Assessing the effectiveness of online Facebook campaigns targeting potential irregular migrants:

A pilot study in three West African countries

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GMDAC
IOM's Global Migration Data Analysis Centre

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Data Analysis Centre

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Executive summary

Background

- Studies have shown that many irregular migrants embark on journeys without accurate or complete information about migration. In response, IOM and other organizations run information campaigns intended to inform potential migrants of the dangers associated with irregular migration and to facilitate informed decisions.

- The use of online and social media platforms for these campaigns has become increasingly popular in recent years, due to their potential for quickly reaching millions of people at low cost.

- While the evidence base for offline information campaigns has been gradually improving, it remains unclear how online communication campaigns affect potential migrants, and methodologies to do this remain underdeveloped.

- This report therefore presents results from a pilot impact assessment of an online campaign based on Facebook posts in Guinea, Nigeria and Senegal during September 2019 and February 2020.

Method

- The report briefly reviews Internet access and speed in West African countries, how potential migrants use social media and current approaches for assessing the effects of Facebook engagement.

- To assess the effectiveness of campaign content (videos versus static images) on different Facebook audiences (urban versus rural and male versus female), the IOM Global Migration Data Analysis Centre conducted two phases of Facebook advertisement (ad) split tests, also known as A/B tests, targeting "potential migrants" in three countries of origin for migrants from West Africa (Guinea, Nigeria and Senegal).[1]

- Effectiveness was defined as the degree to which targeted audiences engaged with the campaign content through clicks, views, likes, shares and comments. One phase of the split tests included an online survey to validate whether the engaged audience represented potential migrants.

Results

- Facebook usage was approximately three to four times lower in West Africa (e.g. 16% on average in Guinea, Nigeria and Senegal) compared to in high-income countries (e.g. 63%

[1] Facebook also offers other forms of experiments, for example, lift testing where groups of people are compared as to who did and did not see the Facebook advertisement (ad) (the holdout or control group) to understand the causal impact on specific objectives, such as brand recognition or conversion (www.facebook.com/business/help/552097218528551?id=546437386202686).

on average in Germany, Singapore and the United States of America). Internet speed was also drastically different. For an average Senegalese person, it would take about five hours to download a 5 GB movie, compared to about 10 minutes for an average Singaporean person (with the second-fastest Internet speeds in the world).

- Approximately 10 per cent of targeted Facebook users engaged[2] with campaign content through likes, comments, shares or clicks. Particularly in urban settings, the campaigns reached 20,000–160,000 users within the seven days that the ad was online.

- While the reach was high, the engagement per post was low overall.[3] Fewer than 3 in 10,000 people who saw the ad on Facebook were willing to complete an online survey. Fewer than 1 in 10 people who were reached by the ad watched the video in full, fewer than 1 in 1,000 people liked the video and fewer than 5 in 10,000 shared or commented on the post.

- More people engaged with a static image than a video in all three target countries, in urban and in rural areas, but static images did not perform significantly better than videos in rural areas despite potential slower Internet speeds.

- Targeted Facebook ads are perceived to be a cheaper option for campaign implementers compared to live outreach activities in the field. The cost difference between Facebook ads and offline information activities narrows substantially when considering that many Facebook users are likely not part of the intended target group.

Conclusion

- Facebook ad campaigns can reach many people quickly. However, large audience sizes and relatively cheap costs come with a trade-off. The impact of an information campaign on potential migrants' perceptions, attitudes, knowledge and behaviour remains largely unknown because many Facebook users that engage with the campaign do not fit the intended target group. The advantage of offline over online campaigns is that implementers have more control and information about who attends activities or who is exposed to campaign content.

- The engagement of users with campaign posts varies largely by audience and post characteristics. Campaign and social media teams are well advised to conduct pilot tests before scaling up activities. Pilot tests can inform a customized approach for each online activity on Facebook, and thereby maximize impact. In addition to A/B tests, lift tests may offer a useful opportunity to test the impact of Facebook posts.

- Compared to impact assessments of offline information campaigns, measuring the impact of Facebook ads on potential migrants presents several unique challenges, including:
  - Many potential migrants are not on Facebook or do not use ad content to seek information about migration. Internet connectivity is also limited in many West African countries.

[2] Engagement on Facebook means people perform actions on the page and posts, for example, likes, comments, shares or clicks.

[3] For non-governmental organizations, the average engagement rate per post is about 0.2 per cent (https://blog.iconosquare.com/average-facebook-engagement-rate/).

- While Facebook allows users to narrow down target groups, it is not clear whether those Facebook users that are exposed to the content fit the profile of potential migrants. Whether the intended target group is reached can be affirmed only through surveys, which have a low response rate.

- It is not possible to interview the same Facebook users several times to track changes in their perceptions. Engagement metrics like post reactions, link clicks or video plays can be useful indicators. However, these low-engagement metrics do not offer clear evidence of the short- or long-term effects on Facebook users.

1. Introduction

Migration can be a dangerous endeavour, especially through irregular channels. Research has repeatedly shown that many migrants leave their countries of origin and embark on journeys without accurate or complete information (Sanchez et al., 2018; Dunsch et al., 2019). As a result, numerous governments, non-profit organizations and multilateral organizations operate or fund large-scale media campaigns intended to inform potential migrants of the dangers associated with irregular migration.[1]

While the goals of migration-related information campaigns vary, they generally aim to raise awareness, change attitudes or change specific behaviours. In the past, information campaigns have been conducted through popular means of communication such as newspapers, television advertisements (ads), radio programmes and billboards, or through in-person events like training events or town hall meetings. However, many campaigns now focus their efforts on social networks due to the increase in use of online communication and social media.

Social media information campaigns have become particularly popular due to the possibility of reaching millions of people quickly at low cost.

Social media information campaigns have become particularly popular due to the possibility of reaching millions of people quickly at low cost. Online campaigns are commonly disseminated as ads through social media sites such as Facebook, Instagram, Snapchat, TikTok, Twitter and YouTube, or through ads placed on websites or search engines. There is no clear classification of campaign type, but online migration-related information campaigns generally focus on informing on the risks of irregular migration, providing information on the difficulties migrants face in host countries,[2] addressing rumours and misbeliefs about migration,[3] providing information about the legal context and alternatives to irregular migration, providing anti-trafficking messages or changing public opinion about migration or immigrants.[4] In recent years, there has been a particular interest in expanding these campaigns into more countries in Africa, where some of the most dangerous migration routes lie.

---

[1] In the context of this report, "irregular migration" is defined as: "Movement of persons that takes place outside the laws, regulations, or international agreements governing the entry into or exit from the State of origin, transit or destination." (IOM, 2019)

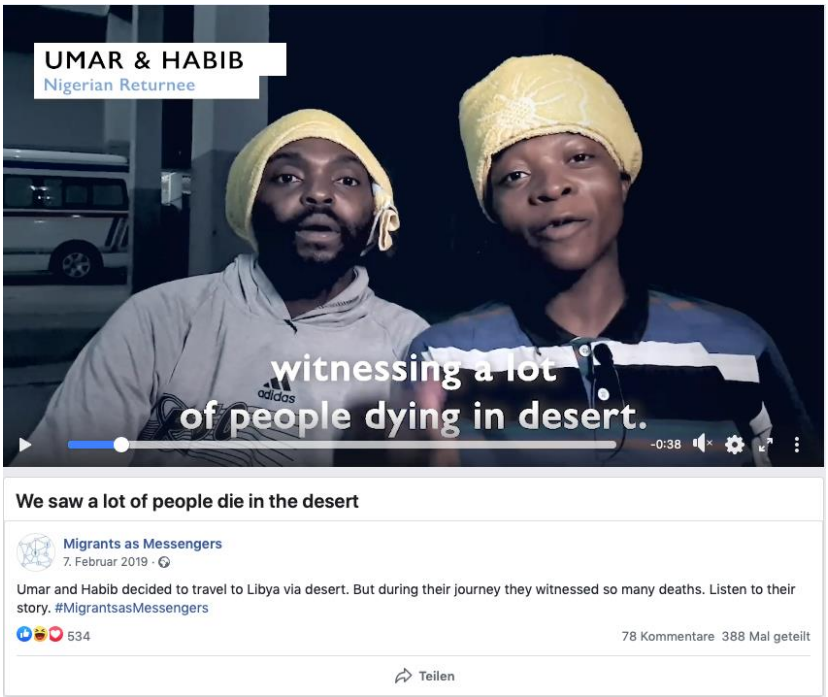
[2] Messages aimed at potential migrants sometimes pair information on the risk of the journey with information on the challenges that migrants face when they arrive in their final destinations.

[3] "Myth busting" information campaigns aim to correct perceived misbeliefs about migration, for example, Germany's Federal Foreign Office launched a website, #rumours about Germany, providing "facts" about smugglers, the real cost and risks of the journey and other information about legally staying in Germany.

[4] An example is the IOM i am a migrant campaign, which aims to promote diversity and inclusion of migrants in society.

One example of such an information campaign is the IOM Migrants as Messengers (MaM) campaign. This targets potential migrants in West Africa and aims to spread "information about the trials and tribulations of irregular migration".[5] The MaM campaign works with migrants who have decided to return home and who share their personal stories through video testimonials. The campaign shares content through in-person town hall meetings and the Internet. For example, on Facebook, the MaM page regularly has testimonial videos from migrants describing the perils of their journey towards Europe. Figure 1 shows a video ad posted on the MaM Facebook page, telling the stories of two Nigerian returnees.

Figure 1. Typical video ad posted by the MaM campaign on Facebook



Source: MaM Facebook page, 2020.

Other online campaigns pair awareness-raising with information about alternatives to irregular migration, such as resources on how to migrate lawfully or labour opportunities in home countries. The primary objective of the IOM Aware Migrants information campaign is to inform potential migrants of the risks of migrating through the desert and Mediterranean Sea, but also to provide links to "regular channels" and "opportunities" in Africa.[6] Campaigns with anti-human trafficking messages are also common. These campaigns typically target potential victims at risk of trafficking and exploitation, and are usually disseminated in sending countries (Schans and Optekamp, 2016). They tend to highlight the dangers associated with hiring a smuggler for the purposes of migration, and the dangers trafficked people may face. IOM X ran several anti-trafficking campaigns across South-East Asia through media channels such as

[5] www.facebook.com/pg/MigrantsAsMessengers/about/?ref=page_internal.
[6] https://awaremigrants.org/category/alternatives.

radio, billboard ads and an active Facebook page[7] (see table A1 in the Annex for an overview of online migration-related information campaigns).

While the number of information campaigns across media channels continues to rise, little empirical evidence exists of their efficacy. A systematic literature review by the Global Migration Data Analysis Centre (GMDAC) of 60 quantitative assessments of information campaigns for potential migrants or traffickers showed that few studies employed rigorous evaluation methods. The GMDAC report (Tjaden et al., 2018) found that "uptake in the use of information campaigns has far outpaced any rigorous assessment of the effects that different campaigns may have on their respective target groups. In the absence of reliable evidence, the debate on the potential of this policy tool often relies on largely anecdotal evidence."

IOM recently published a first-of-its-kind impact evaluation study of the MaM campaign in Senegal (Dunsch et al., 2019). The study measured the effects of an offline information campaign targeting potential migrants across three key outcomes: knowledge about migration to Europe, perceptions of risks associated with irregular migration and expressed intention to migrate irregularly. The report focused on an offline, town hall style portion of the MaM campaign. But an important component of the MaM campaign takes places online, through videos and images shared on social media channels.

While the evidence base for the impact of offline campaigns is gradually improving, it remains unclear how online communication campaigns affect potential migrants.

While the evidence base for the impact of offline campaigns is gradually improving, it remains unclear how online communication campaigns affect potential migrants. This is despite many international organizations such as IOM increasingly running or funding online campaigns.

Purpose of this study

This study aims to provide new evidence on the impact of information campaigns targeting potential migrants through social media channels. The need for evidence in this field is motivated by three key realizations:

(a) Knowledge about the effectiveness of online ad campaigns is often not systematically documented or released publicly. Many past experiences never leave social media teams and are lost when staff move on to other positions.

