration in Bryan et al. (2014). A more intensive intervention could also provide financial and logistical assistance for finding housing, and potentially connect migrants to employers before moving to ensure that they have jobs ready to start upon moving. Such assistance could be potentially more important when facilitating migration to places where there is not a strong existing network that migrants could otherwise use to help find jobs, housing, and other support.

The final treatment was the tuition-free vocational training program. Out of the 892 respondents assigned to this treatment, 680 (about 76 percent) of them said they were interested in participating in the training program. In collaboration with The Gambia Technical Training Institute (GTTI), training was scheduled for September 2019, and would last for six months. The training finally started on 25 November 2019. The reason for the delay of the training program was due to respondents' preference. They requested that the training start at the end of the rainy season as the majority of them were engaged in farming activities, and were unable to leave their farms to engage in the training program. 105 participants (12 percent) enrolled in training. In feedback from monthly surveys of beneficiaries participating in the training program, they complained about financial pressures in sustaining themselves while studying, and so we added a monthly stipend of 1,000 GMD conditional on regular attendance. The COVID-19 pandemic resulted in the closure of all educational programs in the country as of 18th March 2020. This resulted in a nine-month suspension of the GTTI training program partway through the program. The training program was then resumed in January through July 2021. Only half the participants returned, with 49 respondents participating throughout training and 31 of them being certified by the program. Youth in this treatment group indicated several reasons for not taking up the training offer. The main reason was due to too many responsibilities in their home villages (33 percent), while the other

most prevalent reasons were not being called back for the registration (13 percent), not enough information about the course (11 percent), studying (6 percent), too expensive/couldn't afford it (6 percent), distance to the training center (4 percent), difficulty in finding accommodation (4 percent), and not interested in the training subjects (4 percent).

The lesson for future attempts to provide vocational training as an alternative to irregular migration is that it may not be enough to make such training free – potential migrants may need help covering transportation and subsistence costs, as well as the opportunity cost of their time while participating in such a program.

4. Data and estimation methods

4.1 Baseline data and estimating short-term effects

Our baseline survey, in April-May 2019, contained questions about the knowledge, beliefs, and intentions individuals had about backway migration and migration to Senegal. Our knowledge questions asked factual statements (e.g. how much does it typically cost to migrate from The Gambia to Italy through the backway; True or False: Some backway migrants are forced to work for others without being paid; True or False: Gambians do not need a passport to travel to Senegal), and were used to construct pre-specified knowledge measures defined as the number of correct responses (see Appendix B for the full list of questions).

Our baseline beliefs and intentions questions then attempted to ask for subjective probabilities (Delavande et al, 2010). We attempted to make it easier for individuals with no schooling to answer percent chance questions on a 0 to 100 scale by using a dynamic slider, as suggested by Maffioli and Mohanan (2018), and went through demonstration questions asking about the chances of rainfall and going to market to illustrate the use. Beliefs about the riskiness of migration were then assessed by asking questions such as "Out of every 100 Gambians who try the backway to Europe, use the slide (marked from 0 to 100) to indicate how many do you think make it at least as far as Libya or Morocco?", "are attacked or robbed?", etc.). We use this to form a pre-specified index of standardized z-scores about these beliefs about the different risks (appendix B). At baseline we likewise mention intentions by using the dynamic slider to assess their percent chance of migrating to Europe and to Senegal in the next year.

Unfortunately, respondents struggled with these probabilistic responses, despite the visual aids. There was considerable heaping of responses at 50 percent, which Fischoff and Bruine de Bruin (1999) note often reflects individuals having no idea, as well as at 0% and 100%. Many of the responses about nested risks were not statistically consistent – for example, one quarter gave a higher probability of the risk of dying on the way to Europe than the probability of not making it to Europe for any reason (including death). There still appears to be some signal in these responses, in that they are correlated with other likely baseline predictors of migration, but this noise will make it hard to detect changes.

Finally, because of potential concerns about eliciting these subjective expectations from this population, we also implemented a behavioral task-based measure of interest in migration to Europe. During the interview respondents were given a flyer, which said if they want to find out more about wages for Gambians in Europe, they should send an SMS message in the next 7 days. We then measure whether treatment changed the likelihood of requesting this wage information, which we view as an action-based proxy of continuing to be interested in migrating to Europe.

We measure the short-term, immediate, changes in knowledge, beliefs and intentions through randomizing at the individual level the placement of these questions in our baseline survey:

Group A: received these questions *only before* being shown the information video and receiving their intervention.

Group B: received these questions *only after* being shown the information video and receiving the intervention.

Group C: received these questions *both before and after* being shown the information video and receiving the intervention.

Our pre-analysis plan registered with the AEA registry then pre-specified that we could use both an *across-subject* and a *within-subject* design to estimate the short-term effects.

The *across-subject* design uses groups A and B in all villages. Let *Group B* be a dummy variable that takes value 0 if individual *i* in village *s* is assigned to group *A*, and value 1 if they are assigned to group B. Then we estimate:

$$Y_{i,s} = a + \beta_1 Information_s + \gamma_1 GROUPB_{i,s} + \mu_1 Information_s * GROUPB_{i,s}$$

$$+\beta_2 Senegal_s + \mu_2 Senegal_s * GROUPB_{i,s} + \beta_3 Vocational_s + \mu_3 Vocational_s * GROUPB_{i,s}$$

$$+ \sum_{j=1}^{98} \delta_j 1(s\epsilon strata_j) + \varepsilon_{i,s} \qquad\qquad (1)$$

Here β_1, β_2, and β_3 give the difference in outcome for individuals in Group A in the treated villages versus the control villages. Since these outcomes are asked pre-intervention, these coefficients should be zero in expectation. γ_1 then gives the difference in this outcome for individuals in Group B compared to Group A in the control villages. It jointly captures any effect of the placebo video and of receiving a question after a video rather than before. Our key coefficients of interest are then μ_1, μ_2 and μ_3, which capture the difference-in-difference effect of being asked after the intervention compared to before the intervention in treatment villages versus control villages. The standard errors are clustered at the village level, since although Group is assigned at the individual level, treatment is assigned at the village level.[19] Note that we are estimating the intent-to-treat effect of receiving the video part of the intervention and the offer of transport to Senegal in Treatment 2 or offer of training in Treatment 3. Since this is delivered along with the baseline survey, compliance is 100 percent, and so the ITT is the TOT for this part of the treatment.

The *within subject* design only uses Group C villages. Let $\Delta Y_{i,j}$ denote the post-intervention minus pre-intervention change in the given outcome for individual i in village s. Then we use Group C to run:

$$\Delta Y_{i,s} = a + \beta_1 Information_s + \beta_2 Senegal_s + \beta_3 Vocational_s + \sum_{j=1}^{98} \delta_j 1(s\epsilon strata_j)$$

$$+ \varepsilon_{i,s} \qquad (2)$$

where the standard errors are again clustered at the village level. If merely asking the question twice in quick succession changes responses, this will get captured in the control villages by a.

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[19] In practice, the knowledge questions were not asked in *Group A*, and only asked post-intervention in Groups B and C. A simpler across-subject design for the knowledge questions then uses only Groups B and C and estimates $Y_{i,s} = a + \beta_1 Information_s + \beta_2 Senegal_s + \beta_3 Vocational_s + \sum_{j=1}^{98} \delta_j 1(s\epsilon strata_j) + \varepsilon_{i,s}$. This captures the impact of receiving the treatments relative to the placebo video.

The coefficients of interest in this regression are β_1, β_2, and β_3, which give the impact of each treatment on the difference in outcomes before and after the individual intervention in Group C villages.

The advantage of the within-subject design is that it potentially improves power by controlling for individual-specific levels of the outcome pre-intervention. However, the disadvantage is that there could be an anchoring effect, since individuals are asked the questions only about one hour apart. They may therefore anchor their post-intervention responses on their pre-intervention responses and not change them as much. The across-subject design is not subject to this concern, but may have larger variance.

4.2 Follow-up survey data

Our primary hypothesis was that our three treatments would reduce the likelihood of backway migration from the Gambia, increase the likelihood of migration to Senegal and internal migration, and improve the well-being of the young men in our sample. We pre-specified primary outcomes in three domains to test this. The first domain consists of measures that capture steps, attempts, and actual backway migration to Europe. The second domain consists of measures of migration to Dakar and other parts of Senegal, and of internal migration. The third domain consists of broader measures of well-being, such as life satisfaction, experiences of violence, and monetary income. Appendix B details how these outcomes are measured.

These outcomes were measured by a three-step endline survey, which took place between September and November 2020, approximately 18 months after the information intervention, and approximately six months after COVID-19 had led to border closures worldwide. We first conducted phone calls to obtain the current location of half of the youth who were interviewed in the baseline survey. In case of repeated unsuccessful call attempts, the household head was contacted and surveyed. This provided a first data point on migration for those contacted, as well as helped plan the logistics for in-person surveying. We then conducted face-to-face surveys, attempting to interview in-person all youth interviewed in the baseline survey. These surveys asked detailed questions about migration episodes and attempts, work, well-being, and the influence of the COVID-19 pandemic. We also administered an elder survey in each of the 391 settlements, during which the most knowledgeable elder (generally the village leader) was interviewed. The third step was an extensive tracking approach through a second round of phone surveys for all

those individuals who could not be interviewed in person during the second phase and had not been successfully interviewed by phone in phase 1.

We also attempted to obtain migration outcomes using WhatsApp location sharing. During the baseline (August 2019), respondents were shown how to share their current location using WhatsApp. Respondents were asked via audio messages to share their current locations and for each location share, were compensated with mobile credit equivalent to 50 Gambian Dalasi. This exercise was repeated during the endline survey (in August 2020) and afterwards (in January and February 2021).

We employed the same survey firm used for baseline, to maximize the trust in enumeration and the chance of relocating individuals. Surveys were done on tablets with multiple consistency checks, and geo-coded and time-stamped to verify where and when surveys were done. After the data cleaning exercise, a total of 2,761 youths, 370 household heads and 391 elders were successfully surveyed through face-to-face interviews. We ended up with a final panel of 3,640 youth which were either interviewed face-to-face (n=2,761) or through the phone (n=475), or for which we got information from their household head (n=370), the elder survey (n=28) or only their WhatsApp location (n=6). Only 1 individual, a teacher was lost because he could not be contacted by phone and the whole household had moved out.

