

## **Mobile notifications as an information medium: an ethnographic study of mobile human-information interaction attitudes of Egyptian and German higher education students**

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### **Abstract**

This study explores the impact of mobile notifications on the information behavior and interaction attitudes of higher education students in Egypt and Germany. Using an ethnographic approach, the research investigates how mobile notifications serve as a crucial medium for information delivery, transforming user interaction with information. The study identifies significant challenges posed by the influx of notifications, such as information overload, distraction, and stress. It also examines the skills and strategies students employ to manage and prioritize notifications, emphasizing the need for improved mobile information literacy (MoIL). Interviews and observations reveal varied user engagement with notifications, highlighting the dual role of notifications as both end-point information containers and triggers for deeper information-seeking behavior. The findings suggest that while notifications enhance efficiency and immediacy in accessing information, they also necessitate new coping

mechanisms to mitigate negative impacts. This research contributes to the field of information behavior by offering insights into the effective use of mobile notifications and proposing better notification system designs to foster enhanced information literacy in an increasingly connected world.

## **Keywords**

Mobile Notifications, Information Behavior, Human-Information Interaction (HII), Ethnographic Study, Higher Education Students, Mobile Information Literacy (MoiL)

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## **2. Research Problem**

The surge in smartphone and app usage has led to an overwhelming increase in notifications, posing significant challenges for users in managing and prioritizing these alerts. This can result in reduced productivity, shallow information-seeking behavior, and potential smartphone addiction. Despite the importance of notifications, there is a need to understand how users engage with and respond to them. This study aims to explore user engagement with mobile notifications, identify patterns of information behavior, and uncover users' effective coping mechanisms. The goal is to enhance mobile information literacy and improve the overall user experience in managing notifications.

### **2.1. Research Question**

*How do users engage with mobile notifications as an information medium, and what are the patterns of their information behavior in response to these notifications? What are their best practices and coping mechanisms for managing the influx of information?*

This study contributes to the field of information behavior by looking at these changes and giving useful information about the skills and strategies needed to get the most out of mobile notifications. The results will help us make better notification systems and teach people how to use information in a world that is becoming more and more connected. This change in the way things are thought about makes it clear that we need new theoretical frameworks to understand and help with the changing ways people do information research.

### **3. Research Method and Design**

This study is grounded in qualitative research, aiming to understand students' information behavior in a normal environment, capturing a better picture and enhancing contextual understanding. Qualitative research allows for the investigation of hidden patterns, feelings, and beliefs that quantitative methods may miss (Hammarberg, Kirkman, & de Lacey, 2016; Lewis, 2015). The study applies an adaptive nature that allows for adjustments based on emerging insights, which have undergone various developments and refinements. This approach provides a deeper understanding of mobile information literacy among students from diverse backgrounds. Using ethnography as a research method, this study looks at the complicated link between mobile notifications and how people look for information (O'Reilly, 2009). Applying the Thick description ethnographic methodology developed by Clifford Geertz to understand actions within cultural contexts (Geertz, 2003), to capture layers of context and meaning that inform human behaviors and interactions (Kharel, 2015). This approach supports cross-cultural studies by providing a rich portrayal of cultural practices and beliefs, enabling comparisons and contrasts between different societies. It also aids in capturing the emic perspective, which is essential for understanding cultural phenomena from an insider's perspective. (Usunier & Sbizzera, 2013).

The data gathered for this research is part of a larger PhD project studying Mobile information literacy (MoiL) among higher education students (Elzalabany, 2024). The main data collection instrument for this study was interviews, which are considered the most appropriate to capture people's real-life experiences and the strategies they use when dealing with mobile notifications (De Fina & Perrino; Mann, 2016; Peters & Halcomb, 2015). The researcher recorded most of the interviews, which varied in length, ranging from 20 minutes to one hour, and later transcribed them using a word processor. During the unrecorded interviews, the researcher took extensive field notes. The study sample comprised two groups with distinct differences in size; specifically, the sample consisted of two groups of 12 German and 21 Egyptian higher education students. However, the primary focus of this research was not on numerical parity but rather on the richness and depth of everyone's story. The English language was used to conduct interviews with German students, facilitating more seamless interactions. The Egyptian participants were interviewed in Arabic, specifically using the Egyptian dialect,

which helped to facilitate more seamless interactions. Nevertheless, the process of converting qualitative data into English presented intricate challenges. The translation took place while transcribing the data as this early stage gives the advantage of a better and deeper understanding of the data (Santos, Black, & Sandelowski, 2015). A Thematic analysis approach was used in this study to code and analyze the data systematically (Fugard & Potts, 2019; Vani & Permand, 2016). The coding process utilized a hybrid inductive/deductive approach (Proudfoot, 2023). In addition to Interviews, observation was used to capture the nuances of how users interact with notifications during the interviews, implying an interactive attitude toward by giving the participant tasks to do and ask them to show how do they react an how do they feel.

Although this research utilizes a subsection of data gathered originally for a PhD project aimed at exploring the cross-cultural nuances of mobile information literacy among German and Egyptian higher education students, through the analysis of this study, it became clear that the cross-cultural aspect is more subliminal and passive, particularly when focusing on the specific research question regarding mobile notifications.