

# The role of sender credibility in migration information campaigns

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## Abstract

The actors who carry out migration information campaigns—and thus serve as ‘information senders’—vary greatly. Existing studies on the effectiveness of such campaigns typically focus on one case of an information campaign. It is difficult to compare these case studies because, in addition to the different implementing actors, they differ substantially in terms of the content conveyed and the ways they are carried out. As a result, evidence of the causal effect of the information senders is missing. I argue that who implements the campaign is not trivial, as each type of information sender may be associated with a different level of credibility, and psychological models of information processing suggest that a senders' credibility is key to the impact of information. To corroborate and complement existing research, I present findings from a longitudinal survey experiment in Nigeria among students who were presented with the same hypothetical information campaign while the information sender was varied: each an international and local NGO, government and social contact. The results show overall similar effect directions for the different information senders, namely an increase in awareness of the campaign topic of irregular migration and a reduction of (irregular) migration intentions among the participants. However, notable differences are observed in effect size and effect persistence per sender

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and opposing actors are most influential regarding general versus irregular migration. Descriptive mediation analyses support the relevance of credibility per sender and imply the existence of a topic-dependent sender credibility effect.

## INTRODUCTION

It is a stylised fact that social capital and migration networks are crucial determinants of migration behaviour (Castles et al., 2014; Lubbers et al., 2020; Massey, 1999). One main reason for this is their provision of relevant information (i.a. Borjas, 1992). The policy of migration information campaigns aims to harness these information effects to tackle irregular migration.<sup>1</sup> Their declared aim is to spread information about migration and combat misinformation (European Commission, 2015). The campaigns are implemented in places with high levels of irregular migration to Europe but no origin-based legal claim for asylum. Although governments most often fund these campaigns, there is a wide variety of implementers (Tjaden et al., 2018). The most common implementers are governments themselves, NGOs and social contacts. Hence, from the audience's perspective the perceived source of information varies between these implementing sender types. Migration information campaigns are an exemplary case for studying information-sender effects as the audience does not 'gather' the information themselves but receives it regardless of their receptive motivation.

Evidence on the effectiveness of migration information campaigns is scarce and often contradictory. Non-empirical research literature doubts the effectiveness of this policy tool due to an expected lack of trust in the source of information (Schans & Optekamp, 2016). Recent empirical testing studies show that migration information campaigns have a direct impact on migration intentions of the audience with NGOs (Morgenstern, 2024), IGOs (Dennison, 2022) and migrants as senders (Dunsch et al., 2019), while others reveal a limited effectiveness among the campaign-targeted society (Caso & Carling, 2024). Despite suggesting that effectiveness varies by sender type, existing studies lack comparability between the effects of sender types and do not reflect the diversity of senders. With the aim of complementing existing research, I empirically investigate the moderating role of the sender-type in depth, keeping other campaign-components, such as message or audience, constant. Using a survey experimental design, the study loses generalisability compared to previous field experimental studies due to its survey-artificiality but gains in extracting the sender effect and, hence, internal validity.

The central relationship under investigation is between systematically delivered information and its impact on the recipient regarding issue awareness and behavioural intention to migrate. I argue that this relationship is moderated by the type of sender perceived as the source of information. According to the social psychological literature, the default mode of information processing is superficial and, therefore, highly influenced by peripheral cues (Chaiken & Trope, 1999; Petty & Cacioppo, 1986). As this is the case when information is provided by an external source, such as in migration information campaigns, the cue sent by the sender type is expected to work as a heuristic or signalling mechanism for its adequacy of processing, which can then be observed in the level of change in the recipient's awareness or intentions following the information. In line with the communication research literature, the effects should be most durable with repeated information exposure (Lecheler & de Vreese, 2013; Oxley, 2020).

I expect that the mechanism behind this relationship, i.e., the influence of the sender type in an information campaign setting on issue awareness and behavioural intention to migrate, can be traced back to different credibility levels the audience associates with each sender type. Associated credibility with an (inter-)national NGO, government and social contact is, however, a highly subjective endeavour. Based on the literature, one could try

to make initial assumptions, for example in terms of higher/lower credibility of local sender, but this does not do justice to the subjectivity on the individual nor the group level. To include this subjective judgement and therefore keep the level of experimental artificiality low, I examine this mechanism only in a non-causal exploratory manner.

The online survey experiment is conducted in Benin City, Nigeria, and consists of three survey waves over a three-week period. About 600 students ( $N$ ) participate in wave 1, with a significant—but not systematic—attrition, about 150 students continue in waves 2 and 3. The study focuses on the treatment implemented in the first wave: the type of sender of a hypothetical information campaign is varied between NGOs, governments and social contacts, each being local or international. Thus, the treatment consists of six treatment arms, i.e., the six different information senders. The studies' tested sender effect is hence causal, while the presumed mechanism via associated credibility level will be descriptive in nature. The study follows a causally identified yet exploratory study design.

