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Leibniz Institute
for the Social Sciences

Facebook as a Research Tool

Session 3: Using Facebook to recruit hard-to-reach populations

Steffen Pötzschke

Leibniz
Association

Agenda

1. Introduction
2. Theory
3. Examples
4. Conclusion

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1. **Introduction**
2. Theory
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Hard-to-reach (h2r) populations

Tourangeau's (2014) definition of hard-to-survey populations:

➢ Hard to sample   ➔   Lack of sampling frame

➢ Hard to identify   ➔   e.g., missings due to unspecific screener or unwilligness to self-identify

➢ Hard to locate or contact   ➔   e.g., due to mobility, irregular residence status or gate keepers

➢ *Hard to persuade*

➢ *Hard to interview*

The Facebook Advertisement Manager (FAM)

- Online marketing tool of Meta Platforms Inc. (Meta);

- Allows costumers to place advertisements on:
  - Facebook,
  - Instagram,
  - Facebook Messenger,
  - Facebook Audience Network.

- FAM provides estimates of the target group size before an ad campaign is started.

Sampling through advertisements on Facebook & Instagram
- Advantages I -

- Size, in 2020 *(Facebook, 2021a)*:
  - 2.8 billion monthly active Facebook users worldwide,
  - 3.3 billion if all Facebook products (incl. Instagram & WhatsApp) are counted.
- Nearly global coverage and geographically fine-grained targeting possible,
- FAM allows using a plethora of targeting variables, e.g.:
  - Demographics: age, gender, place of residence,
  - Interest in specific topics,
  - Profession and professional association.
- Easy and fast to realize,
- Open to all scholars: Use of Meta's business model,
- (Much) Less expensive than most established methods.

Sampling through advertisements on Facebook & Instagram
## - Advantages II -

- Allows sampling of otherwise hard-to-reach populations, e.g.:
  - ▶ Scattered populations,
  - ▶ Mobily populations, incl. (forced) migrants,
  - ▶ Members of specific (small) social subgroups (e.g., professionals in specific industries),
  - ▶ Individuals systematically missing from other sampling frames (e.g., no telephone or nor entry in telephone book).

Sampling through advertisements on Facebook & Instagram
- Limitations I -

- Coverage:
  - Sampling frame includes only individuals that use the internet *and* Facebook or Instagram,
  - Possible effects of digital divides (influenced, e.g., by age, gender, economic status),
  - Targeting (in part) dependent on information entered by users in their profiles,
  - Targeting variables as black boxes, basis of exact assignment to users often unclear ➔ risk of undercoverage,
  - Possible overcoverage due to users with multiple user profiles.
- Self-selection of participants.

Sampling through advertisements on Facebook & Instagram
- Limitations II -

- Dependency on Meta infrastructure:
  - ▶ Algorithms computing targeting variables may change *(Palotti et al. 2020)*;
  - ▶ New targeting options may be added, but existing ones might also be disabled *(Jan and Dwoskin 2019)*;
  - ▶ Technical difficulties, such as server outages, might interfere with survey fielding *(Isaac and Frenkel 2021; Janardhan 2021)*.
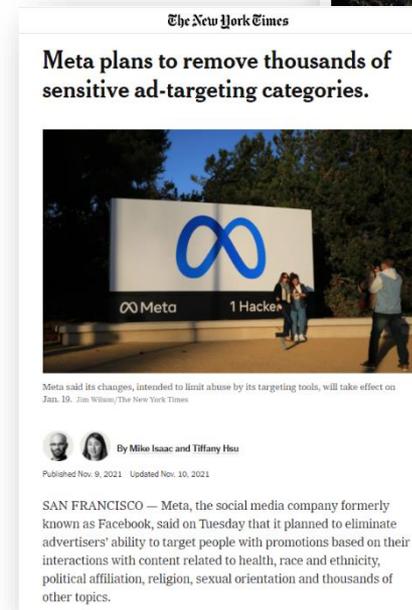
Recruiting h2r populations through Facebook and (less often) Instagram *(selection)*

- **Medical and health research** *(Arcia, 2014; Chu & Snider, 2013; Ramo & Prochaska, 2012; literature review: Whitaker, Stevelink, & Fear, 2017);*

- **(In)voluntary migrants** *(Elçi, Kirisçioglu, and Üstübici 2021; Ersanilli & van der Gaag, 2020; Pötzschke & Braun, 2017; Ryndyk, 2020; Pötzschke & Weiß 2021; Pötzschke et al., 2021);*

- **Supporters of conspiracy theories** *(Iannelli et al., 2018);*

- **Members of the LGBTQ community** *(Guillory et al., 2018; Kühne & Zindel, 2020);*

- **Individuals in specific industries/labor market sectors** *(Schneider & Harknett, 2019; Silber et al., 2021).*

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Reminder: Campaign structure & design

- For details, see the first two sessions of this webinar,
- Ad campaigns consist of three levels:

Advertisment campaign			
Ad set 1	Ad set 2	Ad set 3	
Ad 1.1 / Ad 1.2 / Ad 1.3 / Ad 1.x	Ad 2.1 / Ad 2.2 / Ad 2.3 / Ad 2.x	Ad 3.1 / Ad 3.2 / Ad 3.3 / Ad 3.x	
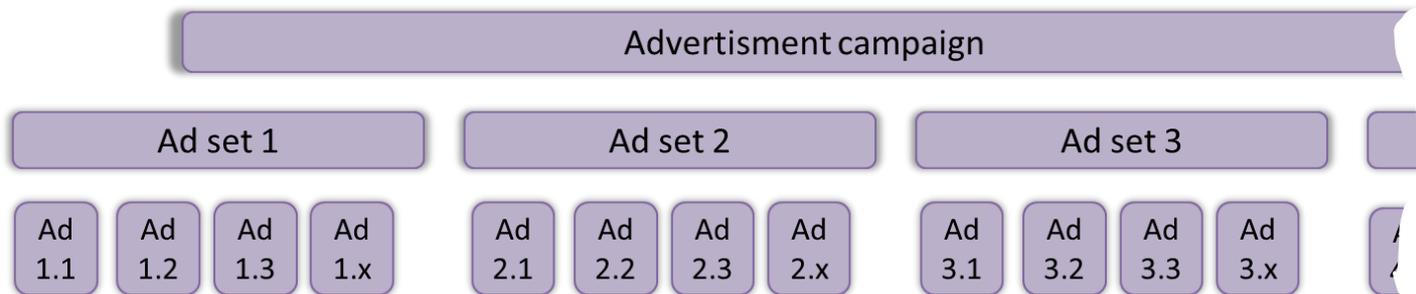
- Targeting happens on ad set level,
- Use ad sets for quota-like stratification of your sample (e.g., by age, gender, geographic area),
- Important: Use URL-parameters to allow identification of ad sets and ads in your data set.

Main targeting variables

- Targeted location, and how users should relate to it,

- Age,

- Gender (all, male, female),

- Languages.

Location targeting

How should users relate to locations?

Include and/or exclude locations

Some options for location targeting

Provinces, federal states etc.

Postal code areas
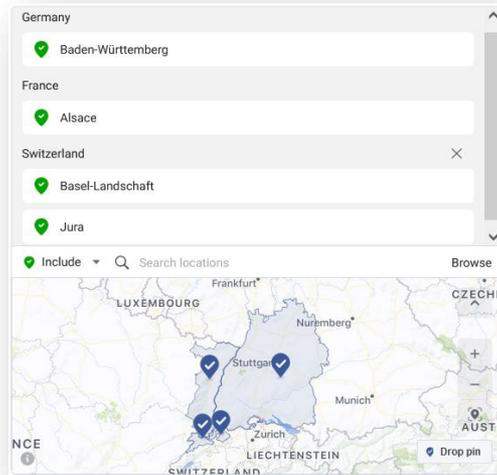
Countries and country groups
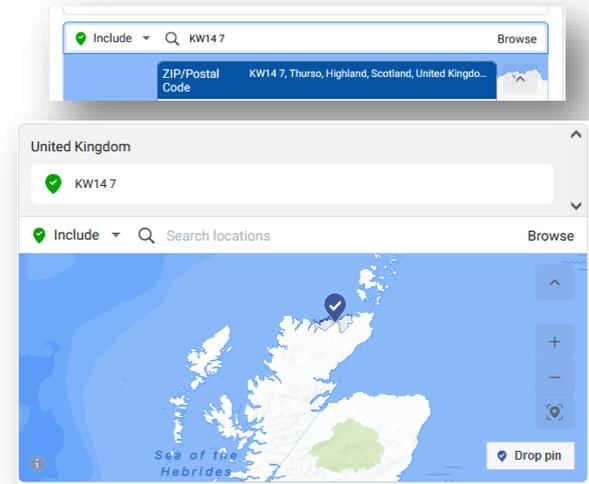
Cities and municipalities
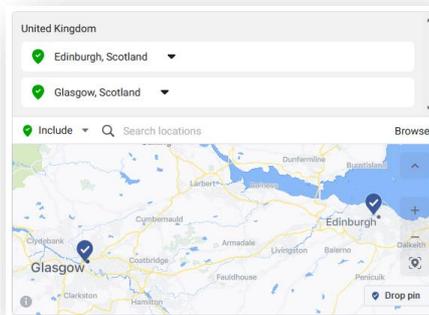
Radii around POI, addresses etc.
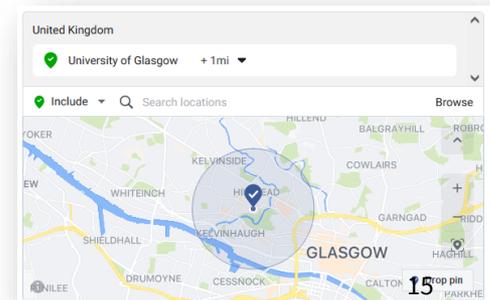
Additional targeting variables (I) - selection

- Demographics
  - Education (e.g., edu. level, fields of study)
  - Work
    - Industries (various categories; e.g., "Health Care and Medical Services")
    - Job titles (open text field)
    - Employers (open text field)
  - USA only: Ranking of ZIP-codes (4 categories) by household income
  - Away from family
  - Recently moved
  - Long distance relationship
  - Newlywed

- Behaviours ➔ Expats
  - Lived in [country]
  - Lives abroad

Additional targeting variables (II) - selection

- Interests
  - Business and industry
    - construction,
    - health care,
    - personal finances [featuring subcategories])
    - …
  - Family and relationships
    - Fatherhood
    - Motherhood
    - …

- Targeting of additional interests via the open text field search function *("People who have expressed interest or like pages related to …")*

Limitation of targeting variables

- Limited set of predefined indicators in all mentioned categories,

- Country and culture-related indicators are not universally available, examples:
  - "Lived in [country]" not available for Afghanistan, North Korea, Syria and others,
  - "Languages" does not include Amharic [Ethiopia], Hausa [West African countries], Sorani [Iraq, Iran], Quechua [Andes region] and others.

- Deactivation of targeting variables by Meta to avoid misuse *(Mudd, 2021)*
  - Changes in 2022 affect targeting based on, e.g., sexual orientation, religious practise, political beliefs.

Not all h2r populations can directedly be targeted using FAM!