4.3 Estimating treatment impacts using the follow-up data

We use outcomes from the follow-up survey and run the following linear regression to estimate intention-to-treat effect. As before, let *Information*, *Senegal* and *Vocational Training* be dummy variables that take value one if the individual is assigned to the information intervention, Senegal migration alternative, and offer of vocational training respectively. Then for outcome *y* for individual *i* in settlement *s* we estimate:

$$y_{i,s} = \alpha + \beta_1 Information_s + \beta_2 Senegal_s + \beta_3 Vocational\ Training_s +$$
$$\sum_{j=1}^{98} \delta_j 1(s \epsilon strata_j) + \varepsilon_{i,s} \quad (3)$$

where δ_j are randomization strata fixed effects (following Bruhn and McKenzie, 2009), and the standard errors $\varepsilon_{i,s}$ are clustered at the settlement level.[20] As mentioned above, note that everyone

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[20] Our clustered random assignment allows for spillovers within settlements but assumes no spillovers across settlements. The vocational training vouchers and transport incentives were given to individuals and unlikely to be

in any of the three treatments received the information part of the intervention at the time of receipt of the baseline survey. For the information treatment effect, the ITT is therefore equal to the treatment effect on the treated. For the Senegal and Vocational Training treatments, the parameters β_2 and β_3 measure the impact of receiving the information video treatment and then receiving the offer of assistance to travel to Senegal or the offer of vocational training respectively. We do not estimate the TOT for these two treatments, since those who do not take the bus to Senegal or take-up the vocational training still have received the information part of their treatments, which could affect outcomes, and the offer of the migration alternatives could have also caused them to consider other alternatives to backway migration. This precludes the use of assignment to treatment as an instrument for take-up of these parts of the treatment.

Note that the specification in equation (3) does not control for the baseline value of the outcome. While an Ancova specification typically can boost power, it is not possible in our setting since our key outcome variables are ones where all individuals have the same baseline value (i.e. they have not migrated). McKenzie (2019) discusses this situation, and we follow the recommendation there to boost power by ex-ante stratifying on geographic region and village-level migration experience and intentions. Then to further boost power, we use the post-double-selection lasso approach of Belloni et al. (2014), using 40 pre-specified control variables as inputs.[21] This approach potentially chooses different control variables for each different outcome, selecting to control for the set of variables that either help strongly predict the outcome (thereby replacing the typical lagged dependent variable in Ancova) or that strongly predict treatment (which occurs if there is baseline imbalance arising from chance or attrition).

We use three approaches to address different aspects of multiple hypothesis testing. First, we pre-specified our primary outcomes, broken up into domains, and aggregate variables into pre-specified index measures, particularly in the well-being domain. Single-estimate p-values from this approach are then useful for understanding results in a pre-specified primary hypothesis domain, as well as for comparing results for this outcome to those for the same treatment and

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transferred across villages, and the information treatment is also unlikely to diffuse quickly, especially given the limited effects we find of this treatment.

[21] We use the village, socioeconomic, and migration history variables shown in our balance tables 1A, 1B, and 1C, along with four additional baseline variables that we believed may affect willingness to migrate (health, risk attitude, patience, and self-efficacy). We partial out the randomization strata fixed effects before selecting these variables.

outcome in other studies. Second, since we have three treatments, we include an F-test that tests the null hypothesis that all three treatments are jointly zero. Finally, in addition to providing single-estimate p-values, we calculate sharpened q-values that control the false discovery rate when testing multiple treatments against multiple outcomes within a domain.

5. Impacts

5.1 Short-term impacts on migration knowledge, beliefs, and intentions

Table 2 uses the randomized placement of questions in the baseline survey, and the action-oriented measure of whether survey respondents request more information about wages in Europe by SMS, to provide the short-term effects of the interventions.

We begin by examining impacts on migration knowledge. Column 1 shows that all three interventions did succeed in significantly improving knowledge about backway migration relative to the control group. The estimated impact is 0.10 to 0.13 more questions right out of 5, which is a relatively modest 4 percent increase in the control mean, or approximately 0.1 standard deviation. The questions asked did not exactly correspond to the content of the informational video, and we see the largest improvements on two questions that did explicitly cover video content: knowing how expensive the backway is, and knowing that some backway migrants are forced to work for others without pay (Appendix Table C1). Column 2 shows that knowledge about migrating to Senegal improved from the Senegal alternative intervention by a similar magnitude of 0.12 questions and, surprisingly, also from the vocational training intervention. This improvement shows up most strongly in terms of individuals knowing they do not need a passport to travel to Senegal, and that they can legally work in most jobs in Senegal without having to apply for a work permit (Appendix Table C2).

In contrast, columns 3 and 4 show that we cannot reject the hypothesis that none of the treatments had significant impacts on beliefs about the risks of backway migration. Columns 5 to 8 then examine impacts on their anticipated likelihood of migrating the backway or to Senegal. The coefficients differ a bit between our across-subject and within-subject designs, and we do not see a clear effect on backway migration or migration to Senegal intentions. As noted, individuals had difficulty expressing their beliefs and intentions using the probabilistic scale, even with visual aids,

and so lack of impact on other outcomes may reflect measurement problems, or that the information alone was not enough to change intentions.

Finally, column 9 examines our action-oriented measure of interest in migration. 11.4 percent of the control group took the action of sending an SMS message to find out more about wages for Gambians in Europe. We find that the Senegal treatment significantly lowered this by 4 percentage points, suggesting less interest in considering Europe as a migration destination. Taken together, we view these short-term results as suggesting that the information part of the interventions was able to generate new knowledge, and, for the Senegal migration alternative at least, change intentions to migrate.

5.2 Impacts on migration knowledge and intentions over the longer-term

We begin our analysis of the follow-up survey data by asking whether the interventions had lasting impacts on knowledge about migration to Europe and Senegal, and migration intentions over the next five years.

The first three columns of Table 3 examine impacts on knowledge. We find no significant impact on knowledge about backway migration (column 1), nor in the likelihood that the individual is over-optimistic about the wages they can earn abroad or the likelihood of asylum (column 2). Column 3 shows the Senegal treatment resulted in a lasting improvement in knowledge about migration to Senegal. The effect size of 0.14 questions out of five is similar in magnitude to the impact measured immediately after showing the informational video, and shows that any knowledge depreciation from the video has been offset by experiential learning from more lasting migration to Senegal.

Given the issues we experienced with asking probabilistic likelihoods of migrations at baseline, our registered report specified that we would switch to using a 5 category Likert scale to measure migration intentions at endline. We then look at impacts on saying they will "surely" move in the next five years (5 on the Likert scale), or that they will "likely or surely" move (4 or 5 on the Likert scale). Columns 4 to 6 examine impacts on longer-term intentions of migrating to Europe and using the backway. The desire to migrate to Europe remains very high, with 28 percent of the control group saying they will surely move in the next five years; 52 percent saying they are sure or likely to migrate; and 42 percent saying they would consider the backway. We find all three treatments have some negative impact on these expressed likelihoods. The largest and most

significant impacts are seen for the vocational training treatment, which lowers the intention to migrate by 5 to 7 percentage points, and of considering the backway by 9 percentage points.

Columns 7 and 8 show that these youth have lower intentions to migrate to Senegal in the next five years, with only 12 percent of the control group saying they "surely" will, and 22 percent of the control group sure or likely to migrate. The Senegal treatment increases these intentions by 3 to 7.5 percentage points. This impact on surely or likely migrating also holds after multiple testing corrections.

Overall, these results show our interventions had lasting impacts on migration knowledge and intentions, with the change in intentions stronger for the policy interventions providing alternatives to irregular migration.

5.3 Treatment impacts on backway, Senegal, and internal migration

Table 4 provides the estimated treatment effects on our different primary migration outcomes. Columns 1 to 3 examine impacts of the different treatments on migration to Senegal. We see that 11 percent of the control group has gone to work in Senegal at some point in the 18-month follow-up period. However, most of this migration is short-term and shorter distance, with only 1.7 percent having gone to Dakar, and only 1.6 percent residing in Senegal at the time of the follow-up survey. None of our treatments had sizeable or significant impacts on migration to Dakar, but the Senegal and vocational training interventions increased the likelihood of residing somewhere in Senegal at the time of the follow-up survey by, respectively, 2.2 and 2.6 percentage points, which more than doubles the rate in the control group. These effects continue to hold after adjusting for multiple hypothesis testing.

Our survey data provides descriptive information on this form of migration. The migrants are about evenly split between urban and rural areas in Senegal. Very few are involved in agricultural activities, unlike in their rural areas of origin, with the main occupations being working in construction and self-employment activities such as small-scale trading. We do not have income data for many of these migrants, but for those that we do, the average reported income is 6,333 Gambian Dalasi (GMB) per month. This is in line with the wages of 75,000 to 100,000 CFA (6,500 to 8,700 GMB) reported by the Gambian migrants residing in Senegal who were interviewed for

our informational video, and is more than 80 percent higher than the average earnings of 3,452 GMB for those who manage to find (paid agricultural) work in their home villages in the Gambia.[22]

The next two columns of Table 4 examine impacts on internal migration to the capital city of Banjul. This is the most common form of migration, with 41 percent of the control group having spent at least a month in Banjul during our 18-month follow-up period, and 10.7 percent being there at the time of the follow-up survey. The Senegal treatment is found to have reduced the likelihood of having gone to Banjul at some point during the follow-up period by 7.6 percentage points, and the vocational training treatment by 3.6 percentage points. Both these interventions therefore appear to have spurred some longer-term migration to Senegal and crowded out some temporary internal migration. Our wage data show the average monthly earnings of those in Banjul at the time of the endline survey were 5,088 GMB, which is almost 50 percent higher than income in their home villages, but more than 1,000 GMB (20 percent) lower than the income earned by those working in Senegal.

The last three columns then examine whether the treatments changed backway migration. Column 6 examines the number of concrete steps taken towards backway migration, such as saving the money needed, asking someone for help finding a job or accommodation, and mapping out the route and making a travel plan. The control mean is for 1 step out of 5 to be completed, and the vocational training treatment reduces this by 0.15 steps. However, this effect is no longer significant when adjusting for multiple hypothesis testing across all backway migration outcomes. We then see small (0.1 to 0.4 percentage point) reductions, which are not statistically significant, on the likelihood of attempting the backway, and of making it to Europe. However, the control mean is only for 1.1 percent of individuals to have made a backway migration attempt, and only 0.6 percent to have made it to Europe. This very low rate of migration reflects the large drop in aggregate migration from The Gambia seen in Figure 1, and is one-seventh of the 7 percent rate anticipated in our power calculations and stage 1 registered report. The result is that there were very few backway migration attempts taking place in our sample for the treatments to deter. If we had reduced backway migration, we hoped this might lead to an improvement in well-being and a

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[22] Recall that only 28 percent had done any paid work in their village in the past month at baseline, so paid job opportunities are scarce. However, we do not measure the own consumption value of unpaid agricultural work at home, nor differences in the cost of living across locations, both of which would cause the difference in nominal wages across locations to overstate the overall welfare gain from migrating.

reduction in the risk that individuals faced (namely on violence and threats to life). Appendix Table D1 shows no significant impacts on overall well-being.