(b) Studies often assess the efficacy of campaigns through reach, engagement and penetration metrics. But it is not clear whether these metrics are good measures for causal impact.

[7] www.facebook.com/IOMXorg/.

(c) Policymakers fund a variety of campaigns and are faced with decisions to invest in online or offline campaigns. If both dimensions are combined, it is unclear which approach is more effective in different contexts. There is little evidence available to guide these decisions.

This study looks at the use of Facebook ads[8] in particular as a means of reaching potential migrants and delivering messages about the dangers of irregular migration. Facebook's ad platform is a popular tool for private firms and organizations to selectively show images, videos and other content to specific audiences, given its low costs and high user reach.

Facebook serves as a useful case study for this project given its large user base and its effective ad platform. About 2.5 billion people are actively using Facebook – accounting for approximately 32 per cent of the world's population.[9] Not everyone who intends to migrate uses Facebook or has Internet access. Yet substantial numbers of potential migrants do actively use Facebook, and may benefit from the added knowledge of online information campaigns.
This report focuses on three West African countries, given that IOM is operating several campaigns in the region and uses Facebook and its ad platform, as well as other social media channels, as an outlet for information campaigns targeting potential migrants.

In a pilot test, several experiments on Facebook's ad platform have been conducted to test ad effectiveness in the context of online information campaigns in Guinea, Nigeria and Senegal. Effectiveness is defined as the degree to which targeted audiences engaged with the campaign content through clicks, views, likes, shares and comments.

The pilot study aims to provide initial insights into the following questions:

(a) What is the best way to measure the impact of offline and online information campaigns?
(b) How can the effectiveness and causal impact of online information campaigns be evaluated?
(c) Do Facebook ads reach potential migrants in West Africa?

2. Evaluating the impact and effectiveness of online information campaigns

This section introduces and reviews different approaches to assessing the impact and effectiveness of online campaigns.

2.1 Defining and measuring impact

Impact can be defined as the "positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended"

[8] www.facebook.com/business/ads.
[9] https://wearesocial.com/blog/2020/01/digital-2020-3-8-billion-people-use-social-media.

(OECD, 2010). For migration-related information campaigns, impact could mean, for example, an increase in knowledge about irregular migration, a change in the perception of risk of irregular migration or an attitudinal change about the intention to migrate.[10]

Practitioners, monitoring and evaluation experts and researchers often have a different understanding of the meaning of impact and how to measure it. There are various ways to assess the results of campaigns, which differ in complexity, reliability and purpose.

Scientifically rigorous impact evaluations are an ideal tool to measure the "quantifiable" impact on a particular activity on a clearly defined target group.

Scientifically rigorous impact evaluations are an ideal tool to measure the "quantifiable" impact on a particular activity on a clearly defined target group. They work by asking what would have happened if the intervention had not taken place. This approach (often called experimental or quasi-experimental methods for causal inference) requires several rounds of data collection over time and a comparison group (see Gertler et al., 2016 for further details).

Governments, firms and organizations such as IOM increasingly conduct rigorous impact evaluations to assess whether a programme or policy had any effect due to an intervention that was introduced (Dunsch et al., 2019; Bia-Zafinikamia et al., 2020). Impact evaluations try to measure the observable differences after an intervention is adopted separate from external factors. Such impact evaluations attempt to isolate the effects of the specific intervention, typically by employing a randomized control trial (RCT) design or an alternative design such as a difference-in-difference approach. RCTs are considered to be the best type of impact evaluations since they allow outside influences to be ruled out. To create a counterfactual situation, evaluation teams divide the intended beneficiaries into treatment and control groups. Rigorous impact evaluations of offline information campaigns are complex, costly and difficult to realize, and often require close cooperation between implementers and researchers (Tjaden et al., 2018; see Gertler et al., 2016 for more information on methods).

Nevertheless, IOM GMDAC has initiated a programme to carefully study the impact of such offline campaigns on potential migrants (see e.g. Dunsch et al., 2019; Bia-Zafinikamia et al.,

[10] The IOM impact evaluation of the Migrants as Messengers (MaM) campaign in Senegal was designed to measure the causal impact of the MaM campaign on potential migrants' perception, information levels, knowledge and intention to migrate irregularly to Europe. By employing a randomized control trial design, and by surveying people before and after they were shown the informational materials, it was found that people who were exposed to the campaign were 19 per cent more likely to report feeling well informed of the risks associated with migration. Moreover, people in the treatment group were 25 per cent more likely to report being aware of the risks associated with irregular migration, as compared to the control group.

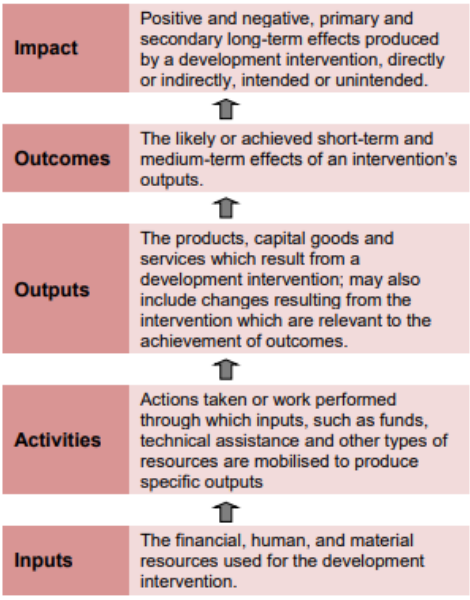
2020). The studies use an RCT and difference-in-difference approach to provide reliable estimates of a project's impact.

2.2 Evaluating impact online

The absence of experimental research on online campaigns is partly due to the difficulty in measuring the impact of campaigns on social media platforms (López, 2019). Typically, offline impact evaluations begin by taking a baseline survey of a group participating in the project and a group that is not participating to understand who the people are and how they think before they are exposed to an information campaign. Then, after receiving the information, people are tested (sometimes once, sometimes again a few months later) to see if any change occurred in their attitudes, information levels or intended behaviour. However, translating this research design to social media campaigns is generally not feasible due to the way in which social media platforms are set up.

An intervention activity (such as an online campaign) does not always translate into immediate, observable impacts. For example, many campaigns aim to change the behaviour of potential migrants (i.e. encourage people to research more before their journey or dissuade them from engaging with smugglers), but this can be a long-term goal involving many preceding steps. When an impact evaluation is conducted, it is important to outline a logical chain and identify key inputs, outputs, outcomes and long-term impact (see figure 2 for a logical chain of evaluation components). Campaign outcomes and impact can be difficult to identify and measure objectively. An evaluation of this type of intervention should therefore involve monitoring of key indicators, outputs and outcomes. The reach of Facebook advertising campaigns can be measured through engagement analytics (number of views, clicks, likes and so on), but one of the best ways to assess impact on behaviour or attitudes is through online surveys.

Figure 2. Chain of evaluation components



Source: OECD, 2013.

If the logical chain of an offline campaign is translated into an online campaign on Facebook, the different components can be described as:

- Inputs: The budget allocated for the production, development and dissemination of the social media campaign content;
- Activities: Creating testimonial videos, curating and monitoring social media accounts, and engaging with beneficiaries;
- Outputs: Videos, static images and other media content used for the campaign;
- Outcomes: Engagement with campaign content – the number of people who view a video and the number of likes, clicks and other engagement metrics;
- Impact: Changes in attitudes, increases in information levels and behavioural changes (directly attributable to the campaign).

2.3 Evaluating the effectiveness of online campaigns

Academic and market researchers have been grappling with finding the best way to measure the effects and effectiveness of online advertising. Traditional market research first relied on methods such as phone calls to survey samples of people on brand awareness and recognition, or knowledge about a specific product or advertising campaign. With the rise of Internet use and social media, many in the field moved to intercept surveys[11] – typically a box that pops up whenever a user enters a specific website that invites them to participate in an online survey. This tool can be helpful in directly recruiting people who are using a site that contains ads for a specific campaign. However, researchers have expressed concerns over this method creating user fatigue (industry overuse has led to fewer people clicking on the ads) and for the potential bias in responses created by conducting a survey on the page that the ad is displayed (Gluck, 2011).

Other ways to measure effectiveness online include:

- Engagement metrics such as Facebook analytics: How many people click on a video? How many people like a post or how many people share it? See table 1 for Facebook metrics and their definitions.

- Sentiment analysis: How are people discussing the content?

- Conversion lifts: Does the ad lead to a measurable outcome? In private industry, this is mostly measured in purchases. One common type of measure is the "conversion lift" of an ad. For example, for an ad advertising a product, what is the percentage of people who saw the ad and who clicked on it, went to another page and made a purchase? A similar concept can be applied to a migration-related information campaign showing an image or post that asks people to go to an external page. There are many examples where campaigns use Facebook or Twitter posts to lead people to a page with in-depth information.

- Ad recall: How many people remember seeing the ad?[12]

- Brand awareness: Do people remember the brand? Did seeing the ad cause them to become more aware? This can also translate to migration-related campaigns. For instance, if it is associated with a particular agency, do the campaigns cause people to be more aware of a certain agency?

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[11] www.driveresearch.com/single-post/2019/01/10/What-are-Website-Intercept-Surveys-Website-User-Feedback.

[12] Ad recall is a campaign metric that measures how memorable an advertisement (ad) is to the audience. On Facebook, the metric shows how many people the platform Facebook estimates would remember an ad within two days of seeing it, based on user-specific behavioural information Facebook has collected.

An online evaluation should involve monitoring of key indicators, outputs and outcomes. Key Facebook metrics can be indicators of the effectiveness of online campaigns. While Facebook metrics such as reach are important to understand the output of campaigns (e.g. how many people get to see an ad), engagement metrics such as post reactions, link clicks and video plays are especially relevant to understanding the outcome of the campaign. Table 1 shows an overview of Facebook metrics used and their definitions.

Engagement metrics such as post reactions, link clicks and video plays are especially relevant to understanding the outcome of the campaign.

Table 1. Facebook metrics and their definitions

Metric	Definition
Amount spent	The estimated total amount of money spent on the campaign, ad set or ad during its schedule.
Comments	The number of comments on the ad.
Frequency	The average number of times that each person saw the ad. Frequency is calculated as impressions divided by reach. Frequency may average one to two per ad set or may be much higher, depending on budget, audience size and schedule.
Impressions	The number of times any content from the page or about the page enters a person's screen. This number will contain duplicates – that is, someone will see an add more than once. This allows ad frequency to be calculated.
Link clicks	The number of clicks on links within the ad that leads to destinations or experiences, on or off Facebook.
Post engagement	The total number of actions that people take involving the ads. Post engagements can include actions such as reacting to, commenting on or sharing the ad, claiming an offer, viewing a photograph or video, or clicking on a link.
Post reactions	The number of reactions on the ads. The reactions button ad allows people to share different reactions to its content: like, love, haha, wow, sad or angry. The post reactions metric counts all reactions that people had to the ads while they were running.

Post shares	The number of shares of the ads. People can share the ads or posts on their own or friends' timelines, in groups and on their own pages.
Potential reach	An estimate of the size of the audience eligible to see the ad. It is based on the targeting criteria, ad placements and how many people were shown ads on Facebook apps and services in the past 30 days. This is not an estimate of how many people will see the ad, and the number may change over time. It is not designed to match population or census estimates.
Reach	The number of people who saw the ads at least once. Reach is different from impressions, which may include multiple views of the ads by the same people.
Results	The number of times that the ad achieved an outcome, based on the objective and settings selected.
Video plays at 100%	The number of times the video was played at 100% of its length, including plays that skipped to this point.

Source: https://www.facebook.com/business/help/447834205249495.

2.4 Challenges to and limitations of evaluating online campaigns

The use of "digital traces" and "big data" have become increasingly popular – and useful – for researchers and advertisers alike (Cesare et al., 2018). However, what makes social media networks such as Facebook so attractive for online information campaigns also makes them difficult to evaluate, and the use of ads to reach intended audiences or collect survey samples has several important limitations (López, 2019).

