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Article — Published Version

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Population and Development Review

Provided in Cooperation with:

John Wiley & Sons

Suggested Citation: Tjaden, Jasper; Gninafon, Horace (2022) : Raising Awareness About the Risk of Irregular Migration: Quasi-Experimental Evidence from Guinea, Population and Development Review, ISSN 1728-4457, Wiley, Hoboken, NJ, Vol. 48, Iss. 3, pp. 745-766, <https://doi.org/10.1111/padr.12468>

This Version is available at:

<https://hdl.handle.net/10419/266667>

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Raising Awareness About the Risk of Irregular Migration: Quasi-Experimental Evidence from Guinea

JASPER TJADEN  AND HORACE GNINAFON

In response to mounting evidence of harm inflicted on irregular migrants along their journeys from West Africa to Europe, international organizations, civil society organizations, and governments have scaled up campaigns as a tool for raising awareness about the risks of irregular migration. Campaigns aim to counter misinformation by smugglers and facilitate safe migration decisions. Despite the growing number of interventions, there is limited empirical evidence on the impact and effectiveness of such campaigns. Based on a difference-in-difference design, this study investigates the effect of a mobile cinema and community discussion intervention on the perceptions, knowledge, and intentions of potential irregular migrants in Northern Guinea in 2019. The results show that potential migrants who participated in events were significantly more likely to show awareness gains and less likely to report high intentions to migrate irregularly. While the relative importance of risk perceptions and their impact on migration flows remain unclear, the findings provide evidence supporting the assumption that risk awareness can be a relevant factor in the decision-making process of potential irregular migrants. While campaigns may be an effective tool in certain contexts, effect sizes highlight the need for policymakers to keep realistic expectations.

Introduction

This paper investigates the effect of awareness about the risks associated with irregular migration on intentions, perceptions, and knowledge among potential irregular migrants in rural areas of Northern Guinea.¹ While information campaigns are commonplace in other fields of development (Bongaarts and Casterline 2013; Battaglia and Pallarés 2020), rigorous evidence in the field of migration is still lacking, contributing to the overall “efficacy gap” in migration policy research (Czaika and de Haas 2013).

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In response to mounting evidence of harm inflicted on irregular migrants along their journeys from West Africa to Europe (Black 2020; Black et al. 2017; Galos et al. 2017; Mixed Migration Centre 2018; UNHCR 2018b), international organizations, civil society organizations, and governments have turned to campaigns as a tool for raising awareness about the risks of irregular migration in hopes of countering misinformation by smugglers, facilitating safe migration decisions, and ultimately reducing harm.² At the political level, such campaigns have attracted criticism for aiming to deter migration without explicitly stating this objective in campaign documentation.

Migration from North, West, and East Africa to Europe has increased since 2013 alongside a surge in mixed migration flows from the Middle East. While the overwhelming majority of migrants arriving in the European Union (EU) since 2015 were nationals from the Syrian Arab Republic, Afghanistan, and Iraq, several African countries were also among the top 10 origins (Maher 2017; IOM 2018; UNHCR 2018a). From January to October 2019, Guinean nationals represented 4.5 percent of all arrivals, 10 percent of arrivals from Africa, and 28 percent from West Africa.³

Despite the growing number of campaigns on the risks of irregular migration, there is limited empirical evidence on their impact and effectiveness (Tjaden, Morgenstern, and Laczko 2018; Browne 2015). In addition to political concerns regarding their objective, scholars have also questioned these campaigns' effectiveness. Accounts from qualitative research have argued that campaigns rely on wrong assumptions. Migrants may already be informed or ignore information that would run counter to their migration plans (Alpes and Sorensen 2015; Hernández-Carretero and Carling 2012; Mbaye 2014; van Bommel 2020). A recent review of the policy on information campaigns highlights the many assumptions involved in the causal chain underlying the design of campaigns, yet the empirical evidence—particularly evidence using rigorous research designs with the ability to isolate program effects—remains severely underdeveloped (Schans and Optekamp 2016; Tjaden, Morgenstern, and Laczko 2018).

This study attempts to address this gap by investigating the effects of an awareness-raising intervention in Guinea using a difference-in-difference (DiD) approach. The intervention was a mobile cinema caravan which organized awareness-raising events and movie screenings in 31 villages and small towns in Northern Guinea in 2019. In addition, 32 comparable villages were selected for the control group where no campaign took place. The events consisted of "infotainment" movies involving documentary-style testimonies by migrants highlighting risks involved in their own migration journeys followed by a community discussion about migration.

The study finds effects on a range of different migration-related outcomes. Participation in the intervention further increased risk perceptions

regarding the journey, reduced intentions to migrate irregularly, increased the perceived costs relating to irregular migration to Europe and marginally increased positive perceptions of economic opportunities at home. Further analyses suggest that effects do not differ by sex, do not wane within a two-to-five-month period after intervention, and increase for those potential migrants with no information at baseline.

Overall, the study aims to contribute to the limited evidence based on information and awareness-raising treatments for potential migrants (Shrestha 2019, 2020; Tjaden and Dunsch 2021; Mesplé-Soms and Nilsson 2020). To the best of our knowledge, this study is one of the first (quasi-experimental) studies to evaluate the effectiveness of large-scale campaigns on irregular migration. Most of the available literature has either been limited to laboratory experiments (Bah and Batista 2018; Batista and McKenzie 2021) or observational studies (Mbaye 2014). In addition, this study offers a unique piece of evidence from rural areas where the living conditions of the population are more precarious and interest in irregular migration is high. Studies from rural areas are scarce, given the challenging environment for data collection.

