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Swipe Dynamics Across Generations: An Analysis of Touchscreen Interaction

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Touch-based interaction is central to smartphone use. Research on human–technology interaction has traditionally focused on typing behavior, often through the analysis of timing and spatial characteristics —as exemplified by large-scale studies such as Palin et al. (2019). In contrast, swipe gestures remain understudied, despite their ubiquity in mobile interaction.
This study examines the execution of horizontal and vertical swipes using SMoDS, a custom Android-based application developed for the high-resolution recording of touchscreen data. The platform captures gesture duration and touch pressure during controlled tasks.
Participants were assigned to two generational groups: Digital Natives (DN) and Digital Immigrants (DI) (Prensky, 2001). Each completed both swipe conditions. The goal was to assess whether gesture dynamics vary by direction and user profile.
Results indicate that, in DN, all measured parameters significantly differed between horizontal and vertical swipes. This suggests sensitivity to gesture type and a differentiated motor response. In DI, the distinction between swipe directions was not uniformly reflected across the set of measured variables.
The observed patterns suggest that generational factors may influence how users differentiate between touchscreen gestures. Although preliminary, these results underscore the value of extending motor-level analyses to a broader repertoire of digital actions. Swipe-related measures could provide useful insights into individual differences in sensorimotor engagement with mobile technology.

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