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I-CReST 2025:061-032 – Factors affecting User's Quality of Experience (QoE) Towards Graphical-based Authentication – A Systematic Literature Review

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ABSTRACT

Graphical-based authentication systems have emerged as promising alternatives to traditional text-based passwords since they enhance memorability and provide better protection against common cyber threats. Comprehensive research examining user perceptions when interacting with graphical-based authentication systems is limited. This paper conducts a systematic literature review (SLR) aimed at identifying the key factors influencing users' Quality of Experience (QoE) with GBA. Following PRISMA guidelines, we analyzed 48 relevant studies published between 2010 and 2024 from reputable digital libraries. Our results indicate five key factors impacting QoE: usability, accessibility, memorability, visual design, and legibility impact factor. Furthermore, the review highlights an increasing need for authentication design focused on QoE, which integrates subjective user preferences with objective usability metrics. The study concludes by offering insights for developing GBA systems that adhere to user-centered principles, ultimately enhancing both security and user satisfaction.

Keywords: Graphical-based authentication; Quality of experience (QoE); Usability; Shoulder surfing; Systematic literature review