Targeting > Targeting variables

Primary targeting elements (users' personal traits)

Targeting variables

Ad design

Language | Wording | Media elements

Secondary elements targeting (user behaviour)

Networks

Placement within networks

Devices

Targeting > Targeting variables

Take-home messages:

- Direct targeting through targeting variables allows to identify many h2r populations,

- But: successful recruitment always depends on more than the right targeting variables,

- Not all target populations can directedly be identified using FAM,

- Combine direct *(targeting variables)* and indirect targeting *(ad design, placement)* to reach and engage your target population.

Agenda

Overview

	German Emigrants Overseas Online Survey (GEOOS)	**Feasibility Study Investigating Recently Arrived Refugees in Germany (PARI-F)**	**Work and Daily Life of Health Professionals in Germany During the COVID-19 Pandemic**
Collaborators	*Pötzschke and Weiß*	*Pötzschke, Hellmann, Weiß, and Echterhoff*	*Silber, Beuthner, Pötzschke, Weiß, and Daikeler*
Targeting	Direct	Indirect	Direct and indirect
Field period	2020/08/13-09/09 (28 days)	2021/10/2-13 (12 days)	2021/04/20 – 05/10 (21 days)
n	3,816	608	3,075
Total sampling costs	2,223€	2,492€	2,700€
Costs per compl. survey	0.62€	5.09€	0.88€
Note		All results reported from these studies are preliminary. Please do not cite without permission.	

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   a) Recruiting emigrants globally (GEOOS)
   b) Recruiting recent refugees in Germany (Pari-F)
   c) Recruiting health professionals in Germany

4. Conclusion

Example 1: Recruiting emigrants globally (GEOOS)

- Clear difference in cultural and national origin between target and general population,
- Target population:
  - Germans *(individuals born in Germany and/or holding German citizenship)*,
  - Living outside of Europe,
  - Age 18+.
- Survey type: cross-national,
- Main challenges:
  - Globally dispersed population,
  - Settlement patterns not fully know.

Direct targeting through FAM possible.

GEOOS targeting (I)

- Target variables
  - **Geographic targeting** ➔ several ad sets,
  - Age: 18-65+ (two ad sets/cohorts)
  - Gender: female; male
  - **"Lived in Germany"** (Behaviour: Expat)
- Networks:
  - Facebook
  - Instagram
- Placement:
  - Facebook news feed
  - Instagram feed
  - Right margin (FB on PCs)
- Devices:
  - Mobile devices (all),
  - Desktop devices.

GEOOS targeting (II)

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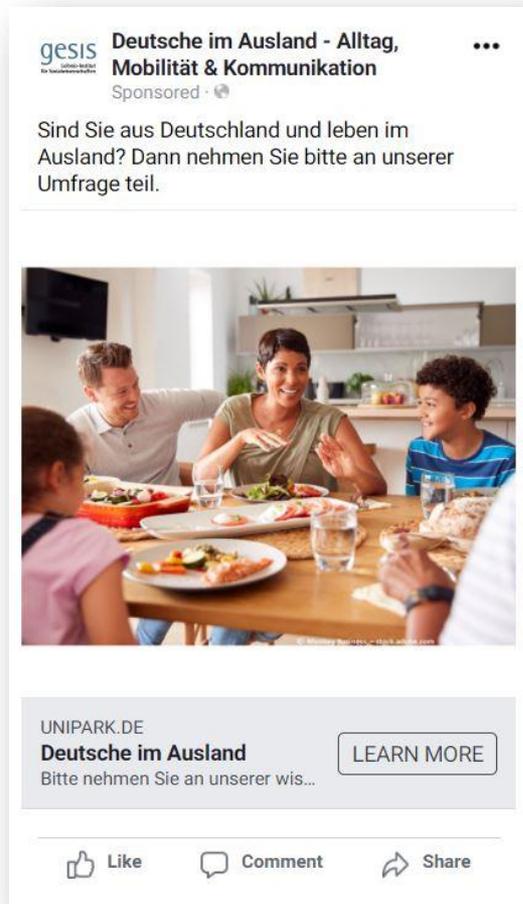
© picture: Monkey Business – stock.adobe.com.

- Questionnaire, ads and FB page in German only,
- Using ads with same text and one of seven pictures.

- General rule:
  - ▸ Clearly identify your target population in the (a) ad text and (b) "headline" (below the picture),
    - a) "Are you from Germany and live abroad? Please participate in our survey."
    - b) "Germans abroad"
  - ▸ Set-up a Facebook page, ideally using the survey title as page title,

Ad campaign structure

Region of residence   13
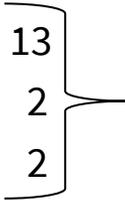
Gender   2   **52 ad sets** * 7 pictures ⟶ **364 ads**

Age cohorts   2

Legend:
- Africa 1
- Africa 2
- Africa 3
- Asia 1
- Asia 2
- Asia 3
- Middle + South America 1
- Middle + South America 2
- Middle + South America 3
- North America 1
- North America 2
- Oceania 1
- Oceania 2
- Country not targeted