2.4.1 Difficulty in experimental design

A popular way to test the effect of an ad is to select a population sample and divide it equally (and randomly) into a treatment group and a control group. The treatment group would be shown the relevant ad, while the control group would be shown some sort of placebo ad that is not likely to have an effect on the outcome of interest.[13] A difference in outcomes would be calculated sometime later. But as many social media ads now rely on algorithms, using a null or placebo ad as a control group, this method is no longer feasible.[14] Facebook, for example, will show the ad selectively or increasingly to people who are more likely to click on

[13] In market research literature, this placebo ad is typically a public service announcement for an unrelated charity.
[14] Another popular option is to use an intent-to-treat design, but people designated into the treatment group may not see the ads. Because ad exposure cannot be guaranteed, then the study must require a larger sample size to deal with the added variance. This can result in even higher costs, which makes this strategy infeasible.

it – thus introducing further bias into the experiment. This means that the ad platform can create a problem of endogeneity that introduces further error and which makes it more difficult to determine if an observable effect was caused by the intervention or some other unrelated factor. In other words, in an online evaluation of Facebook ads, there is limited control over who will be exposed to the ad and how many times a user will see the ad.

In an online evaluation of Facebook ads, there is limited control over who will be exposed to the ad and how many times a user will see the ad.

Facebook's advertising algorithm makes it difficult to conduct an RCT because it leads to problems with selection bias. Facebook's platform optimizes a given campaign objective (for instance, clicks or conversions) and will selectively show ads to people who are more likely to click on them. This bars the ability to create true random assignment of the treatment, and it also means that concurrent campaigns may show ads to different groups at the same time, leading to potential cross contamination. The issue with selection bias has important implications for causal inference and it makes it difficult to control for unobservable differences among treatment groups. As suggested by Lewis and Rao (2015): "These biases exist primarily because ads are, entirely by design, not delivered randomly."

2.4.2 Difficulty in representative sampling

The Facebook user base is not necessarily representative of a nation's population, which is a problem for the external validity of a research project. While Facebook boasts an impressive number of users (2.5 billion), they still represent only about 32 per cent of the world's population.[15] People who use Facebook may also be different from an average citizen in a particular country, depending on income, education, access to Internet, language access and so on.[16] Furthermore, Facebook estimates that 5 per cent of the worldwide monthly active users are fake accounts and 11 per cent of global monthly users are duplicate accounts,[17] which can lead to potential contamination across the sample. Additionally, the user composition, user size and usage patterns change over time. This means that Facebook users in the same location may be more or less "representative" of people living in that location when interviewed at different times.

[15] The number of Facebook users refers to Fakebook's active monthly users as of January 2020. The share of the world's population that uses Facebook is the number of Facebook users (who must be aged 13 or older) divided by the number of people aged 14 and older (https://wearesocial.com/blog/2020/01/digital-2020-3-8-billion-people-use-social-media).

[16] A younger audience also increasingly uses other social networking apps and platforms, such as Instagram, Snapchat or TikTok (https://datareportal.com/).

[17] https://blog.hootsuite.com/facebook-demographics/.

The Facebook user base is not necessarily representative of a nation's population, which is a problem for the external validity of a research project.

2.4.3 Audience saturation

Repeated ads cannot be excluded from a user's screen and the audience group might see the ads multiple times, which could lead to diminishing interest in the ad because people feel oversaturated[18] at some point. Especially in rural areas where the potential audience is smaller, the frequency[19] of ads is often much higher than in urban areas. Furthermore, if not enough time lag is allowed between ad roll-outs, people could easily experience fatigue in exposed areas.

2.4.4 Difficulty in measuring intended outcomes

The objective of migration-related information campaigns is commonly a change in the audience's perception, knowledge or attitudes towards migration-related issues. In an offline study, these outcomes can be easily measured through a survey. However, in an online study, the default metrics that Facebook provides do not allow any insights into these outcomes. Facebook metrics are largely limited to "engagement", that is, the degree to which users react to the ad. Measuring migration-relevant outcomes on Facebook requires adding a dedicated online survey, which introduces a host of new difficulties (see sections 4.1 and 5.1).

2.4.5 Difficulty in tracking individuals online over time

Offline impact evaluations require that the same audience be interviewed at least twice over time. On Facebook, it is extremely difficult to track people in online experiments, making person-level assignment of treatment or control groups difficult. People may use different devices, and one device may be shared by many people. Moreover, new privacy technologies make it easier to mask online identity, thus making it harder to trace an individual.

Internet cookies are often used as the best-available way to identify users over the Internet. Internet browsers store data about a user on specific websites, so sites can use that data when the user returns. However, cookies are easy to delete (by clearing cookies), and changing regulations make it harder for websites to track cookies in certain places.[20]

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[18] www.facebook.com/business/help/360633990938573?id=561906377587030.

[19] Facebook frequency is the number of times each person has seen the ad. It is calculated as impressions divided by reach.

[20] https://ec.europa.eu/ipg/basics/legal/cookies/index_en.htm.

2.4.6 Ethical considerations

When communicating on social media and addressing potential vulnerable people, migrants or refugees, ethical considerations must be taken into account (Brekke and Thorbjørnsrud, 2018). Several organizations and scholars have pointed out the pitfalls of targeting potential migrants through information campaigns. Essentially, it is argued that the goal of these campaigns is to stop people from migrating instead of supporting them in making informed migration decisions (Oeppen, 2016). In a humanitarian context, information campaigns should not target vulnerable people in need of protection and who might have a legal claim for asylum (UNHCR, 2011).[21] However, Facebook and other social media platforms make it difficult to ensure that potential vulnerable groups are excluded when targeting an audience group. Furthermore, critics often note that information campaigns usually lack balanced information, rather focusing on negative messaging about irregular migration than offering information about regular ways to migrate (Pecoud, 2010).

Other ethical considerations are Facebook's data privacy issues. While the targeting feature has ensured Facebook has record profits every year, governments, consumer-advocacy groups and the general public have roundly criticized it. In 2018, the Cambridge Analytica scandal placed a public focus on how the personal data of millions of people's Facebook profiles were mishandled and misused to influence Facebook users with targeted messaging in political campaigns.[22] Amid this privacy scandal in 2018, Facebook lost more than a million European users over a three-month period, with numbers dropping from 376 million to 375 million monthly active users.[23]

3. Internet and social media use of potential migrants

Online information campaigns targeting potential migrants rely on the key assumption that they have access to social media sites and will see and engage with content that appears on their screens. Moreover, they are predicated on the assumption that information is an essential component of the migration process. But do potential migrants in West Africa use social media sites such as Facebook or Twitter to access migration-related information? To answer this question, it is important to consider Internet access and social media usage in the region and among potential migrants.

[21] In 2015, Norway launched a campaign on social media, targeting prospective refugees and informing potential asylum seekers about the treatment they would face in the host country (www.telegraph.co.uk/news/worldnews/europe/norway/11975535/Norway-launches-anti-refugee-advertising-campaign.html).

[22] www.theguardian.com/news/series/cambridge-analytica-files.

[23] https://blog.hootsuite.com/facebook-demographics/.

3.1 Social media usage

The logic chain for online campaigns begins with the assumption that potential migrants lack important information about migration, and that they are sometimes misled by rumours and lies from family members, the media and smugglers (Schans and Optekamp, 2016). Furthermore, the campaigns assume that by providing factual information or correcting information, potential migrants may change their attitudes or even behaviour.

Previous research suggests that some potential migrants use the Internet and social media sites to plan their journeys, contact smugglers or stay in touch with their networks. In 2019, a study on asylum-related migrants' Internet use and smartphone ownership surveyed migrants from 37 countries in European Union migration hotspots (Lesvos in Greece and Lampedusa in Italy) and in transit/host countries (Islamic Republic of Iran, Jordan and Turkey). The study found that 85 per cent of the migrants in Greece and 61 per cent of the migrants in Turkey or in Italy used the Internet during their migration journey (Merisalo and Jauhiainen, 2019). Studies also found that the "expansion of the communication infrastructure is one of several spatial transformations that have turned the [trans-Saharan] region into a more 'transitable' space" (Schaub, 2011).

A report by Gillespie et al. (2016) found that forced migrants tend to ignore official, national and state-funded institutions' online pages or social media accounts, as refugees communicate mostly through trusted individuals. While Facebook is one of the most popular platforms alongside other applications, refugees tend to use closed and encrypted mobile applications (e.g. WhatsApp) to exchange information, and they prefer closed groups to open groups. Therefore, the report recommends outreach should take place through trusted intermediaries such as influencers, without the branding of a national or state-funded organization (Gillespie et al., 2016).

Also in 2016, a study focusing on the media use of asylum seekers in Germany found that almost half of the respondents searched online for testimonials of other refugees and information about life in Germany before leaving their country of origin (Emmer et al., 2016). Nevertheless, the knowledge about life in Germany was heavily shaped through interpersonal communication, while the level of trust in online information apart from their personal contacts was relatively low (Emmer et al., 2016). The study focused mostly on asylum seekers from Afghanistan, the Islamic Republic of Iran, Iraq, Pakistan and the Syrian Arab Republic, and so the use of the Internet and social media channels for migrants from West Africa might differ.

The European Commission found that in West Africa, migrants' use of social media for migration depended largely on Internet access – and for the most part, migrants still relied on face to face communication rather than social media. "Although migrants pointed to a great variety of information available online, this was not central to the decision-making process.

Rather, migrants relied on people they knew, or compatriots for information" (European Commission, 2017). While this may change quickly due to technological advances, various other studies have found similar results. A recent impact evaluation study from IOM in Senegal found that the main source of information for potential migrants is friends and family. The Internet was cited as the second most common source of information, at about 15 per cent. Yet, almost all (90%) respondents in the IOM study reported that they use social media regularly (Dunsch et al., 2019).

In 2019, the Mixed Migration Centre found that among West African migrants, fellow travellers, family members in the origin country and family members in the destination country were the top three sources of migration information (Frouws and Brenner, 2019). Fewer than 30 per cent of migrants interviewed had used any social media for information before their migration began. In 2018, a study for the European Commission also found that many migrants did not rely on social media to collect information concerning migratory journeys as "the use of apps for communication appears to be limited given the poor state of Internet infrastructure in many of the migrants' countries of origin" (Sanchez et al., 2018).

Similarly, the Mixed Migration Centre found that about half of West African migrants interviewed reported owning a smartphone. Smartphone ownership varied by nationality, with Cameroon at the top, and the Niger, Senegal and Burkina Faso at the bottom. Furthermore, the centre found that migrants who did not own a smartphone were three times more likely to say they were unaware of the dangers of irregular migration (Frouws and Brenner, 2019).

3.2 Internet access in West Africa

Today, over 500 million people can access the Internet in Africa[24] – but digital connectivity varies greatly by country and region. Figure 3 shows Internet access and Facebook usage for the three West African countries studied in this report compared with Germany, Singapore, the United States of America and the world. These Internet usage rates are for the entire population of each country, and not necessarily people who are intending to migrate. All three countries fall below the global average for Internet access (50% as of 2017).

Over 500 million people can access the Internet in Africa – but digital connectivity varies greatly by country and region.