Benin City, Nigeria, was selected as a case study for two reasons. First, Benin City plays an exemplary role as a 'migration hub' (Obi et al., 2019). In an environment with high fluctuations of people arriving and leaving, regularly or irregularly, there is a high market for information about migration, but also a high fluctuation of misinformation. Especially in a less regulated environment, such as the present one, the high fluctuation of (mis)information causes different information channels to compete. Therefore, the source of information becomes all the more critical. Second, from the perspective of European governments, Nigeria is one of the most frequently chosen places for migration information campaigns. This is because Nigeria is classified as a 'safe place', and Nigerians have represented the highest national proportion of irregular migrants from West Africa to Europe in the last half-decade (World Bank—country data), making Nigeria a typical country for this policy implementation.

## THEORY

This study is based on the fundamental premise that information about a given topic affects the level of awareness among the audience and influences their intentional behaviour with regard to that topic. One frequently debated topic in the context of migration information campaigns is the question of whether the conveyed information could aim to correct a lack of information or misinformation. This issue has been discussed by several scholars, including Nieuwenhuys and Pecoud (2007), Oeppen (2016), and Schans and Optekamp (2016). The empirical evidence is inconclusive (Gilbert & Koser, 2006; Schapendonk, 2015). In this study, it is assumed that, although the level of previous knowledge may vary among individuals, comprehensive information is implausible, and a campaign may deliver new or revised information to varying degrees. Moreover, according to prior empirical research, it is anticipated that the information provided by a migration information campaign will positively impact topic awareness, but have a negative impact on behavioural intentions to migrate irregularly (Dunsch et al., 2019; Morgenstern, 2020). This is because the campaign focuses on the challenges of irregular migration, and this additional cost inducement may reduce aspirations (Carling, 2002; Massey, 1999).

The relationship between systematic information about irregular migration and its impact on the recipient can be moderated by several factors, including the source of the information. A higher likelihood for moderation is mainly when the information is not gathered by the individual in question but delivered from outside, as in migration information campaigns (Morgenstern, 2024). This absence of individual action is also described as the default mode of information processing and is understood to be primarily superficial (Marcus, 2000). The superficial processing path facilitates the application of heuristics and cue signals (Chaiken & Trope, 1999; Petty & Cacioppo, 1986). Studies have shown that heuristic processing can be as effective as deep processing, but more efficient, particularly given the difficulty in assessing the veracity of new information (Lupia, 1994).

The impact of information sources on processing has been demonstrated across various contexts, including externally provided and self-gathered information (DeBono & Harnish, 1988; James & Van Ryzin, 2017; Malhotra & Kuo, 2008). In migration research, the link is primarily established for the latter. In this context,

information obtained through international social contacts has the most significant influence on migration intentions in general, while local social networks are shown to be of particular importance in the case of irregular migration (Castles et al., 2014; Frouws et al., 2016). In a recent review, Williams et al. (2020) demonstrate how prospective migrants employ a range of information sources strategically tailored to their particular requirements.

## Mechanism: credibility per sender type

The reasoning behind variation in the impact of different senders of information is generally attributed to different levels of credibility of the source, i.e., the sender of information and hence the information itself. Applying information processing paths of heuristics and cue signals (Chaiken & Trope, 1999; Petty & Cacioppo, 1986), information conveyed by credible sources is perceived as more credible information and identified as worthy of processing, whereas information from less credible sources is regarded as less credible information and of lesser value. The concept of credibility comprises three key aspects used to evaluate the sender of information and the information itself (Brinol & Petty, 2009; McCroskey & Teven, 1999): expertise (a), trustworthiness (b) and goodwill (c). This study examines how the impact of information varies according to the sender type in an exploratory manner, as the concept of credibility and the different sub-components are difficult to assign to the different sender types from the perspective of the audience.

The concept of expertise (a) implies the capacity to provide valid information. Organisations with a more institutionalised structure, such as government or non-governmental organisations (NGOs), may be perceived by the audience as more knowledgeable due to their ability to draw on the experiences of numerous individuals. In contrast, social contacts may be perceived as more knowledgeable because they possess expertise based on lived experience, either their own experience (international social contact) or that of a close person. The aspect of trustworthiness (b) pertains to the motivation to provide accurate information in general. In the light of the assumption that destination countries may be interested in reducing irregular migration, it is reasonable to posit that international governments and potentially even international NGOs may have divergent interests, which could result in lower levels of trustworthiness being attributed to them. Goodwill (c) denotes the intention to provide the recipient with accurate information. Although the first two components may be subject to objective classification and exhibit some degree of cross-cultural consistency (Freitag & Bauer, 2013; Putnam, 2000; Uslaner, 2018), the component of goodwill is characterised by a clear dyadic dependency between the sender and the receiver, underscoring the subjective nature of the process. Hence, the perception of the senders by the audience is highly subjective and difficult to ascertain from existing literature, making it an unsuitable basis for developing differentiated hypotheses on the extent of variation that is expected. In vague terms, however, it can be formulated that

1. different sender types are expected to have different effects on issue awareness and behavioural intention to migrate, and
2. the level of credibility associated with the sender type is the reason for the relationship between sender type and issue awareness/behavioural intention to migrate.

This proposed moderating effect of the assigned credibility per sender type is the argument used in some of the literature to explain why information campaigns are unable to influence migration: a lack of trust in the source of information (Nieuwenhuys & Pecoud, 2007; Oeppen, 2016). The evidence on the impact of information campaigns is mixed. Some studies (e.g., Morgenstern, 2024) have identified empirical evidence of the impact of migration information campaigns on the attitudes or intentions of the target society. Other studies (e.g., Caso & Carling, 2024) have found that such campaigns exert limited influence. The mechanism of variation by sender type might provide a resolution to this apparent contradiction.

