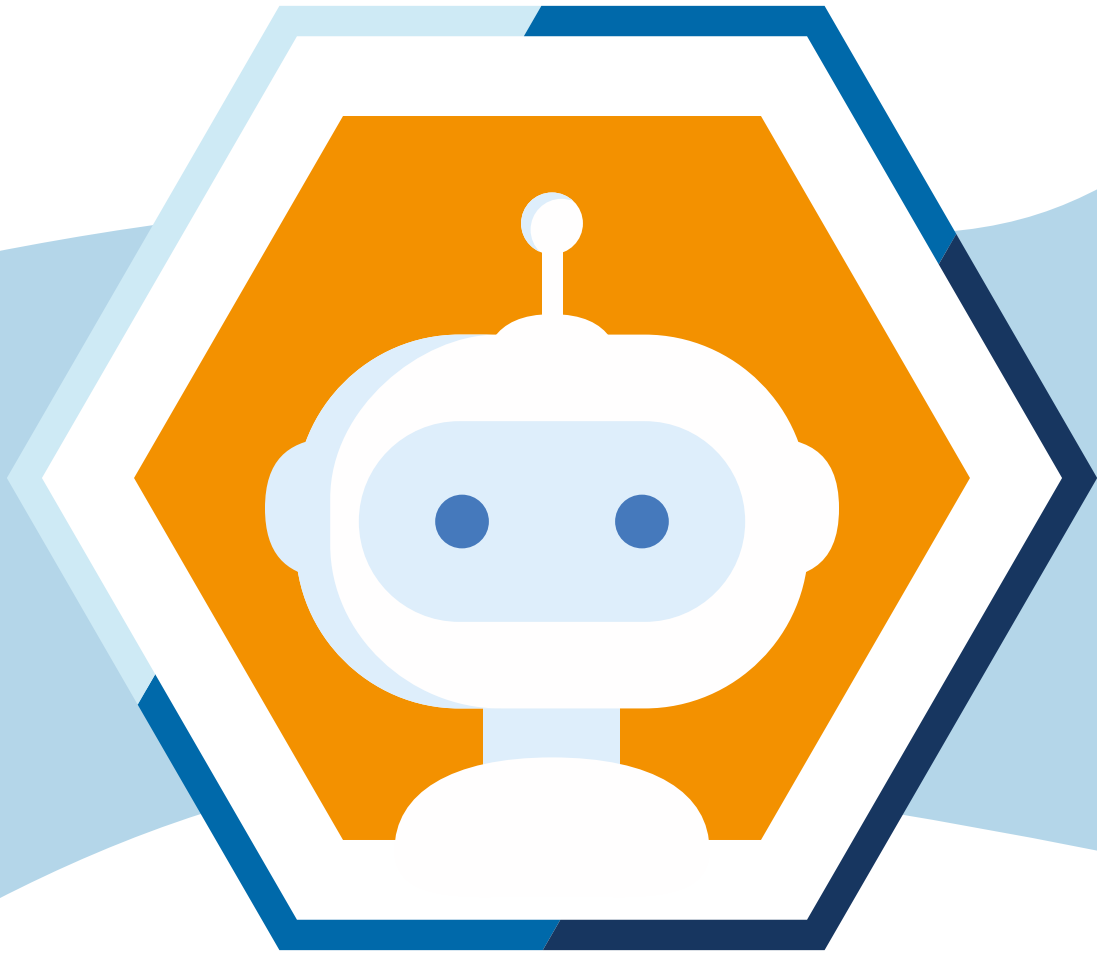




## PERCEPTIONS



Developing Twitter bots to disseminate information, encourage debate, and share research findings and resources.



## Location

Our Twitter bot workshop was held online but can easily be replicated as a face-to-face workshop.



## Contributors

UNN, all project partners



## Purpose / Aim

Twitter bots are accounts that are controlled by software and rules that command how they operate and what content they share online. They can provide an automated way to broadcast helpful information and generate interesting or creative content. For instance, a few years ago, a Twitter bot called 'Drop the I' was used to raise awareness about the stigmatisation of undocumented migrants by replying to individuals who had tweeted content containing the phrase illegal immigrant and suggesting alternative phrasing they could use (<https://www.bbc.co.uk/news/blogs-trending-33735177>). While generating automated responses to tweets based on particular keywords is currently against Twitter Terms & Conditions, it shows how Twitter bots can be used creatively to challenge stigmatisation.