To further help understand this low migration rate, we conducted qualitative discussions with some of the study respondents. They noted several reasons for the low level of backway migration. The first was the change in government in The Gambia, which they saw as being associated with higher risks of being denied asylum upon arrival in Europe given the no longer autocratic nature of the political regime in The Gambia, combined with higher risks of being deported when detected in Europe with irregular migration status. Indeed, there were several newspaper stories about the government signing an agreement with the European Union to deport irregular migrants in exchange for aid funding. Second, there was an increased difficulty in financing the trip (potentially because of this increase in risk), so that some of them are using seasonal migration to urban areas and to Senegal to accumulate savings to fund eventual backway migration. Third, the COVID-19 pandemic had further deterred migration. Finally, some mentioned that they still intended to migrate, but were just waiting on "fate to decide when". This is in line with our results in Table 3 that showed intentions to migrate remain high, with our interventions reducing these longer-term intentions to migrate the backway.

5.5 Exploratory Analysis of Heterogeneous Effects

Our registered report specified that we would examine whether our interventions had more impact on those who were more likely to be considering migrating in the absence of any intervention. Given that there is almost no backway migration, we examine this heterogeneity only for migration to Senegal and internal migration to Banjul.[23] In Table 5 we examine how the impacts of our different treatments vary with prior migration experience. Panel A examines how the impacts differ for the 22 percent of the sample who had previously migrated to Senegal at baseline. We do find significant treatment heterogeneity. The Senegal treatment and vocational training treatments increase Senegal migration and reduce internal migration significantly more for those with past

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[23] Our registered report stated that we would use the repeated split-sample approach of Abadie et al. (2018) to examine heterogeneity by whether individuals were above or below the mean predicted outcome. However, we did not realize that this approach currently does not apply to the clustered randomization set-up (it is unclear whether sample splitting should be done at the individual or cluster level, and the standard errors in the implemented Stata command do not allow for clustering), nor does it apply to examining multiple treatment effects. Moreover, given the low incidences of current migration to Senegal and Banjul at follow-up, our prediction models are not very accurate for predicting which individuals migrate. We therefore use the simpler single variate heterogeneity approach.

experience in Senegal. Panel B examines how impacts vary for the 38 percent of youth that had prior internal migration experience. We see no significant heterogeneity with respect to past internal migrant experience.

These results suggest that efforts to spur regional migration are likely to be more effective for youth who already have some experience or who are closer to considering this destination. The fact that ITT effects of the vocational training intervention on increased migration to Senegal were concentrated among those individuals that had prior experience migrating to Senegal further reinforces the evidence supporting that the vocational training intervention increased the salience of the construction and small appliance occupations for which training was provided, which were available in neighboring Senegal areas – but not in the rural areas of origin.

5.6 Comparison to migration expert and Gambian stakeholder predictions

In July and August 2020, before the follow-up survey was collected, we invited migration scholars who had participated in the annual Migration and Development conference, along with World Bank migration experts, to provide their predictions as to the treatment effects through the Social Science Prediction Platform (DellaVigna et al, 2020). We asked for point estimates, along with a 90 percent confidence interval for key outcomes. We received responses from 36 migration experts living in 13 different countries. We also carried out a dissemination event at the University of The Gambia, and elicited predictions of the program effects from 22 academics, aid agency officials, and local journalists. We asked them their expectations of migration outcomes in each of the four groups, and calculated the treatment effects expected by comparing their control group to treatment group estimates.

Table 6 examines the extent to which our results line up with the priors of these experts and stakeholders. First, note that our ability to track the location of migrants was far greater than expected by migration experts. On average, they expected 28 percent attrition in measuring migration based on direct reporting, and 17 percent including proxy reports, with our realized rates of 11 percent and 0.03 percent attrition below the mean elicited 5th percentile.

Second, our estimated treatment effects on steps towards the backway and attempted backway migration are smaller than expected by academic experts, but within their 90 percent confidence intervals. The impacts on migration to Senegal are smaller than predicted for the Senegal treatment, and slightly larger than predicted for the vocational training treatment. The Gambian stakeholders

expected backway migration attempts to be far more common than they actually were, and for the vocational training intervention to have the largest impact on reducing these attempts, and they expected the Senegal treatment to have increased migration to Senegal by far more than it did. Consistent with our results, both groups did expect offer alternatives to have more impact on migration patterns than just providing information about the risks of the backway.

The most surprising features of our results to migration experts are therefore the very low attrition rate in measuring migration, and that facilitating migration to Senegal did not have a larger impact; while the most surprising results to local stakeholders were that backway migration was much less than expected, and also that the Senegal intervention did not have a larger impact.

6. Concluding Remarks

We evaluated the impact of three policy interventions aimed at reducing risky irregular migration from West Africa to Europe and providing alternative livelihoods for Gambians. Providing information about the risks of migration did increase knowledge about backway migration in the short-run, but had only small and statistically insignificant impacts on longer-term intentions to migrate to Europe, and did not significantly change regional or internal migration. This is consistent with the somewhat limited effectiveness of information campaigns in combatting irregular migration in other settings, and suggests the need to consider additional interventions. In contrast, policies which also offered alternative pathways to improving livelihoods through either facilitating regional migration to Senegal or offering vocational training opportunities led to lasting impacts on migration intentions, and to changes in regional and internal migration. These changes took place despite relatively limited take-up of our regional migration assistance and attendance in our vocational training program, suggesting that these programs may have also increased the salience of other types of opportunities. We do not find any significant impacts on actual migration rates to Europe during this period, since aggregate migration from the Gambia fell sharply due to a change in European asylum policy and the COVID-19 pandemic. As a result, over the eighteen-month period we consider, there were very few backway migration attempts taking place for the treatments to deter. This fall in irregular migration was a surprise not only to our research team, but also to local and international experts.

Our results also highlight the importance of targeting migration-related policies: it is often hard to reach those most likely to migrate in a population, but this is crucial for effectiveness and actual impact. While we targeted young males in high migration areas, our findings illustrate how geographic and demographic targeting alone are unlikely to be enough, and further targeting on more variables may be needed for program effectiveness. For example, our heterogeneity results highlight that prior migration experience to Senegal was a necessary condition for both the regional migration and vocation training interventions to generate significant actual new migration flows to Senegal. Individuals with this prior experience are likely to be closer to the margin of actually migrating again, and so our treatments may have been strong enough to provide the impetus for them to change their migration decisions, even though stronger treatments may be needed for those who were not considering migration or who had never migrated before to consider trying a new location.

These results show impacts over a 18-month horizon. In future work it would be useful to consider longer term impacts. Although our Senegal and vocational training treatments increased regional migration and reduced internal migration, it is unclear whether these could in turn affect the tendency to migrate to Europe over a longer time period. Migration to Senegal might serve as a substitute to European migration if it allows individuals to improve their livelihoods without facing the risks of irregular travel. Conversely, it may serve a stepping stone to future migration, by enabling potential migrants to earn money they can use to finance the costs of longer distance moves. Likewise, vocational training may expand job opportunities in the future at home, or merely delay migration to Europe while individuals undertake training, and over a longer-term horizon make it easier for them to find jobs abroad.

A final, and more fundamental reason for further study is that the desire to migrate the backway remains strong, even if few individuals attempted this form of migration during our study period. Our sample reports low levels of satisfaction of targeted individuals with their current lives, and a strong intention to migrate to Europe over the next five years. While backway migration dramatically fell during 2019 and the initial stages of the pandemic, as of June 2022, it appears to be increasing again. Current news reports also suggest it may have become even riskier, with Gambians shifting to the West Atlantic route to the Canary Islands, with an accompanying rise in

tragic stories of young men losing their lives at sea.[24] Targeting and testing efforts to reduce these dangerous journeys remains an ongoing policy imperative.

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[24] See, for example, https://www.dw.com/en/spains-canary-islands-draw-more-migrants-despite-dangers/a-59953338 [accessed June 30, 2022].

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Figure 1: Recorded Irregular Migration Flows from The Gambia 2010-2020, and Local Beliefs
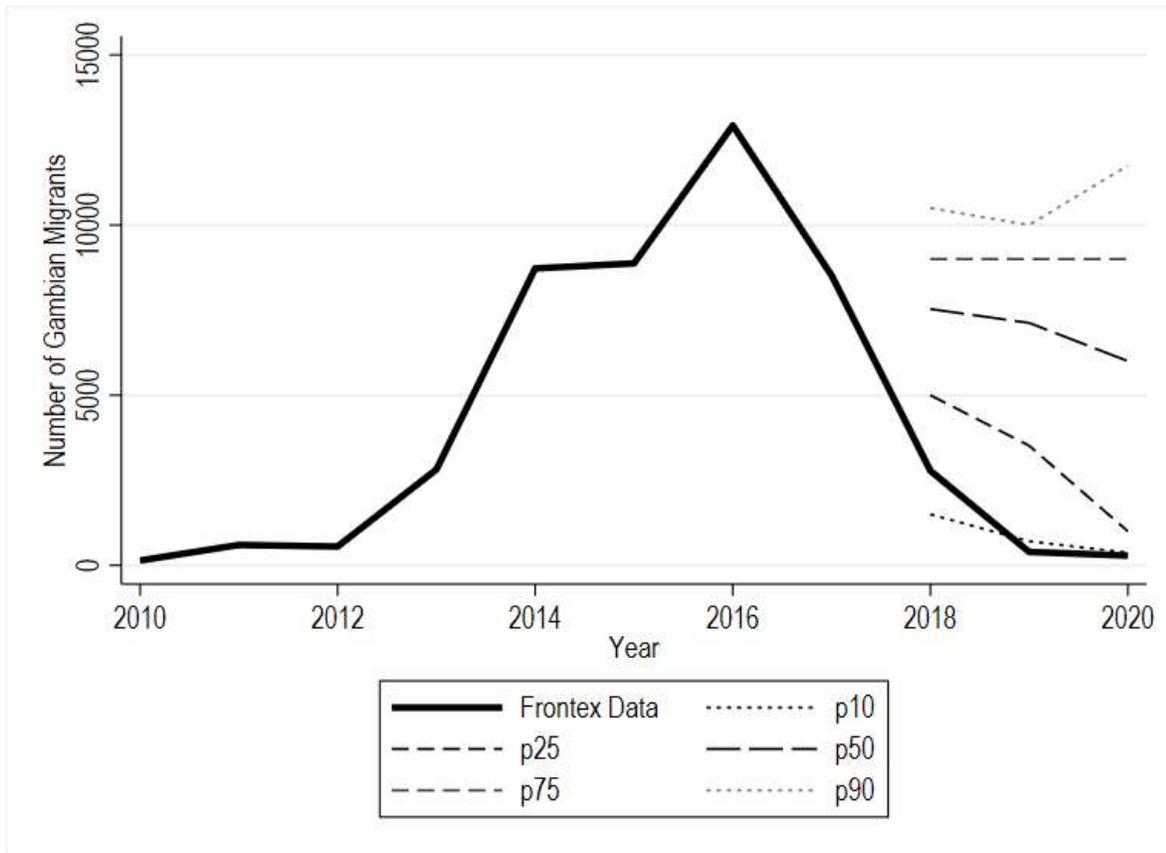
Notes: Irregular migration flow data come from FRONTEX, the European Border Agency. In June 2021, we held a local dissemination workshop at the University of The Gambia, and gave local researchers, aid agency officials and journalists the number of migrants recorded in 2014, 2015, 2016, and 2017, and asked them what they thought the 2018-2020 annual numbers were. The lines p10, p25, p50, p75, and p90 report the 10th, 25th, 50th, 75th, and 90th percentiles of their beliefs on these numbers.

