



# Using Smartphone Technology for Research Among Refugees in Germany

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Florian Keusch  
University of Mannheim  
 [f.keusch@uni-mannheim.de](mailto:f.keusch@uni-mannheim.de)  
 @floriankeusch

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# Acknowledgement

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# 2013



NBC NEWS

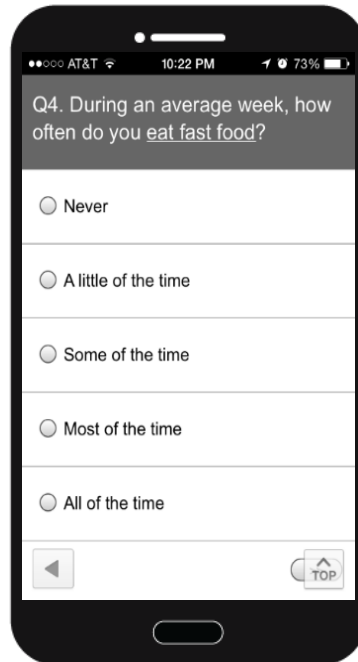
Michael Sohn / AP

# Data Collection in a Historic Context

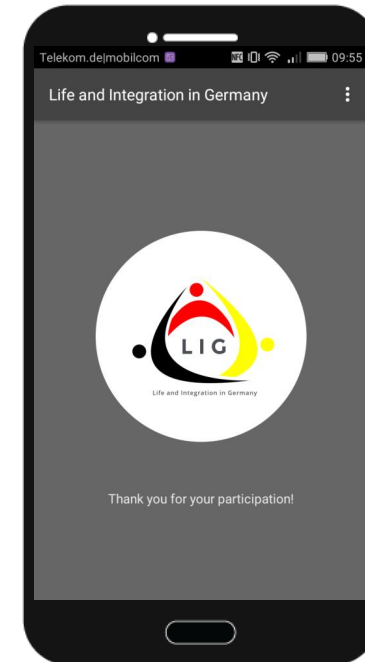
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## Mobile Surveys



## Passive Mobile Data Collection



# Smartphones as an Alternative for Data Collection

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- Smartphones “increasingly viewed as groundbreaking new data collection tools for studying human behavior” (Sugie 2016: 2)
- Flexible devices that can collect range of data
  - Self-reports through mobile web surveys
  - Passive data collection via sensors and apps
- Data collection independent of time, location, and language of smartphone user
  - Cheaper than face-to-face interviews

# Compared to Surveys, Passive Mobile Data Collection Has Potential to...

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- ...provide richer data
  - Because it can be collected in much higher frequencies
- ...decrease respondent burden
  - Because fewer survey questions need to be asked
- ...reduce measurement error (Boase and Ling 2013, Scherpenzeel 2017)
  - Because of reduced recall errors and social desirability

# Can We Answer Traditional Social Science Research Questions with Passive Mobile Data Collection?

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- How do parolees recently released from prison reintegrate into society? (Sugie 2018)
- What influence has unemployment on social participation? (Kreuter et al., under review)
- How do refugees use smartphones in integration efforts and search for a job? (Keusch et al., under review)