Source: Pötzschke and Weiß, 2021
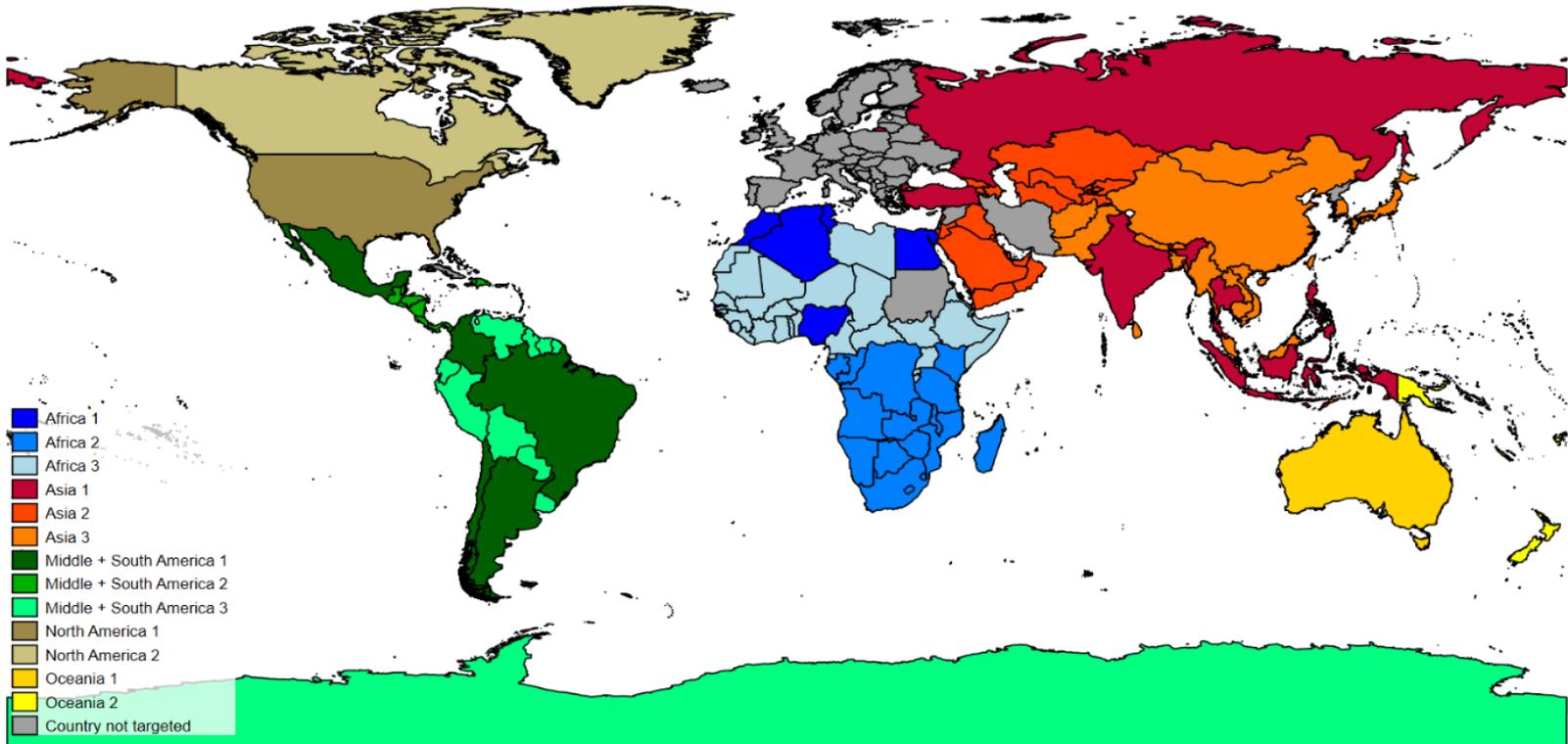
Ad campaign metrics and achieved sample size

- Unique users reached: 354,604
- Impressions: 1,805,217
- Unique clicks: 20,220
- Used advertisement budget: 2,222.90 €
- Average cost per click: 0.11 €
- Average sampling costs per completed survey (emigrants broadly/narrowly defined): 0.62 € / 0.58€

	Completed surveys (total)		Emigrants broadly defined		Emigrants narrowly defined	
N / %	3,895	100%	3,816	98%	3,462	89%

Geographic distribution of GEOOS respondents

- 148 countries and territories,
- Subsamples of n > 50 in 18 and n>10 in 53 countries and territories,
- Biggest subsamples: Canada (n=416); New Zealand (n=359), Australia (n=344); USA (n=323), Brazil (n=155), Turkey (n=144), South Africa (n=140)

Number of participants
401-450
301-400
201-300
101-200
51-100
41-50
31-40
21-30
16-20
11-15
6-10
3-5
1-2
Missing