Figure 2: Map of The Gambia, showing selected settlements by treatment status and relation to Banjul and Dakar
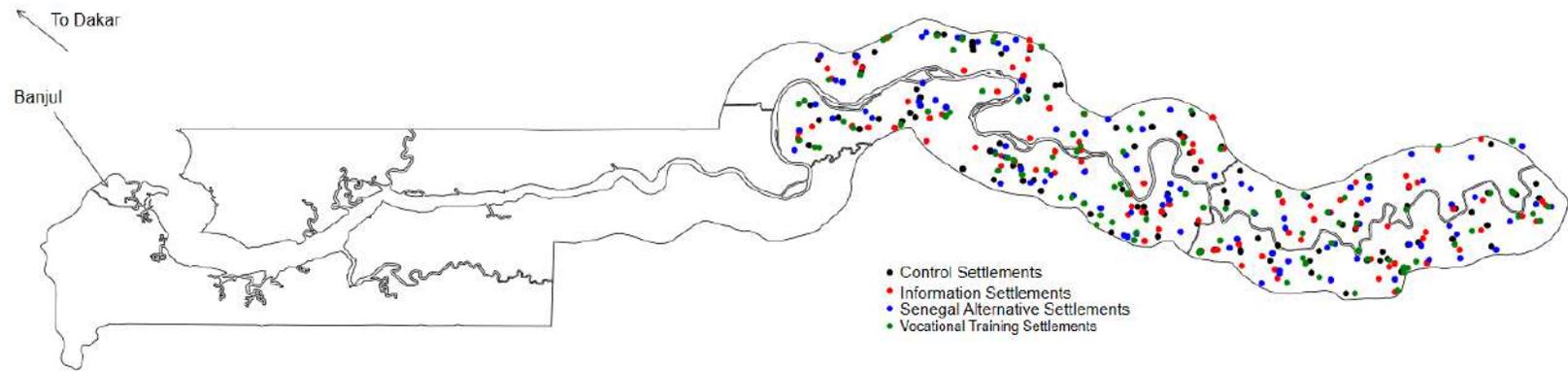
Note: All settlements are within The Gambia. Atlantic Ocean is to the West, and the remainder of the country is surrounded above and below by Senegal. This map is intended to illustrate the random assignment of settlements and the position of these settlements relative to Banjul and Dakar. The boundaries, colors, and other information shown on this map do not imply any judgement as to the legal status of any territory or boundary.

Table 1A: Baseline Balance on Village Variables Elicited from Elders

	Control Group Mean/SE	Information Group Mean/SE	Senegal Group Mean/SE	Training Group Mean/SE	Pooled Sample Mean/SE	F-test for joint orthogonality
Number of 15-30 year old males in the settlement	175	178	228	160	185	1.031
	[25]	[18]	[46]	[23]	[15]	
Fraction of households in this settlement with migrants in Europe	0.177	0.170	0.200	0.172	0.180	0.342
	[0.022]	[0.020]	[0.025]	[0.017]	[0.010]	
Fraction of households in this settlement have migrants in Senega	0.108	0.123	0.126	0.142	0.125	0.549
	[0.021]	[0.020]	[0.022]	[0.025]	[0.011]	
Fraction of households in this settlement have migrants in Banjul	0.224	0.259	0.295	0.288	0.267	2.679**
	[0.028]	[0.031]	[0.034]	[0.034]	[0.016]	
Any vocational training program operating?	0.022	0.022	0.043	0.022	0.027	0.402
	[0.015]	[0.015]	[0.021]	[0.015]	[0.008]	
Any information campaign about migration previously run?	0.185	0.183	0.247	0.217	0.208	0.452
	[0.041]	[0.040]	[0.045]	[0.043]	[0.021]	
Cost of Bus ticket to Dakar (in Dalasi)	857.315	918.935	916.559	855.880	887.338	0.981
	[31.309]	[41.666]	[32.614]	[30.489]	[17.179]	
Number of observations	92	93	93	92	370	

Notes: Baseline settlement data is missing for 21 settlements. F-test for joint orthogonality conditions on randomization strata fixed effects.
***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table 1B : Balance on Socioeconomic Characteristics from Baseline

	(1) Control Group Mean/SE	(2) Information Group Mean/SE	(3) Senegal Group Mean/SE	(4) Training Group Mean/SE	(5) Pooled Sample Mean/SE	F-test for joint orthogonality
Age	23.002	22.839	22.686	22.669	22.799	1.567
	[0.148]	[0.162]	[0.144]	[0.156]	[0.077]	
Own a cellphone	0.821	0.833	0.836	0.845	0.834	1.006
	[0.014]	[0.012]	[0.015]	[0.014]	[0.007]	
Has a Whatsapp account and shared it	0.459	0.495	0.480	0.497	0.483	1.474
	[0.027]	[0.023]	[0.023]	[0.023]	[0.012]	
Speaks English well enough for work	0.217	0.261	0.230	0.295	0.251	4.157***
	[0.021]	[0.026]	[0.023]	[0.024]	[0.012]	
Speaks French well enough for work	0.012	0.009	0.012	0.021	0.014	1.605
	[0.004]	[0.003]	[0.004]	[0.005]	[0.002]	
Highest Grade of School Completed	3.281	3.405	3.388	3.748	3.455	1.711
	[0.248]	[0.278]	[0.254]	[0.250]	[0.129]	
Married	0.301	0.294	0.284	0.269	0.287	1.134
	[0.022]	[0.022]	[0.019]	[0.020]	[0.010]	
Main occupation in rainy season non-agricultural paid work	0.063	0.055	0.063	0.077	0.064	1.760
	[0.008]	[0.007]	[0.012]	[0.010]	[0.005]	
Worked for pay in last month	0.291	0.270	0.278	0.260	0.275	0.341
	[0.020]	[0.019]	[0.019]	[0.019]	[0.010]	
Household member skipped meal in last month due to no funds	0.117	0.103	0.119	0.111	0.112	0.673
	[0.015]	[0.012]	[0.014]	[0.012]	[0.007]	
Asset index	-0.022	0.171	-0.133	-0.015	0.003	2.080
	[0.124]	[0.131]	[0.138]	[0.103]	[0.063]	
Number of observations	889	953	907	892	3641	

Notes: F-test for joint orthogonality conditions on randomization strata fixed effects, and standard errors are clustered at settlement level.

***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table 1C: Balance on Migration History and Intentions from Baseline

	(1) Control Group Mean/SE	(2) Information Group Mean/SE	(3) Senegal Group Mean/SE	(4) Training Group Mean/SE	(5) Pooled Sample Mean/SE	F-test for joint orthogonality
Has migrated internally since age 12	0.393	0.387	0.355	0.377	0.378	2.101*
	[0.018]	[0.022]	[0.019]	[0.019]	[0.010]	
Has migrated to Europe previously	0.001	0.006	0.002	0.003	0.003	1.820
	[0.001]	[0.002]	[0.002]	[0.002]	[0.001]	
Has migrated to Senegal previously	0.210	0.218	0.232	0.229	0.222	0.350
	[0.019]	[0.020]	[0.020]	[0.023]	[0.010]	
Made unsuccessful attempt to Europe	0.027	0.035	0.028	0.022	0.028	1.593
	[0.005]	[0.007]	[0.006]	[0.005]	[0.003]	
No. people they know who died going the backway	3.281	3.395	3.075	3.139	3.225	0.951
	[0.377]	[0.298]	[0.254]	[0.282]	[0.152]	
No. people they know who made it the backway	11.189	11.307	10.470	9.945	10.736	1.582
	[1.195]	[0.974]	[1.157]	[0.930]	[0.532]	
Have family or relatives in Europe	0.226	0.201	0.186	0.239	0.213	0.597
	[0.032]	[0.029]	[0.027]	[0.035]	[0.016]	
Knows someone deported from Europe	0.398	0.431	0.443	0.406	0.420	0.548
	[0.029]	[0.025]	[0.022]	[0.026]	[0.013]	
Received remittances from outside Gambia	0.292	0.300	0.293	0.275	0.290	0.735
	[0.027]	[0.027]	[0.025]	[0.025]	[0.013]	
Would ideally move internally	0.823	0.805	0.828	0.835	0.823	0.893
	[0.014]	[0.013]	[0.014]	[0.015]	[0.007]	
Would ideally move to Senegal	0.058	0.067	0.068	0.066	0.065	0.544
	[0.009]	[0.009]	[0.010]	[0.010]	[0.005]	
Would ideally move to Europe	0.555	0.547	0.579	0.548	0.557	1.030
	[0.020]	[0.025]	[0.020]	[0.022]	[0.011]	
Number of steps taken towards moving out of Gambia	0.382	0.453	0.394	0.397	0.407	0.709
	[0.046]	[0.042]	[0.038]	[0.039]	[0.021]	
Would ideally migrate to Europe and would go backway	0.126	0.155	0.163	0.142	0.147	1.973
	[0.014]	[0.017]	[0.014]	[0.015]	[0.008]	
Prestige rank of youth working in Europe	1.958	1.946	1.923	1.839	1.917	1.016
	[0.070]	[0.080]	[0.068]	[0.070]	[0.036]	
Prestige rank of failed migration	6.544	6.667	6.644	6.723	6.645	3.533**
	[0.052]	[0.045]	[0.055]	[0.039]	[0.024]	
Prestige rank of youth working in Senegal	4.417	4.338	4.417	4.328	4.375	0.772
	[0.065]	[0.059]	[0.052]	[0.057]	[0.029]	
Having heard of Youth Against Irregular Migration	0.273	0.282	0.294	0.287	0.284	0.357
	[0.019]	[0.020]	[0.020]	[0.022]	[0.010]	
Number of observations	889	953	907	892	3641	

Notes: F-test for joint orthogonality conditions on randomization strata fixed effects, and standard errors are clustered at settlement level.