Risk awareness and irregular migration from West Africa

Many irregular migrants arriving in the EU or stranded in Libya between 2015 and 2019 were from West Africa, including Guinea. According to a study by the Guinean National Institute of Statistics, the international emigration rate increased from 7 percent in 2007 to 30 percent in 2013 (Mas-sandouno and Cissé 2017). According to recent UN estimates for 2018, half a million Guinean nationals lived abroad, approximately 24,000 as recognized refugees and 33,000 as asylum seekers. According to national Afro-barometer surveys for 2016–2018, one in five Guineans depend on money sent home from abroad, and almost one in three have a family member who lives abroad.⁴

According to data from the United Nations High Commissioner for Refugees (UNHCR) and the International Organization for Migration (IOM), Guinean nationals represented approximately four to five percent of all arrivals in the EU in 2018, 10 percent of arrivals from Africa, and 28 percent from West Africa.⁵ While the overall percentage of Guinean migrant arrivals in Europe in more recent years appears low, Guinean nationals are consistently among the 10 largest migrant groups in terms of arrivals in Italy and among the three largest migration groups in terms of arrivals in Spain.⁶ In 2018, the numbers of asylum claims from Guinea (3,000) launched in the European Union reached almost half of the number of asylum claims from Nigerian nationals despite the fact that Nigeria's population is almost 16 times larger. Guinean migrants travel the land route via Mali and Niger to ports in Morocco or Libya before attempting to cross

the Mediterranean Sea. Alternatively, some migrants travel to Morocco through Senegal and Mauritania or, in few cases, take the sea route to the Canary Islands.

A number of reports have indicated that some irregular migrants may embark on their journeys with limited awareness regarding the risks involved as well as the context in which migration to Europe takes place—both in transit countries and at destination. As a result, many may underestimate the risk (IOM 2017; European Commission 2018; Regional Mixed Migration Secretariat 2014; Gillespie et al. 2016; Foran and Iacucci 2017). According to a recent report by the United Nations Development Programme (UNDP 2020), only approximately half of recent African migrants in Europe had expected to encounter danger during their journey, yet 93 percent of them reported that they had actually experienced real danger. A study based on a sample of transit and returning migrants in Niger in 2016 showed that half (56 percent) declared that they did not collect information about migration before departing (IOM 2017). Over 80 percent of the individuals who provided feedback on their information sources said the information turned out to be false.

A recent study showed that almost 43 percent of potential migrants who responded to a survey in Dakar reported that they did not feel well informed about how to migrate to Europe (Dunsch, Tjaden, and Quiviger 2019). Thirty-seven percent of young residents considering leaving Senegal said they were not well informed about the risks associated with migration, and data suggest that they were misinformed about the legal context of migration in terms of visa and international protection eligibility (Dunsch, Tjaden, and Quiviger 2019). Migration is a large business for people smugglers who often spread misinformation for monetary gain. The fees charged to smuggle migrants can differ substantially based on the point of origin, with figures ranging from USD 2,000 to USD 10,000 (Dunsch, Tjaden, and Quiviger 2019; Europol/Interpol 2016). A conservative estimate of the smuggling business along all sea smuggling routes for the year 2016 ranges between USD 320 million and USD 550 million (United Nations Office on Drugs and Crime 2018). There may be an incentive for smugglers to downplay the risks involved in the journey, the likelihood of reaching the destination, and the total costs involved, in order to recruit more customers and increase profits.

Based on the assumption that a lack of awareness and misinformation contributed to increased risk of harm along the migration journey and at destination, many EU governments funded information and awareness-raising campaigns to counter narratives spread by smugglers. Many interventions between 2016 and 2019 focused on the risks involved in the journey because of horrifying evidence of harm inflicted on irregular migrants, especially among those stranded in Libya and those attempting to

cross the Mediterranean (Black et al. 2017; Galos et al. 2017; Mixed Migration Centre 2018; UNHCR 2018b).

Despite accounts of awareness gaps and information needs, the academic literature is predominantly skeptical toward efforts to provide information on risks. Several authors have argued—mostly based on qualitative studies—that migrants are fully aware of the potential perils but decide to migrate anyway (Alpes and Sorensen 2015; Fiedler 2020; Hernández-Carretero and Carling 2012; Mbaye 2014; van Bommel 2020). Even when accurate information is provided, migrants may not trust it, only taking into account information from their immediate friend and family networks (Schans and Optekamp 2016). Others question whether migration decisions are rational cost-benefit calculations at all. Prothmann (2018), for example, claims that migration can be influenced by norms of masculinity, where migration can be seen as a means of recovering “lost values” of courage and determination. Ryo (2013) agrees that “the view of would-be migrants as atomistic, utility maximizing opportunists diverts our attention away from the complex and wide-ranging moral systems within which prospective migrants are embedded” (p. 593).

In light of those arguments, the lack of robust empirical evidence is striking. The lack of evidence is even more glaring when considering that the role of risk and risk salience in migration decision-making is widely assumed implicitly and forms a key part of standard models of migration in the economic and sociological literature (Todaro and Maruszko 1987; Williams and Baláž 2012).⁷ In the widely used Todaro and Maruszko (1987) model, migrants weigh the benefits of migration, the likelihood of those benefits to materialize, and the costs involved in migration. Greater risk awareness would reduce the perceived likelihood of the benefits of migration materializing (e.g., because irregular migrants will not reach the destination country or will not find a job there) and increase the costs (mental and financial) involved.

A recent systematic review of available campaign evaluations revealed that the evidence base for programming and policymaking in the migration field is strikingly limited (Tjaden, Morgenstern, and Laczko 2018). Beyond evidence regarding particular campaigns, there is also a lack of general examination of the overall mechanism. Only a few experimental studies (outside the lab) are available that test the role of risk awareness and information for migration decision-making.