In this workshop, we explored the potential of Twitter bots to provide a cost-effective and interactive way to disseminate research findings and resources and provoke meaningful online discussion. More specifically, the aim was to generate ideas for a Twitter bot that will innovatively raise awareness about some of the issues explored in the PERCEPTIONS project.



## Audience

Our Twitter bot workshop was aimed at partners within the PERCEPTIONS project who had diverse backgrounds and areas of expertise. This included both researchers and third sector practitioners – where involving a mix of researchers and practitioners enhanced the relevance and impact of the designed output.

## Description of Activity

Having a workshop allowed us to generate Twitter bot concepts collaboratively, building on the ideas and expertise of about 20 participants. The workshop was divided into three parts: 1) Sharing bot examples; 2) Design your bot; 3) Show and tell. Following on from the workshop, the organising team selected one concept for piloting.

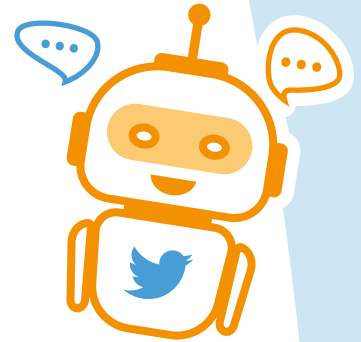
### 1) Sharing bot examples

To start getting ideas about what our PERCEPTIONS bot could look like, participants were first given the opportunity to share examples of bots with the group. This activity aimed to give voice to the different researchers and practitioners who took part in the workshop, build their confidence, and explain the links between the creation of a bot and the project's topics.

The first example was the 'Gender Pay Gap Bot', a bot that retweeted companies and organisations that posted tweets for International Women's Day alongside a message revealing how women's pay compared to men's within them. This information was retrieved from a public dataset that compiles the reported yearly salary differences between men and women reported by companies with 250 or more employees. While this information is publicly available on a governmental website, it is not readily retrievable and visible. The popularity (almost 250,000 followers) and media coverage generated by the Gender Pay Gap Bot demonstrate how bots can make such public information accessible to a large audience. Some of the organisations the bot retweeted chose to delete their tweets; others responded with their plans to address the pay gap. This shows that it did not only make public data more accessible, it also dramatically increased its impact, leading companies to change their behaviours, at least on their communication channels.

Another example was Reddit's 'Too Long Didn't Read' bot, which reduces news articles to their most essential parts, allowing people to get the most crucial information without reading through the entire article. It starts from the observation that many articles are not read because they are too long and feature a lot of unessential and possibly sensationalised information. Similar to the Gender Pay Gap bot, this bot aims to increase the visibility and accessibility of information by using automated means.

This first activity allowed participants to better understand what bots can look like and start thinking about what a PERCEPTIONS bot could do. It also served as an 'ice-breaker' and allowed participants to discuss an important point that the organisation team had not considered in their presentation: what dataset could our bot build on?



→ The Gender Pay Gap Bot, an example of an impactful Twitter bot

## 2) Design your bot

For the second activity, we used a Miro Board (<https://miro.com/>) that facilitates collaborative work by allowing remote participants to work together on an online whiteboard. This format allowed participants to join from different countries while using traditional design-thinking workshop tools, such as sticky notes and cards that participants can move around and respond to.

Workshop attendees were presented with the cards shown in the picture below, which acted as provocations for generating concepts for Twitter bots. Similar approaches using card-based prompts and provocations have been used in a variety of creative design contexts and can be adapted to suit the needs of the workshop (Kalid, Elbæk, & Kane 2019; Roy & Warren 2019). They can work in either an online or offline setting.

