

Understanding Privacy Concerns of WhatsApp

Users in India

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OVERVIEW

WhatsApp is a leading platform for mobile messaging with the largest user base being in India, yet research on Indian perspectives towards privacy and security in social networking platforms is sparse. WhatsApp incorporates features which pose privacy challenges, including Last Seen, Live Location, and personal profile information. We implemented a survey, querying both privacy attitudes and privacy behaviors, with 213 Indian participants. We found the majority of participants reported that they actively use the privacy controls provided by WhatsApp to restrict access to their information. We provide visualizations of our raw results and initial recommendations.

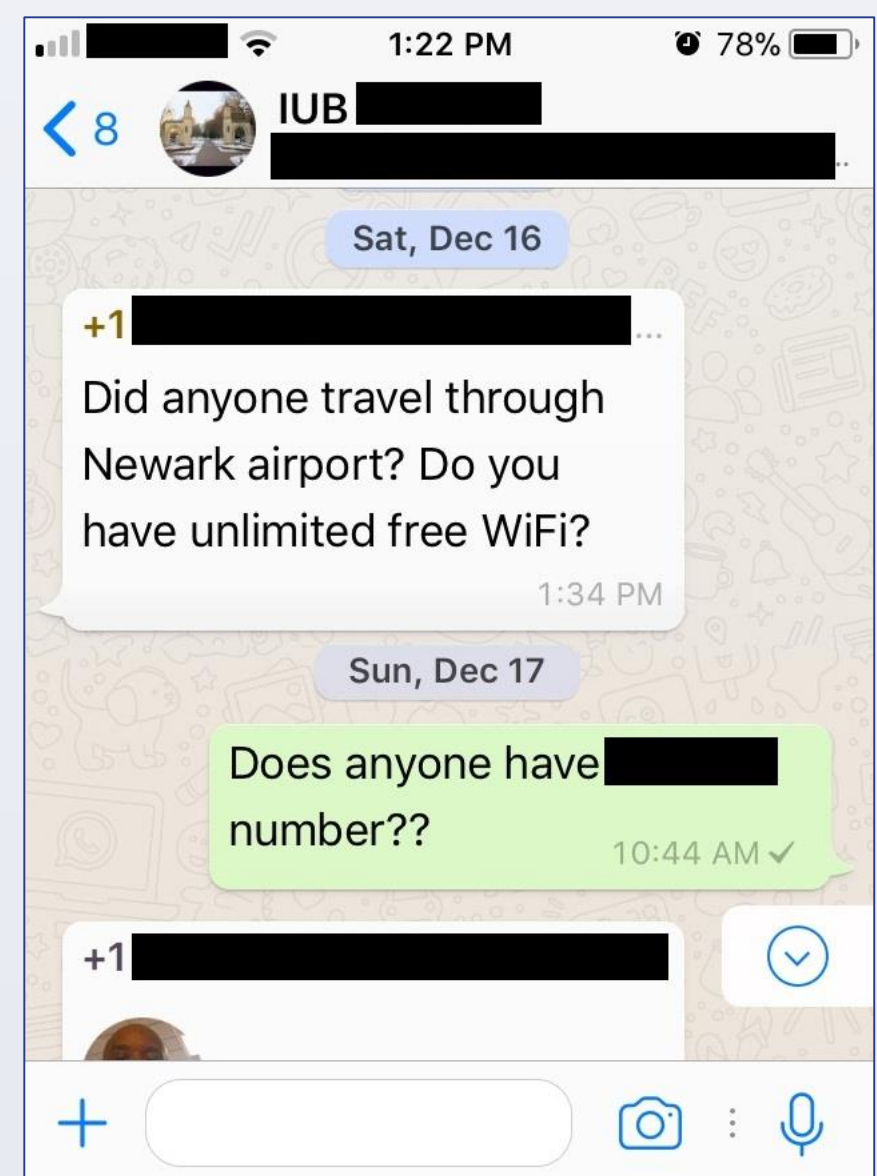


Fig. 1: iOS interface of a WhatsApp group (2017)