Bryan, Chowdhury, and Mobarak (2014) and Beam, McKenzie, and Yang (2016) look at the impact of information incentivizing (internal) migration in Bangladesh and the Philippines. Both studies find that providing information on job opportunities elsewhere does not have any impact on migration behavior.

Shrestha (2019) highlights the importance of access to information for potential migrants’ expectations and their subsequent (internal)

migration decisions using a randomized controlled trial (RCT) in Nepal. Findings suggest that providing information on mortality rates during the migration journey affects subsequent migration decisions. Providing information on mortality rates lowers the expected mortality rates which then increases the propensity to migrate. Providing information on wages at destination reduces expected wages and, in turn, reduces migration intentions. It is important to note that mortality rates as used by Shrestha (2019) are prone to measurement error as actual mortality is likely to be vastly underestimated based on available sources, particularly in the context of irregular migration from Africa to Europe (Black 2020).

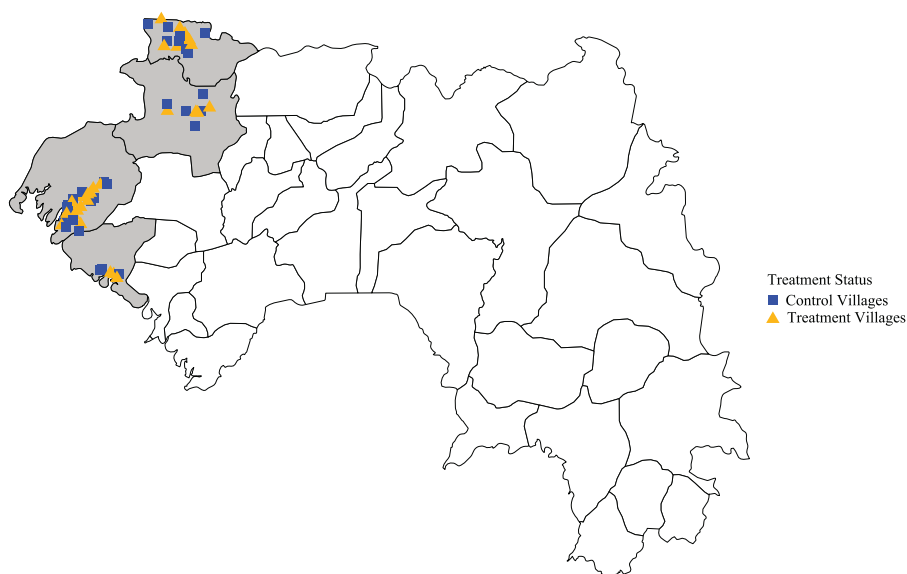
Recent work by Mesplé-Soms and Nilsson (2020) tests the effects of 20-minute documentary films on the migration intentions of a probability sample in one rural district in Mali using a RCT. The authors compare the effects of positive role models (i.e., migrants who were successful) and negative role models (i.e., migrants who failed and experienced considerable hardship). The study finds no evidence of any effect induced by the films, concluding that for most participants the returns of migration are too high for campaigns aiming to change perceptions of risks or opportunities at home to matter.

Lastly, Tjaden and Dunsch (2021) recently conducted an RCT study on the effects of townhall events organized to raise awareness of the risks of irregular migration among potential migrants in Dakar, Senegal. Initial findings suggest that participation in such events has the potential to increase risk perceptions and reduce intentions to migrate irregularly. No effects on factual knowledge gains were found and the sample was limited to a large regional hub in urban settings. Urban settings may differ substantially from more rural settings in terms of livelihood opportunities, transnational family networks, availability of migration-relevant information (through organizations, media, and the internet), and prevalence of smuggling networks among other factors.

Empirical methods

Data

The analysis is based on a (gross) sample of 2,825 potential migrants in the Guinean region of Boké, namely Boffa, Boké, Gaoual, and Koundara, collected in January and February 2019. All villages in the treatment group were selected during a scouting mission in December 2018. The provinces were chosen based on emigration levels and their border position with Senegal and Guinea-Bissau. Within these regions, the villages were selected according to accessibility of the village by the caravan (one truck and two minivans) and approval by local authorities (mayor or chief of the village), who were first approached during the scouting mission. For each selected

FIGURE 1 Sampled control and treatment villages

NOTE: Data were collected in a total of 63 villages between January and May 2019. Figure 1 shows the geographical position of both treatment villages (the yellow dots) and the control group (the blue dots).

village along the route of treatment villages, we carefully selected a control-group village. Control villages were selected based on similarity (language, ethnic composition, infrastructure) and distance to treatment villages, that is, six km apart to avoid spillover. One more control village was added to adjust for oversampling in treatment villages (in anticipation of noncompliance in treatment villages) and to preempt attrition issues. Figure 1 shows a map of the sampled sites.

