Assessing Mobile Instant Messenger Networks with Donated Data

Keywords: Social network analysis, social media, survey research, data donation, social movements

Extended Abstract

Social media play an increasingly important role in civic and political participation across democratic societies (Boulianne, 2018). Most of the research on social media and social movements focusses on the "traditional" social media platforms such as Twitter (Abdul Reda et al., 2021; González-Bailón & Wang, 2016), and, to a lesser extent, Facebook (Valenzuela et al., 2018) but largely ignores *mobile instant messenger services* (MIMSs) such as WhatsApp, Signal and Telegram, which not only play an increasingly important role in social movements (Montag et al., 2015), but meanwhile rival social media platforms in popularity (Oberlo, 2020). The relative popularity of MIMSs thus stands in sharp contrast to the available empirical knowledge on these platforms, giving these networks the status of "elephant in the room" in the field of social media research. This is problematic because not only the nature of social interaction on MIMSs is likely different from other social media, but also the network topology, given the prominence of groups.

A key reason for the scarcity of research is that in contrast to traditional social media platforms, MIMSs are hardly accessible to researchers since they typically lack a public web interface and any centrally collected data are proprietary. The scarce empirical research on MIMSs focusses primary on publicly accessible Whatsapp groups in political contexts (Resende et al., 2019), or relies on surveys among small convenience samples (Agrawal, 2020). Research on Telegram tends to be somewhat more comprehensive but is still restricted to public groups and channels (Kermani, 2020), or focusses on fringe groups (Urman & Katz, 2020) rather than the general population. Consequently, this research provides little guidance with regard to the overall network topology of instant messenger networks: we lack knowledge about even the most basic topological features of the societal-scale instant messenger network such as the degree distribution (number of contacts per user) or the degree of clustering, which will be strongly dependent on the group structure.

While MIMS data are not directly accessible to researchers, the EU General Data Protection Regulation grants *users themselves* the right to electronic copies of their data. Taking advantage of this fact, we employ the innovative approach of *data donation* respondents of a high-quality panel in the Netherlands to collect user data while preserving their privacy (Boeschoten et al., 2020). Focusing on Whatsapp as the most popular MIMS, this study collects the first measurement of MIMS usage on a nationally representative sample.

We report first results for a sample of around 750 respondents surveyed in early 2023. Given the scarcity of empirical knowledge on the structure and usage of MIMS networks, we focus on describing core features of the network topology, the group structure (see Fig. 1), and individual usage patterns. Furthermore, we take advantage of the data already available on panel respondents from earlier waves to study how MIMS usage relates to, on the one hand, socio-economic differences (given that exiting research mostly studied very specific groups), and on the other hand, political participation.

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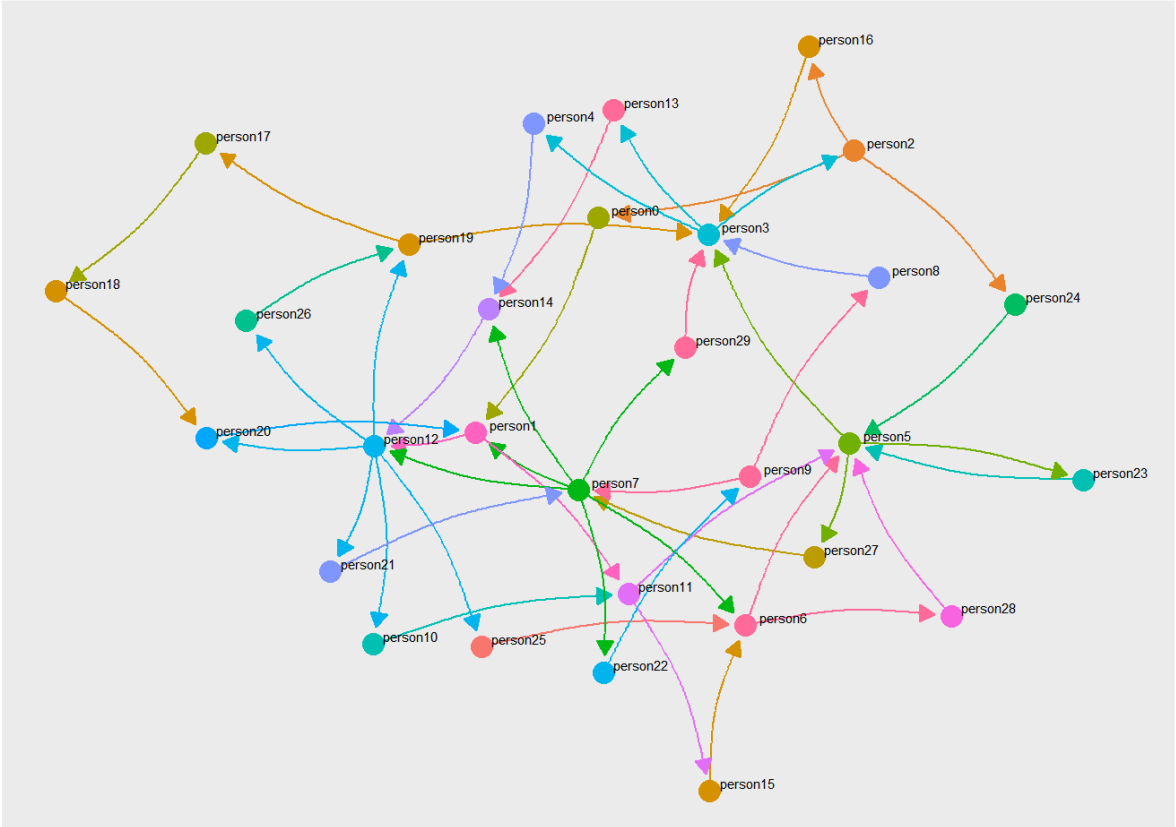

Figure 1: A network of conversations in a Whatsapp group. Based on pilot data collected by the authors in 2022.