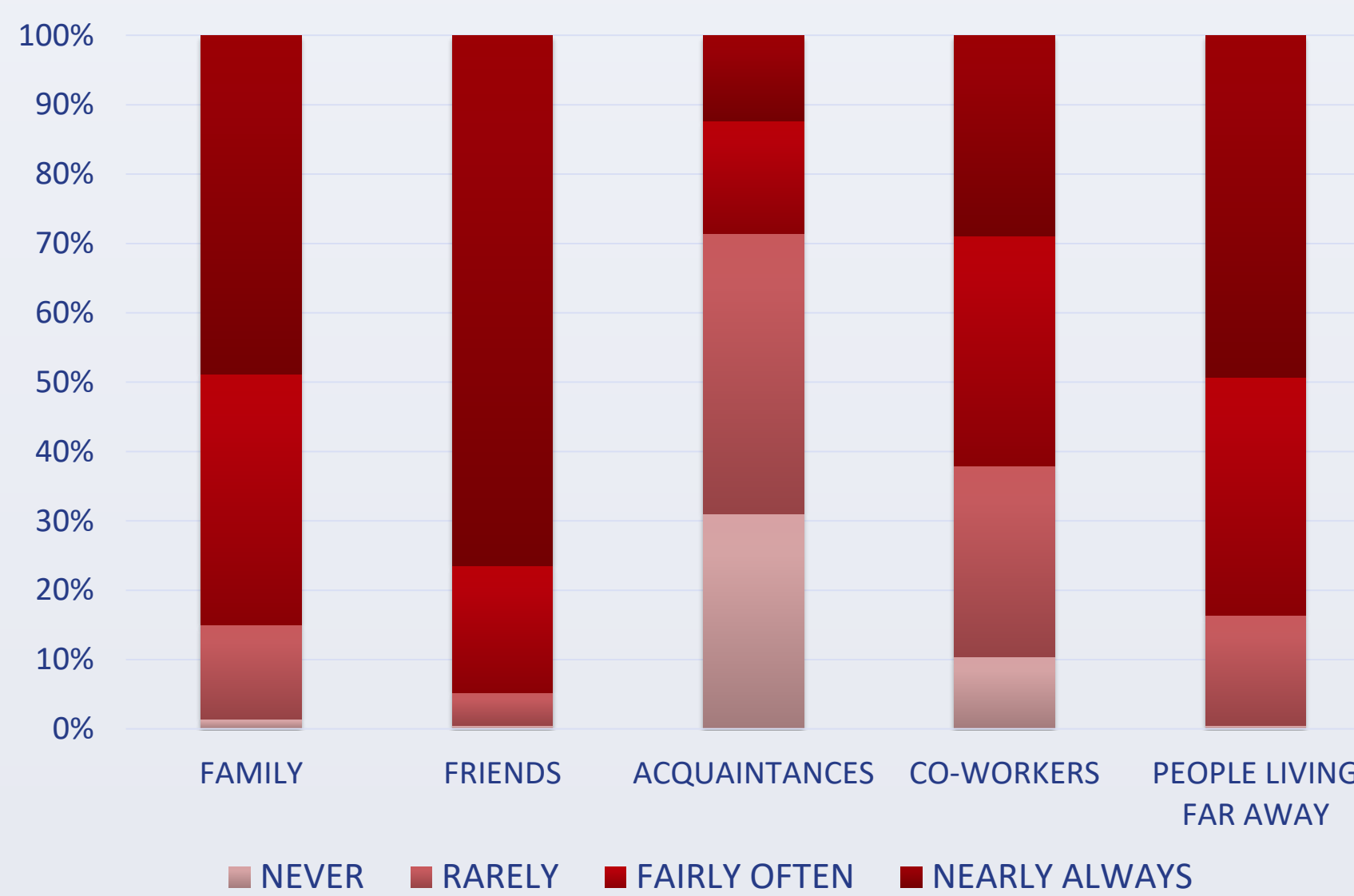


Fig. 2: The scope and frequency of information sharing as reported by participants