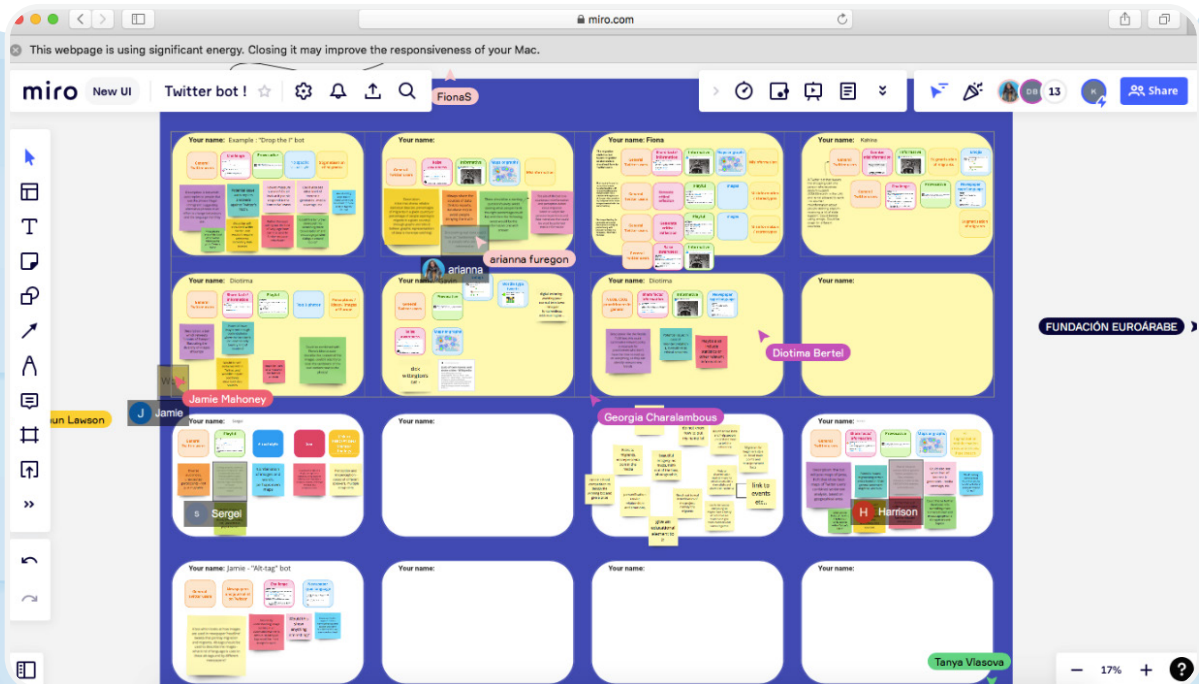
The first four categories of cards aimed at prompting reflections around the purpose and appearance of the bot by providing examples of audiences, goals, interactions styles and visual styles that could be adopted. The fifth category of cards reflected key themes that emerged from the empirical research conducted in work packages 3 and 4 of the PERCEPTIONS project are major risks or threats related to migration: stigmatisation of migrants, misinformation, risks and issues related to irregular migration, and hate speech. They aimed to prompt participants to think about what research findings could be highlighted and made more accessible through a Twitter bot and how that could be done. As well as the examples within each category, it was also possible to create additional items within each category. Through selecting different combinations of cards, workshop participants would be encouraged to design different bot concepts, leading to a broader set of ideas produced within the workshop.



Cards used to prompt ideas for a PERCEPTIONS Twitter bot

### 3) Show and tell

Based on these prompt cards, workshop attendees generated 15 different Twitter bot concepts. Here, we provide just a few examples, showing which cards the workshop participants selected and how they described their bot concept.