Baseline data were collected one to two days prior to the date of the treatment event in both control and treatment villages. It is important to note that, throughout the campaign, the impact evaluation activities did not overlap or interfere with campaign implementation. Data were collected by a trained team of local Guinean nationals who conducted interviews with likely event attendees one or two days before the event team arrived. Enumerators were allocated various key sites in the village (such as mosque, market, school, and main street) and conducted random walks in the vicinity. After identifying a specific location for the enumerators to start, households were selected through the household selection procedure used in the Afrobarometer surveys.⁸ At the household level, from a list provided by the head of household or his/her representative, the interviewer randomly selected a respondent who agreed to participate in the survey. Eligible target group members were required to meet three criteria: (1) the respondent must be between the ages of 15 and 39 years of age⁹; (2) the

TABLE 1 Sample overview and adjustment

Stage	Control	Treatment	Running total
Baseline	1,086	1,739	2,825
Reduced sample due to...			
<i>Noncompliance</i>		204	
<i>Spillover</i> 3			
<i>Attrition</i> 43		41	
<i>Trimming based on propensity score</i> 331		826	
Final sample for analysis	709	668	1,377

NOTE: Final sample in the model may vary depending on item nonresponse.

respondent had generally considered migration in broader terms; and (3) the respondent had an interest in attending a movie event on migration. These criteria were applied in both control and treatment villages to attenuate the potential risk of bias due to differences in selection into treatment.

The endline was conducted in April and May 2019, between three to five months after the intervention. The analysis accounts for minor variations in the time between intervention and endline. Based on a complete list of participants from the baseline survey, enumerators set up appointments via mobile phones to schedule face-to-face interviews. Respondents were offered a phone credit of 30,000 Guinean francs (approximately USD 4) for successful participation in the endline survey. It is important to note that no incentives were used in the baseline survey to reduce selection into the study. Considering low and balanced attrition overall (three percent), incentives are unlikely to introduce substantial bias. In cases where a face-to-face interview was not achieved, the survey was conducted by telephone. When the interviewer was unable to identify or locate the baseline respondents, several strategies were used to locate them. Upon the arrival of the survey team in the village, enumerators approached the head of the village, passers-by, religious leaders, or market workers for a referral to find the missing baseline respondents. The contact details of baseline respondents who were still not reinterviewed were sent to a subcontracted call center in Conakry that followed up with respondents several times over the phone. As a result of these intense efforts to reduce attrition, only 84 baseline respondents were not re-interviewed in the endline (three percent).

The endline survey also verified compliance and contamination. Out of 1,739 re-interviewed individuals in the treatment villages, 1,535, 88 percent (i.e., compliers) attended the intervention (main film and discussion). Only three respondents in the control group were exposed to treatment (i.e., contamination).

Table 1 shows the sample at different stages of the process including information on attrition, spillover, and trimming (see the next section).

Table A1 in the Supporting Information shows summary statistics of the sample at baseline by treatment status. As expected in the absence of random selection of villages into treatment and control, we observed systematic differences in average observable characteristics between survey respondents in treatment versus control villages. For example, control villages are—on average—smaller than treatment villages. This was inevitable given that the route of the treatment intervention followed places accessible by roads. Larger villages cluster near paved roads. Control villages were selected in the vicinity (see above), and in many cases were slightly smaller villages.

Treatment

The treatment consisted of a mobile cinema initiative aimed at raising awareness among potential migrants in rural areas of West Africa about the dangers of undertaking the migrant journey. Based on personal testimonies of returnees, the movie highlights the serious risks that migrants may face during their travels. It should be noted here that the campaign organizers focused on awareness-raising via messaging through entertaining movies and personal stories from peers rather than more conventional objective, fact-based information interventions. Awareness-raising campaigns similar to the intervention studied here are sometimes referred to as “dissuasion campaigns,” aiming to dissuade people from potentially harmful behavior such as smoking, drunk driving, or vaccine hesitancy.

The organizers felt, foremost, that facts do not engage the audience in the same way that edutainment and storytelling approaches do based on studies in other sectors (Banerjee, La Ferrara, and Orozco-Olvera 2019; Bernard et al. 2015), but also, that because fact-based interventions are often conducted by governmental agencies, they hold limited credibility in Guinea. Second, verifiable facts regarding the dangers involved are difficult to obtain in the context of migration. “Information” on the risks is largely based on anecdotal evidence and survey responses using convenience sampling. For example, one prominent source of risk information—the recorded number of migrant deaths collected by the IOM—likely represents a substantial undercount of the actual death toll because many deaths are never reported by the media, governments, or NGOs (Black 2020). Providing “facts” that risk being a misrepresentation of reality may mislead the audience and raise ethical concerns. In Guinea, the mobile cinema events were held between January 15, 2019 and February 24, 2019. During this period, 32 film evenings were organized and attended by approximately 200–500 spectators each across all ages. The caravan drove from one village to the next in the morning. In the afternoon, the team set up the mobile cinema at a prominent location within the village. Games, dances, and theatre were organized to attract and entertain audiences before the films

were eventually screened after sunset. Following each movie screening, two local, contracted staff facilitated a discussion about migration with the audience. The headline event was the documentary “*Migrant, Retour de l’Enfer*”¹⁰—a 52-minute long documentary directed by Patrick Fandio and produced in 2017 by Hemisphere Media Production Africa, a production company based in Abidjan, Côte d’Ivoire. The focus of the documentary is on the dangers of irregular migration. The audience follows five main characters throughout the film, all of them having undertaken a dangerous irregular migration journey to Europe. Throughout their stories, all of the main dangers irregular migrants are exposed to are shown or described, such as exploitation, abduction, extortion, and detention in Libya; ship wreckage and homelessness in Côte d’Ivoire and Italy; and lethal sea crossings on the shore of Morocco.

After each screening, local facilitators moderated a discussion with the audience of all ages. Audience members discussed the documentary and shared their opinions on what they had seen, as well as their experiences with and views on migration. Many attendees expressed frustration and concerns about their living conditions and the lack of opportunities at home as well as the need to invest in a future at home.