Source: Pötzschke and Weiß, 2021
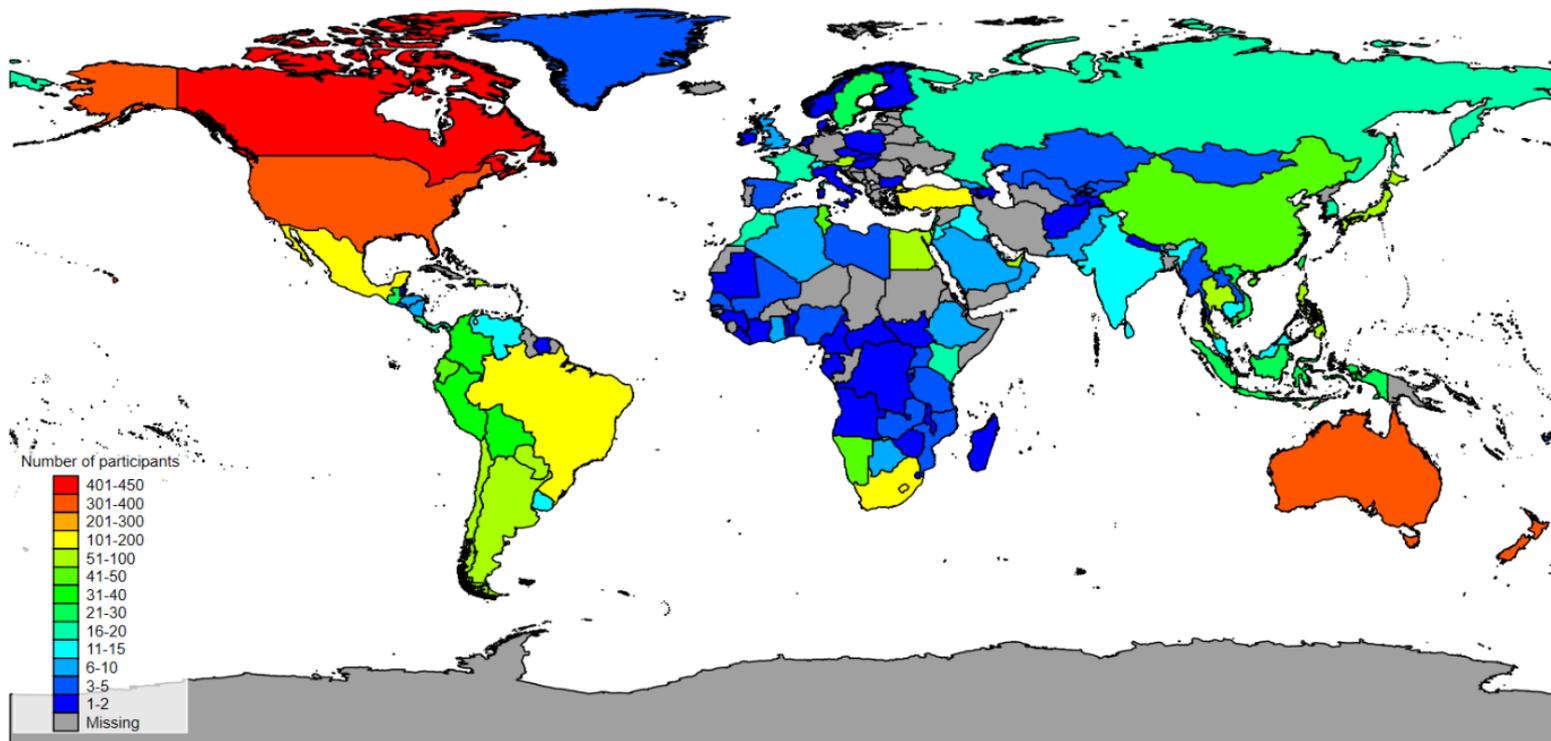
Short detour: Added value of sampling via Facebook and Instagram

- Most promising alternative approach to sample German emigrants: Register based sampling *(Erlinghagen et al., 2021; Ette et al., 2015)*.

- Limitations:

  ▶ Emigrants must have deregistered with German authorities,

  ▶ Most efficient if emigrants additionally registered new address abroad,

  ▶ Coverage problems for non-European regions beyond North-America.

Possible inclusion of GEOOS respondents in a population register-based sample

Respondents providing
answers to all relevant questions

n = 3,226

| Deregistered and provided address abroad	Deregistered, but <u>cannot remember</u> whether provided address abroad	Deregistered <u>without</u> providing address abroad
n = 740 (23%)	**n = 798 (25%)**	**n = 1,048 (33%)**

Does the respondent still
live at this address?

Does the respondent have an active mail forwarding order with postal services or does someone in Germany receive mail for them?

Did not
deregister at all

n = 640 (20%)

- Yes: **n = 384 (12 %)**
- No, but updated address: **n = 96 (3 %)**
- No: **n = 260 (8%)**

- Active forwarding order: **n = 11 (0.3 %)**   **n = 24 (0.7 %)**
- Someone receives mail at last German address: **n = 288 (9 %)**   **n = 478 (15 %)**
- Neither: **n = 499 (15%)**   **n = 546 (17 %)**

Source: Pötzschke and Weiß, 2021

Geographic distribution (excluding Europe): GEOOS vs. register sample (n)
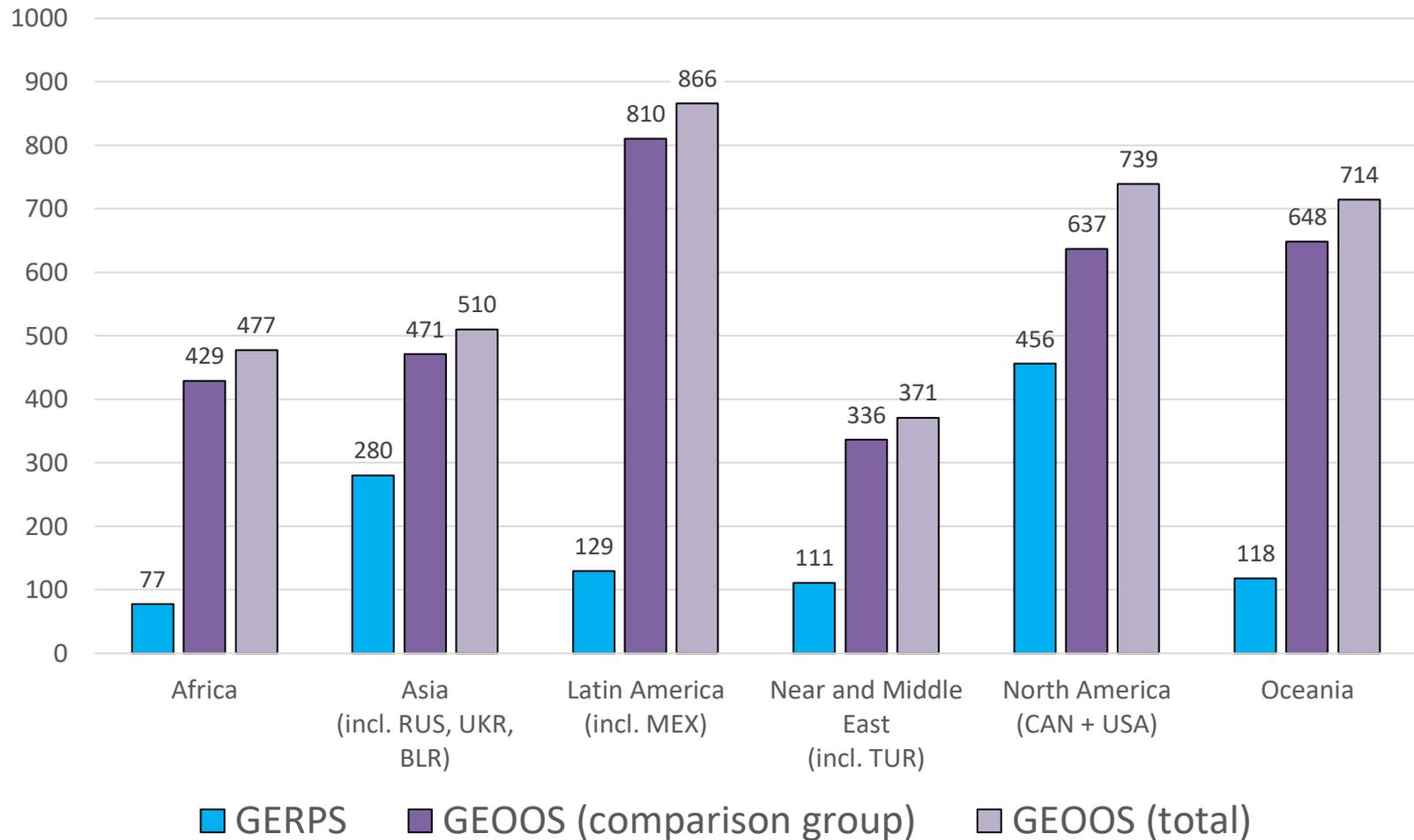
Sources: German Emigration and Remigration Panel Study (GERPS) - Erlinghagen and Schneider (2020); GEOOS. Own calculations.