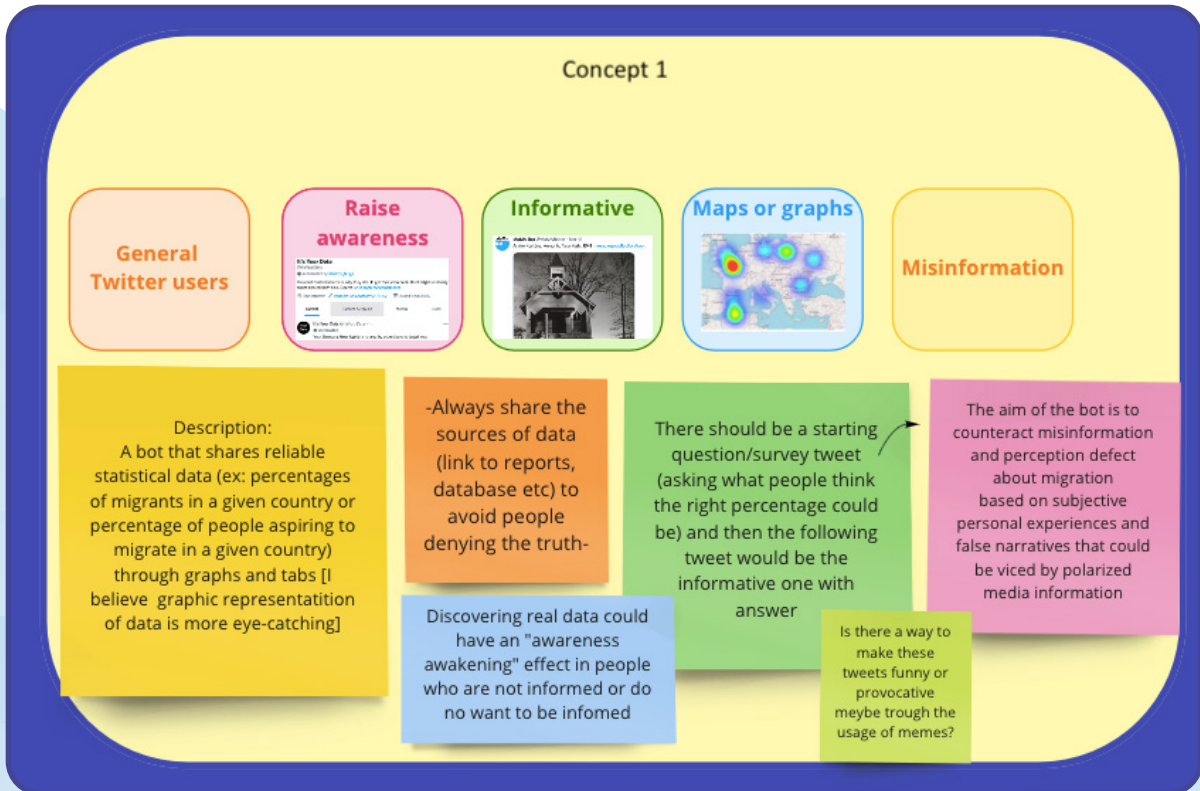


Overview of workshop participants' contributions to the Miro Board



## Concept One

**Selected cards:** General Twitter users, raise awareness, information, maps or graphs, misinformation.

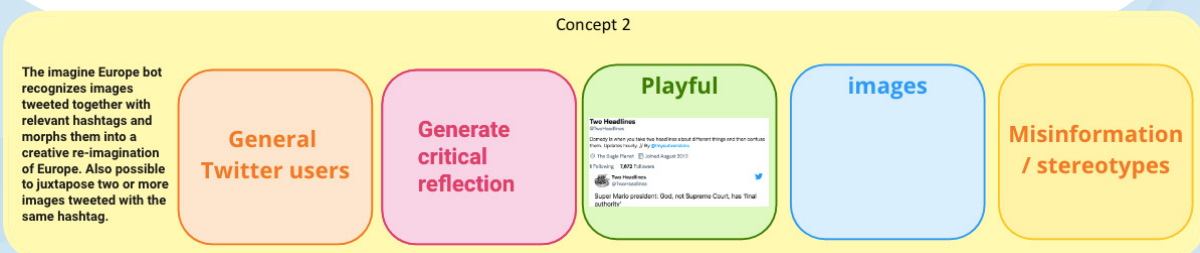


Concept 1, a bot to share migration statistics

## Concept Two

**Selected cards:** General Twitter users, Generate critical reflection, Playful, Images, Misinformation & stereotypes

**Bot Description:** The imagine Europe bot recognises images tweeted together with relevant hashtags and morphs them into a creative re-imagination of Europe. It is also possible to juxtapose two or more images tweeted with the same hashtag.



Concept 2, a bot to create new images of Europe

## Concept Three

**Selected cards:** General Twitter users, counter misinformation, informative, Stigmatisation of migrants, Emojis

**Bot Description:** A Twitter bot that tweets the shopping cart of a person who receives asylum support (£39.63/month in the UK) and is not allowed to work - to counter misinformation about people seeking asylum receiving a lot of state support. Could tweets using emojis. Could be down for different countries.