Another argument from the literature that calls into question the impact of migration information campaigns, and which is equally applicable to information campaigns more broadly, is that externally provided information has only a short-term effect in the form of nudging (Davenport et al., 2010; Gerber et al., 2011; Williamson et al., 2020). In order to gain a deeper understanding of this topic, I will examine the impact of the information campaigns in question, both in terms of the magnitude of the effect and the persistence of the effect.

## RESEARCH DESIGN

This study aims to shed light on the role of the sender type in a campaign setting on topic awareness and subsequent behavioural intentions. To achieve high internal validity while keeping the conditions as generalisable as possible, an online survey experiment is implemented among a relevant target group following a lab-in-the-field experimental design. Analytically, only the first wave, including baseline, treatment and endline, is used to extract the effect magnitude per sender type. The two waves of panel follow-up surveys act as first insights into the persistence of change, i.e., the effect persistence over time. The research design received ethical approval from the ethics committee of the researchers' university and from the University of Benin City, Nigeria, where the study is implemented.

### Setting

In Nigeria, Benin City is known as a migration hub across state borders. A migration hub setting is a loose construct. In this study, I understand it as a setting in which (a) migration is an omnipresent issue with high mobility among the people, whether through immigration, emigration, or both, whether irregular or regular, and (b) various sources of migration-related information compete with each other. The latter criterion is generally more likely in a less regulated environment, such as places with low governmental restrictions and considerable irregular emigration movement. This is the case for Benin City in Edo State, Nigeria. Due to its relative richness through oil resources, migration behaviour to and from Benin City goes back in time. In the last decade, Benin City has become an epicentre for irregular migration.

In such a setting, different sources of information compete with each other, and receiving information from an external source—instead of by self-selection—is inevitable: the most common information sources are social contacts (local ones and the international diaspora), different organisations and brokers (Aker et al., 2011), local governments, and international governments such as the EU or European nation states (Tjaden et al., 2018). With a high variation in sender types providing systematic or strategic information, the source of information becomes ever more important. One reason for this increased sender-type effect is that the level of misinformation naturally increases as more information fluctuates. This environment comes with a decreased level of generalised trust among society and higher levels of scepticism (Draude et al., 2018), which is visualised by the 'circle of trust' in Chabal and Daloz (1999). Empirical evidence indicates deficient levels of generalised trust in sub-Saharan Africa (Inglehart & Welzel, 2010; Mattes & Moreno, 2018) and considers it a potential relic from the African history of slavery (Nunn & Wantchekon, 2011).

Migration information campaigns are an exemplary case for studying the sender effects of information provision in a high migration setting, as the one described. Although generally funded by governments themselves, the campaign is then implemented by different actors, such as NGOs, social contacts and governments themselves. Hence, the perceived source of information varies between these senders. For European national governments it has become popular to invest in this policy direction since the so-called migration crisis in 2015. The declared aim of migration information campaigns is to inform audiences about the issue of migration (Cleton & Schweitzer, 2021) as well as to combat the circulating misinformation disseminated by smuggling

organisations and others (European Commission, 2015). The campaigns are implemented in places with high levels of irregular migration to Europe but no origin-based legal claim for asylum. A typical country for this policy implementation is Nigeria. Nigerians have represented the highest national proportion of irregular migrants from West Africa to Europe in the last half-decade, the majority starting their journey from the migration hub, Benin City (Morgenstern & Strijbis, 2024; The World Bank Group, 2018). According to the statistics upon arrival in Europe, most migrants are young, male adults, have a lower-middle to middle-class socio-economic status, and possess a school education and often a university degree (see UNHCR Operational Portal); they are hence defined as the target group of this policy. The setting resembles a typical case for this policy implementation regarding country and city.

## Sample

To match the described target audience of migration information campaigns, the sample population under study comprises young adults in Benin City, Nigeria. More precisely, the study focuses on university students. University students fulfil the aspects of a most typical case given the description of the target group of these campaigns with regard to age group, education and presumably social status, as only certain groups of society in Nigeria manage to attend university. However, this social group is expected to still be on the upper level of the socio-economic status of the overall group of irregular migrants to Europe.

## Treatment specification and allocation

Similar to the output of an information campaign, the treatment consists of a piece of information (A) shown to the participants and an indication of the source of this information (B). The source varies between three types—NGOs, governments and social contacts—each of which are international or local actors. This results in six distinct sender types (3 types  $\times$  2 versions, international and local). To guard against deception, participants are told that the information is similar to information from a migration information campaign. The information piece (A) deals with the challenges of irregular migration. The content of the information piece is based on a previous study on irregular migration among Nigerian students. A systematic compilation of texts from the participating students in the control group ( $N = 916$ ), who were asked to write a letter to a friend, family member or acquaintance about irregular migration, resulted in five main themes (risks on the journey, challenges at destination, deception, conditions at home and legal ways) with 2–4 key sentences per theme. The piece of information is presented as a leaflet for the NGO and government sender types, and as a handwritten letter when the information source is a social contact (for an excerpt, see Appendix A in Data S1). This distinction in the means of information transmission ensures a certain degree of reality. However, it has the disadvantage of introducing some noise into the social contact treatment, as we had to add more words/sentences to the letter as compared to the content of the leaflets. All leaflets are identical except for the sender indication; the same applies to all letters. The layout of the leaflets was designed based on input from various actual migration information campaign leaflets.

