



UX & UI Design



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Design

La obra "UX/UI Design" es un manual práctico de diseño de experiencia de usuario y interfaz de usuario, escrito por expertos en el campo. Incluye ejemplos de diseño y consejos para crear interfaces de usuario intuitivas y atractivas.

The Impact of Visual Hierarchy, Navigation Structure, and Minimalist UI Design on User Experience

Abstract

User Experience (UX) and User Interface (UI) design significantly influence user performance, satisfaction, and engagement in digital systems. This study investigates the combined effects of visual hierarchy, navigation structure, and minimalist UI design on task completion time, perceived usability, and user satisfaction in mobile applications. Using an experimental between-groups design, 120 participants interacted with four prototype mobile interfaces that varied in hierarchy clarity, navigation depth, and visual complexity. Results indicate that clear visual hierarchy and shallow navigation significantly reduce task completion time, while minimalist UI positively affects perceived usability and satisfaction. However, excessive minimalism negatively impacts navigation discoverability. The findings suggest that optimal UX results from balanced minimalism combined with strong structural guidance.

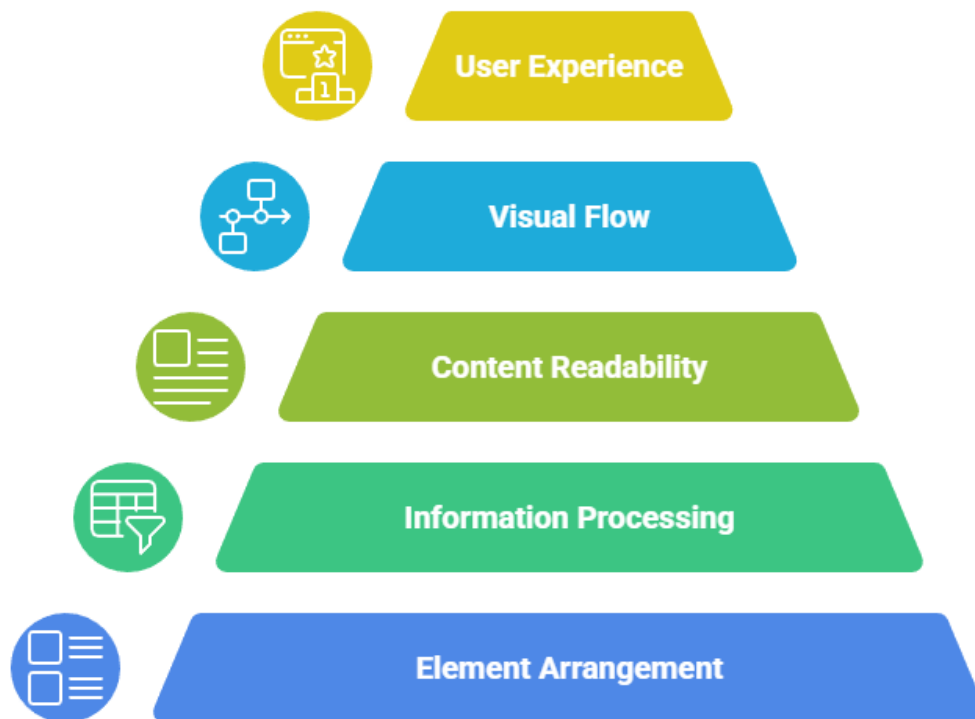
1. Introduction

With the rapid expansion of digital platforms, effective UI/UX design has become central to product success. Poor interface design leads to increased cognitive load, slower task performance, and reduced satisfaction. Conversely, intuitive interfaces improve usability and retention.

