2. Developing a Holistic UX Measure for Complex Web Applications: Integrating Perceived Usability, Emotional Response, and Cognitive Load.

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User Experience (UX) is a critical determinant of the success of web applications, influencing user satisfaction, retention, and conversion rates. While numerous methods exist to evaluate UX (e.g., usability testing, surveys), there is a lack of consensus on a standardized, quantitative, and holistic measure that can be efficiently deployed to capture the multifaceted nature of UX across different application domains. While established metrics effectively measure individual facets of user experience, a significant gap remains: there is no unified, holistic instrument that concurrently quantifies the pragmatic (usability), hedonic (pleasure/stimulation), and cognitive load dimensions of UX for web applications. This research aims to answer the following RQs:

RQ1. What are the core constructs (factors) that define a holistic user experience for complex web applications?
RQ2. How to develop a reliable and valid instrument to measure these constructs quantitatively?
RQ3. How to develop a reliable and valid holistic UX measure based on these instruments?
RQ4. How does the new instrument/measure perform compared to established scales (e.g., SUS, UEQ) in terms of validity and sensitivity to UX improvements?

This research will directly address the identified gap in UX evaluation by developing and validating a novel, holistic UX measure. By integrating the core constructs of perceived usability, emotional response, and cognitive load into a single, reliable measure, this thesis aims to provide researchers and practitioners with a powerful and efficient tool. The resulting framework will enable a more complete understanding of user experience, ultimately guiding the design of more effective, satisfying, and sustainable complex web applications.