***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table 2: Short-term Treatment Impacts on Knowledge, Beliefs, and Intentions

	Back-way Knowledge Questions	Senegal Knowledge Questions	Beliefs about Riskiness of Backway Migration		Intent to Migrate to Europe		Intent to Migrate to Senegal		Sent SMS to get wage info
			Across Subject	Within Subject	Across Subject	Within Subject	Across Subject	Within Subject	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Information Treatment	0.122**	0.053	0.007	0.031	1.137	0.068	-4.758*	-1.039	-0.006
	(0.048)	(0.058)	(0.040)	(0.036)	(2.855)	(1.909)	(2.738)	(1.616)	(0.016)
	[0.109]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[0.297]	[1.000]	[1.000]
Senegal Treatment	0.100**	0.121*	0.026	0.011	-4.388	-0.011	-0.400	3.111*	-0.039***
	(0.049)	(0.067)	(0.041)	(0.039)	(3.018)	(1.689)	(2.996)	(1.781)	(0.015)
	[0.226]	[0.297]	[1.000]	[1.000]	[0.449]	[1.000]	[1.000]	[0.297]	[0.109]
Vocational Training Treatment	0.132**	0.158**	-0.034	0.008	2.168	-0.241	3.263	-0.799	-0.006
	(0.051)	(0.064)	(0.045)	(0.031)	(3.023)	(1.785)	(2.774)	(1.482)	(0.016)
	[0.109]	[0.109]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]
Sample Size	2459	2459	2398	1243	2398	1243	2398	1243	3641
Control Mean	2.724	2.863	-0.018	-0.026	42.304	-0.274	32.558	0.130	0.114
P-value	0.029	0.072	0.318	0.854	0.098	0.998	0.003	0.089	0.015

Notes: regressions control for randomization strata fixed effects, and cluster data at the village settlement level. Standard errors in parentheses. *, **, *** denote significance at the 10, 5, and 1 percent levels respectively. [.] contain sharpened q-values that control the FDR when examining all 27 outcomes in table. P-value tests that the three treatments jointly have no impact on the specified outcome.

Backway knowledge questions is the number of correct questions out of 5 about the process of migrating the backway; Senegal Knowledge Questions are the number of correct responses out of 5 about the process of migrating to Senegal; **Beliefs about Riskiness of** Backway Migration is an index of 7 standardized z-scores of the percent of migrants individuals believe experience different risks of backway migration; **Intent to Migrate to Europe** is the percent chance they will migrate to Europe in the next year; **Intent to Migrate to Senegal** is the percent chance they will migrate to Senegal in the next year; **Sent SMS to get wage info** is a dummy variable with value one if they sent an SMS to get wage information for Gambians in Europe, and 0 otherwise. Across subject design shows difference-in-difference coefficients from comparing respondents asked question pre-intervention to those asked question post informational video and offer of Senegal or Vocational Training intervention; Within Subject design uses the pre-post change in outcome for those asked the question both before and after the intervention.

Table 3: Long-term impacts on migration knowledge and intentions

	Number of correct Europe Backway questions	Index of over-optimism about back-way	Number of correct Senegal questions	Will surely move to Europe in next 5 years	Will likely or surely move to Europe in next 5 years	Considers taking Backway to Europe	Will surely move to Senegal in next 5 years	Will likely or surely move to Senegal in next 5 years
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Information Treatment	0.057	0.031	0.036	-0.015	-0.021	-0.052**	0.003	0.008
	(0.040)	(0.034)	(0.054)	(0.021)	(0.024)	(0.022)	(0.014)	(0.020)
	[0.345]	[0.573]	[0.715]	[0.715]	[0.573]	[0.086]	[1.000]	[0.882]
Dakar Treatment	-0.035	0.033	0.144***	-0.038*	-0.040*	-0.008	0.028*	0.075***
	(0.040)	(0.038)	(0.056)	(0.022)	(0.024)	(0.024)	(0.015)	(0.022)
	[0.573]	[0.573]	[0.053]	[0.239]	[0.245]	[0.918]	[0.173]	[0.010]
Vocational Training Treatment	0.021	-0.002	0.020	-0.047**	-0.070***	-0.091***	-0.013	0.009
	(0.044)	(0.036)	(0.051)	(0.021)	(0.023)	(0.025)	(0.014)	(0.021)
	[0.882]	[1.000]	[0.882]	[0.100]	[0.023]	[0.007]	[0.573]	[0.882]
Sample Size	3233	3233	3233	3233	3233	3233	3233	3233
Control Mean	2.860	-0.018	3.643	0.277	0.520	0.416	0.115	0.222
P-value	0.155	0.651	0.053	0.110	0.024	0.000	0.060	0.002

Notes:

All outcomes are measured in endline (18 month) follow-up survey. **Number of correct Europe backway questions** is number of knowledge questions correct out of 5; **Index of over-optimism about backway** is average of standardized z-scores of over-optimism on wages and on asylum likelihoods; **Number of correct Senegal questions** is number of knowledge questions on migrating to Senegal correct out of 5; **Will surely move to Europe in next 5 years** is binary variable for a response of 5 on a Likert scale of 1-5 on likelihood to move; **Will likely or surely move to Europe in next 5 years** is binary variable for response of 4 or 5 out of 5 on a Likert scale; **Considers taking backway to Europe** is a binary variable based on a direct question of whether they would consider taking the backway; **Will surely move to Senegal in next 5 years** is a binary variable for response of 5 on a Likert scale of likelihood to move; **Will likely or surely move to Senegal in next 5 years** is binary variable for response of 4 or 5 on a Likert scale of likelihood to move. All regressions control for randomization strata fixed effects, and baseline controls as chosen by PDS Lasso.

Robust standard errors clustered at the settlement level in parentheses. *, **, *** denote significance at the 10, 5, and 1 percent levels respectively.

Sharpened q-values are provided in square brackets []. They control the FDR for testing three treatment effects across all outcomes in this table.

P-value: all jointly zero is the p-value from an F-test of the joint null hypothesis that all three treatments have no effect on the specified outcome.

Table 4: Treatment Impact on Primary Migration Outcomes

	Senegal Migration			Internal Migration		Back-way Migration		
	Migrated to Senegal	Migrated to Dakar	Currently in Senegal	Migrated to Banjul	Currently in Banjul	Number of steps taken	Attempted Backway	Migrated to Europe
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Information Treatment	-0.019	-0.007	0.009	-0.029	-0.016	-0.007	0.004	0.002
	(0.012)	(0.005)	(0.006)	(0.023)	(0.013)	(0.066)	(0.004)	(0.003)
	[0.280]	[0.280]	[0.280]	[0.311]	[0.361]	[1.000]	[1.000]	[1.000]
Dakar Treatment	0.017	-0.001	0.022***	-0.076***	-0.015	0.047	-0.002	0.000
	(0.013)	(0.006)	(0.007)	(0.022)	(0.013)	(0.067)	(0.004)	(0.003)
	[0.311]	[0.421]	[0.010]	[0.005]	[0.368]	[1.000]	[1.000]	[1.000]
Vocational Training Treatment	0.023*	0.002	0.026***	-0.036*	-0.003	-0.151**	-0.002	-0.004
	(0.014)	(0.005)	(0.008)	(0.021)	(0.014)	(0.065)	(0.004)	(0.003)
	[0.280]	[0.421]	[0.005]	[0.280]	[0.421]	[0.226]	[1.000]	[1.000]
Sample Size	3640	3640	3640	3640	3640	3613	3611	3633
Control Mean	0.110	0.017	0.016	0.411	0.107	0.995	0.011	0.006
P-value: all jointly zero	0.008	0.221	0.001	0.007	0.561	0.017	0.396	0.326

Notes:

All outcomes are measured in endline (18 month) follow-up survey. **Migrated to Senegal** denotes moving to Senegal at any point since the baseline; **Migrated to Dakar** denotes moving to Dakar at any point since the baseline; **Currently in Senegal** denotes being in Senegal at the time of the endline; **Migrated to Banjul** denotes internal migration to the capital city of Banjul at any point since baseline; **Currently in Banjul** denotes being in Banjul at the time of the endline. **Number of steps** taken is number of steps taken towards attempting the backway out of 5. **Attempted backway** denotes attempting migrating the backway to Euope; **Migrated to Europe** denotes making it to Europe. All regressions control for randomization strata fixed effects, and baseline controls as chosen by PDS Lasso. Robust standard errors clustered at the settlement level in parentheses. *, **, *** denote significance at the 10, 5, and 1 percent levels respectively.

Sharpened q-values are provided in square brackets []. They control the FDR for testing three treatment effects across all outcomes in Domain 1 (columns 1-3); and for Domain 2 (columns 4-8).

P-value: all jointly zero is the p-value from an F-test of the joint null hypothesis that all three treatments have no effect on the specified outcome.