Identification strategy

As a result of nonrandom assignment and unbalanced observables at baseline, we follow a DiD estimation strategy. DiD estimation is a quasi-experimental appropriate approach to obtain a counterfactual when randomization is not possible. It compares differences between treatment and control group before and after intervention, thus accounting for any observed time-invariant characteristics. DiD assumes that outcomes in the treatment and control groups would follow similar trends over time, in the absence of treatment. Any unobserved differences between treatment and control groups must be time-invariant, while the inclusion of time-varying covariates fully accounts for any time-varying differences between the two groups. Our data do not allow direct testing of the parallel trends assumption. However, we observe (and account for) in the model a wide range of geographic, sociodemographic, and socioeconomic factors relevant for migration (including, for instance, employment, income, wealth, education, migration networks, household and village characteristics, etc.) (see Tables A2 and A3 in the Supporting Information).

Bias resulting from unobserved characteristics (such as general risk aversion) is unlikely given, first, the proximity and similarity of treatment and control villages; and second, the broad range of controls for characteristics that could drive risk preferences—including age, sex, education, income, village size, access to health care, etc.—and the fact that risk preferences are likely to be time-invariant, stable characteristics.

To further reduce threats to identification due to *unobservables*, we severely reduced the sample, conditional on the propensity of being selected into treatment (propensity score). The estimation is then based on the prescreened, “trimmed” sample (Gibson and McKenzie 2014; Crump et al. 2009). This approach was developed to address the issue of limited overall overlap between the treatment and control groups in terms of observables. It was used to provide conservative estimates and mitigate potential bias as a result of nonrandom assignment of villages and nonrandom selection of participants within villages. Individuals with propensity scores in the lowest and highest deciles were excluded from the analysis, ensuring that individuals in treatment and control villages were highly comparable on observables. As a result, the sample was highly comparable on observables which further reduces the risk of bias due to unobservables. This approach reduced the sample considerably (see Table 1). Figure A2 in the Supporting Information shows the area of support.

As an additional approach to allow for the most robust and conservative estimate of the treatment effect, we use individual fixed effects to control for *time-invariant unobserved* individual characteristics.

Note as well that the sample is restricted to individuals with prior interest in migration and a willingness to attend an event about migration. This is important given that the absence of events in control villages could potentially introduce bias as a result of selection into the treatment (i.e., people who are willing to attend an event). In response, recruitment into the study was conditional on prior interest in migration more generally and general willingness to attend an event about migration in both treatment and control villages.

In combination, this conservative strategy allows us to limit the sample to highly comparable individuals in the treatment and control group. A further source of confidence in the results is the fact that the effects are stable across various specifications (see section Robustness Checks. and Table A4 in the Supporting Information).

Estimation

To identify the causal effects of the intervention, we utilize a DiD estimation (Abadie and Cattaneo 2018). Differences in perceptions, knowledge, and intentions regarding irregular migration are compared between treatment and control villages before intervention (i.e., baseline) and three months after intervention (i.e., endline).

We estimate the following DiD specification:

$$Y_{it} = b_0 + b_1 y_{(i|post=1)} + b_2 y_{(i|treat=1)} + b_3 y_{(i|post=1treat=1)} + X_{it} + e_{it}$$

where Y_{it} is the outcome of interest (i.e., knowledge, risk perceptions, and intentions to migrate irregularly; see Table A3 in the Supporting

Information), $i = \{1, 2, 3 \dots N\}$, $post$ is a binary variable equal to 1 if the measurement period was after the intervention (endline) and 0 for preintervention measurement (baseline). “Treat” is a binary variable equal to 1 when the individual attended the awareness-raising event (the treatment group) and 0 for individuals in the control group. Note that noncompliers ($N = 204$; see Table 1) in treatment villages were excluded from the analysis as well as respondents in the control group who were exposed to the treatment ($N = 3$; see Table 1).

Assume that the outcome of interest is the intention to migrate irregularly, measured as a binary variable (e.g., “yes” or “no”). Let b_0 be the level of the intention to migrate preintervention; b_1 the change in the intention to migrate over time for all the individuals in the sample, and b_2 the change in the intention to migrate between the treatment and control groups. The treatment effect is measured by the interaction term of $post$ and $treat$ b_2 , also called the DiD coefficient.

X_{it} is a vector of control variables including gender; age; marital status; number of children; size of household; ethnicity; employment status; main source of income; capacity to save; access to basic clean water, energy and health care; receipt of remittances; personal contacts in Europe; and family pressure to migrate; as well as the number of days between endline and the intervention (see Table A1 for summary statistics; see Table A2 for details on control variables in the Supporting Information). Covariates were not included in those models which include individual fixed effects. The error term e_{it} accounts for the unobservable factors that could potentially affect the outcome variables (see discussion in previous section).

Standard errors were clustered at the level of the village and individual fixed effects were applied to account for any time-invariant variation.

Results

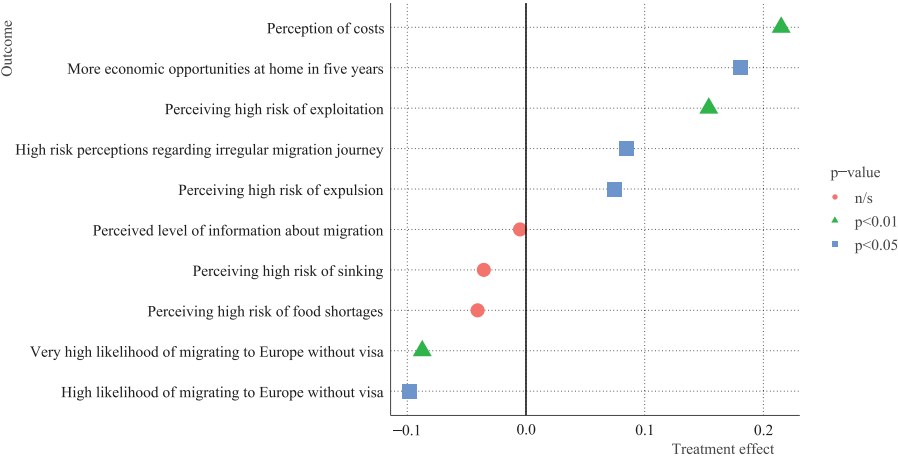
Treatment effects

Figure 2 illustrates the main treatment effects on separate migration-relevant outcomes subject to the objective of the intervention (i.e., raising awareness of the risks of irregular migration). Each effect is based on the main DiD coefficient from the most conservative model specification (see specification IV in Table A4 in the Supporting Information).