Nearly 97 million people used the Internet in Guinea, Nigeria and Senegal in 2017. Overall, some 32 million people used Facebook in the three West African countries targeted in this study in 2020. Senegal – one of the countries targeted by the MaM campaign – has an Internet access rate of 46 per cent among its total population, and 20 per cent of Senegalese people

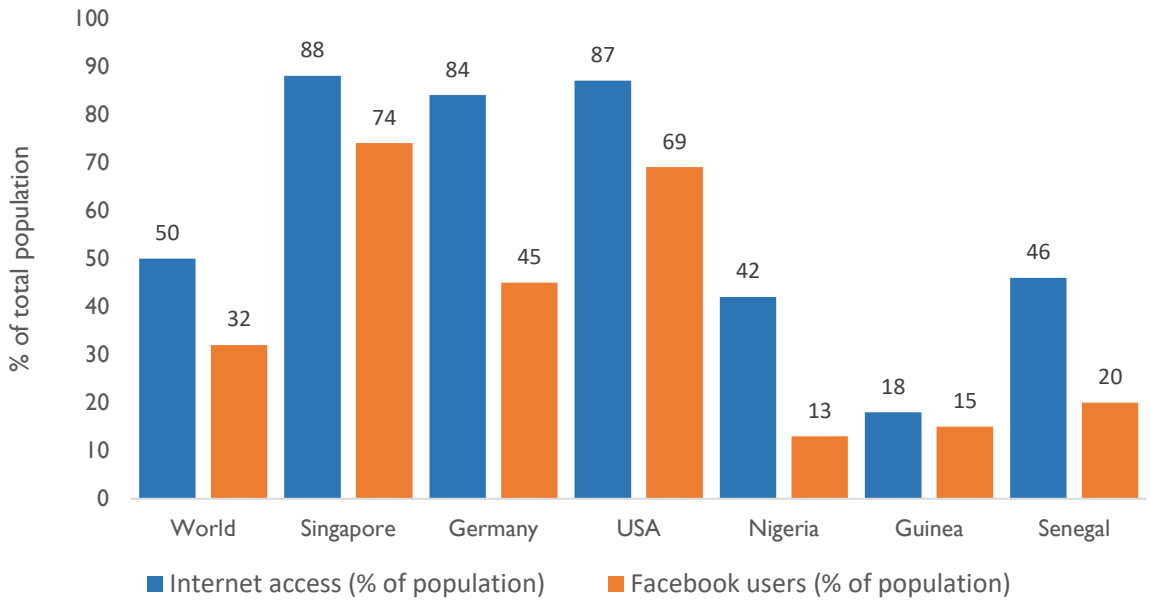
[24] www.internetworldstats.com/stats.htm.

use Facebook (see figure 3).[25] While only about one in five people in Senegal use Facebook, this translates to about 3.3 million people who actively access the platform. Of the three West African countries, Senegal had the highest Internet access rate (46%), followed by Nigeria (42%) and Guinea (18%). Less than one in five people had Internet access in Guinea. Compared to Germany, Singapore and the United States, average Facebook usage relative to the population was approximately three to four times lower in Guinea, Nigeria and Senegal (see figure 3).

Limited Internet access and Facebook usage must be considered when implementing an information campaign over the Internet. More importantly, in addition to the low Internet penetration rates, issues exist with the quality and speed of the Internet access. The European Commission found that in some areas of West Africa, Internet speeds were too slow to reliably process or play videos – one of the key elements of migration-related online information campaigns (European Commission, 2017). Research from the worldwide broadband speed league showed that Africa has the slowest Internet speeds in the world (Kazeem, 2017).

[25] The MaM campaign was implemented in Guinea, Nigeria and Senegal over the period 2017–2019. The project shared testimonial videos of peer migrants who had returned home. The videos were shown in town hall meetings and also shared through the MaM Facebook page (www.facebook.com/MigrantsAsMessengers/).

Figure 3. Internet access and Facebook usage rates (percentage of population) for selected countries



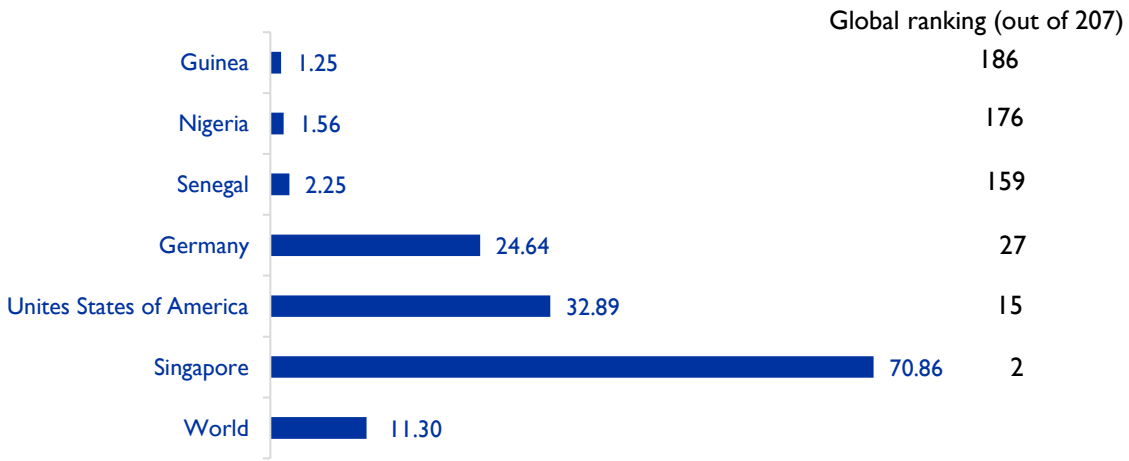
Sources: World Bank, 2017; NapoleonCat.com, 2020.
Notes: Internet user data are for 2017; Facebook users are as of February 2020.

3.3 Internet speed in Guinea, Nigeria and Senegal

Internet speed can be measured as the time it takes to download 1 MB. Figure 4 shows the average Internet speeds for Guinea, Nigeria and Senegal in 2019, compared to those in Germany, Singapore, the United States and the world. Senegal has the fastest mean Internet speed out of the three West African nations. On the other hand, Guinea has the slowest speed and ranks 186 out of 207 jurisdictions measured in a recent study.[26] For an average Senegalese person, it would take about five hours to download a 5 GB movie, compared to about 10 minutes for an average Singaporean person (with the second-fastest Internet speeds in the world).

[26] www.cable.co.uk/broadband/speed/worldwide-speed-league/#map.

Figure 4. Average Internet speeds (megabytes downloaded per second) in selected countries, 2019



Source: Worldwide broadband speed league, 2019.

Internet speeds and quality have important implications for online information campaigns. Most migration-related campaigns rely on video content to disseminate information. Visuals, including photographs or videos, are also important in engaging online audiences.[27] Migration campaigns such as MaM share short testimonial videos through Facebook pages for example. Typical video lengths range from a few seconds to a few minutes. The Aware Migrants campaign shares a mixture of photographs, articles and videos on its Facebook page. Online campaigns that rely on video content may face greater engagement constraints in countries with lower Internet use, lower Facebook use and limited Internet speeds.

4. Pilot study method

This pilot study aims to assess the effectiveness of online Facebook ads for reaching potential migrants in Guinea, Nigeria and Senegal. Two phases of split-test experiments were conducted between September 2019 and February 2020 on the MaM campaign's official Facebook page.[28] Split tests, also known as A/B tests, controlled experiments or online field experiments, are widely used in data-driven decision-making processes to evaluate if introducing a new feature or specific change improves key metrics like user engagement or satisfaction (Kohavi and Longbotham, 2017). Facebook offers different ways to conduct experiments on its platform.[29] Through Facebook's A/B testing feature, it is possible to test different variations in the content

[27] Lee et al. (2018) found that Facebook posts with photographs had the highest user engagement (in terms of likes), followed by posts with videos.

[28] www.facebook.com/MigrantsAsMessengers/.

[29] Facebook also offers the possibility to conduct other experiments, for example, lift testing where groups of people are compared as to who did and did not see the Facebook ad (the holdout or control group), to understand the causal impact on specific objectives, such as brand recognition or conversion (www.facebook.com/business/help/552097218528551?id=546437386202686).

of ads, such as placement, timing or audience, to learn more about the impact of advertising in a measurable way. A/B testing allows estimation of the difference between various treatment effects of different variations, for example how Facebook users in an urban versus a rural area would engage with a video versus a static image, and finds correlation patterns to establish a causal relationship with a high probability (Kohavi and Longbotham, 2017). A/B testing is also a useful tool for researchers, as it can help them learn about what type of ad is effective. Effectiveness is measured using the various engagement metrics that Facebook provides (see table 1). Engagement on Facebook can be seen as a specific manifestation of people's behaviour through metrics such as post likes, video plays, comments or sharing (Sanne and Wiese, 2018). Other forms of engaging people or observing their behaviour could also be obtained through direct communication with the same user through, for example, Facebook Messenger, or incentivize users to enrol in an online survey. In addition, a post-ad survey was conducted to measure migration-related outcomes (see section 4.1).

This section of the report explains in detail how the two phases of the split-test experiments in three West African countries were conducted with Facebook's advertising platform. Since an evaluation of this type of intervention should involve monitoring of key indicators, outputs and outcomes, key engagement Facebook metrics were selected for the split-test experiments.

4.1 First split-test experiments

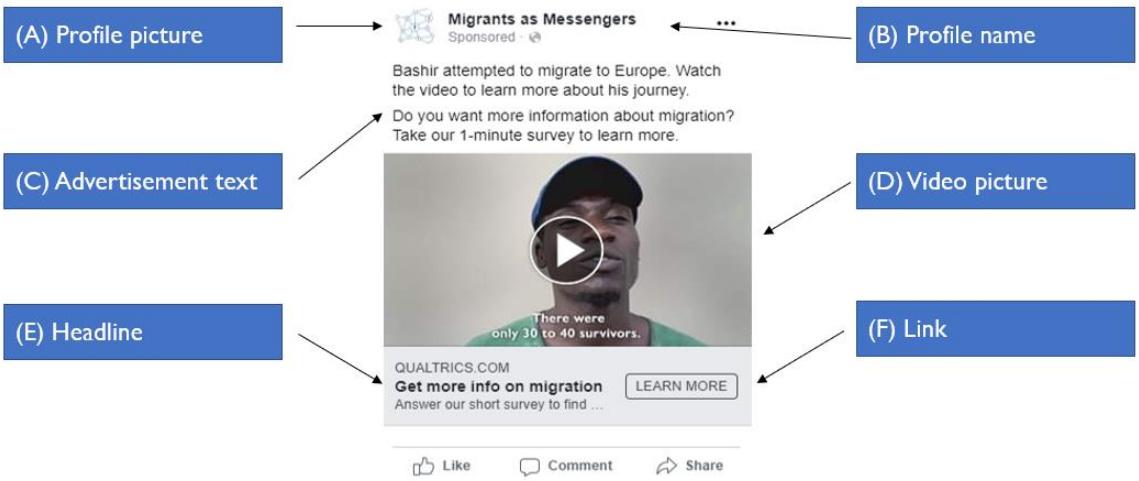
Social network sites such as Facebook's ad platform allow users to target information on different audience characteristics like age, sex, language spoken, education and so on. Previous research has shown that sex, age, urban versus rural background or education can be important factors when it comes to Internet use and having access to migration-related information. It has also been shown that migrants who are from an urban origin, male and in the age group under 30 years were more likely to use the Internet (Merisalo and Jauhiainen, 2019).

In terms of information campaigns, Facebook's targeted ads tool can be especially useful in reaching potential migrants. By selectively targeting specific audiences on Facebook, organizations running information campaigns can ensure that the intended audience is seeing the content, while also keeping costs down. One important question on the efficacy of migration-related online campaigns though is whether the Facebook content reaches potential migrants – the intended beneficiaries of most migration-related campaigns. To test this question, an experiment was designed in combination with a short survey to verify if the ad reached the intended target audience of potential migrants. Furthermore, it was also analysed whether there were differences in engagement by sex and by rural/urban areas.

As IOM is currently operating several information campaigns offline and online in West Africa, targeting potential migrants, the conducted tests focused on regions in Guinea, Nigeria and Senegal. The experiments were set up as a four-way split with the variable "audience" to test custom audiences, which can be detailed when specifying behaviours, demographics and so on. The test variation was between rural/urban and male/female. In all three countries, the test

focused on the top sending regions for emigrants and Facebook users aged 18–35 years because this is the key age range for people who emigrate. In these regions, tests focused on people living in the four largest cities (urban) and people living outside the largest cities (rural) where everyone in the test group saw the same testimonial video. For comparability, videos of similar length and messaging were chosen. The testimonial videos showed returnees talking about the dangers and difficulties they experienced on their journey to Europe. Figure 5 shows the structure of the Facebook ad for the first phase of the experiments.

Figure 5. Structure of Facebook ad for the first phase of experiments



Source: MaM Facebook page, 2020.