### Concept 3



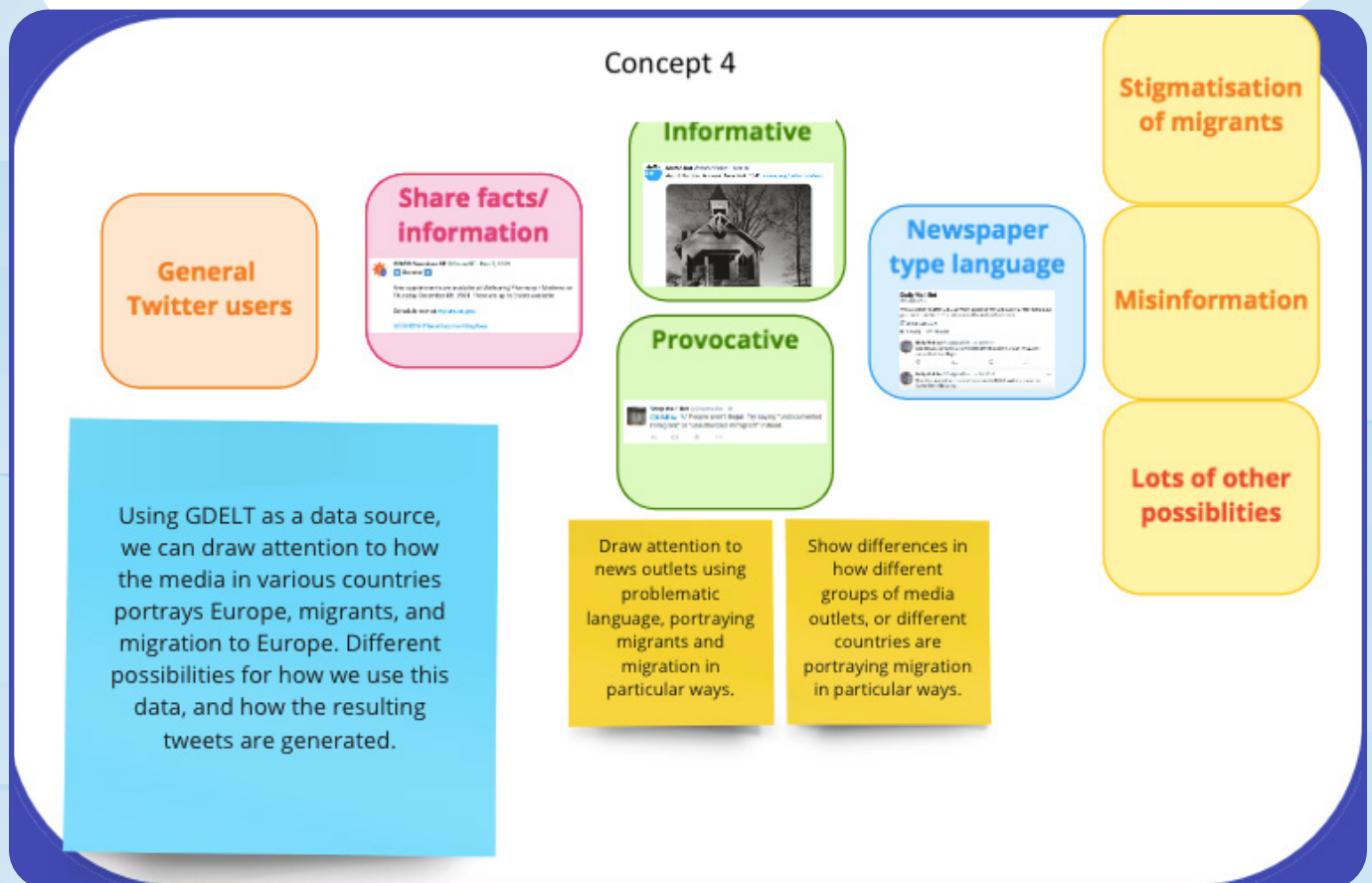
A Twitter bot that tweets the shopping cart of a person who receives asylum support (£39.63/month in the UK) and is not allowed to work - to counter misinformation about people seeking asylum receiving a lot of state support. Could tweets using emojis. Could be down for different countries.