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   c) Recruiting health professionals in Germany
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Example 2: Recruiting recent refugees in Germany (Pari-F)

- Clear difference in cultural and national origin between target and general population,
- Target population:
  - ▸ Arabic speaking refugees,
  - ▸ Living in Germany,
  - ▸ Age 18+.
- Survey type: national,
- Main challenges:
  - ▸ Population is unevenly distributed across Germany,
  - ▸ Only partial inclusion in established sampling frames,
  - ▸ Gate keepers.

Direct targeting through FAM <u>not</u> possible.

- **FAM does not provide:**
  - ▸ Indicators identifying refugees,
  - ▸ Expat ("Lived in …) indicators for numerically important countries of origin, especially Iraq and Syria.

Pari-F targeting (I)

- Target variables
  - **Targeting strategy 1 (T1): Arabic speaking migrants,**
    - Geographic targeting: Germany (east/west),
    - Age: 18-65+,
    - All Genders,
    - Lives abroad,
    - Languages: Arabic,
  - **Targeting strategy 2 (T2): T1 + Interest: Syria,**
  - **Targeting strategy 3 (T3): T1 + Interest: Iraq.**
- Networks:
  - Facebook,
  - Instagram,
  - Messenger.
- Placement: all available,
- Devices:
  - Mobile devices (all),
  - Desktop devices.

Pari-F targeting (II)

- Questionnaire, ads and FB page in Arabic only,

- Offering 5 € post-paid incentive,

- Using ads with same text and one of six pictures,

- Two versions of the advertisement text:

Neutral wording	Refugee specific wording
Did you come from another country to Germany since 2015, and now live here? Then please take part in our survey.	Did you come as refugee to Germany since 2015, and now live here? Then please take part in our survey.

© picture: VadimGuzhva – stock.adobe.com.

Ad campaign metrics and achieved sample size*

- Unique users reached: 120,343
- Impressions: 460,852
- Unique clicks: 11,130
- Used advertisement budget: 2,492.26 €
- Incentives (5€ post paid x 120)   600 €
- Average cost per click: 0.22 €
- Respondents belonging to target population: 88 % / 58 %
- Average costs per completed survey: 5.09 € / 7.76 €
  (incl. incentives)

	Completed surveys (total)		Arabic speaking migrants		Refugees broadly defined[1]		Refugees narrowly defined[2]	
N / %	688	100%	663	96 %	608	88 %	398	58 %

[1] Respondents mentioning at least one of the following reasons for migration: Fear of violent conflict or war; fear of forced recruitment into the military or armed groups; persecution; discrimination.
[2] Respondents mentioning one of the following as their <u>current</u> residence status/title: Recognized refugee; decision on asylum claim pending; asylum claim denied (with or without temporary suspension of deportation); subsidiary protection.