The goal was to test if there was greater engagement (measured through the proportion of link clicks and video plays at 100% relative to the ad population) in urban areas, given that they were more likely to have better Internet access than in rural areas and test if the engagement between male/female Facebook users differed. As key indicators, video plays at 100 per cent, link clicks and survey completes were chosen to see how many people were interested enough to watch the video to the end, would follow the objective to drive traffic to the Qualtrics survey platform by engaging with the call to action and click on the link to respond to the survey. The pilot test started in Nigeria in September 2019, and was followed by experiments in Guinea and Senegal in February 2020.

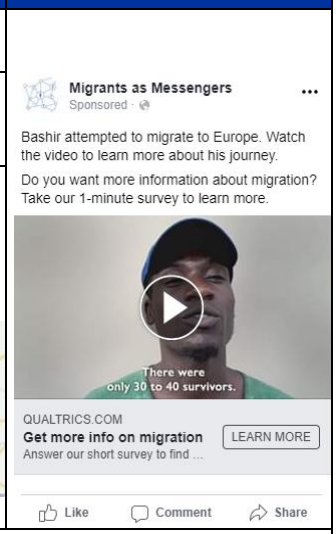
Figures 6, 7 and 8 give an overview of the split tests for Nigeria, Guinea and Senegal, respectively. These include the different ad sets, potential reach as estimated by Facebook for each ad set, targeted location, budget, duration and a preview of the final ad. The pilot split test was conducted in Nigeria first, where the two top sending regions for emigrants, Edo and Delta states, were focused on.[30] The split test in Guinea focused on the three top sending regions for emigrants, Boké Region, Labé Region and Conakry. As the estimated potential reach was too small for the initial targeted locations in Guinea, a third region was added. The

[30] https://displacement.iom.int/system/tdf/reports/NIGERIA%20-%20DTM%20CMFS%20final%20report%20-V5%20-%20FINAL_0.pdf?file=1&type=node&id=5692.

split test in Senegal focused on the two top sending regions for emigrants, Dakar Region and Saint-Louis Region.

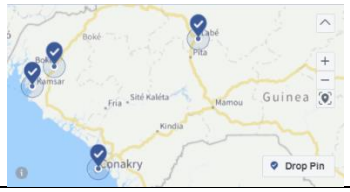
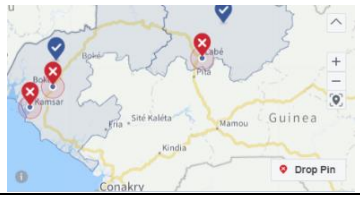
Figure 6. Pilot split test in Nigeria

Ad campaign	**Nigeria**			
Ad set	A: Urban/male	B: Urban/female	C: Rural/male	D: Rural/female
Estimated potential reach by Facebook	750,000	610,000	39,000	31,000
Location	People living in largest cities in Edo/Delta: Asaba, Delta; Sapele, Delta; Warri, Delta; Benin, Edo		People living in Edo and Delta excluding largest cities	
Budget	Daily budget of €60.00 per country, evenly split by €15.00 per ad set			
Duration	Seven days			



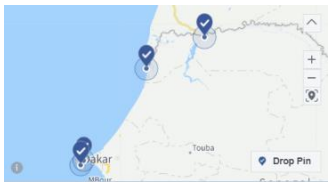
Source: Facebook Ads Manager, 2019.

Figure 7. Split test in Guinea

Ad campaign	**Guinea**			
Ad set	A: Urban/male	B: Urban/female	C: Rural/male	D: Rural/female
Estimated potential reach by Facebook	800,000	600,000	7,500	9,800
Location	People living in largest cities in Boké and Labé regions plus Conakry: Boké, Boké region; Kamsar, Boké region; Labé, Labé region; Conakry 		People living in Boké and Labé regions excluding largest cities 	
Budget	Daily budget of €60.00 per country, evenly split by €15.00 per ad set			
Duration	Seven days			

Source: Facebook Ads Manager, 2019.

Figure 8. Split test in Senegal

Ad campaign	**Senegal**				
Ad set	A: Urban/male	B: Urban/female	C: Rural/male	D: Rural/female	
Estimated potential reach by Facebook	770,000	510,000	11,000	6,400	
Location	People living in largest cities in Saint-Louis and Dakar regions: Dakar, Dakar region; Pikine, Dakar region; Richard Toll, Saint-Louis region; Saint-Louis, Saint-Louis region 		People living in Saint-Louis and Dakar regions excluding largest cities		
Budget	Daily budget of €60.00 per country, evenly split by €15.00 per ad set				
Duration	Seven days				

Source: Facebook Ads Manager, 2019.

Rigorous impact evaluations can be run in a variety of ways, but many rely on surveys to measure the effect of an intervention.[31] In this case, the information campaign is the intervention with the desired outcome of increasing awareness of potential migrants. An ultimate goal may be to change the behaviour of how potential migrants make decisions to leave. One way to measure whether the information campaign – and not an outside factor – had any effect on awareness is to compare a group that sees the campaign against one that does not. A survey is therefore a necessary tool in assessing what effect, if any, the campaign had on awareness or knowledge.

For this purpose, the first round of Facebook split-test experiments also included a survey (available upon request). The goal was to evaluate whether the Facebook ad reached potential migrants. The Facebook ad redirected people from Facebook to the Qualtrics web page where people could respond to the survey. In Guinea, Nigeria and Senegal, the same survey was used for all three campaigns but was translated into French in Guinea and Senegal. To evaluate if the ad reached potential migrants, the survey asked respondents if they had considered migrating in the next two years. Additionally, respondents were able to receive information and links to other web pages informing them about migration, asylum and visa procedures. The objective was to test how many of the people who saw the ad would click on the link and complete the survey.

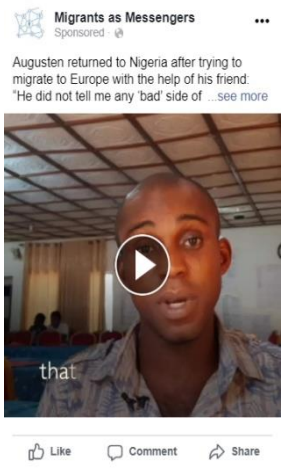
[31] See, for example, www.povertyactionlab.org/research-resources/introduction-evaluations.

4.2 Second split-test experiments

In late February 2020, the second phase of experiments was conducted simultaneously in Guinea, Nigeria and Senegal. The objective was to test how the audience from the first round of experiments would engage with a static image versus a video and if there was greater engagement with a static image than a video in rural areas. Ads containing videos may be more engaging – but they also require higher Internet speeds. By contrast, a static image may load faster but is more limited in the content it can convey. Was there a difference in engagement in areas that were likely to have higher Internet speeds (urban areas) versus those that did not? As the first phase of experiments had a low turnout regarding survey respondents, it was difficult to measure the impact of the Facebook ads. In the second phase, rather than confirming the target group with an add-on survey, these experiments explicitly invited post reactions as a sign of being interested in migration.

While in the first split-test experiments, the variable "audience" was chosen, in the second round of experiments, the variable "creative" was selected. This variable refers to any visual aspect of the ad. It could be the headlines, ad text, ad links, different images or videos. In the creative split test conducted, an ad that used a video was tested versus one that used a static image for an urban/rural audience, as shown in figure 9. See table A2 and A3 in the Annex for an overview of Facebook variables.

Figure 9. Ad campaign in Nigeria: Testing a static image versus a video

Ad set	A: Static image	B: Video
Ad		
Location	People living in largest cities in Edo/Delta: Asaba, Delta; Sapele, Delta; Warri, Delta; Benin, Edo; and people living in Edo and Delta excluding largest cities	
Budget	Daily budget of €60.00 per country, €30.00 per campaign, evenly split by €15.00 per ad set	
Duration	The length of the campaign was set to seven days but ran for eight days*	

Source: Facebook Ads Manager, 2019.

Notes: The ad featured the following text: "Augusten returned to Nigeria after trying to migrate to Europe with the help of his friend: 'He did not tell me any "bad" side of the game. He only told me the good side.' Do you consider emigrating in the next two years? Then hit the like button 👍." Due to technical difficulties, the campaign stopped for almost a day, and the ad campaign ran for eight days in the end.

In all three countries, the same audience group and regions as in the first round of experiments were chosen. The tests focused on the top sending regions for emigrants and Facebook users aged 18–35 years as this is the key age range for people who emigrate. While Facebook gives users the option to test different visual aspects with the variable "creative", it was only possible to test them on one selected audience group. For this reason, six ad campaigns instead of three were created. The variation was a four-way test between rural/urban and video/static image. Due to the set-up of Facebook's Ads Manager, the split test was set as a four-way test, separated into two ad campaigns for each country. In the first campaign, in a two-way test, a static image versus a video was tested in an urban area and in the second campaign in a rural area. Sex (male/female) was not specifically tested for as the amount of ad campaigns would have been 12 and therefore not feasible for one round of experiments. However, Facebook gives detailed aggregated analytics on sex in the reporting and analytics.

As different visuals were tested in the second phase of experiments, testimonial videos of returnees were used for the first ad set and a screenshot of the video as a static image for the other ad set. The testimonial videos featured returnees talking about returning home to their country of origin after encountering difficulties on their journey or seeing no prospects in their host country. All videos and images featured a quote from the testimonial video and ended with the call to action "Do you consider emigrating in the next two years? Then hit the like button 👍." The objective "engagement" was chosen to maximize the number of people who would engage with the ad and react to the post. See table A3 in the Annex for an overview of Facebook objectives.

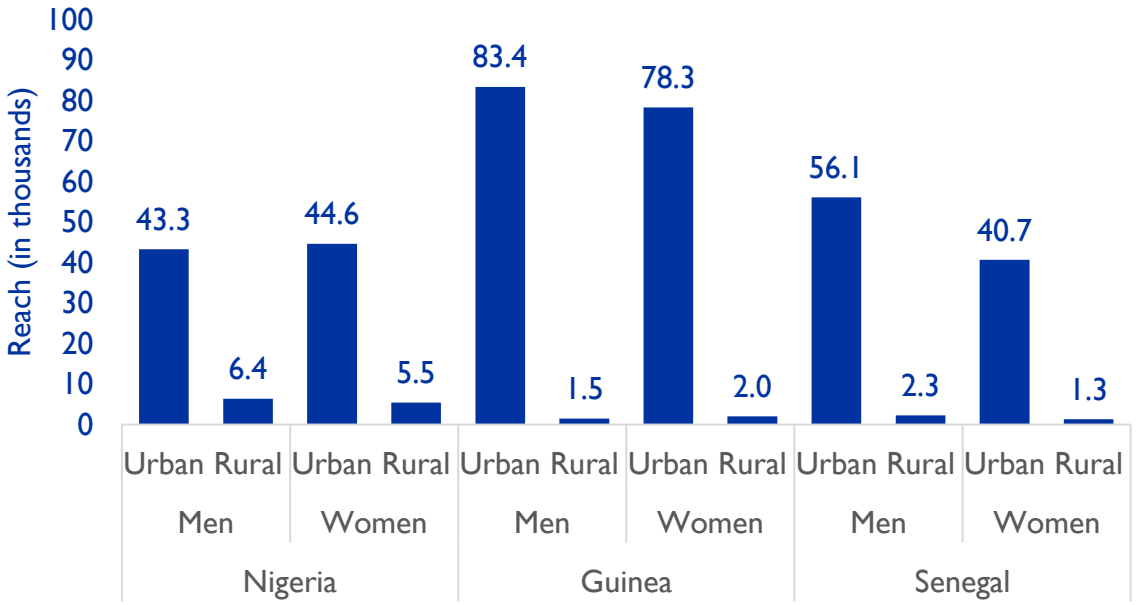
5. Results

5.1 First split-test experiments

This section discusses the output, outcome and impact of the first round of Facebook experiments on potential migrants in Guinea, Nigeria and Senegal in September 2019 and February 2020.

Figure 10 shows the differences in target audience between rural and urban settings. For example, the same ad reached about 80,000 users in urban areas in Nigeria, but only approximately 12,000 users (15% of urban users) in rural areas.