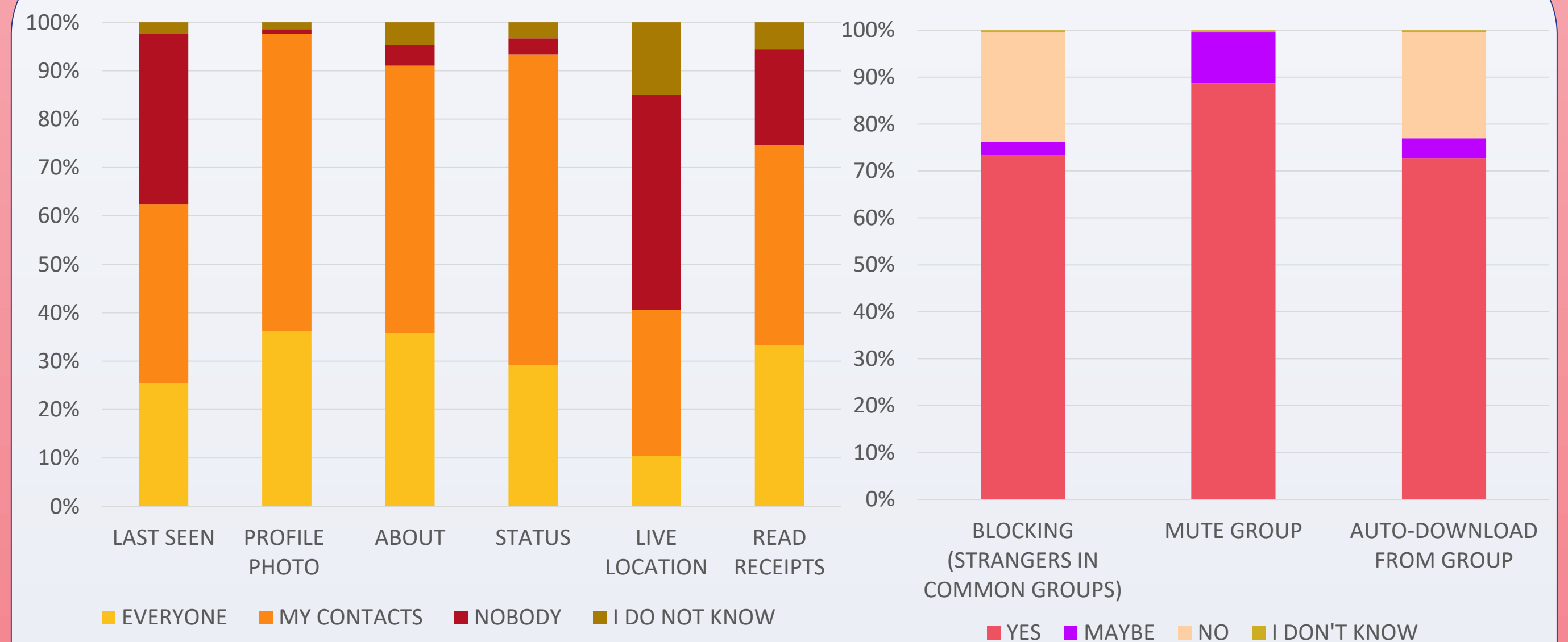


Fig. 3: Privacy settings across different features

Fig. 4: Privacy settings in a group

SHARING AND DATA USAGE

- Participants reported controlling data sharing both by data type and by recipient.

COMPARATIVE CONCERNS

- 35.21% of participants responded that they were concerned about being contacted by people that they did not know which is much lower than the Saudi participants in previous work [2]
- Location data was the least likely to be shared, with Live Location being the least used feature. This is similar to location privacy concerns among US and UK study participants [1]