*Concept 3, a bot to challenge misinformation about asylum seekers*

## Concept Four

**Selected cards:** General Twitter users, Share facts/information, Informative or Provocative, Newspaper-type language, Stigmatisation of migrants Or Misinformation

**Bot Description:** Using GDELT as a data source, we can draw attention to how the media in various countries portrays Europe, migrants or migration to Europe. Different possibilities for how this data can be used and how the resulting tweets are generated. This would show differences in how different groups of media outlets or different countries are portraying migration, Europe, or countries within Europe in particular ways.



*Concept 4, a bot to raise awareness about the stigmatisation of migrants in mainstream media*



## Concept Five

**Selected cards:** General Twitter users, Share facts and information, provocative, Maps or graphs, All: stigmatisation, misinformation, risks and issues, hate speech.

**Bot Description:** 'How welcoming is your area?'. The bot will post maps of (area, EU?) that show heat maps of Twitter users' combined sentiment analysis, based on geographical area. These kinds of visual, map-based data presentations garner a lot of traction on social media. Potentially due to the interaction between space, and people's preconceived images of how they think these maps would have looked. However, there is a risk of stigmatising certain areas based on their general sentiment that would be unethical.

How Welcoming is your area?

Concept 5

**General Twitter users**

**Share facts/ information**

**Provocative**

**Maps or graphs**

**All: stigmatisation, misinformation, risks and issues, hate speech**

Description: The bot will post maps of (area, EU?) that show heat maps of Twitter users' combined sentiment analysis, based on geographical area.

Potential issues: stigmatising certain areas based on their general sentiment might be unethical.

How to measure success: Mix of general Twitter analytics, i.e likes, retweets, followers, traffic to the PERCEPTIONS website, and media con.

These kinds of visual, map based data presentations garner a lot of traction on social media. Potentially due to the interaction between space, and people's preconceived images of how they think these maps would've looked.

What is the relationship between this and just how many people are Twitter users in certain areas. Would cities be overrepresented and skew the presentation of the data? What would be a way to change this? Sentimental analysis per capita????

Could use these different interpretations of maps. using blocks of data based on

Would be self-contained within Twitter, and wouldn't require additional secondary data sources. As long as this data is available?

Rather than just calling out this kind of language, how can it be used to further educate individuals?? It is one thing to call out geographical areas on their sentiment surrounding migration, but can we link the PERCEPTIONS research and materials to this somehow? Perhaps exploring certain themes with 3d posts and linking these to PERCEPTIONS findings, sharing quotes from migrants based on the themes covered.

Number of Goats per Country 1984-2014

Visualizing Russia's Economic Ties With LatAm

Concept 5, a bot to visualise sentiment towards migrants

## Concept Six

**Selected cards:** NGOs CSOs and practitioners in general, Share facts / information, informative, newspaper-type language.

**Bot description:** Like the Reddit TLDR (Too Long; Didn't Read) bot, this could summarise relevant policy or research for practitioners who don't have the time to read up on everything, so they can identify relevant new trends.

### Concept 6

NGOs, CSOs,  
practitioners in  
general

Share facts/  
information



Informative



Newspaper  
type language



Description: like the Reddit TLDR bot, this could summarise relevant policy or research for practitioners who don't have the time to read up on everything, so they can identify relevant new trends

Potential issue: in case of misinterpretations, it would raise ethical concerns

maybe also include statistics or other relevant information

Concept 6, a bot to share policy and research information about migration

#### 4) Pilot

Although many concepts were developed during the PERCEPTIONS workshop, Concept 6 has been selected to be implemented first due to ease of technical implementation, potential ethical concerns raised by the other concepts, and the time needed to address them. Other concepts may potentially be developed further at a later stage.

Based on the underlying concepts behind the 'Too Long Didn't Read' Reddit Bot, the concept that has been implemented provides a means of disseminating research findings and sharing useful resources to practitioners and other interested parties: [https://twitter.com/Migration\\_TLDR](https://twitter.com/Migration_TLDR). During the PERCEPTIONS project, the PERCEPTIONS platform is being developed, which will be used to highlight and share a range of resources (library of best practices identified during WP5, publications, policy briefs, knowledge articles, etc.). This bot can aid in disseminating such resources in an automated manner. Links to these resources will be accompanied by a 'Too Long; Didn't Read' summary – highlighting key aspects of the resources being shared. In doing so, practitioners and stakeholders will be able to identify relevant resources and materials based on these summaries. As the various resources become publicly available on the PERCEPTIONS platform and the accompanying tweet contents have been formulated, the bot can become almost self-sufficient and can continue the information dissemination beyond the official end of the PERCEPTIONS project.