Figure 10. Ad reach (in thousands)



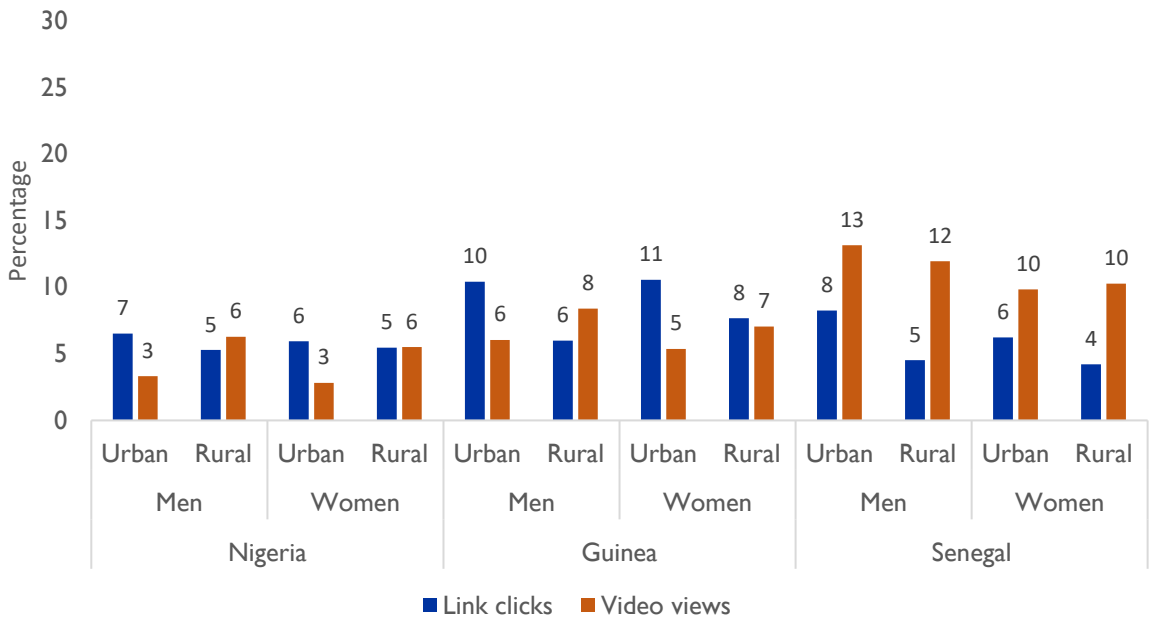
Source: IOM GMDAC Online Ad Dataset, 2020.
Note: Reach shows the number of unique users who saw the ad at least once.

Figure 11 shows how successful the first campaign was in terms of relative engagement. Relative engagement was measured as the percentage of people that clicked on the link of the ad or watched the whole 30 second video, out of all targeted Facebook users who had the possibility of seeing the ad (i.e. it appeared on their Facebook wall). The results show that only 5–10 per cent of Facebook users engaged with the campaign out of the audience reached. However, 5–10 per cent still represents a large audience, particularly in urban settings, ranging from 20,000 to 80,000 users within the seven days that the ad was online.

The results show that only 5–10 per cent of Facebook users engaged with the campaign out of the audience reached.

Some differences emerge regarding countries, locations and sex. The results of the Facebook experiment only partly support the assumption that the ad population in urban areas is more likely to engage with a video due to better Internet access and speed rates. In the urban areas of all three countries, the engagement rate (link clicks and video plays at 100%) was higher than in rural areas, regardless of sex. The engagement of men was also higher in urban and rural areas in Nigeria and Senegal. Guinea was the only country out of the three studied where the engagement of women was higher in urban and rural areas.

Figure 11. Proportion of link clicks and video views relative to ad reach

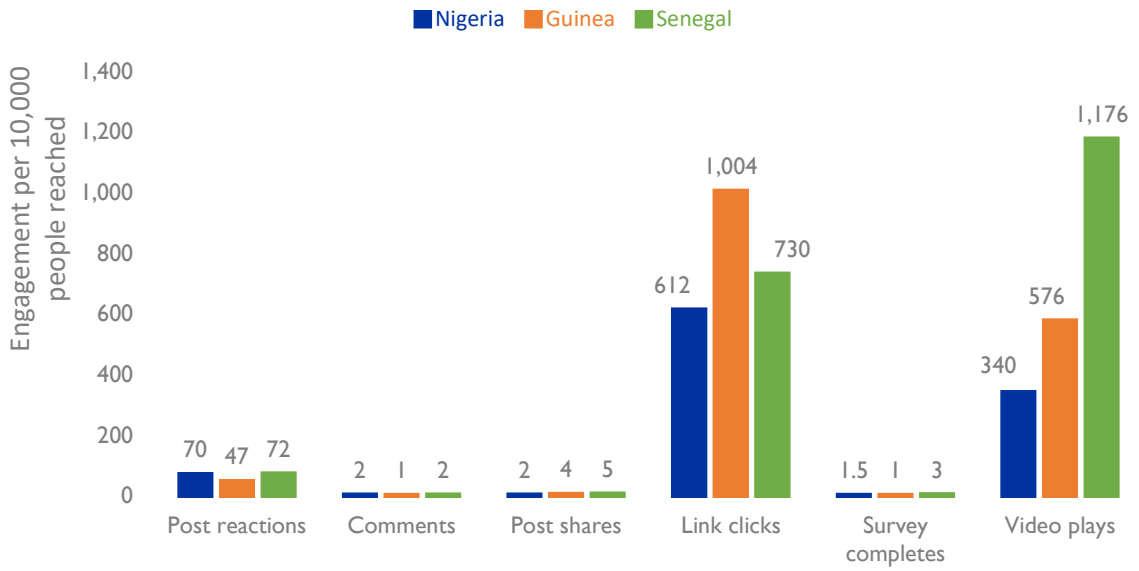


Source: IOM GMDAC Online Ad Dataset, 2020.
Notes: Link clicks (results) shows the number of times that the ad achieved an outcome, based on the objective and settings selected (in this case, traffic to the survey web page). Video plays at 100% shows the number of times the video was played at 100 per cent of its length, including plays that skipped to this point.

How many people clicked on the link or watched the full video are just two available engagement metrics, as shown in figure 11. Deeper forms of engagement include, for example, post reactions (clicking the like button), leaving comments below the ad, sharing the post or completing the survey that was attached to the ad. The results are markedly different with respect to those measures, as shown in figure 12. In Guinea, 1 in 10 people who saw the ad followed the call to action, clicked on the link and were redirected to the Qualtrics survey platform. But only 1 in 1,000 who clicked on the link also completed the survey. This meant that out of 10,000 people who saw the ad in Guinea, only 1 person completed the survey. In Senegal, the rate of survey completion was three times higher than in Guinea. Out of 10,000 people who saw the ad, 3 people completed the survey. The number of video plays at 100 per cent per 10,000 people reached was also the highest in Senegal, and more than three times higher than in Nigeria. More than 1 in 10 people who saw the ad played the video to the end. These results are striking, even though participation in the survey is the only means to verify whether targeted Facebook users are potential migrants.

Out of 10,000 people who saw the ad in Senegal, 3 people completed the survey.

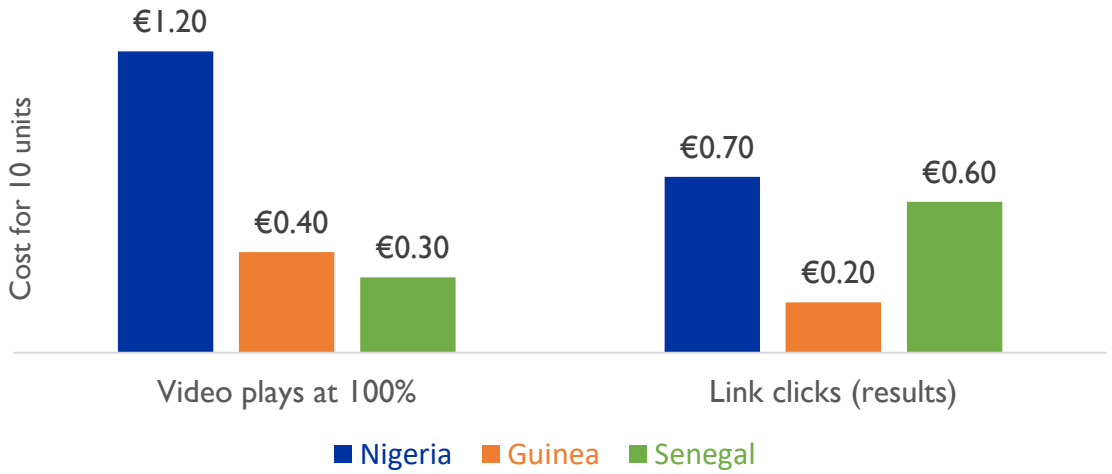
Figure 12. Engagement per 10,000 people reached on Facebook



Source: IOM GMDAC Online Ad Dataset, 2020.
Notes: Post reactions shows the number of reactions on the ads (reaction button: like, love, haha, wow, sad or angry). Comments shows the number of comments on the ads. Post shares shows the number of shares of the ads, including posts on friends' timelines, groups or own pages. Link clicks (results) shows the number of times that the ad achieved an outcome, based on the objective and settings selected (in this case, traffic to the survey web page). Survey completes shows the number of people who completed the survey on the Qualtrics web page by answering the question: "Are you seriously considering leaving your country (migrate) in the next 2 years, or not?" Not everyone who participated in the survey completed it: only 75 per cent in Nigeria, 60 per cent in Senegal and 50 per cent in Guinea completed the survey. Video plays at 100% shows the number of times the video was played at 100 per cent of its length, including plays that skipped to this point.

Figures 13 and 14 put the campaign engagement into context by calculating the costs by engaged user. In this case study, it cost EUR 0.30–1.2 to reach 10 users who saw the full video and EUR 0.20–0.70 for 10 users to click on the provided link. As mentioned above, views and clicks are low-engagement forms and do not provide a clear picture of the effect the content has on users. Overall, in Nigeria the cost per 10 people was the most expensive regarding video plays at 100 per cent and link clicks compared to Guinea and Senegal. In Guinea, the average cost per link click was the lowest. This means that in Guinea the same amount spent received three times the amount of video plays at 100 per cent and link clicks as in Nigeria. This is because in some countries, advertisers are willing to pay more, and the costs to advertise increase accordingly.

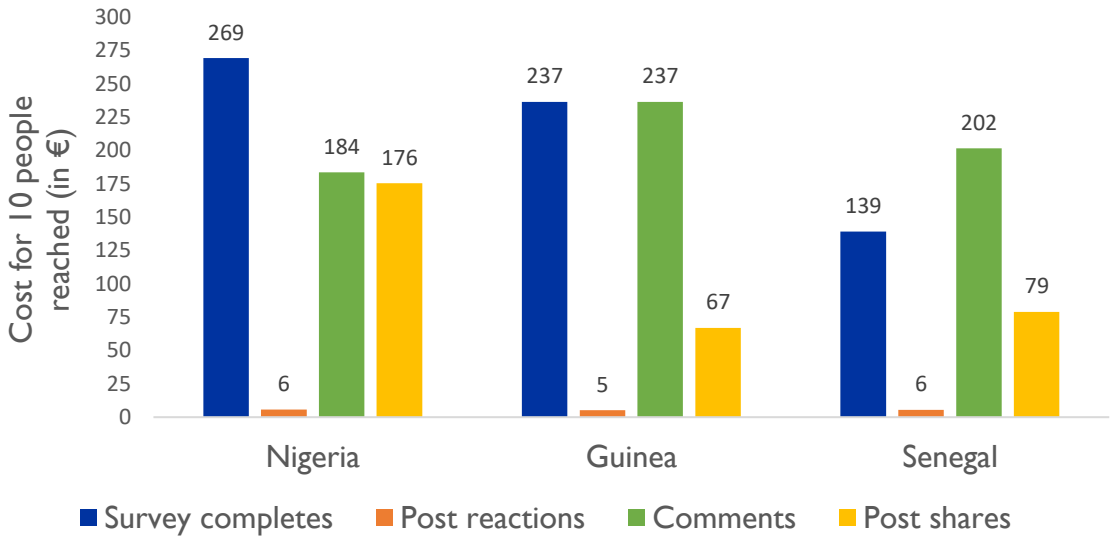
Figure 13. Cost (euros) for 10 video plays at 100 per cent and link clicks, calculated as average of total amount spent



Source: IOM GMDAC Online Ad Dataset, 2020.
Notes: Video plays at 100% shows the number of times the video was played at 100 per cent of its length, including plays that skipped to this point. Link clicks (results) shows the number of times that the ad achieved an outcome, based on the objective and settings selected (in this case, traffic to the survey web page).