The type of sender (B) is communicated clearly and repeatedly: before the information piece, in the information piece, i.e., on the front page of the leaflet or in the first line of the letter, and after the information piece. The social contact is limited to close contact via the salutation 'Dear friend, dear family', in the information piece. It is assumed that each of the six senders has a different level of credibility with the target group. A post-treatment measure captures the credibility level of the different sender types using a 10-item scale that captures all three credibility subgroups.

## Operationalisation of variables of interest

The central concepts of interest are awareness and behavioural intentions regarding migration. As direct questions have the disadvantage of being susceptible to social desirability bias, the questions are designed to be as indirect as possible. The author pre-tested the questions in previous fieldwork with Nigerian adolescents. Awareness is measured by the question asking how common irregular migration is in the respondent's society. A higher score indicates a higher awareness of the prevalence, in an environment such as the one studied.

In addition to the level of awareness, the intention to migrate is measured. Students are asked to indicate the extent to which they intend to migrate, both regularly and irregularly,<sup>2</sup> on a 10-point scale. Migration intentions are correlated with actual migration flows, showing a higher number of intending migrants compared to the actual number of migrants (Ortega & Peri, 2013). Recent studies highlight the relevance of immobile but aspiring migrants, providing an additional reason to study how information can shape migration aspirations (Carling & Schewel, 2018).

## Study setup and design

The online survey was set up via the online survey platform unipark. Students received the study link and a brief description of the study via mobile phone SMS. The phone numbers were provided to the research team confidentially by the student registry. The university administration provided a random selection of student phone numbers from across the university, i.e., from all pre-graduate years and all cohorts. As agreed in the ethical approvals with the authors' and the studied university, only the numbers were passed on to the researcher without any additional information. Participants received an incentive of 500 naira mobile airtime after each wave of the survey in which they participated.

The study design consisted of three waves. In the first wave, pre-treatment covariates are collected in a baseline survey, the sender-type treatment with the information piece is implemented, and the dependent variables are then collected in an endline estimation. One week later, the second wave consists of a baseline to capture the short-term persistence effects of the first treatment, a repeated exposure manipulation, and again a measurement of the dependent variables in an endline survey part. In the third wave, after another week in between, only the dependent variable is measured to learn about the duration of the effect. The total time frame is, therefore, 3 weeks. Given the lack of repeated exposure and measurement in quantitative field studies, it is difficult to characterise this timeframe as typical. However, in terms of practical intentions from a campaign funding or implementation perspective, the 1 week in between and the 3-week total timeframe could be seen as the absolute minimum of the desired effect duration, meaning that the smallest effects in an unintended effect direction would be relevant.

## Descriptive insights: case setting and sample

The sample studied falls into the category of convenience sample. We invited a random sample of students from the student register and asked them to distribute the link to their peers at the university. A total of 619 students participated, of which 140 were from the student register. The lack of random selection for most of the sample, however, results in a lack of generalisability and carries the risk of obtaining a systematically self-selected sample. I expect that there is a high probability of potential systematic bias in the following directions: (a) people with an interest in the issue of migration, (b) people with altruistic values who want to get involved in supporting research, (c) people in financial need (air time incentive) and (d) people who are generally less suspicious or have a higher general level of trust. The first and last elements are particularly relevant. The first is because it is the target group

that actors who provide information on migration want to reach. The latter is because a sample with a generally higher level of trust is similar to a conservative measurement scenario when studying the mechanism via sender credibility. When interpreting the results, it is important to bear in mind the possible self-selection of the sample due to interest in the topic and gullibility.

The average study participant is around 23 years old, male, studies physical sciences at the University of Benin City, and lives outside campus (see Appendix C in Data S1). Prior to treatment, general awareness of irregular migration is medium (6.86, scale 1–10). The intention to migrate is generally high (7.74, scale 1–10), but the intention to migrate irregularly is much lower (2.33, scale 1–10). Table 1 and the balance tests reported in the Appendix S1 show the treatment is evenly distributed within each wave. Additional analyses show no systematic attrition based on the recorded covariates, but on the basis of the initial migration intentions. This slight systematic attrition among the less interested makes the sample more similar to the intended target group of migration information campaigns.

## RESULTS

The results are presented in four parts. I focus first on the direct effect of migration information by the different sender types. Second the issue of durability is examined. Thus, the first part focuses exclusively on data from Wave 1, while the second part includes the panel structure. In the third part, I further explore the mechanism behind the sender-type effect via the construct of sender credibility. Fourth and finally, I sum up the results and discuss the outcomes, their limitations and paths for future research.

### Direct effects of sender type

Before describing the variation by sender type, I check for an overall change pre-post the information treatment, hence ‘the campaign impact’ (results, see Table in Appendix S1). Comparing the pre-post-treatment estimates within the first wave reveals a small but insignificant change regarding awareness levels. The lack of significance might be due to a lack of analytical power. General migration intentions and irregular migration intentions are estimated with the full sample size and reveal a small but significant decrease. The decreasing pre-post-treatment results for irregular migration intentions are in line with empirical evidence from prior studies on immediate and direct effects of migration information campaigns (Dennison, 2022; Dunsch et al., 2019; Morgenstern, 2024).