##### What?

A Twitter bot shares migration-related resources, research findings, and useful datasets, accompanied by a 'Too Long; Didn't Read' summary, highlighting key points and aspects to practitioners and other stakeholders.

##### Why?

Resources and research findings are produced and collated throughout the lifespan of a research project, such as PERCEPTIONS. While these will be of interest and relevant to practitioners and other stakeholders, the amount and size of such resources often makes it impractical for stakeholders to read each resource to find particularly relevant ones to their context. This bot aids in disseminating research findings and other resources by providing the link to such resources and selected key points, highlights, and summaries to aid in the identification of relevant content.

With an approach that other research projects can adopt, this bot aims to provide a sustainable means of disseminating research findings and sharing relevant resources in an easy-to-access format, both within and after the lifespan of a research project.

## How?

This bot works on the concept of sharing resources, along with (at present) pre-formulated summaries and key points related to each resource. These summaries form the main content of the tweet, and can be accompanied by images as well as the link to the resource. Each day, the bot will select a pre-determined number of resources from the dataset, at random, to share that day. The time at which each tweet is posted will also vary day to day.

The resources and research findings shared through the bot account will be based on those produced and identified within the PERCEPTIONS project. An admin panel has also been created to aid the construction and maintenance of a suitable dataset related to these resources in a format that suits the processes behind the bot account. As the PERCEPTIONS project includes the creation of a library of identified best practices and other resources, the final set of resources and tweet contents that the bot can draw on will be considerable.

## For whom?

While the content shared from the Twitter bot will be available to anyone who can access the Twitter platform, it is primarily focused on practitioners and other stakeholders interested in the research findings, resources, and datasets that will be shared (see sample output in Figure 1). Through the sharing features of the Twitter platform, such as likes and retweets, the content is likely to reach a wider audience and, therefore, may impact individuals other than practitioners.



Screenshot of a tweet generated by the Too Long Didn't Read Migration Research Bot

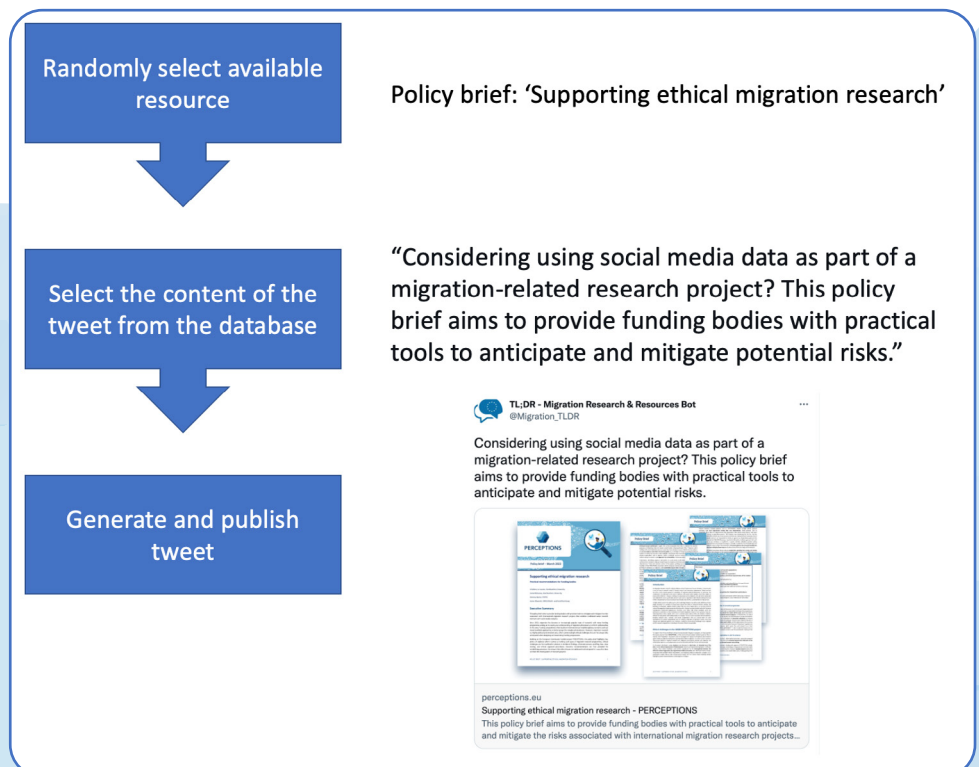
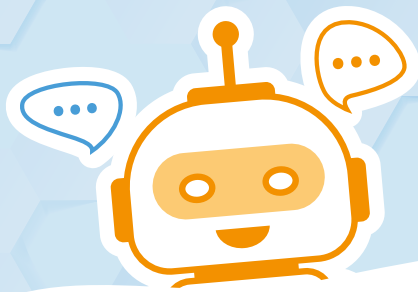