In terms of migration intentions, the results show that participating in the awareness-raising event reduced the likelihood of reporting very high (M1) and high (M2) intentions to migrate (without a visa) by 9–10 percentage points ($p < 0.01$) (see Table A4).

In terms of self-reported knowledge about irregular migration, we find no effect on the general, subjective knowledge about migration. It is possible that the new insights acquired through intervention makes potential

FIGURE 2 Treatment effects



NOTE: See Table A3 for details on outcome variables and A4 for coefficient estimates across models.

migrants aware of their lack of prior knowledge which they underestimated at baseline. In contrast, we find a large and statistically significant effect on perceptions of the costs of irregular migration (M4) by 21 percentage points ($p < 0.01$) (see Table A4).

In terms of risk perceptions, we find that participating in the awareness-raising event increased the level of perceived general risk (i.e., danger) associated with irregular migration (M5) by 8.5 percentage points ($p < 0.01$). Further, the results indicate positive treatment effects on perceiving a high risk of (labor) exploitation (15.4 percentage points) and high risk of expulsion (7.5 percentage points). On the other hand, we find no significant effect on perceptions regarding the risk of food shortages during the journey (M6) and the risk of sinking (i.e., ship wreckage).

Lastly, we find that participating in the awareness-raising event increased positive perception of future economic opportunities in Guinea by 18 percentage points (M10). We attribute this effect to the community discussion following the documentary movie; however, we cannot directly test this assumption. According to anecdotal evidence reported by the event organizers, a substantial part of the discussion between youth and older cohorts in the community focused on the need to invest “at home” and ways to mobilize youth to contribute to development in the local community. This new evidence suggests that one of the mechanisms leading to a reduction in the intention of young people to migrate irregularly is the redirection of discussions among local stakeholders on economic opportunities in the country. This finding provides interesting pointers for policy. Some unsafe migration practices may be reduced by providing and highlighting ways

for youth to invest in economic opportunities in the community. However, more research is needed to explore this point further.

Subgroup effects

In addition, to the main treatment effects in section Treatment Effects, this section explores heterogeneous subgroup effects. Table A5 in the Supporting Information shows DiD estimates for two main subgroups, that is, male potential migrants and those who reported very low prior knowledge on migration to Europe.

Most migrants arriving in Europe are male. The results do not change considerably when restricting the sample to only male potential migrants. This may not be surprising given that female potential migrants represent only 20 percent of the sample (see Table A1 in the Supporting Information). Despite substantially smaller sample sizes for female potential migrants, we still find several treatment effects regarding intentions, perceptions of costs, and perceived risk of exploitation along the journey.

However, we find large increases in treatment effects for potential migrants who reported not having any knowledge about migration at baseline. For example, the negative effect on intentions to migrate irregularly almost doubles compared to the main treatment effect (16.4 percentage points vs. 8.7 percentage points). We find no more treatment effects on general (abstract) perceptions of the risks involved in irregular migration; however, we find much larger awareness gains in terms of specific risks such as labor exploitation or expulsion. While there was no main treatment effect on the risk of ship wreckage, there is a large treatment effect for those with no information at baseline (13 percentage points). The results suggest that potential migrants with little information from the outset perceive high abstract, nonspecific risks (which is consistent with the literature), but may not be aware of the specific risks that can occur to people similar to them. These findings imply that campaigns may be particularly effective when reaching people early in their decision-making process when they have little information and low access to information.

Lastly, we examine whether the effects fade with time. We exploit the fact that treatment and control villages varied in the amount of time that passed between the awareness-raising event and the endline survey by between 9 and 17 weeks. Approximately 50 percent of the sample were interviewed two to three months after intervention, the other half at three to four months after intervention. Based on the distribution of weeks since intervention, we set the cutoff at 15 weeks after intervention. We find that treatment effects across all outcomes do *not* appear to wane as expected. In contrast, treatment effects on risk perceptions, perceptions of costs, optimistic future expectations, and intentions to migrate irregularly increase with time. One possible explanation for this finding is that participation

in the campaign induced additional information-seeking behavior or additional informal exchanges at the local level that reinforced awareness rather than reducing it. The timing of the endline was associated with the location of treatment and control villages along the route of the mobile caravan. Therefore, this effect remains tentative and requires further research.

Robustness checks

The results are robust against different specifications (see Table A4 in the Supporting Information). As an alternative specification to our main DiD estimation of choice (DiD based on a trimmed sample and individual fixed effects, see section Treatment and specification IV in Table A4), we report results for (I) DiD estimation without covariates based on the gross sample, (II) DiD estimation based on the gross sample with individual fixed effects, (III) DiD estimation with covariates (see caption below Table A4), and (V) DiD estimation based on the trimmed sample and covariates (without individual-fixed effects). The results are qualitatively similar across specifications.