Completed questionnaires by targeting strategy
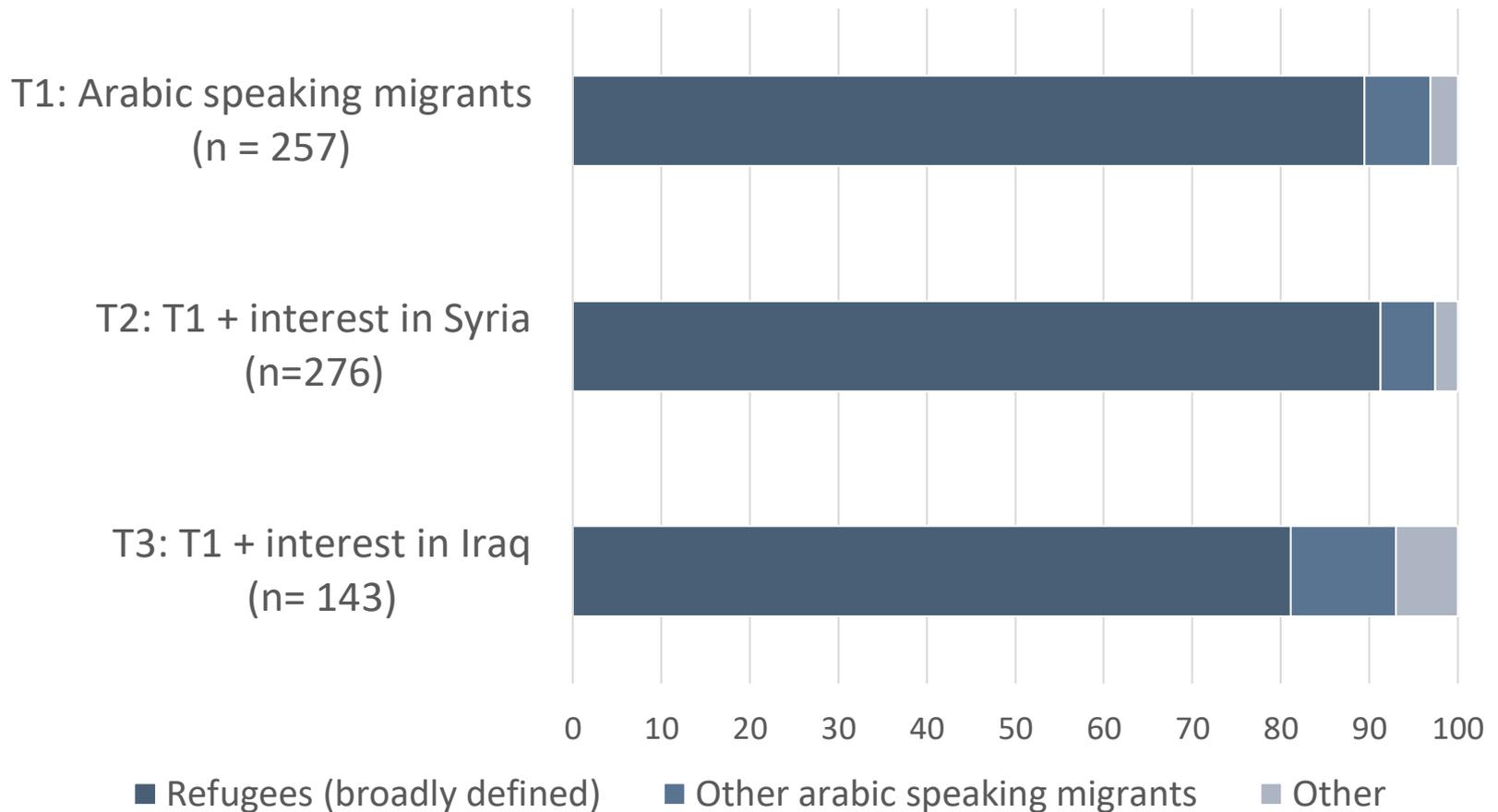
Recruited refugees (broadly def.) by ad wording and targeting strategy

	T1: Arabic speaking migrant		T2: T1 + interest in Syria		T3: T1 + interest in Iraq		Total	
	n	%	n	%	n	%	n	%
Neutral wording	135	59	109	43	55	47	299	50
Refugee specific wording	95	41	143	57	61	53	299	50
Total	230	100	252	100	116	100	598	100

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Example 3: Recruiting health professionals in Germany

- <u>No general difference</u> in cultural and national origin between target and general population
- Target population:
  - ▶ Health professionals
  - ▶ Living in Germany,
  - ▶ Age 18+
- Survey type: national
- Main challenges:
 - ▶ Target population is hard to identify.

Direct targeting through FAM possible, but comparatively few users are in the corresponding categories.

Health professionals - targeting (I)

- Target variables
  - **Targeting strategy 1 (T_H 1): General population**
    - Geographic targeting: Germany (federal states divided in three groups)
    - Age: 18-65+ (two ad sets/cohorts)
    - Gender: female; male
  - **Targeting strategy 2 (T_H 2): T_H 1 + Industry: Healthcare and Medical Services**
  - **Targeting strategy 3 (T_H 3): T_H 1 + Interests: Health care or Nursing**
- Networks:
  - Facebook
  - Instagram
- Placement: Facebook News Feed, Instagram Feed, Facebook Right Column, Instagram Explore, Facebook Groups Feed, Instagram Stories, Facebook Stories
- Devices:
  - Mobile devices (all),
  - Desktop devices.

Health professionals - targeting (II)

- Questionnaire, ads and FB page in German only,
- Using ads with same text and one of five pictures.
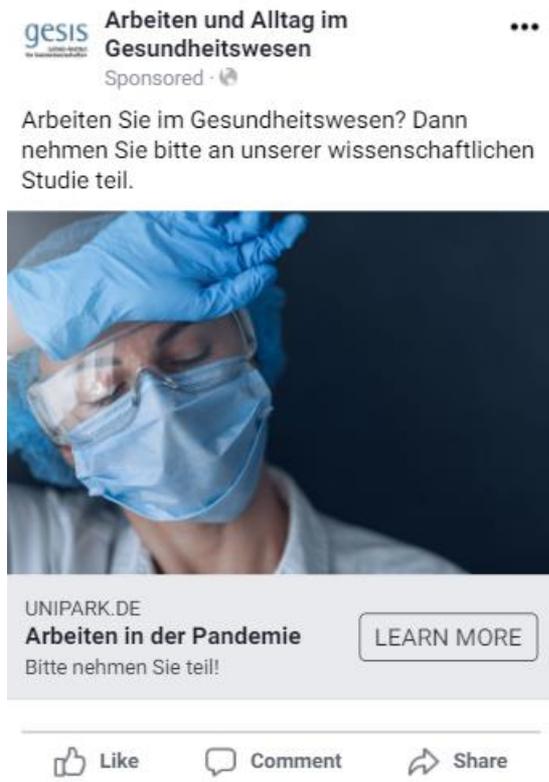
© pictures: Mikhaylovskiy – stock.adobe.com (left);
REDPIXEL – stock.adobe.com (right).