Figure 1. Simplified overview of the tweet generation process.



## Key Concepts

- Rather than focus solely on the immediate design and implementation of a single social media bot, facilitating a creative workshop allows for a **more prosperous and participant-led design process**. In this way, the process becomes an essential aspect of the work; not only is the implementation necessary, but also the discussion and exchange of knowledge and ideas between participants during the creation process.
- The workshop process **enables creative experimentation with data sources**, methods of data presentation and purposes of using digital technologies. Approaches such as the collaborative whiteboard and the prompt cards are more inclusive and accountable research methods, which involve **participants with varying levels of knowledge and technical expertise**. It encourages sharing knowledge, ideas and expertise from the whole project consortium, including academics and migrant practitioners. This leads to a richer set of ideas, which can then be developed further into viable technological solutions.
- **Increasing the accessibility of data sources, documentation, and resources**. In doing so, the potential audience is broadened, potentially improving the impact that these can have.



## Impact & future development

The impact of this process can be thought of as two distinct elements: the impacts associated with the workshop and creative process and the impacts associated with the developed Twitter bot itself.

The workshop process presented an opportunity for participants to consider using digital technologies, datasets and resources in creative and innovative ways. The workshop participants represented a wide range of academic and professional backgrounds, with varying experience working with and designing digital technologies. As such, the workshops also facilitated an opportunity for individual participants to deepen their own understanding of such technologies and **share their skills and experiences** from fields outside that of digital technology. This activity also has an **educational purpose**, as it offers a blueprint for developing ideas through interactive workshops, which will be shared with practitioners seeking to develop similar technological solutions to raise awareness, generate discussion and disseminate research findings.

This particular bot aims to highlight and share valuable resources, information, and research findings. The primary **metrics for assessing impact** will focus on reaching a relevant audience and generating engagement with the social media content and the resources being shared. **Retweets** will show how the bot's content is engaged with and shared with a broader audience. The number of followers of the account(s) will show how many accounts are regularly shown the content generated and shared from the account. An **increase in the number of followers**, over time, will show increased 'popularity' or interest in the account and the content being generated and shared. Direct replies to the content being shared may show a deeper **engagement** with the content. As the content shared through the bot will primarily be hosted via the PERCEPTIONS platform, additional traffic to the platform will also be an indicator of the ongoing impact of the Twitter account.

The impact of the implemented bot is hard to assess at present, with its full impact only known once it has been operational for a more extended period and depending on the range of resources shared through the account and the groups of individuals accessing and interacting with it. For example, for practitioners and other stakeholders involved in migration-related services, content shared through the bot may aid in a **deepened understanding** of a given topic, **learning about something new**, or **generating links** between aspects of their work and new resources that they may not have been aware of. For those not working in a migration-related field, being exposed to new data, facts, and resources may **increase their knowledge about migration, correct misformed beliefs about Europe and migration, and may alter their perceptions of and behaviours towards Europe and those that are migrating or have migrated to Europe.**



## Refernces

Khalid, Md. Saifuddin & Elbæk, Lars & Kane, Neha. (2019). Method Cards for Movement-Based Design Activities: A Survey of Free Online Toolboxes.

Roy, R., & Warren, J. P. (2019). Card-based design tools: A review and analysis of 155 card decks for designers and designing. *Design Studies*, 63, 125-154.





# PERCEPTIONS



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