Table 5: Heterogeneity in Migration Impacts by Prior Migration Experience

	Senegal Migration		Internal Migration	
	Migrated to Senegal	Currently in Senegal	Migrated to Banjul	Currently in Banjul
	(1)	(2)	(3)	(4)
Panel A: Heterogeneity in impacts by Senegal Migration at Baseline				
Information Treatment	-0.028**	0.002	-0.031	-0.028*
	(0.014)	(0.006)	(0.025)	(0.016)
Senegal Treatment	-0.013	0.015*	-0.053**	-0.007
	(0.014)	(0.008)	(0.024)	(0.015)
Vocational Training Treatment	-0.005	0.012	-0.028	0.012
	(0.016)	(0.008)	(0.023)	(0.016)
Information Treatment*Senegal Migration Experience	0.048	0.032*	0.001	0.055*
	(0.034)	(0.017)	(0.056)	(0.033)
Senegal Treatment*Senegal Migration Experience	0.140***	0.033*	-0.110**	-0.033
	(0.044)	(0.017)	(0.052)	(0.029)
Vocational Training *Senegal Migration Experience	0.140***	0.070***	-0.047	-0.070**
	(0.041)	(0.022)	(0.056)	(0.028)
Sample Size	3640	3640	3640	3640
Control Mean if no Senegal migration experience	0.105	0.019	0.406	0.110
Control mean if Senegal migration experience	0.128	0.005	0.428	0.096
P-value: interactions jointly zero	0.001	0.006	0.051	0.000
Panel B: Heterogeneity in impacts by Internal Migration at Baseline				
Information Treatment	-0.014	0.012*	-0.016	-0.020
	(0.016)	(0.007)	(0.028)	(0.017)
Senegal Treatment	0.026	0.025***	-0.071**	-0.018
	(0.017)	(0.009)	(0.028)	(0.016)
Vocational Training Treatment	0.024	0.034***	-0.029	-0.010
	(0.017)	(0.010)	(0.026)	(0.017)
Information*Internal Migration Experience	-0.010	-0.007	-0.039	0.009
	(0.029)	(0.014)	(0.044)	(0.027)
Senegal*Internal Migration Experience	-0.023	-0.010	-0.021	0.007
	(0.031)	(0.016)	(0.045)	(0.032)
Vocational Training*Internal Migration Experience	0.000	-0.022	-0.032	0.012
	(0.032)	(0.015)	(0.042)	(0.031)
Sample Size	3640	3640	3640	3640
Control Mean if no internal migration experience	0.104	0.013	0.354	0.093
Control mean if internal migration experience	0.120	0.020	0.499	0.129
P-value: interactions jointly zero	0.863	0.554	0.809	0.979

Notes: Regressions include control for interacting variable, for randomization strata, and other baseline variables chosen by PDS Lasso.

Robust standard errors clustered at the settlement level in parentheses. *, **, *** denote significance at the 10, 5, and 1 percent levels respectively.

Table 6: Comparison to elicited expectations of international migration experts and Gambian stakeholders

| | | Expectations of Migration Experts | | | | Gambian Stakeholders | |
| | Estimated Treatment | | | 5th | 95th | | |
	Impact	Mean	Median	Mean	Mean	Mean	Median
Expected Treatment Impacts on Main Outcomes							
Number of Steps Towards Backway (steps out of 5)							
Information Treatment	-0.007 (-0.12, 0.10)	-0.16	-0.1	-0.40	0.13		
Senegal Treatment	0.047 (-0.06,0.16)	-0.26	-0.2	-0.51	0.05		
Vocational Treatment	-0.151 (-0.26, -0.04)	-0.22	-0.1	-0.48	0.03		
Attempted Migrating the Backway (percentage points)							
Information Treatment	0.4 (-0.3, 1.1)	-0.55	-0.5	-1.93	1.10	-3.5	-4
Senegal Treatment	-0.2 (-0.9, 0.5)	-1.68	-1	-3.47	0.34	-3.6	-3
Vocational Treatment	-0.2 (-0.9, 0.5)	-1.11	-0.63	-2.44	0.59	-15.3	-10
Migrated to Senegal (percentage points)							
Information Treatment	-1.9 (-3.9, 0.1)	1.63	1	-0.40	3.66	5.2	1
Senegal Treatment	1.7 (-0.4, 3.8)	6.65	5	3.12	10.11	9.6	2
Vocational Treatment	2.3 (0.0, 4.6)	0.08	0	-2.26	2.21	2.1	0
Expected Attrition in Measuring Migration Outcome (%)							
Using only Direct Reporting	11.0	28.4	30	19.4	37.1		
With Proxy Reporting	0.03	17.2	15	11.6	23.6		

Notes: First column shows our treatment estimates from Table 3, along with 90% confidence intervals, and realized attrition rate.

Expectations of 36 international migration experts were elicited in July/August 2020 using the Social Science Prediction Platform. Experts were participants in the Migration and Development conference and World Bank migration specialists.

Mean and Median are the mean and median of the elicited point estimate; participants were also asked to give a 90 percent confidence interval, and we show the mean of the elicited 5th and 95th percentiles.

Expectations of 22 Gambian stakeholders from the University of The Gambia, local aid agencies, and journalists were collected during a dissemination event in June 21. Estimates calculated as difference between expected control mean and treatment group mean.

Appendices

A: More Details on the Interventions

A1. Europe Intervention Videos

A1.1 Returnees and Migrants Intervention Video

The information conveyed in the Europe video comes from personal experiences of "backway" returnees, deportees and migrants in Italy.[1] The video, which is about 20 minutes long, describes what motivated individuals to migrate, how they obtained information about the trip, how much they spent in financing the trip, what they experienced/saw along during the journey, and what is their general advice to prospective migrants.

Below we provide snapshots from the videos. In the first picture, a returnee explains how long it took him to cross the desert saying "It took us about two weeks in the desert, I was so tired. We ran out of water to drink and we spent days without water". In the second picture, they talked about what happened to people who died in the desert, highlighting the risk involved with the mode of transportation available. They explained that "we only rest for a while and the cars move at a high speed. Seated at the back of the car, there comes a time when you feel exhausted but got to move when the car starts. And "when someone dies in the car, what they do is stop the car dig, bury the person and journey continues. A lot of people died and it's not worth it".

Similarly, one of the returnees recalls spending one night in a Libyan prison saying that was the first time she was locked behind bars. Another one talks about kidnapping and modern slavery documented elsewhere saying "I was sold to residents, the way fish is sold in the market, in fact we were sold like it's done during an auction. Seriously!". They recalled the fact that boats used during the trip are mostly inflatable and overloaded carrying more than 120 passengers. The notion that there is some form of information gaps is highlighted by one of the migrants in Italy saying "most people will be thinking about you will have in Europe, but this place is not easy, especially for Africans and foreigners". They also talk about how talking to their friends or watching TV influenced their decisions to migrate only to find out that it is harder than what they expected. In the last picture, they talk about how the "backway" journey taught them that legal migration is more reliable and convenient.

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[1] Recruiting migrants in Italy proved difficult, and those who agreed to participate insisted that their faces be blurred so that they could not be recognized by their family and friends.

It took us about two weeks at the desert, I was so tired. We ran out of water to drink, we spent days without water

We only rest for a while and the cars move at a high speed. Seated at the back of the car, there comes a time you feel exhausted but you got to move when the car starts

when someone dies in the car, what they do is stop the car dig and buried the person and the journey continues. A lot of people have died and its not worth it.

Fatoumatta Cham

I spent a night in prison, that was my first time to be locked behind bars.

I was sold to residents, the way fish is sold in the market, in fact we were sold like its done during an auction. Seriously!

Saihou Tunkara
Returnee from Libya

but if your family fails to pay the amount you are sold to another group or person. Example, when one buys you for D50,000 you server him,

A1.2 **Animation Video**

The animation video (3 minutes long) supplemented the testimonies of the migrants by focusing on the risks of dying and chances of obtaining legal status for irregular migrants. The video opens with the following introductory background about the migration journey:

Migration from Gambia to Europe through the "Backway" can be risky, expensive and time consuming. Some die along the way, others experience torture, kidnapping, slavery and imprisonment. Those who can get to the sea, often see their boats returned back to Libya and sometimes drown in the sea. Those who get to Italy are most of the time deported back to Gambia because they have no legal residence papers. In the last two years, policies in Europe have been made tougher and more people are being returned to Libya and Gambia, even after they arrive in Italy. Migrating from Gambia to Italy can cost from 100,000 to 250,000 Gambian Dalasi. This journey lasts for about 8 months.

We have heard several Gambians who attempted to reach Europe through the Backway. We also heard from experts studying this journey. What they told us is described in the animation and testimonies that follow.

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Using data from the North African Mixed Survey of migrants arriving in Italy through Libya, the video documents the chances or likelihood of Gambian migrants arriving in Italy and obtaining legal status. It details what happens at each stage of the journey to every 100 Gambians that leave Gambia to Italy through the "backway". The first picture portrays the journey costs and average duration. The second picture highlights for every 100 who passed through the desert, 22 die. Reasons for dying include overloaded vehicles that result into falling, dehydration, and violence. In the fifth picture, 18 people die in Libya due to conflict and lack of medical treatment. Of those who manage to reach the sea, 25 are sent back to Libya by coast guards. Of those who escape coast guards, about 5 percent die due to drowning, fuel exposure and asphyxiation under boat deck. Of those who reach Italy, 26 are deported to The Gambia and only 4 are granted asylum/residence status.