Threats to validity

In line with the theory of change of the intervention, we interpret the effects as evidence that potential migrants adjust their perceptions and intentions in response to learning from the experiences of their peers through the films and discussion. However, response biases such as social desirability bias and reciprocity bias may threaten the validity of this interpretation. These response biases are common to most experimental and quasi-experimental studies and are generally difficult to avoid.

Social desirability bias emerges when respondents adjust their response to what they perceive to be the “correct” or socially desirable response. Respondents in treatment villages were exposed to messages surrounding the dangers of migrating; therefore, respondents may infer that the “correct” response at endline is to state high risk awareness following the intervention. Respondents in the control group were not exposed to any intervention. As a result, respondents in the control group may not form a conception of what the desirable response would be. We introduced several measures at the data collection stage to reduce the risk of this bias. All enumerators were locals and had no association with the campaign itself. It was made clear to the respondents that data collection was conducted as part of an independent exercise, that their responses would have no impact on follow-up interventions, and that data would not be shared with third parties including governments. Moreover, the endline survey took place three to five months after the intervention. Respondents had time to deliberate their preferences, seek additional information, discuss with friends,

etc. Social desirability bias should present a greater threat shortly after the intervention took place.

Reciprocity bias is a concern when respondents adjust their responses in anticipation of a (financial) reward provided by the data collection team. We believe this bias is not a main concern for our study. First, all respondents, in both the treatment and control groups, received the same incentive (phone credit). If reciprocity applied, it applied equally to both groups and as such does not affect the treatment estimates. Second, the amount was very limited (approximately USD 4). Third, it was made clear to respondents at the beginning of the interview that the incentive was conditional on completing the survey and was not linked to the type of responses provided. Fourth, it was made clear that the data collection team had no links with the campaign organization and that survey responses had no impact on entitlements or participation in other projects.

In sum, we argue that response bias is of minor concern; however, as with most DiD studies, we cannot exclude the possibility that treatment effects are—at least partially—influenced by social desirability bias.

Discussion

In response to mounting evidence of the harm inflicted on irregular migrants along their journeys from West Africa to Europe, international organizations, civil society organizations, and governments have scaled up awareness-raising campaigns about the risks of irregular migration. The official objective of many campaigns is reportedly to increase awareness, counter misinformation by smugglers, and facilitate safe migration decisions. Despite the growing number of interventions, there is limited empirical evidence on the impact and effectiveness of such campaigns. In contrast, there is widespread doubt expressed in some parts of the literature showing that campaigns are based on wrong assumptions about how migrants make decisions. More generally, empirical evidence measuring the role of risk perceptions in the decision-making process of potential irregular migrants remains limited while it is generally assumed in theoretical models (Todaro and Maruszko 1987).

This study aimed to contribute an empirical account based on a case study in North-Western Guinea—a region with a high prevalence of out-migration. Based on a quasi-experimental DiD design, we estimated the effect of participating in awareness-raising events (screening edutainment films about the risks of irregular migration based on personal testimonials of migrants, followed by moderated community discussion among participants from the local community) on potential migrants' perceptions, knowledge, and intentions regarding irregular migration.

The results show that potential migrants who participated in movie and discussion events were significantly less likely to report high intentions

to migrate irregularly and significantly more likely to report higher awareness regarding the costs involved in irregular migration; they also had heightened perceptions of the level of certain (not all) risks related to irregular migration and a more positive perception of future economic opportunities at home. The effects were larger for those potential migrants with little to no information about migration to Europe at baseline. While general and abstract risk perceptions are already high among potential migrants in the sample at baseline, the intervention appeared to further increase perceptions of specific risks associated with the irregular migration journey. In addition, treatment effects appear to increase marginally with time, suggesting that the intervention may have induced additional information-seeking behavior among potential migrants following the campaign.

These results suggests that general dismissals of information and awareness-raising interventions targeting potential irregular migrants require nuance. Consistent, statistically significant effects on various migration-relevant outcomes underscore the potential of campaigns to inform the decision-making process of certain groups of potential irregular migrants and, in some cases, potentially reduce harm for those facing perils associated with irregular journeys from West Africa to Europe by land and sea.

The general finding that context information matters for migration choices is consistent with emerging experimental evidence from different settings (Tjaden and Dunsch 2021; Shrestha 2019, 2020; Bah and Batista 2018). The results are also consistent with general rational-choice models of migration decisions which assume that risk perceptions may condition the likelihood of expected benefits of migration (e.g., income) to materialize (Todaro and Maruszko 1987; Massey et al. 1993). However, the results are inconsistent with recent findings in a similar study in Mali (Mesplé-Somps and Nilsson 2020) which found no effects of films featuring positive and negative role models on migration intentions. Unlike the intervention we have assessed, the Malian study relied only on a 20-minute documentary screening without follow-up discussion and without any in-person contact with migrants who shared their stories. In addition, the Malian sample was not tailored to potential migrants with reported interest in migration but to the general population. Bryan et al. (2014) and Beam, McKenzie, and Yang (2016) also found no effect on migration behavior of information on job opportunities elsewhere. In taking stock, the mixed results underscore the need for further research on campaign—and more broadly, information—effects on migration. In the meantime, it appears that campaign effects depend highly on the context, the target group, and specifics of the intervention.

Awareness-raising interventions are commonplace in other fields of development (i.e., health, family planning, and education; see e.g., Battaglia and Pallarés 2020; Bongaarts and Casterline 2013). The evidence presented

in this study suggests that—similar to other fields—there is reason to believe that campaigns can be an effective tool in certain circumstances. The conversation should go beyond dismissing the general approach and move toward a discussion on which types of campaigns may be useful at a particular time and location. For example, the results suggest that interventions targeting individuals who are in early stages of their decision-making process may be particularly effective.