Table 2 demonstrates that the within-subject pre-post-treatment comparison effects vary by sender type. The awareness estimates are average mean comparisons, since they are measured in a random subgroup per wave. This smaller sample size has implications for statistical power, as shown in the rare significance. Still, it is observable that awareness increases in the treatment group with local governments and decreases with local social

TABLE 1 Overview of treatment group distribution by treatment and wave.

	Sender type/credibility						Total
	NGO	I. NGO	Gov.	I. Gov.	Soc.	I. Soc.	N
Wave 1	99	104	100	105	102	109	619
Wave 2	24	23	32	34	21	32	166
Wave 3	19	18	28	25	20	27	137

Abbreviations: Gov., government; I., international; no additional indication, local agent; Soc., social contact.



TABLE 2 Panel comparison by sender type treatment group in wave 1.

	Awareness	Migration intentions	Irreg. Migration intentions
NGO	-0.23 (0.48)	-0.44** (0.18)	-0.33* (0.19)
I. NGO	0.21 (0.51)	-0.37* (0.22)	-0.48** (0.20)
Gov.	0.73 (0.47)	-0.76*** (0.17)	-0.36** (0.18)
I. Gov.	0.08 (0.52)	-0.47*** (0.18)	-0.85*** (0.25)
Soc.	-0.71 (0.53)	-0.43* (0.24)	-0.09 (0.25)
I. Soc.	-0.26 (0.48)	-0.68*** (0.19)	-0.24 (0.18)
Observations	[98–109]	[198–218]	[198–218]

Note: Within-comparison; I., international; no additional indication, local agent; Gov., government; Soc., social contact; pre-post-treatment comparison for the dependent variable 'awareness' is no actual panel estimation; observations *N* are indicated as range, the variation is due to slightly different group sizes per treatment group (see Table 1).

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

contacts as sender types. Migration intentions decrease with the treatment for all panel comparisons per sender type. For general migration intentions, the strongest decrease is observable in the local government (-0.76) and the international social contact (-0.68) treatment group. While the smallest decrease is revealed for the international NGO (-0.37) sender type, followed by a local NGO (-0.44) and social contact (-0.43).

Regarding irregular migration intentions, Table 2 shows, that international governments (-0.85) as senders have the strongest pre-post-treatment effect. Local and international social contacts (-0.09, -0.24) reveal the smallest estimates and remain insignificant in the effect of immediate pre-post-treatment change. Overall, the effect sizes vary between 0.37 and 0.76 for general migration intentions and 0.09 and 0.85 for irregular migration intentions. Given the scale of the dependent variable operationalisations (Range 1–10), the effect sizes can be interpreted as quite substantial; especially when put in relation to the treatment implemented, i.e., a one-time information piece with sender indication.

Effect comparisons with and without covariates are reported in Appendix C in Data S1. Aggregating the data to compare international senders with local ones (Appendix C in Data S1), the analyses reveal a decreasing but not significant effect of international senders in contrast to local ones for awareness levels among the audience. Similar is observable for migration intentions in general. International sender types decrease irregular migration intentions significantly more than local ones. Comparing the three sender types among each other, regardless of whether they are local or international, reveals nearly no significant differences concerning the outcomes of interest, which indicates that being an international or local sender type is more relevant than which group (government, NGO, social contact). At the same time, the above results per individual sender type, and hence the combination of (inter-)nationality and group, reveal the highest variation.

To sum up, the theoretical expectation—in its exploratory terms—suggests an effect variation by sender type. This is supported for migration intentions in general as well as for irregular migration intentions. Overall, the information treatment effect reveals a similar effect direction for all sender types, yet the effect magnitude varies strongly between the sender types under study. For a change in topic awareness, the expectation can only partially be confirmed due to a lack of statistical power.

## Effect persistence by sender type

The three-wave panel data of this study, with 1 week between each wave, shows first insights into the persistence of effects. Attrition and balance tests allow for a comparison, despite a notably reduced sample size with each wave (see Appendix D in Data S1). However, the relatively small sample size per wave per treatment group increases the variance per estimand of interest. In other words, the confidence intervals that would give an indication of the differentiability between the treatment groups over time are larger (for readability, Figure 1 is reported without confidence intervals in the main text and with confidence intervals in Appendix D in Data S1). In short, the longitudinal perspective of the results only delivers tentative insights.

Comparing the sample over time without additional distinction reveals that the change in awareness levels that has been observable in the direct treatment effect with an immediate measurement (from Baseline W1 to endline W1) jumps back to the first and partwise even below. Irregular migration intentions and general migration intentions stay low after the initial change in the direct treatment effect of wave 1.

The average mean estimates vary substantially by sender-type treatment over time. As Figure 1 indicates, the topic awareness levels decrease without additional treatment exposure (comparison endline W1–baseline W2). Regarding the intentions to migrate, the pattern is similar in a positive effect direction, particularly for both treatments with governments as the sender and the international social contact sender group. While irregular migration intentions generally seem to go back to baseline, this is only true in the treatment group with the local NGO and local government as sender types. In the treatment group with local social contacts as senders, irregular migration intentions continue to decrease.