# Context

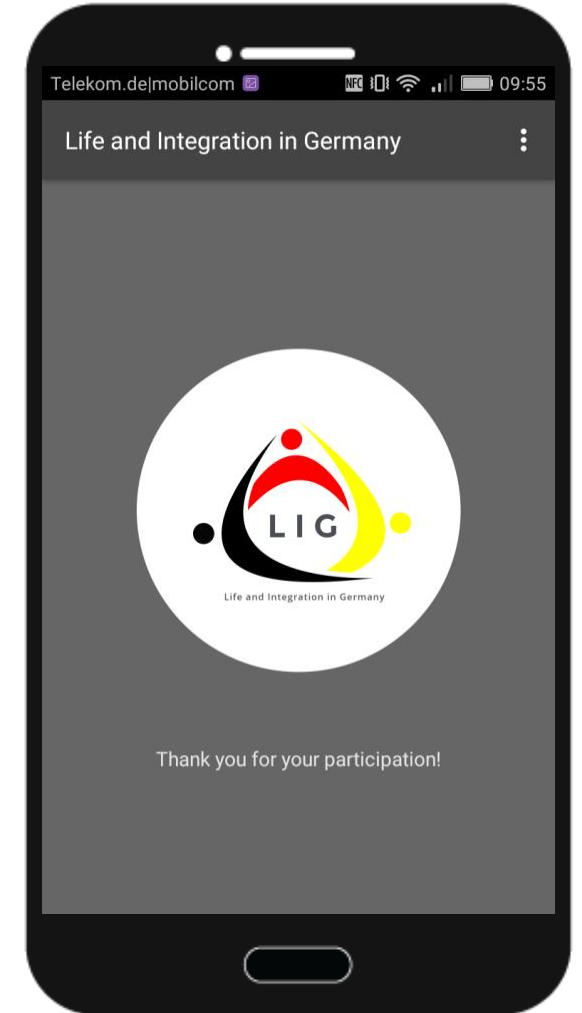
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- Over 1.2 million refugees arrived in Germany since 2015 (BAMF 2017)
- Policy-makers intend to design effective integration concepts
  - To do so, they require credible information on needs, aspirations, and life circumstances of refugees
- Using traditional survey methods for recruiting and interviewing refugees as well as longitudinal tracking is not trivial (Morville et al. 2015; Tingvold et al. 2015)



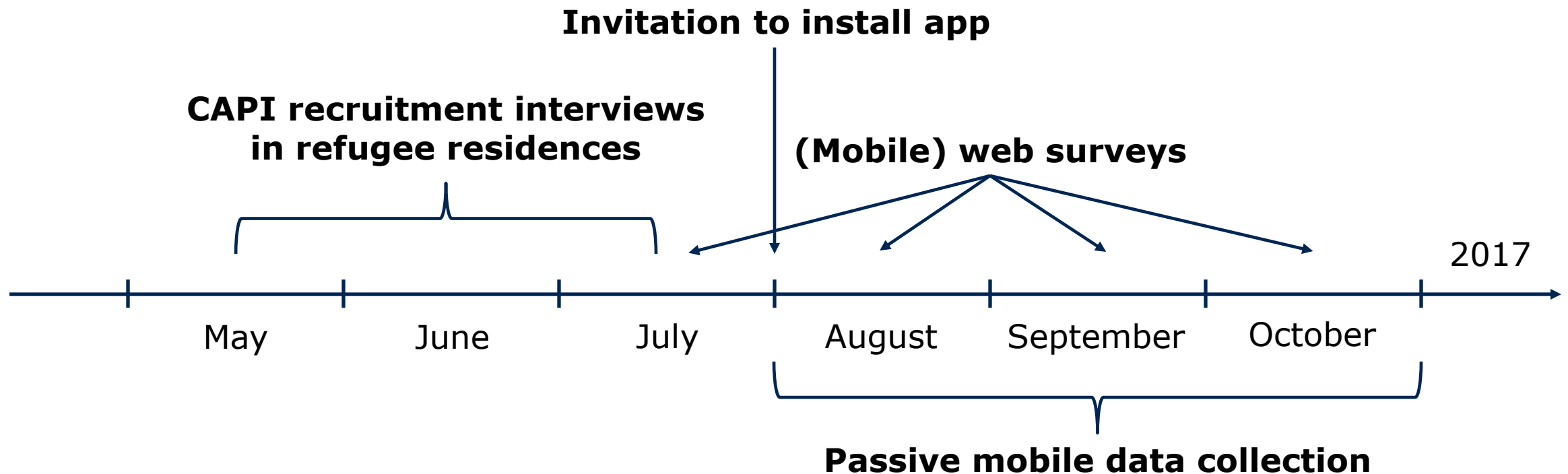
# Life and Integration in Germany (LIG)

- Case study on feasibility of smartphone data collection for refugee research
  - Combining methodological questions with substantive questions on mobility, social integration, and job search
- Target population: Arabic and English-speaking refugees (18+) living in residences for temporary accommodation (>10 people from target pop.)
  - 3 districts in Baden-Wuerttemberg
- 5 month data collection with initial F2F interviews followed by (mobile) web surveys and passive mobile data collection