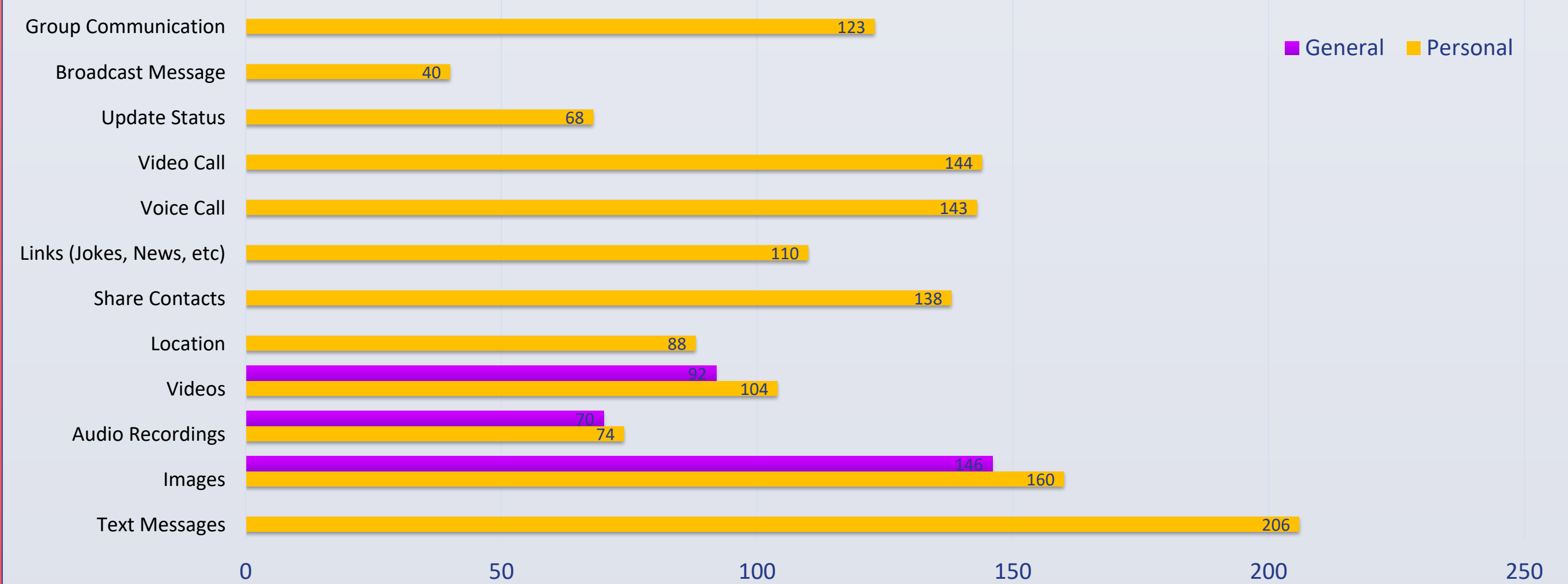


Fig. 5: Frequency of WhatsApp usage across different contact groups

RECOMMENDATIONS

Privacy and security are of significant concern in the largest market for WhatsApp. Participants were aware of data sharing and used access control to limit sharing of information. Participants expressed concerns that could be resolved by opt-in privacy control and privacy by default.

RESPECT CULTURAL REQUIREMENTS

- While Indians had a moderate amount of concern about being contacted by strangers they were exposed to only via groups, it was significantly higher for Saudi women.

GROUP CONTROLS ARE NEEDED

- Universities, schools, and companies use groups in India and Saudi Arabia. The settings developed under western assumptions about autonomous social use are inappropriate.
- Allow **by-group and per individual customization** of features such as 'Last Seen', 'Read Receipts' and 'Status'.
- Enable **access control** before adding users to a group involuntarily with opt-ins for group information sharing.

PRIVACY AND SECURITY AWARENESS CREATE RISKS TO ACCEPTABILITY

- Inform users about privacy settings and options, possibly with periodic privacy recommendations detailing the impact of such settings.

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- [1] Steven Bellman, Eric J Johnson, Stephen J Kobrin, and Gerald L Lohse. 2004. International differences in information privacy concerns: A global survey of consumers. *The Information Society* 20,5(2004),313-324.
- [2] Yasmeen Rashidi, Kami Vaniea, and L Jean Camp. 2016. Understanding Saudis privacy concerns when using WhatsApp. In *Proceedings of Workshop on Usable Security (USEC16)*.
- [3] Manish Singh. 2017. WhatsApp hits 200 million active users in India. (Feb 2017). <http://mashable.com/2017/02/24/whatsapp-india-200-million-active-users/>

METHODOLOGY

Research Questions

- What concerns do Indian Mobile Instant Messaging (MIM) users have while accessing the privacy and control settings?
- Have new features in social media such as Live Location sharing affected the acceptability of WhatsApp?
- How do Indian users manage issues associated with one-sided connections?
- How does this differ from previous findings for other users of other social network systems in a different cultural setting?

Survey Design

- 80 survey questions
- Privacy perceptions and behaviors for features and settings
- Demographics

Recruitment

- Direct and Group emails
- Advertisement over social media and other forums
- Snowball sampling

Analysis

- Qualitative analysis of open questions and comments
- Quantitative analysis of survey results

Results

- Privacy concerns over certain features significantly greater than others
- Culture plays an important role in privacy decisions
- Proposed recommendations for platform improvement

FINDINGS

PRIVACY CONCERNS

- The most widely used WhatsApp feature was the **Blocking Feature (73.24%)**
- 198 participants (**90.57%**) indicated they do use the **Read Receipt** feature
- 132 participants (**63.46%**) do not hide their **Profile Picture** to all WhatsApp users.
- Blocked individuals were often strangers, introduced via the **use of groups**.

ONE-SIDED CONNECTIONS

- Participants indicated **more sensitivity** for privacy when in **groups**.
- Discomfort expressed about being added to a group **'without consent'** which WhatsApp inherently does.

NEW FEATURES

- Live Location (27.91%)** was the least used feature with low acceptability. The reasons not to use included effects on phone's battery life, which does not impinge privacy. A reason to use may be personal safety, based on open answers.
- Participants were also more likely to share data with people in their Contact than with Everyone, with Live Location being shared to a controlled group.