Some limitations of this study should be mentioned which also put potential policy lessons into context. First, this study was unable to measure actual behavior which is notoriously difficult given the mobile and irregular setting of migration from Guinea to Europe. Intentions are an important predictor of actual behavior (Tjaden, Auer, and Laczko 2019); however, the reasons that lead to leaving may differ from those that shape prior preferences and intentions. This question is inherently linked to policy decisions about the intended outcomes of campaigns. Knowledge and awareness gains may be suitable and ethical indicators of campaign effectiveness when campaigns aim to promote safe migration and facilitate informed decisions (regardless of eventual migration behavior). While actual behavior is of key interest, it may not be an adequate indicator of success in cases when the way in which migration takes place (i.e., safely or unsafely) cannot be measured.

Effect sizes in this study appear to be large for social scientists (approximately 8–20 percentage points relative to the control group), yet modest from a policy perspective. Campaigns by themselves are no silver bullet. On average, one to two potential migrants out of 10 change their mind based on new information acquired through interventions. Structural factors driving the initial consideration of migration (such as livelihoods, income opportunities, access to health care, etc.)—which have been held constant in this study—are likely to outweigh the role of information. More insights are needed on the relative cost-effectiveness of campaigns vis-à-vis alternative approaches to promote safe migration and prevent harm, including supporting local livelihood interventions or alternative legal pathways within the region or beyond.

Second, sustainability of effects may be of concern. The study assessed outcomes three to five months after the intervention. More research is needed to assess long-term impacts. Tentative evidence from heterogeneous treatment effects in this study suggests that effects could actually increase over time but more research is needed.

Lastly, as is common in survey-based research, social desirability bias may be an issue. We attempted to mitigate the risk of this bias, yet it is not possible to test for it directly.

In sum, awareness-raising interventions appear to be a viable option in the toolbox of migration policymakers, yet they are well advised to keep

realistic expectations, carefully tailoring campaigns and clearly defining campaign objectives.

Data availability Statement

Data and materials to replicate the analysis are available upon request. Please send an email to jasper.tjaden@uni-potsdam.de.

Acknowledgment

Open access funding enabled and organized by Projekt DEAL.

Notes

1 The authors would like to thank Marie-Luce Zafinikamia (IOM) for her pivotal support on data collection, field coordination, and data management, as well as the team at the International Organization for Migration's (IOM) Global Migration Data Analysis Centre (GMDAC). We would also like to thank the team at the Guinea country mission of the IOM for their support, including Lucas Chandellier, Mohamed Doumbouya, and Mohammad Coulibaly; and Giulia Falzoi, Shiraz Jerbi and Flavio Di Giacomo at the IOM Coordination Office for the Mediterranean-Liaison Mission for Italy, Malta, and the Holy See. In addition to the anonymous reviewers, earlier versions of the paper benefited greatly from feedback from David McKenzie (World Bank); Bernd Beber (WZB Berlin Social Science Center); Catia Batista (NOVA School of Business and Economics); Yvonne Giesing and Nadzeya Laurentsyeveva (ifo Institute, Munich); Tobias Stöhr (IfW Kiel); Gilles Spielvogel (Organisation for Economic Co-operation and Development); Nahomi Ichino (Emory University); Sandra Morgenstern (University of Konstanz); and Benjamin Chibuye (University of Kiel). The work was supported by UKAid by the Government of the United Kingdom as part of the project titled Safety, Support and Solutions in the Central Mediterranean Route; and by the German Federal Ministry for Economic Development and Cooperation through staff contributions.

2 According to an internal review by the European Commission, the European Union and European Union governments have

funded, implemented, or endorsed more than 100 such information and awareness-raising campaigns targeted at migrants since 2014. The provision of information and awareness-raising activities form part of major policy framework between the EU and Africa on the issue of migration such as the EU Emergency Trust Fund for Africa (EUTF) and the Migration Partnership Framework.

3 See <https://data2.unhcr.org/en/situations/mediterranean> and Europe | Flow monitoring (iom.int).

4 See afrobarometer.org/sites/default/files/publications/Dispatches/ab_r7_dispatchno288_looking_for_opportunity_africans_views_on_emigration1.pdf.

5 See <https://data2.unhcr.org/en/situations/mediterranean>.

6 See <https://data2.unhcr.org/en/situations/mediterranean>.

7 One notable exception is the case study of migration between Mexico and the United States. Several studies have examined the potential role of border enforcement and inferred risks on the decision-making process of potential irregular migrants (Espenshade 1994; Ryo 2013). Given its unique context (large diaspora, shared border, bilateral trade), comparability with West African migration to the EU is limited.

8 "Team members must walk in opposite directions to each other. If A walks towards the sun, B must walk away from the sun; C and D must walk at right angles to A and B. Use a 5/10 interval pattern to select a household. That is, walking in your

designated direction away from the starting point, select the fifth household for the first interview, counting houses on both the right and the left (and starting with those on the right if they are opposite each other). Once you leave your first interview, continue on in the same direction, this time selecting the tenth household, again counting houses on both the right and the left. If the settlement comes to an end and there are no more houses, turn at right angles to the right and keep walking, continuing to count until finding the

tenth dwelling." See https://afrobarometer.org/sites/default/files/survey_manuals/ab_r7_survey_manual_FR.pdf.

9 Massandouno and Cissé (2017) used data from the 2014 General Population and Housing Census to show that the large share of international migrants are aged from 15 to 39 years old.

10 Hemisphere Africa, "Migrants, return from hell," June 9, 2017. Available at <https://www.youtube.com/watch?v=icfztPXNiDk&t=1401s>.

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