After additional information exposure (comparison baseline W2–endline W2), the increase in awareness is particularly strong in the international governments and international social contacts treatment group. It drops in the local governments group, which had exceptionally high values before. Only slight changes are observable in migration intention measurements comparing baseline and endline in wave 2 (see panel analysis Appendix D in Data S1). The effects for migration intentions in general and irregular migration intentions persist in Wave 3 and are constantly lower than in the Wave 1 baseline for all sender-type treatment groups.

## Mechanism: credibility per sender type

The underlying mechanism that causes the observed variation by sender type is postulated to be the perceived credibility attributed to each sender type by the audience. The following passage provides a more detailed examination of this link (detailed Appendix C in Data S1). Table 3 shows an overview of the sender type–credibility nexus, with rankings for the credibility level by sender type in the first column, and the measured rankings per subgroup in columns 2–4. These rankings should be interpreted with caution. On the one hand, although rankable, the measured variation in credibility scores is relatively small, with an alpha of less than 0.15 for the correlation between sender type and credibility or sender type and subscore. This suggests that the different levels of credibility and the credibility subgroups are pretty close to each other. On the other hand, we have no clear hypotheses about what to expect, which would make the interpretation post-hoc.

When analysing the mechanism between sender type, their credibility level and the outcome, a challenge could be that participants had the wrong type of sender in mind when they answered the battery of items to measure credibility. In other words, this measurement error would lead to false attributions of credibility levels to the different sender types. Based on the average duration needed, the time between receiving the treatment and the recap question on the sender type was around 7 min. An additional analysis is conducted to compensate for the potential discrepancy between the actual sender type and the type the participant recalled. A two-stage OLS

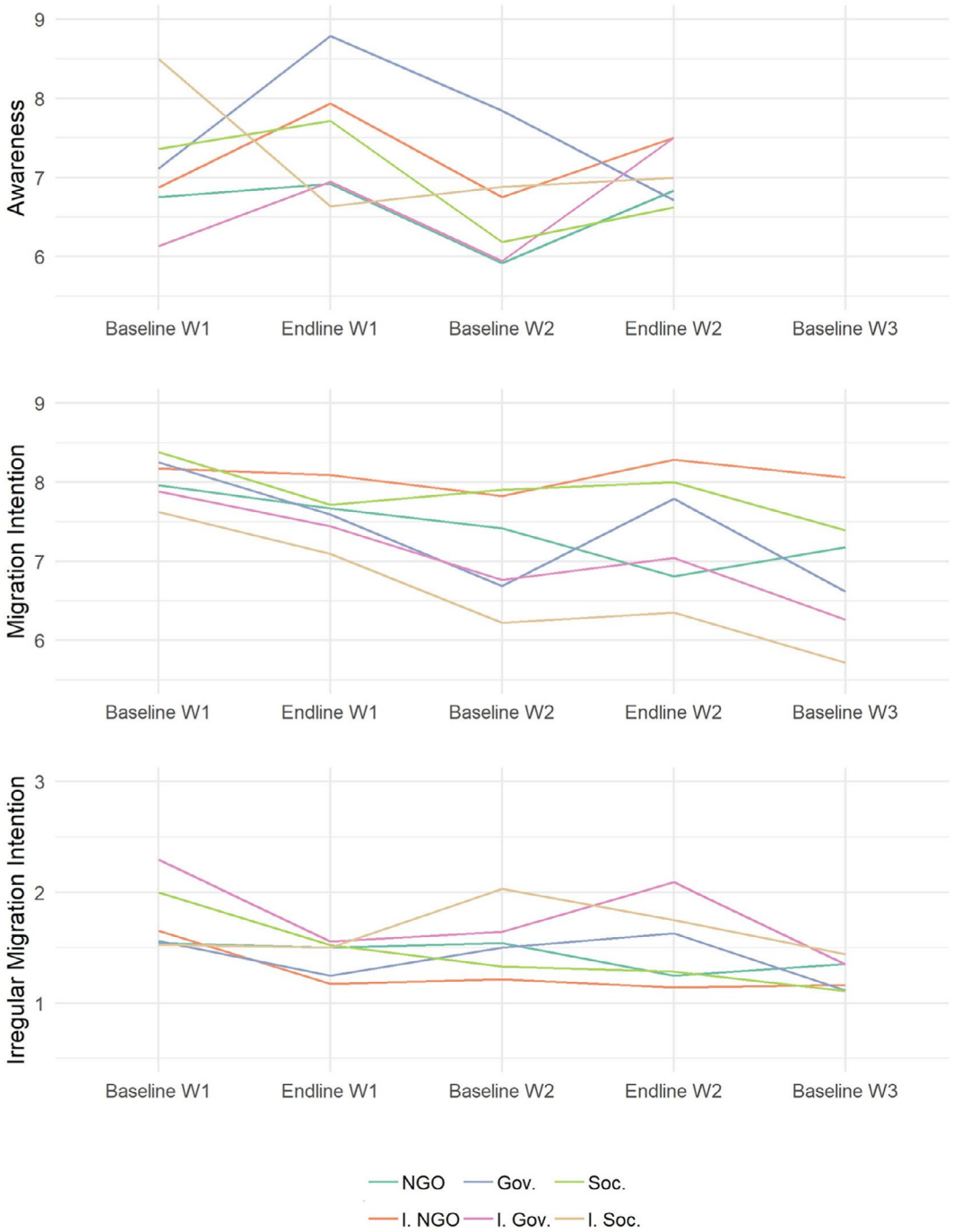


FIGURE 1 Average mean per credibility treatment group over time. For the sake of consistency, merely the mean and standard deviation estimates for the subgroup participating in Wave 2 are reported. The graph with confidence intervals is shown in Appendix D in Data S1.