18 DIE IN LIBYA

25 TURNED BACK TO LIBYA

5 DIE ON THE BOAT

26 DEPORTED BACK TO THE GAMBIA

4 GET LEGAL STATUS IN EUROPE
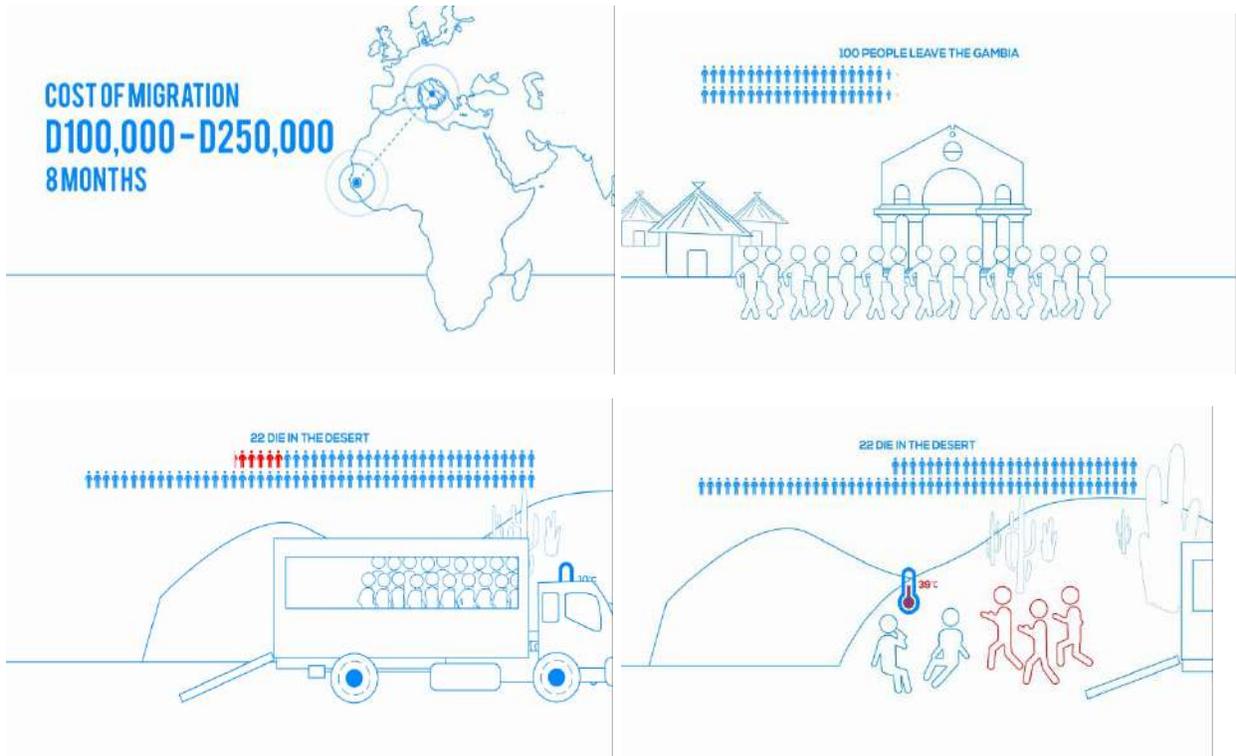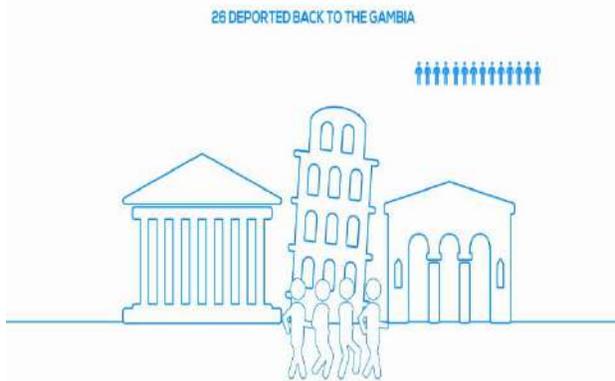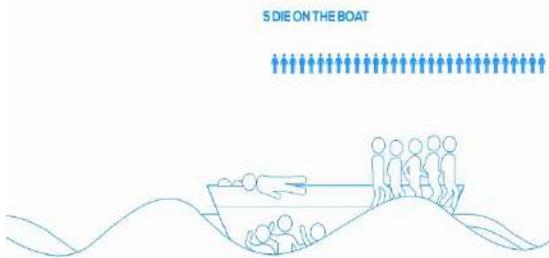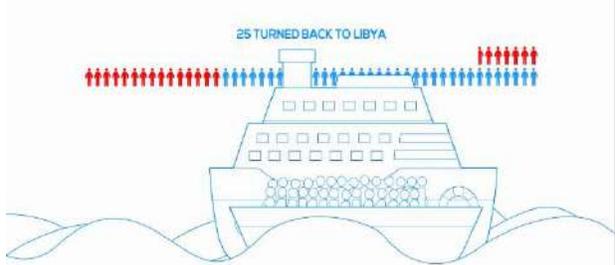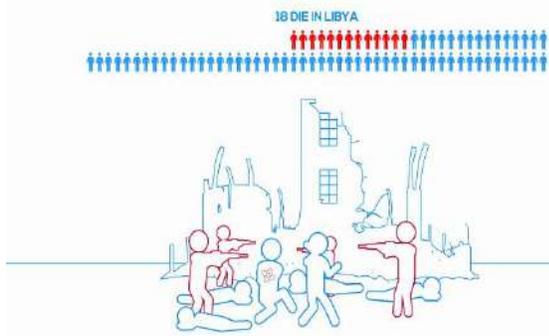
A2. Senegal Intervention video

The Senegal video is a six-minute documentary about Gambian migrants living in Dakar, Senegal. They narrated their experiences and conveyed information about the type of jobs, and opportunities available to migrants in Dakar. These migrants were recruited from the census list provided by Gambians residing in Dakar. The list was obtained from The Gambian embassy in Senegal. The list contains the names of the migrants, their occupations, and their contacts. For each occupation, we use the listed number for calling and recruitment. Once we call the migrant, we explain briefly the aim of the project and arrange a visit to their workplace for the video shooting. A priori, we selected respondents based on their phone availability and their current location in Senegal (whether they were currently residing in Dakar).

Below are some snapshots taken from the video. The first picture portrays a Gambian migrant who works in the business sector, while the second shows a mechanic. This is followed by an elderly migrant talking about what opportunities are available to youth in Senegal saying "The youth can leave Gambia for Senegal and make it here, because right now we have young Gambians here as retailers, working with me and supporting their families". Migration to Senegal as an alternative to irregular migration to Europe is reechoed by these migrants, one of them says "Europe is not the only solution to our problems; African countries are also here, like I am here in Senegal" while another saying "Most Gambian migrants think that migration is only centered at going to Europe".

Furthermore, they spoke about proximity of Senegal to Gambia, the earnings potentials of this type of migration. One says that "It's not far from home and you can work and earn some money, it's not a difficult country". This is reiterated by another saying "It is not expensive travelling from Gambia to Senegal and it costs 6,000CFA and it's about 5 to 6 hours' drive" and "you can receive up to 100,000 to 75,000 CFA it depends on your job". Finally, they talked about equal opportunities of Gambians and Senegalese in Dakar.

Muhammed Sillah working in Garand Yoff. I am from The Gambia, residing in Kanifing South.

Muhammed Savage, from the savage family in Gambia, I am mechanic currently working in Dakar.

The youth can leave the Gambia for Senegal and make it here, because right now we have young Gambians here as retailers working with me and supporting their families.

Europe is not the only solution to our problems; African countries are also here, like am here in Senegal.

Most Gambians think that migration is only centered at going to Europe,

It's not far from home and you can work and earn some money, it's not a difficult country.

It's not expensive traveling from Gambia to Senegal, it cost 6000CFA and it is about 5 to 6 hours drive.

you can receive up to 100,000CFA of 75,000CFA it depends on the job you do.

There are equal opportunities for both Gambians and Senegalese here in Dakar. Honestly, I have been here for a while but it's positive.

A3 – Travel instruction leaflet and sample Dakar voucher

TRAVEL INSTRUCTIONS TO DAKAR

1. **We are buying back your transport voucher:** we pay you D1200.00 for your voucher. *This money is to pay for your travel costs to Dakar.*
2. You will receive a text message with a reference number to collect D1200.00 from the nearest *JFin* or *Yonna Branch*
3. **Use public transport to travel to Dakar via Farafenni (Poste):**
   - *From South Bank Road:* travel to Soma and take a bus/van/"Gelegele" to Farafenni from Soma. Upon arriving at Farafenni Garage take a vehicle to Poste (Senegal) where you will take a vehicle to get to Dakar.
   - *From North Bank Road :* take a bus/van/"Gelegele" to Farafenni. Upon arriving at Farafenni Garage take a vehicle to Poste (Senegal) where you will take a vehicle to get to Dakar.

   Note: DO NOT use the Vouchers at any point during this trip. Use the D1200.00 given to fund ALL travel expenses.

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TRAVEL INSTRUCTIONS TO DAKAR

3. **Before starting the journey,** you should call ▓▓▓▓▓ who is a member of the *Gambian Migrant Association in Dakar* on
   - ✓ **(00221)**▓▓▓▓**(Whatsapp)**
   - ✓ **(00220)**▓▓▓▓

   to make travel arrangements and agree on a meeting place after you arrive in Dakar.

4. **When you meet**▓▓▓▓ **in Dakar**, he will pay you (only you, not a friend with your voucher) **CFA 10,000 in cash.** To be paid the cash, you need to give him your **Dakar voucher**, and you need to **show your identification** and **sign to confirm** receipt of the cash.

   NOTE: You cannot bring vouchers for other people. They will not be paid.

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A4 – Training registration instruction leaflet

A5 – Study timeline

B: Definitions of Pre-specified Outcome Measures

B1: Short-term measures of knowledge, beliefs and intentions

A pre-analysis plan to cover these baseline measured impacts was uploaded to the AEA RCT registry on May 1, 2019, while the baseline survey was underway and prior to us receiving any baseline data. It includes examining the impact on the following outcomes.

1. *Europe backway knowledge:* this is measured as the number of correct responses (out of 5) to the following five questions[2]:
   a. How much does it cost to migrate from Gambia to Italy through the "backway"? (Answers in the range 100,000 to 250,000 Dalasi (approximately $2,000 to $5,000) considered correct).
   b. How many countries do you transit through when migrating through the backway (correct answer 4 countries).
   c. True or False: Some backway migrants are forced to work for others without being paid (correct answer True)
   d. True or False: Backway migrants without residence/asylum permits can be deported by the European Union (correct answer True)
   e. True or False: Gambian migrants migrating through the backway cannot travel without Gambian passports (correct answer False).
2. *Beliefs about the riskiness of the backway journey:* is measured as an index of standardized z-scores of the following questions:
   a. Number of migrants out of 100 who will not make it at least as far as Libya or Morocco (calculated as 100 minus the number they think will make it)
   b. Number of migrants out of 100 they believe will get arrested or imprisoned before getting to Europe
   c. Number of migrants out of 100 they believe will get attacked or robbed
   d. Number of migrants out of 100 they believe will die on the way to Europe

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[2] Note that the backway knowledge and Senegal knowledge questions in our pre-analysis plan filed on May 1, 2019 do not exactly match the knowledge questions actually asked. We intended to update the knowledge questions to more closely capture the information contained in the information videos. However, the survey firm failed to implement this update to the knowledge questions, instead using the set of questions detailed here. As such, some of our knowledge questions ask about information that is not covered in the information videos, leading us to view any treatment effects on knowledge as a lower bound of whether treated individuals learned new information from the information intervention.

e. Number of migrants out of 100 they believe will not make it to Europe (calculated as 100 minus the number they will make it)

f. Number of migrants they think will not be able to obtain residency or refugee status in Europe (calculated as 100 minus the number they think will get this)

g. Number of migrants who board a Mediterranean crossing they believe will not make it across the sea.

3. *Intention to migrate to Europe:* is measured by the percent chance they will migrate to Europe in the next year.

4. *Behavioral measure of interest in migration to Europe:* during the baseline individuals are given a number they can send an SMS message to receive information about the wages earned by recent Gambian migrants in Europe. This measure is a dummy variable taking value 1 if they text to ask for this information and 0 otherwise.