# Study 2: LIG Timeline

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# CAPI Recruitment

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- 529 CAPI interviews in English & Arabic in residences for temporary accommodation (“Unterkünfte zur vorläufigen Unterbringung”)
  - 75% male, 60% <30 years
  - 37% from Syria, 22% from Iraq, 21% from Gambia
  - 95% own smartphone
- Topics:
  - Flight history & refugee/asylum status in GER
  - Big five (CASI)
  - Smartphone ownership & usage
  - Demographics
- At end of interview, *Rs* were asked for contact information (phone number and/or email address) and consent to be contacted again for follow-up studies

# (Mobile) Web Surveys

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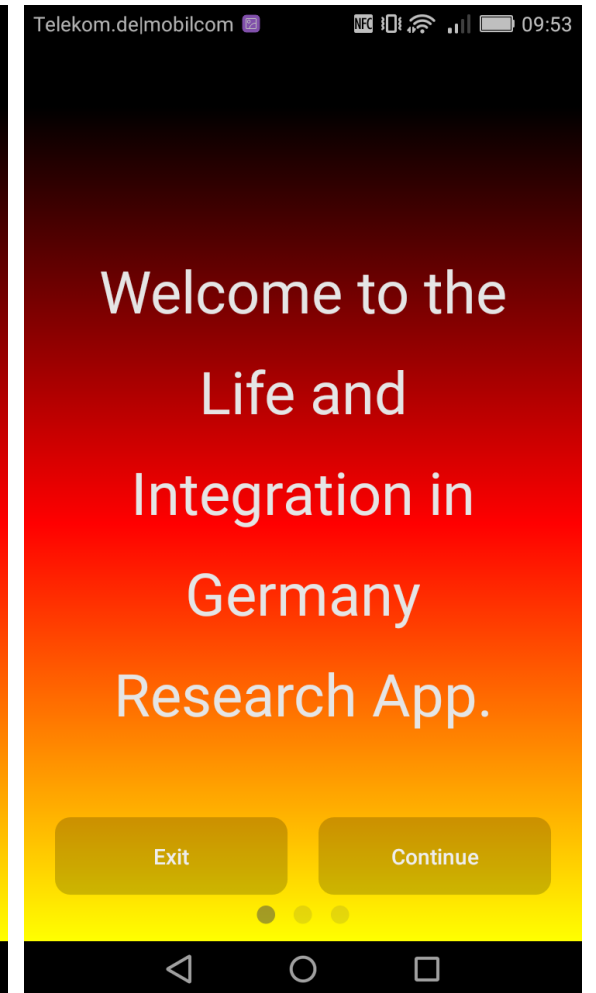