TABLE 3 Ranking of sender types by mean credibility score.

	Credibility (C.)	C. Competence	C. Trust	C. Goodwill
1	I. NGO	I. NGO	Gov.	I. NGO
2	Gov.	NGO	I. NGO	Gov.
3	NGO	Gov.	Soc.	I. Soc.
4	Soc.	Soc.	NGO	Soc.
5	I. Gov.	I. Gov.	I. Gov.	NGO
6	I. Soc.	I. Soc.	I. Soc.	I. Gov.

Abbreviations: Gov., government; I., international; no additional indication, local agent; Soc., social contact.

model is applied, treating the actual and the recalled sender type as treatment assignment and treatment taking, respectively, like in a non-compliance analysis (see analysis in Appendix C in Data S1). Except for the larger effect magnitude, the effects are robust to the simpler model in Table 2.

The theoretical causal construct linking sender credibility to the relation between sender type and migration awareness/intentions assumes a mediation. It is postulated that the sender type influences the credibility level of the audience, and that the credibility then influences the outcome. I conduct additional descriptive analyses to grasp the triangular relationship between sender type, respective sender credibility, and the impact on topic awareness and behavioural intention change. The direct effect of sender credibility levels on the dependent variables is strong and significant. It goes in the same direction as the effect of sender type on the dependent variables. A mediation analysis, taking sender credibility as the mediating variable between sender type and the outcomes of interest, shows significant ACME effects, for a comparison between international and local sender types' impact on the dependent variables. Due to power limitations this analysis had to be grouped into international and local. However, given the effect directions and the direct effects described above, these results might act as good indicator for the detailed sender-type measurements. Based on the results (see Appendix S1, graphs D5, D6, D7 in the section 'Detailed Results: Mechanism: Sender Type, Credibility, Impact'), the relationship under study, sender type on awareness and (irregular) migration intentions operates at least partially through the level of sender credibility. However, the credibility level is only measured topic-independent. Given the present results one would expect a much clearer variation in credibility—and credibility subgroup levels—if credibility would be measured with regard to the topic measured, i.e., general or irregular migration. Additionally, the mediation analyses do not allow for causal claims since only one out of two variables on the right side of the equation is randomly assigned.

## DISCUSSION OF THE RESULTS AND STUDY LIMITATIONS

Overall, the results for a change in topic awareness are coherent in all sender-type treatment groups with regard to effect strength and persistence. Awareness levels increase directly after treatment and revert over time, except for the local government sender-type treatment group. However, given power limitations, the awareness estimates remain with critical uncertainties. Intentions to migrate in general, decrease persistently in all sender-type groups, but to varying degrees. The strongest and most persistence effect is associated with the sender types of local government and international social contacts. Over time, the effects of campaign information via international governments decrease notably as well. Regarding irregular migration intentions, direct effects are strongest with international governments as the sender, followed by local and international NGOs and the local government. Over time, irregular migration intentions decrease to a noteworthy degree in the local social contact sender type group, while they increase again in both government sender type groups. Both NGO groups reveal slight but stable decreasing effect behaviour.

The vital role of the local government, the diaspora or international social contact, and (mostly) the international governments in fostering a long-term and strong general change in migration intentions, contrasts the strong but not persistent effect of these sender types on irregular migration intentions. A similar picture, but vice versa, is observable about local social contacts: a solid but short-term effect on general migration intentions, but a long-term effect on irregular migration intentions. It seems that local governments and the diaspora primarily influence general migration intentions, while international governments and local social contacts have a stronger influence in decisions regarding irregular migration. NGOs, both international and local, play a relatively stable role: the treatment groups reveal moderate effects but no extreme effects or noteworthy volatility in any direction for all dependent variables studied.

The difference in effects per sender type for both migration intention measurements can partly be attributed to the levels of general credibility of the information sources. Two features of sender credibility are particularly evident in the results. First, the sender's credibility is subjective. In line with previous literature demonstrating individual-level subjectivity (Helbling & Morgenstern, 2023), this was to be expected also for the group level of the studied target population. Second, the pattern of sender-type effect on migration in general or irregular migration indicates that credibility attributed to a sender is also topic-dependent; as has been implied for trust in Bauer (2019). In this study, the item battery measuring credibility per sender type does not include a component for the context but estimates the concept in general. Credibility scores may be topic-dependent in the sense that the credibility score, and especially the goodwill score, is guided by the relation of the sender to the respective topic. For example, based on the presented results, the judgement of the credibility of an international government seems to vary with regard to information provision of regular versus irregular migration information.