Ad campaign metrics and achieved sample size*

- Unique users reached: 301,403
- Impressions: 641,300
- Unique clicks: 10,661
- Used advertisement budget: 2700 €
- Average cost per click: 0.24 €
- Respondents belonging to target population: 98 %
- Average sampling costs per completed survey :   0.88 €

	Completed surveys (total)		Health sector professionals	
N / %	3,132	100%	3,075	98 %

* Preliminary results; detailed analysis pending.

Recruited health professionals by targeting strategy
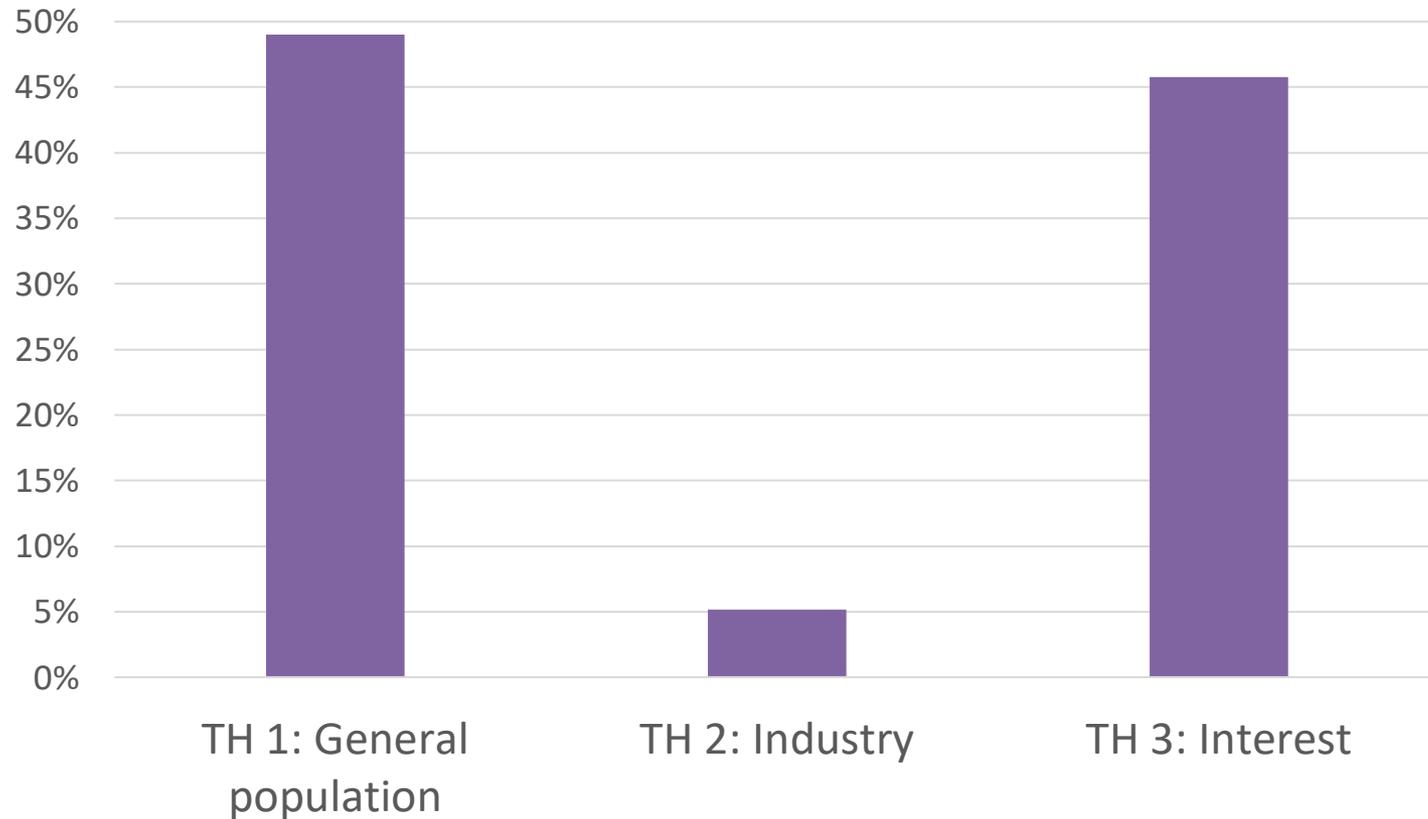
n = 3,071.

Health care workers by profession and targeting strategy

	Total		T_H 1: Gen. pop.		T_H 2: Industry		T_H 3: Interest	
	n	%	n	%	n	%	n	%
Nurses	1,962	64	937	62	50	31	975	69
Paramedics	264	9	127	8	11	7	126	9
Doctor's assistants	246	8	151	10	7	4	88	6
Therapists	136	4	68	**5**	22	**14**	46	**3**
Doctors	117	4	45	**3**	33	**21**	39	**3**
Medical technicians	69	2	36	2	6	4	27	2
Care givers	61	2	38	3	1	1	22	2
Administrative workers	52	2	28	2	4	3	20	1
Other	164	5	76	5	25	16	63	4
Total	3,071		1,506		159		1,406	

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Conclusion

- **The Facebook Advertisement manager (FAM)**
  - ▶ allows timely recruitment of h2r populations,
  - ▶ allows recruitment on a global or very local level,
  - ▶ offers an inexpensive way to recruit h2r populations for survey research.
- **FAM does not offer specific target variables for all potential h2r target groups,**
- **Successful targeting needs more than the right targeting variables,**
- **Thorough design of the advertisement campaigns is a crucial,**
- **If in doubt, combine different targeting strategies to optimize the targeting results.**

Thank you for your attention.

Contact:
steffen.poetzschke@gesis.org   @stpoetzschke

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