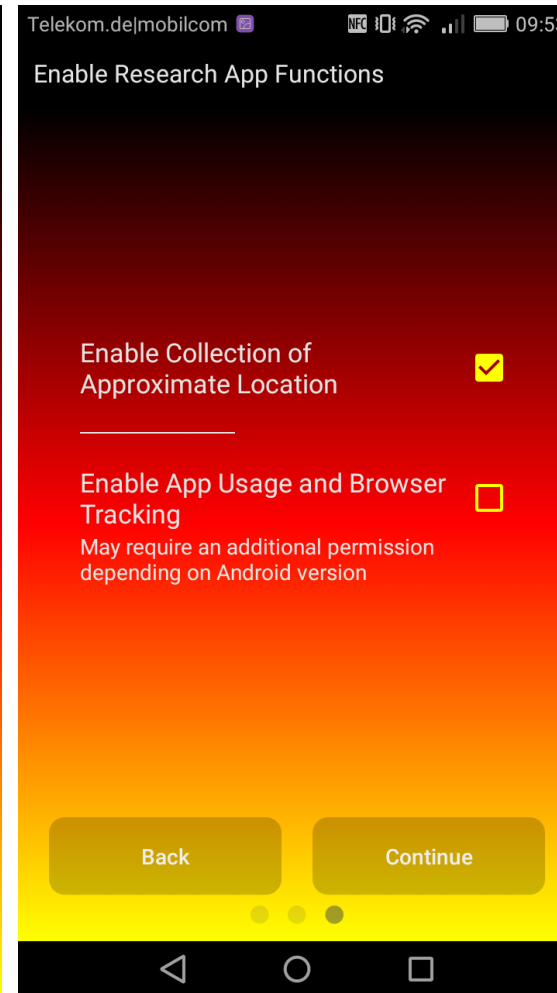
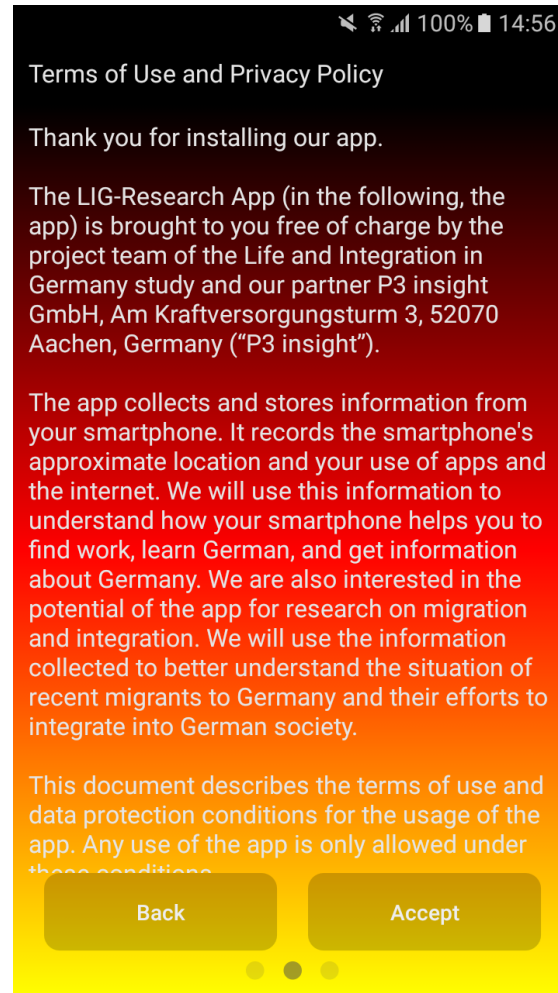
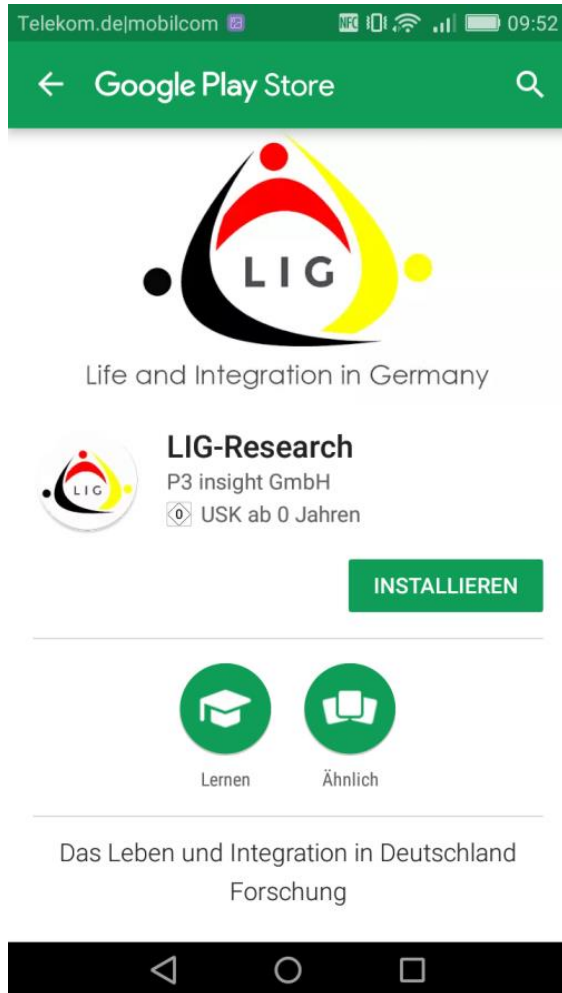
- 468 refugees with valid contact information invited to participate in four 5-min follow-up (mobile) web surveys
    - Invitations sent via WhatsApp and email
    - Questionnaires optimized for smartphones
    - Questionnaires available in English & Arabic
1. Labor market integration, language proficiency, use of Internet and apps for integration purposes (RR: 24%)
  2. Mobility, expectations about future, personality (RR: 11%)
  3. Political attitudes (“Wahlomat”) (RR: 9%)
  4. Labor market integration, language proficiency, use of Internet and apps for integration purposes (RR: 8%)