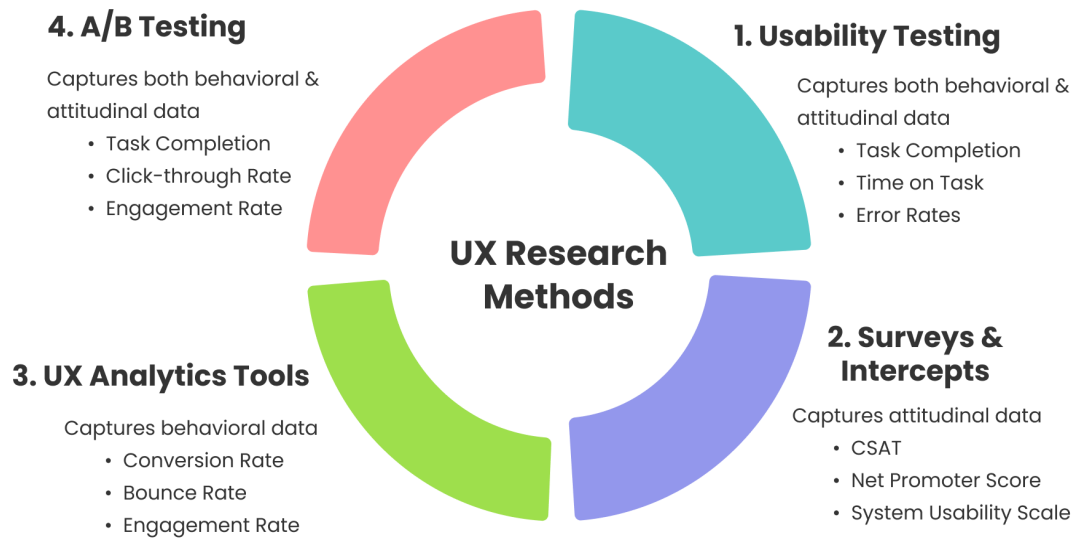
Three design factors frequently discussed in Human-Computer Interaction (HCI) research are:

Visual hierarchy

What is Visual Hierarchy in UI Design?



Navigation structure



Minimalist UI design

Although these factors are often studied independently, limited research examines their combined effects on both objective performance metrics (e.g., task time) and subjective measures (e.g., satisfaction).

This study aims to bridge that gap.

۲. Literature Review

۲.۱ User Experience (UX) and Usability

UX encompasses users' emotions, perceptions, and responses before, during, and after system interaction. According to ISO ۹۲۴۱-۲۱۰, usability consists of:



Effectiveness

Efficiency

Satisfaction

Efficiency is commonly measured via task completion time, while satisfaction is assessed through surveys such as the System Usability Scale (SUS).

۲.۲ Visual Hierarchy

Visual hierarchy refers to the arrangement of interface elements to guide user attention using:

Size

Color contrast

Spacing

Typography

Research shows that strong hierarchy reduces cognitive effort and improves scanning efficiency.

٢,٣ Navigation Structure

Navigation affects how users move through digital content.

Two common models:

Shallow navigation (few levels, broader categories)

Deep navigation (many levels, narrower categories)

UX Design	UI Design
Focuses on the holistic experience of the user.	Focuses on the specific visual touchpoints of the user.
Centers on strategy, structure, and interaction design.	Centers on surface-level aspects of design, including visuals.
Involves studying the user's journey, and designing information architecture.	Involves designing the tangible elements of the experience, such as the choice of elements and how they interact.
Outputs include personas, user journey maps, wireframes, prototypes.	Outputs include mockups, high-fidelity layouts, and prototypes.
Incorporates a user's environment, mood, and context.	It is more tangible as users directly interact with the UI.

Studies indicate shallow structures improve speed but may increase clutter.

ॡ, 4 Minimalist UI Design

Minimalism emphasizes:

Reduced visual clutter

Limited color palettes

Simplified components

Increased white space

Benefits:

Lower cognitive load

Improved aesthetic appeal

Risks:

Reduced discoverability

Hidden functionality

ॡ. Research Objectives

This study investigates:

How visual hierarchy affects task completion time.

How navigation depth affects task efficiency.

How minimalist design influences perceived usability.

Whether excessive minimalism harms usability.

The interaction effects between structure and aesthetics.

4. Research Questions & Hypotheses

RQ\): Does strong visual hierarchy