Figure 14 breaks down the costs for deeper-level engagement with the campaign content. The results show that other types of engagement are more costly. For example, the campaign had to spend approximately EUR 270 for 10 users that were confirmed potential migrants (i.e. a user that responded to the survey). For other forms of engagement, the campaign had to spend approximately EUR 5 for post reactions, EUR 180–240 for comments and EUR 70–170 for shares, per 10 people reach. With regard to the cost per survey completed, Senegal was the cheapest with almost half the costs compared to Guinea and especially Nigeria. This is because in Senegal, twice as many people completed the survey as in Guinea or Nigeria.

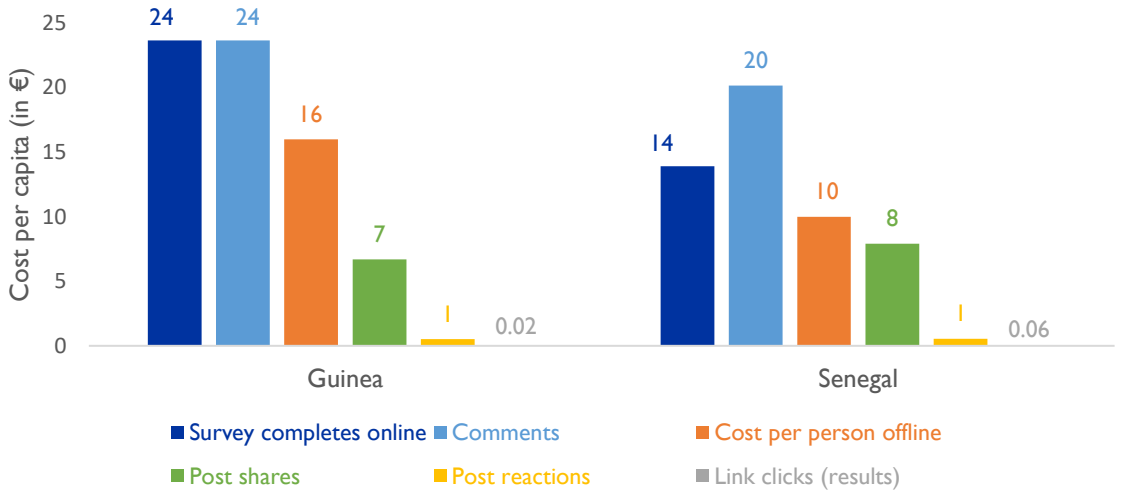
Figure 14. Average cost (euros) for 10 engaged users by type of engagement, calculated as average of total amount spent



Source: IOM GMDAC Online Ad Dataset, 2020.
Notes: Survey completes shows the number of people who completed the survey on the Qualtrics web page. Post reactions shows the number of reactions on the ads (reaction button: like, love, haha, wow, sad or angry). Comments shows the number of comments on the ads. Post shares shows the number of shares of the ads, including posts on friends' timelines, groups or own pages.

Figure 15 breaks down the cost per capita (in euros) for offline and online campaigns. For offline campaigns, this includes the cost per capita for each attendee of the offline events, while for online campaigns, it includes the cost per capita for survey completes as users who were confirmed potential migrants, and engagement metrics (comments, post reactions, shares and link clicks). Surprisingly, there are not many differences in costs when comparing the cost per capita for an attendee of an offline event with a survey complete. However, the outcome and impact of offline campaigns can be much better examined than for an online campaign. The costs for engagement metrics also greatly vary, depending on the goal and objective. While the engagement metrics might have lower costs (comments are an exception for this ad), it remains unclear if the engagement users belong to the target group, unlike with survey completes.

Figure 15. Cost (euros) per capita – offline versus online information campaigns



Source: IOM GMDAC Online Ad Dataset, 2020.
Note: Survey completes shows the number of people who completed the survey on the Qualtrics web page. Comments shows the number of comments on the ads. Cost per person offline shows the number of people who attended one of the MaM in-person screenings. Post shares shows the number of shares of the ads, including posts on friends' timelines, groups or own pages. Post reactions shows the number of reactions on the ads (reaction button: like, love, haha, wow, sad or angry). Link clicks (results) shows the number of times that the ad achieved an outcome, based on the objective and settings selected (in this case, traffic to the survey web page).

5.2 Second split-test experiments

This section discusses the output, outcome and impact of the second round of Facebook experiments on potential migrants in Guinea, Nigeria and Senegal. This set of experiments is different from the first set in two main ways:

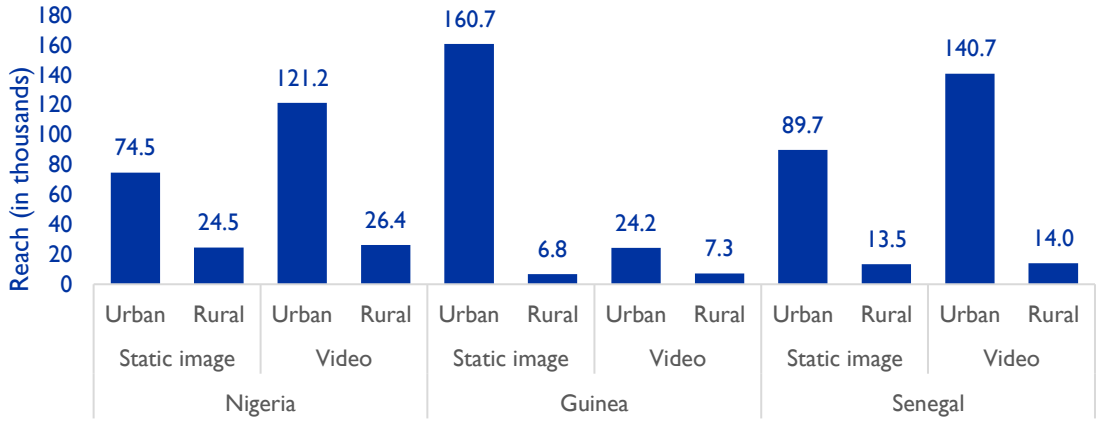
(a) This set investigates whether video content is more effective in urban areas compared to in rural areas due to lower Internet connectivity in rural areas;
(b) Rather than confirming the target group with an add-on survey, this set explicitly invites post reactions as a sign of being interested in migration.

In the second phase of split tests, the ads reached 7,000–160,000 people (figure 16) in the eight days the ad was online, depending on the country and area. However, when comparing the performance of post reactions relative to the ad reach, it must also be noted that the objective was engagement, to get people who saw the ad to hit the like button if they considered migrating in the next two years. Figure 17 shows that the engagement regarding post reactions ranged from less than 1 per cent to 11 per cent. It can be assumed that 11 per cent or less of the Facebook users who were reached by the test belonged to the intended target group. In comparison, in the first phase of the test, less than 10 per cent engaged in the post through links. Nevertheless, the 1–11 per cent still represented a large audience, and the ad engaged 300 to 8,000 people, depending on the country and area.

A static image always performed better than a video in all three countries, in urban and in rural areas.

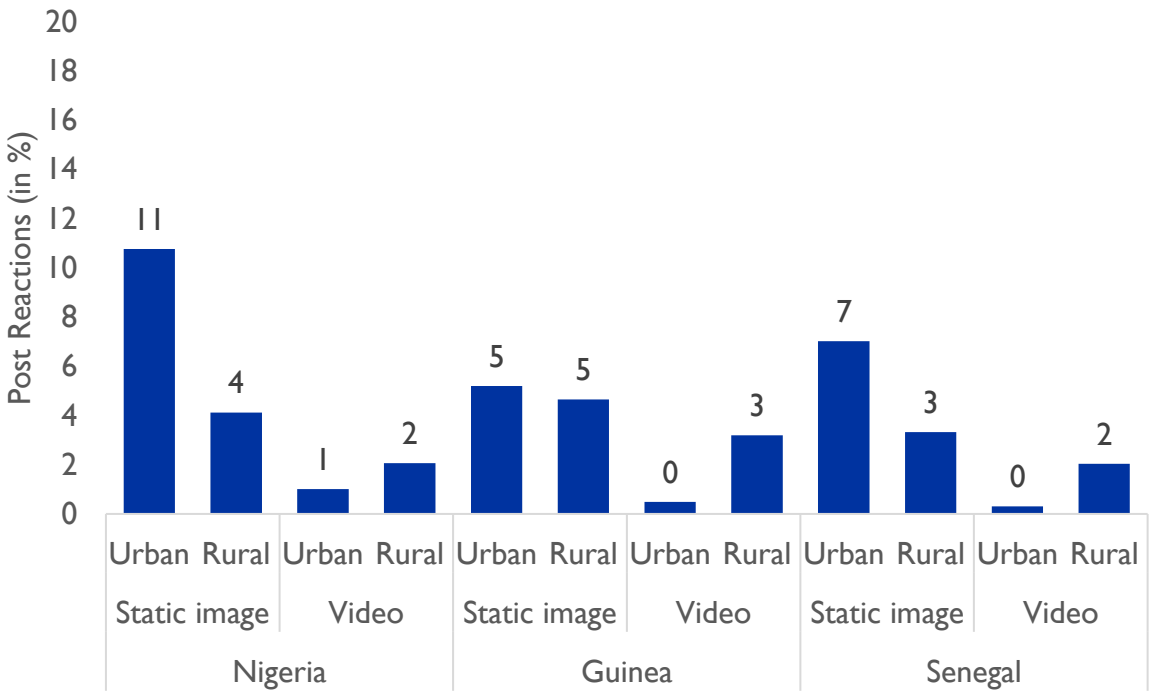
Regarding the creative component of the content, a static image always performed better than a video in all three countries, in urban and in rural areas. However, the results showed a difference of only 1–2 per cent when comparing the engagement of a static image with a video. Nigeria showed the most significant difference. In urban Nigeria, 11 per cent reacted to the static image compared with 1 per cent who reacted to the video. Surprisingly, in all three countries, the video performed slightly better in rural areas compared to in urban areas. However, the test did not show any robust evidence that there was a strong correlation between static images performing better than videos in rural areas due to lower Internet access or speed rates.

Figure 16. Post reach



Source: IOM GMDAC Online Ad Dataset, 2020.
Note: Reach shows the number of unique users who saw the ad at least once, while impressions may include multiple views of the ad by the same people.