# LIG App

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- LIG Android App developed by P3 insights (English & Arabic)
- RQ: How do refugees use smartphones in integration efforts (e.g., using language course apps, online dictionaries, German news apps) and search for a job?
- Three months of passive mobile data collection
  - Approximate location (every 15 minutes)
  - Internet & app usage (no content!)
- Experiment: conditional 30€-incentive for having app installed for full 3 months vs. no incentive
  - (Control group also received incentive at end of study period)

# LIG App



# Ethics & Data Security

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- Study design reviewed and approved by ethics commission of University of Freiburg
- Biggest concern: Passively collected data considered very sensitive
  - Solution: level of granularity allows to observe behavior necessary to answer substantive research questions but without exposing individuals
- App required multiple consent steps
  - Consent to be contacted again at end of CAPI
  - Google Play Store
  - Acceptance of T&C in app
  - Separate opt-in for both location and Internet & app usage
- During invitation phase phone hotline available, e-mail, website
- Data encrypted before transfer
- Data stored in Germany

# LIG App

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- 27 out of 417 Android smartphone users with valid contact information downloaded app
  - Incentive treatment clustered by residence/city
- Installation rates:
  - 30€ incentive: 8.4%
  - No incentive: 5.2%
- Treatment effect: +3.2pp (n.s.)



# Do Smartphone Users Differ From Non-Users?

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- Mobile web surveys DV: Ownership of smartphone
  - With every ten years of age, average predicted probabilities of owning smartphone decreases by 2 p.p.
  - Average predicted probabilities of owning smartphone 23 p.p. lower for refugees from African countries (except Gambia) compared to Syria
  - Gender, relationship status, education, reading proficiency, and asylum status do not matter for smartphone ownership
- Passive mobile data collection DV: Ownership of Android smartphone
  - None of explanatory variables predict Android smartphone ownership

# Do Participants Differ From Non-Participants?

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- Mobile web surveys DV: Participation in at least one web survey
  - Gambian refugees on average 15 p.p. less likely to participate than refugees from Syria
  - With each additional year of education, average predicted probabilities increase by 2 p.p.
  - Low reading proficiency reduces average predicted probabilities by 13 p.p.
  - Positive asylum decision increases predicted probabilities by 15 p.p.
  - Accessing Internet on smartphone regularly increases average predicted probabilities by 23 p.p.
- Passive mobile data collection DV: Installation of LIG app
  - Low reading proficiency reduces average predicted probabilities by 6 p.p.

# Conclusion

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- Large majority of refugees owns smartphone and willing to share contact information for future research
- Participation rate in mobile web surveys between 8 and 24%
  - Strong attrition after first survey
- Refugees seem to be skeptical towards passive mobile data collection
  - Higher incentive and personal help with installation could increase participation rate but might be coercive

# Limitations & Next Steps

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- Very limited budget & resources
  - Non-probability sample of refugees in selected residences in southwest GER
  - Only two languages (English & Arabic)
  - No incentive for mobile web survey participation
- Very limited set of variables available for bias analysis
  - Coverage error estimates rely on assumption that smartphone ownership is not correlated with participation propensity in CAPI survey
- To-do: In-depth analysis of app data

# Thank You!

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## **Florian Keusch**

University of Mannheim

School of Social Sciences

Statistics and Methodology

 [f.keusch@uni-mannheim.de](mailto:f.keusch@uni-mannheim.de)

 <http://floriankeusch.weebly.com/>

 [@floriankeusch](https://twitter.com/floriankeusch)