At the same time, this insight limits the generalisability of the results. With regard to the group-level subjectivity of credibility among Nigerian students, similarities could be assumed within close cultures or settings, yet further research would be needed for verification. Since the migration hub setting is correlated with high scepticism in society, the outcome effects of the information might be larger in different surroundings and potentially vary less among sender types. Another limitation regarding the generalisability of the present results is the highly self-selected sample studied. The sample presumably could be biased in the direction of higher levels of generalised trust and a higher interest in the topic of (irregular) migration. Since these two components fit the actual campaign target audience of young Nigerians, the self-selection may not be an issue from a policy perspective. Nevertheless, the population under study is university students in Benin City, Nigeria. Even though they correspond in many respects to the target group of the policy in terms of age, gender and education, they probably belong to the upper socio-economic class and thus to a subgroup of the target group for which one would want to generalise.

Due to a lack of statistical power, the results on the persistence of effects can only be interpreted tentatively. Yet, they suggest a high relevance of long-term observations, since already a 3-week persistence estimation, as in this study, shows noteworthy insights: the effects of one of the outcome variables of interest went back to baseline values after this period, the initial strong effect of certain sender types faded out quickly as well, and the effects of other sender types did not reveal a strong direct effect but a stable durability of effects with additional change in the effect direction without further exposure. Future research should build on these initial insights and conduct a more extended investigation into the longitudinal sender variation effect.

## CONCLUSION

One feature of migration information campaigns is that individuals receive migration information from an external source—rather than through their effort (Morgenstern, 2024). The default superficial information processing mode is prone to sender-type heuristics, signals and peripheral cues (Chaiken & Trope, 1999; Petty & Cacioppo, 1986). I argue in this study that the impact of information on awareness and behavioural intention change varies by sender

type. I explore the impact in magnitude and persistence. A three-wave survey experimental design is implemented among Benin City, Nigeria, students. In the first wave, the sender type is manipulated, varying each between international and local, governments, NGOs and social contacts.

The results suggest an increase in awareness of the issue as a result of the information provided. This is in line with previous research (Dennison, 2022, Morgenstern, 2024; Tjaden & Gninafon, 2022). The change is similar across all sender-type treatment groups but lacks statistical power and persistence over time for most. There is a sustained decrease in migration intentions for all sender types, but to varying degrees. A local government and international social contacts, i.e., the diaspora, are the sender types with the strongest direct effects on general migration intentions. Over time, the general migration effects diminish. In contrast, the effects of the campaigns' information on irregular migration intentions are strongest when provided by international governments, followed by NGOs and local governments. However, while irregular migration intentions continue to decrease with social contacts as senders, they do not persist for the other information sender.

The results of the mechanism analysis indicate that the observed variation in sender-type effects can be attributed, at least in part, to the levels of credibility that the participants ascribe to the various sender types. Investigations on systematic patterns show that local governments and the diaspora seem to influence migration intentions in general, while international governments and local social contacts play a more vital role in irregular migration. NGOs, international and local, inherit a rather stable role. These outcomes highlight the subjectivity and topic-dependence of credibility. The insight that credibility is subjective and topic-dependent highlights an often overlooked aspect: the importance of knowing the topic and the target audience—and adjusting to it. The results indicate that this is not just the way to go due to ethical considerations, but also needed for a successful (policy) information campaign implementation. This could also be promising avenues for further research and should be explored in more detail, especially concerning the different components of sender credibility—expertise, trustworthiness and goodwill—and effect persistence over time. The rather short 3-week persistence analyses in the present study already suggest meaningful insights from this line of study.

At least two significant contributions can be identified. Firstly, the rigorous empirical testing of different sender types as a moderator of information effects in this study serves to confirm current theoretical assumptions and previous empirical evidence from the field. Estimates suggest that the peripheral cue of sender type may operate, to some extent, through ascribed credibility aspects. The persistence of results provides new evidence and calls for further attention. However, these findings on the moderating role of sender type in an external information provision setting are not limited to the (social or cognitive) psychological literature or to research on migration information campaigns. The findings can also be applied to the growing corpus on combating misinformation and fake news (Allcott & Gentzkow, 2017; Herrmann et al., 2018; Lazer et al., 2018).

Secondly, the findings have practical, real-world implications for the policy of migration information campaigns. The evidence on the impact of different sender types is relevant to policymakers and campaigners in the field. The study tests which sender type is most effective in terms of the magnitude and persistence of change, and emphasises the importance of adapting to local contexts, culture and perceptions. In terms of irregular migration intentions, local social contacts were found to exert the strongest persistent effect—a finding consistent with the insights derived from qualitative in-depth fieldwork (Alpes, 2017).

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## CONFLICT OF INTEREST STATEMENT

The research received ethically approval by the university of the author and the university of implementation. No conflicts of interest exist with regard to this study. The pre-analysis plan (PAP) for this research was registered prior to implementation.

## PEER REVIEW

The peer review history for this article is available at <https://www.webofscience.com/api/gateway/wos/peer-review/10.1111/imig.13383>.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

## Endnotes

<sup>1</sup>In this article, I define irregular migration from a government perspective as irregular entry, i.e., entry without the required legal documents (e.g., visa), often referred to as undocumented migration.

<sup>2</sup>The actual wording in the questionnaire is different. To reduce any potentially perceived judgement and align with culturally accepted expression the wording 'through the backdoor' is used instead of 'irregular' migration.

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Additional supporting information can be found online in the Supporting Information section at the end of this article.

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