5. *Senegal migration knowledge:* this is the number of correct responses out of the following five questions:

    a. What is the typical monthly wage a Gambian migrant worker earns working in the construction sector in Dakar? (Answers in the range 6,000-9,000 Dalasi will be counted as correct)

    b. True or false: Gambians do not need a passport to travel to Senegal (correct answer True)

    c. True or false: Gambians are legally allowed to stay as long as they like to work in Senegal (correct answer True)

    d. True or false: Gambians can legally work in most jobs in Senegal without having to apply for a work permit (correct answer True)

    e. What is the cost of a bus ticket from your village to Dakar (answers in the range 800 to 1,500 Dalasi will be counted as correct).

6. *Intention to migrate to Senegal in the next year:* is measured by the percent chance they will migrate to Senegal in the next year.

B2: Pre-specified Primary Outcome Measures

We pre-specified primary outcomes in three domains as follows.

Domain 1 (PHD1): Steps towards and acts of backway migration. We measure impacts on the following outcomes:

1. *Number of steps taken towards migrating the backway:* the follow-up survey asks if individuals have taken any of the following actions:

    a. Collected or saved the money they need to pay for travelling the backway

b. Asked someone for help finding a job in Europe
c. Asked someone for help finding accommodation in Europe
d. Have mapped out the initial route they would take if they were to travel the backway
e. Have made a plan on how they will travel to Europe

This outcome is a count variable from 0 to 5 for the number of these actions taken. It will be coded as 5 for individuals who have attempted migrating the backway (defined in outcome 2).

2. *Attempted migrating the backway:* the follow-up survey asks about all attempted moves out of the country since the baseline survey. This variable will be coded as 1 if the individual attempted to migrate to a European country, and they did not use a visa. It is also coded as 1 for those who are not able to be interviewed but who either shared a location along the backway with us using WhatsApp, or for whom proxy respondents report having gone the backway. It is coded as 0 for those interviewed who did not attempt migration, and for those not interviewed for whom proxy respondents report still being in the settlement or having moved internally.

3. *Migrated to Europe:* this is coded as 1 if the individual has migrated to Europe since the baseline survey, as reported either in their own survey responses, or by them sharing location using WhatsApp, or by proxy respondents reporting them to be in Europe; and 0 if they are interviewed outside of Europe and have not returned from there, or reported by proxy respondents or WhatsApp location-sharing to be outside of Europe.

Domain 2: Migration to Senegal and Internal Migration (PHD2). We measure the following outcomes.

1. *Migrated at all to Senegal since baseline:* This is coded as 1 if the individual has migrated to Senegal since the baseline survey, as reported in either their own survey responses, or by them sharing location in Senegal using WhatsApp, or by proxy respondents reporting them to have been to Senegal or to be in Senegal, and 0 if interviewed and they say they have not been to Senegal, or if reported by proxy respondents to not be in Senegal.

2. *Migrated to Dakar since baseline:* Since many Gambian youth migrate seasonally to nearby rural Senegal for agricultural work, we are separately interested in whether they go to Dakar, which is a more major move. This is coded as 1 if the individual has migrated to Senegal since baseline (outcome 1) and the destination in Senegal is Dakar, and 0 if not.

3. *Currently in Senegal:* Since seasonal and return migration from Senegal is more common, we also measure whether they are currently in Senegal at the time of the follow-up survey. This is measured as for outcome 1, except that those who have returned to Gambia or moved to another country are now coded as 0.

4. *Migrated to Banjul since baseline:* This is coded as 1 if the individual has migrated to Banjul, the capital city of the Gambia, since baseline, and 0 otherwise. This is based on the location the youth is living at the time of the interview (Banjul or not), and a direct question on the follow-up survey of whether they have migrated to Banjul for a period of at least one month since the baseline survey.

Domain 3: Well-being (PHD3). This is measured by the following outcomes:

1. *Cantril ladder of life satisfaction:* This is a measure from 0 to 10, from the question "Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. If the top step is 10 and the bottom step is 0, on which step of the ladder do you feel you personally stand at the present time?"

2. *Experiences of violence, theft, and threats to life:* this is measured as an index comprised of the average of standardized z-scores of yes/no questions of whether or not individuals have experienced any of the following since the baseline survey:
   a. Robbed of money
   b. Physical violence (beatings, torture, etc.)
   c. Arrest or imprisonment
   d. Threats against their life

3. *Monetary income from work:* total income earned from work in the past month from all sources including wage and salary work, casual and day labor, self-employment, and sales of agricultural production. Since this outcome is expected to have many zeros, and to be highly skewed, we take the inverse hyperbolic sine transformation, after winsorizing at the 99th percentile to reduce the influence of measurement error-related large outliers that can arise when comparing incomes from different sources. All income will be converted to Gambian Dalasi using the prevailing exchange rate in the month of survey.

4. *Overall well-being index:* This will be an index of standardized z-scores of outcomes 1-3 in this domain.

C: More Details on Impacts on Knowledge and Beliefs

Tables C.1 and C.2 provide impacts on the individual components of the Europe backway knowledge and Senegal migration knowledge measures respectively. Figure C.1 shows the distribution of responses to the migration belief questions. Figures C.2 and C.3 show percent chances of migrating. Table C.3. examines the extent to which responses to the percent chance of migrating are associated with baseline characteristics.

Table C1: Question by Question Treatment Impact on Europe Knowledge

	Knows Backway Cost	Knows no. of countries transited	Knows forced work	Knows can be deported from Europe	Knows backway doesn't require passport
Information Treatment	**0.058****	0.002	**0.045****	0.013	0.006
	(0.026)	(0.018)	(0.016)	(0.018)	(0.027)
Senegal Treatment	**0.064****	-0.003	0.036**	-0.002	0.006
	(0.025)	(0.017)	(0.018)	(0.017)	(0.027)
Vocational Training Treatment	0.016	0.016	0.036**	0.030*	0.034
	(0.028)	(0.019)	(0.017)	(0.016)	(0.029)
Sample Size	2,458	2,458	2,458	2,458	2,458
Control Mean	0.330	0.153	0.869	0.860	0.509
P-value treatments jointly zero	0.035	0.753	0.046	0.135	0.635

Note: If we adjust for multiple testing on multiple outcomes by calculating sharpened q-values that hold constant the false discovery rate, then only coefficient estimates in bold have sharpened q-values below 0.10.

Table C2: Question by Question Treatment Impact on Senegal Knowledge

	Knows Monthly Wage	Knows don't need a passport	Knows no limit on stay	Knows can legally work	Knows cost of bus ticket from village
Information Treatment	-0.014	0.031	0.016	0.034	-0.012
	(0.018)	(0.024)	(0.017)	(0.022)	(0.026)
Senegal Treatment	0.006	0.056**	0.024	0.053**	-0.010
	(0.018)	(0.026)	(0.018)	(0.025)	(0.028)
Vocational Training Treatment	0.017	**0.081*****	0.005	0.020	0.044
	(0.019)	(0.025)	(0.017)	(0.025)	(0.027)
Sample Size	2,458	2,458	2,458	2,458	2,458
Control Mean	0.147	0.729	0.860	0.654	0.470
P-value treatments jointly zero	0.479	0.008	0.521	0.168	0.137

Note: If we adjust for multiple testing on multiple outcomes by calculating sharpened q-values that hold constant the false discovery rate, then only coefficient estimates in bold have sharpened q-values below 0.10.

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D: Impacts on Well-Being

We pre-specified looking at outcomes in the well-being domain, with the hypothesis that reducing backway migration to Europe may change subjective well-being, reduce incidences of violence experienced, but also change income earned. Since we did not reduce backway migration or migration to Europe over the study period, we would expect to see fewer changes here, but report these results for completeness. Table D1 shows the estimated impacts on different dimensions of well-being. Column 1 considers life satisfaction, as measured by a Cantril ladder of subjective well-being. Overall life satisfaction is rather low, with a control mean of only 3.5 on a scale of 0 to 10, where 0 is the worst possible life, and 10 the best possible life they can imagine. This shows part of the impetus for migration, since many youth are not currently satisfied with their current lives. However, all three treatments have small and statistically insignificant impacts on this measure. Column 2 examines impacts on an index of experiences of violence, theft, and threats to life.[3] The information and vocational training treatments have significant impacts on this measure, leading to a small (0.06 s.d.) reduction in incidences of violence experienced. However, these effects are small in magnitude and not significant after adjusting further for multiple testing across outcomes. Column 3 shows no significant impact on monetary income from work. However, since many youth earn zero, and income is highly skewed, we do not have much power for measuring this effect, and the 95 percent confidence intervals incorporate changes in income of 20 to 30 percent in either direction. Finally, column 4 examines impacts on an overall index of well-being, which combines these first three measures. The point estimates are small in magnitude, and we cannot reject that they are jointly zero.

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[3] We pre-specified that we would also look at death separately as a secondary outcome if at least 5 percent of the control group died during backway migration. However, since very few individuals attempted the backway, this is not the case, and so we do not measure impacts on death.

Table D1: Treatment Impact on on Wellbeing

	Life Satisfaction	Index of Violence Experienced	Monetary income from work	Overall Well-being
	(1)	(2)	(3)	(4)
Information Treatment	-0.057	-0.068**	0.004	0.024
	(0.097)	(0.029)	(0.153)	(0.029)
	[0.628]	[0.256]	[0.690]	[0.628]
Dakar Treatment	-0.142	-0.039	-0.228	-0.028
	(0.099)	(0.032)	(0.162)	(0.032)
	[0.474]	[0.474]	[0.474]	[0.628]
Vocational Training Treatment	0.139	-0.058**	-0.046	0.037
	(0.103)	(0.029)	(0.168)	(0.030)
	[0.474]	[0.342]	[0.628]	[0.474]
Sample Size	3233	3315	3233	3315
Control Mean	3.529	0.036	1.690	-0.021
P-value	0.061	0.086	0.420	0.133

Notes:

All outcomes are measured in endline (18 month) follow-up survey. **Life Satisfaction** is score from 0 to 10 on Cantril Ladder; **Index of Violence Experienced** is mean of standardized z-scores of measures of robbery, physical violence, arrests, and threats to life; **Monetary income from work** is the inverse hyperbolic sine of work income in last month; **Overall Well-being** is an index of standardized z-scores of columns 1-3, reverse-signing the violence index. All regressions control for randomization strata fixed effects, and baseline controls as chosen by PDS Lasso.

Robust standard errors clustered at the settlement level in parentheses. *, **, *** denote significance at the 10, 5, and 1 percent levels respectively.

Sharpened q-values are provided in square brackets []. They control the FDR for testing three treatment effects across all outcomes in this table.

P-value: all jointly zero is the p-value from an F-test of the joint null hypothesis that all three treatments have no effect on the specified outcome.