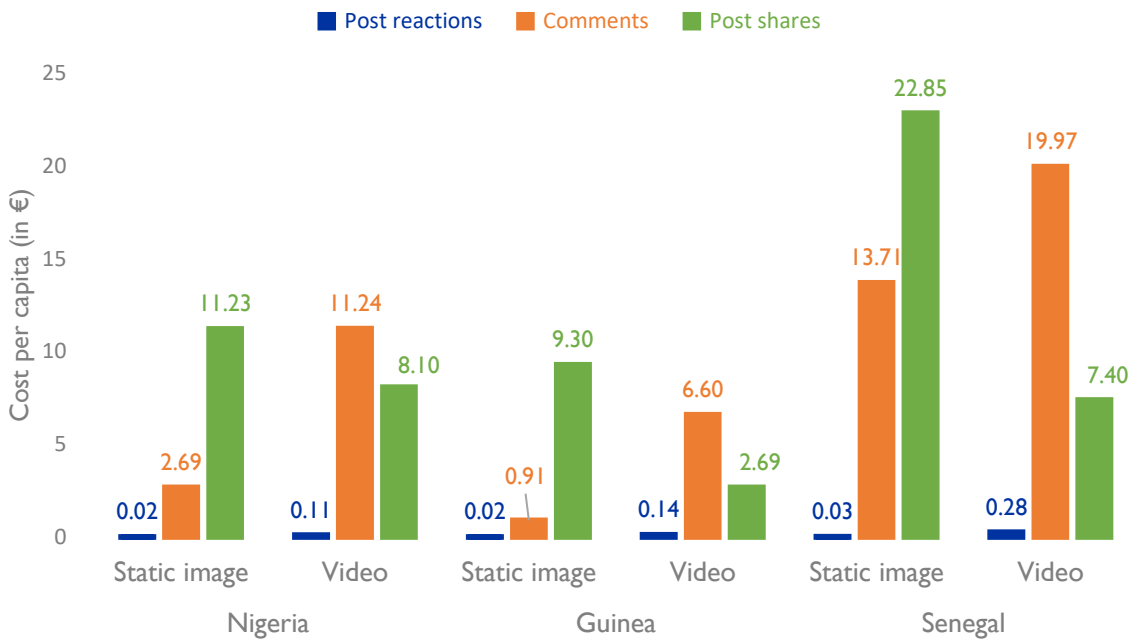
Figure 17. Post reactions (%) relative to ad reach



Source: IOM GMDAC Online Ad Dataset, 2020.
Note: Post reactions shows the number of reactions on the ads (reaction button: like, love, haha, wow, sad or angry).

Figure 18 shows there was a clear distinction in the costs per post reaction for a static image versus a video. In Nigeria, the cost for a post reaction for a video was five times higher than that for an image; in Guinea, it was almost seven times; and in Senegal, even nine times higher. The costs per comment were higher for a video than for an image in all three countries. This meant that more people commented on the image than on the video. In contrary, the costs per share were higher for an image than for a video in all three countries. This meant that more people shared the video than the image. With regard to the costs for people reached, it was possible to reach twice as many people in Nigeria and Senegal with the video compared with the image. In Guinea, the costs were eight times higher to reach the same amount as people with the image as with the video.

Figure 18. Cost (euros) per capita, calculated as average amount spent for each ad



Source: IOM GMDAC Online Ad Dataset, 2020.
Notes: Post reactions shows the number of reactions on the ads (reaction button: like, love, haha, wow, sad or angry). Comments shows the number of comments on the ads. Post shares shows the number of shares of the ads, including posts on friends' timelines, groups or own pages.

5.3 Summary

Both phases of tests have shown that less than 10 per cent of the target population may be potential migrants, measured solely by engagement (through link clicks and post reactions). However, caution must be exercised when looking at these results. Metrics such as reactions or clicks are low-engagement forms and do not provide a clear picture of what effect the content has on the users, given that that users could react or click on the post without really reading or viewing the content. Hence, this is not a confirmation if someone really has the intention to migration. After all, in the post-survey results, fewer than 3 in 10,000 people who saw the ad also completed the survey.

While online campaigns are low cost, partly due to savings on logistics and staff costs, they have a high trade-off: their outcomes and impact are not clearly measurable.

While online campaigns are low cost, partly due to savings on logistics and staff costs, they have a high trade-off: their outcomes and impact are not clearly measurable. Comparing the cost per capita for one person for offline (attendees) and online events (survey completes) and considering only Facebook users that likely fit the intended target audience, the results did not show a significant difference in the costs.

The tests also did not show any evidence that static images receive significantly more engagement than videos in rural areas, given that the Internet access and speed rates may be lower in rural areas. In terms of engagement, a static image always performed better than a video in the tests, especially in urban areas. But surprisingly, the video performed slightly better in rural areas, compared to in urban areas.

6. Conclusion

Evidence on the effectiveness of offline campaigns is improving; however, evidence for online campaigns is still rarely systematically documented and released. Nowadays, many campaigns, such as the MaM campaign, share their content offline but also feature an online component. But while numerous governments, non-profit organizations and multilateral organizations operate or fund online and social media campaigns intended to inform potential migrants of the dangers associated with irregular migration, there still exists little empirical evidence of their efficacy. This is partly due to the difficulty in measuring the impact of campaigns on social media platforms. An intervention activity (like an online campaign) also does not always translate into immediate, observable impacts. While social media platforms such as Facebook are attractive for reaching millions of people at low costs, the way such social media platforms are set up makes it extremely difficult to evaluate the effectiveness of ads to reach intended audiences.

This pilot study aimed to assess the effectiveness of online Facebook ads for reaching potential migrants in Guinea, Nigeria and Senegal. Based on the results in this study, several advantages and disadvantages of migration-related online information campaigns have emerged, as shown in table 2.

Table 2. Assessing the impact of migration-related information campaigns online

Advantages	Disadvantages
• Reach a large audience at low cost • Easy to measure user engagement based on various metrics (clicks, shares, views, likes, comments and so on) • Can be creative with different headlines, sizes, images, videos and text inducing more traffic to other migration-related web pages and social media pages • Have a large user base • Have a lot of data points to target people for specific demographics, such as sex, age, location, behaviour and education • Easy to set up and run on social media platforms	• Unclear whether the audience represents the target audience • User engagement is not a good indicator of changes in perceptions, attitudes and behaviour, which are common objectives of information campaigns • Difficult to measure changes over time as it is hard to get reactions from the same user twice • Type of intervention is limited to posts featuring short messages, images or videos • In low-income countries, Facebook penetration is low (20–40%), Internet speed is slow and user composition may change over time • Ethical concerns in potentially targeting vulnerable groups and data privacy issues • People could easily become oversaturated by too many campaigns by different stakeholders and lose interest • Costs relative to the impact remain unclear; however, differences in cost compared to offline events are much lower than they first appear • Relative to offline activities, online activities can reach people with posts only at a certain time

This report is a first step only in a broader learning process about the effectiveness of online information campaigns targeting potential migrants. Research on the effectiveness of online information campaigns should not be limited to A/B testing. Further experiments should be conducted, such as with Facebook's lift testing feature.[32] To better target potential migrants and analyse the target group, other social networking applications (apps) and platforms that are popular with younger audiences should also be considered.[33] Hopefully, this study will motivate further research, which could address the following questions:

(a) Do online information campaigns have a long-lasting effect on potential migrants?

[32] Facebook offers different possibilities to conduct experiments. The lift testing feature compares groups of people who did and did not see the Facebook ad to understand the causal impact on specific objectives, such as brand recognition or conversion. People who match the ad audience but are intentionally withheld from seeing the ads are the holdout, or control, group (www.facebook.com/business/help/552097218528551?id=546437386202686).

[33] https://datareportal.com/reports/digital-2020-global-digital-overview.

(b) Are other social platforms and apps, which are particularly popular with a younger audience, an option to reach potential migrants (e.g. Instagram, Snapchat or TikTok)? What effect would there be if returnees posted their testimonial videos themselves?

(c) What role do extended online connections (family, friends and contacts abroad) play? If a friend or family member shared a video online, would it be more effective?

(d) How do potential migrants perceive online information campaigns versus offline campaigns?

(e) What effect do different messages, creatives and headlines have on engagement?

(f) Are online campaigns really cost-effective when compared with offline campaigns?

Annex: Supplementary material

Tables A1, A2 and A3 show supplementary material such as examples of online migration-related campaigns, Facebook ad structure, and objectives and variables for Facebook's ad platform.

Table A1. Online migration-related information campaigns

Campaign name	Organizations	Modes of distribution	Main objectives	Target groups
i am a migrant	IOM	Posters shared through social media	Change attitudes towards migrants, and promote diversity and inclusion	General public in host countries
Aware Migrants	IOM and Italian Ministry of Interior	News and testimonial videos shared on social media, website and radio/television	Raise awareness of risks of irregular migration, change attitudes about migration and promote information on alternatives to migration	Migrants and potential migrants and their families in North/West Africa
Migrants as Messengers	IOM	Testimonial videos from returnees shared through social media	Raise awareness of risks of irregular migration	Migrants and potential migrants in West Africa
InfoMigrants	European Union and media outlets	News through website and social media	Provide "balanced and verified" information on migration	Migrants and potential migrants interested in Europe
Telling the Real Story	UNHCR	Testimonial videos shared through a website, Facebook and Twitter	Raise awareness of risks of irregular migration	Migrants from Eritrea, Nigeria and Somalia
IOM X	IOM	Media content on television and online, participatory communication framework	Raise awareness of risks of irregular migration, anti-trafficking and behaviour change	Migrants, potential migrants and general public in South-East Asia
Stricter Asylum Regulations in Norway	Norwegian Ministry of Justice and Public Security	Targeted Facebook ads	Deter potential asylum seekers by providing information about strict asylum regulations	Potential male asylum seekers from Afghanistan, Eritrea and Ethiopia
Surprising Europe	Al Jazeera	News portal with stories and videos	Raise awareness of the difficulties African migrants can face in Europe	African immigrants in Europe

Somos Colmena	IOM	Videos, information portal and website	Inform potential migrants of safe and regular migration, and provide information about migration alternatives in home countries	Central American migrants in transit through Mexico

Table A2. Facebook ad structure

Structure	Definition
Ads Manager	Facebook tool that allows creation and management of Facebook ads. It is possible to view, make changes and see results for Facebook campaigns, ad sets and ads.
Ad campaign	Top-level container for an ad. A campaign can contain multiple ad sets, and multiple ads. For the first round of tests, multiple separate ad campaigns (split-test experiments) were conducted in Guinea, Nigeria and Senegal.
Ad set	Secondary-level container for an ad. It groups together ads testing a specific variable. For instance, for the first three ad campaigns, the variable "audience" was chosen to test how different audience groups (age 18–35 years, female/male and rural/urban) in Guinea, Nigeria and Senegal would react to the same content. Facebook gives the option to have up to five ad sets.
Ad	Unique ad that Facebook users will see. Ads can vary in creative content (images, videos, text and so on).

Source: www.facebook.com/business/help/706063442820839?id=802745156580214.

Table A3. Objectives and variables for Facebook's ad platform

Term	Definition
Conversion	A desired action that is the result of the ad. For marketers, this is usually the number of purchases, registrations or items added to a cart that were the result of an ad. For a social media campaign, this could be the number of potential migrants that complete a survey or sign up for a newsletter on an external website.
Objective	Multiple objectives can be chosen for an ad. Most relevant are those under "consideration", which include traffic, engagement and video plays. The objective is the main goal of the ad. For the first round of experiments, the objective "traffic" was chosen because maximizing the number of clicks on the survey link was of interest. For the second round of experiments, the objective "engagement" was chosen because maximizing the number of people who engage with the creative content (video/static image) with the same message was of interest.
Variables	When running a split test on Facebook, it is possible to vary the following: Creative: This refers to any visual aspect of the ad. It could be the headlines, ad text, ad links, different images or videos. Typical creative split tests may be

	testing one ad that uses a video versus one that uses a static image. This variable was used for the second round of experiments. • Delivery optimization: This varies the objective optimization of the ad. For instance, in the pilot test it optimized link clicks. It was also possible to optimize an ad for conversions, impressions, video plays and so on. • Audience: This allows to test custom audiences, such as in the pilot test where male/female and rural/urban were tested for. Custom audiences can be detailed if behaviours, demographics and so on are used. This variable was used for the first round of experiments. • Placement: Tests where the ad is shown, that is, shown in the newsfeed versus a side bar, or shown on Instagram versus Facebook Messenger. • Product set: Comparing different product sets as configured in the Ads Manager assets. For example, choosing two different product sets to use when running product set ads on Facebook. Product set variables are managed at the ad set level in Ads Manager. • More than one: Some A/B tests allow multiple variables to be changed if it is required to compare two complex strategies against each other on the same cost per result or cost per conversion lift basis. Changes can also be made to the campaign, ad set or ad when changing multiple variables.
Call to action	This is the button/link that gets shown as part of an ad. By default, it is shown as "learn more". Facebook allows a limited range of options, including "listen now", "book now" and "apply now". For social media campaigns, "learn more" is probably the most appropriate one.

Sources: www.facebook.com/business/help/143841771978691 4?id=802745156580214; www.facebook.com/business/help/196215992405205 1.

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