



CAPSI




**25TH CONFERENCE OF THE PORTUGUESE
ASSOCIATION FOR INFORMATION SYSTEMS**
São Miguel, Azores | 16–18 October | 2025

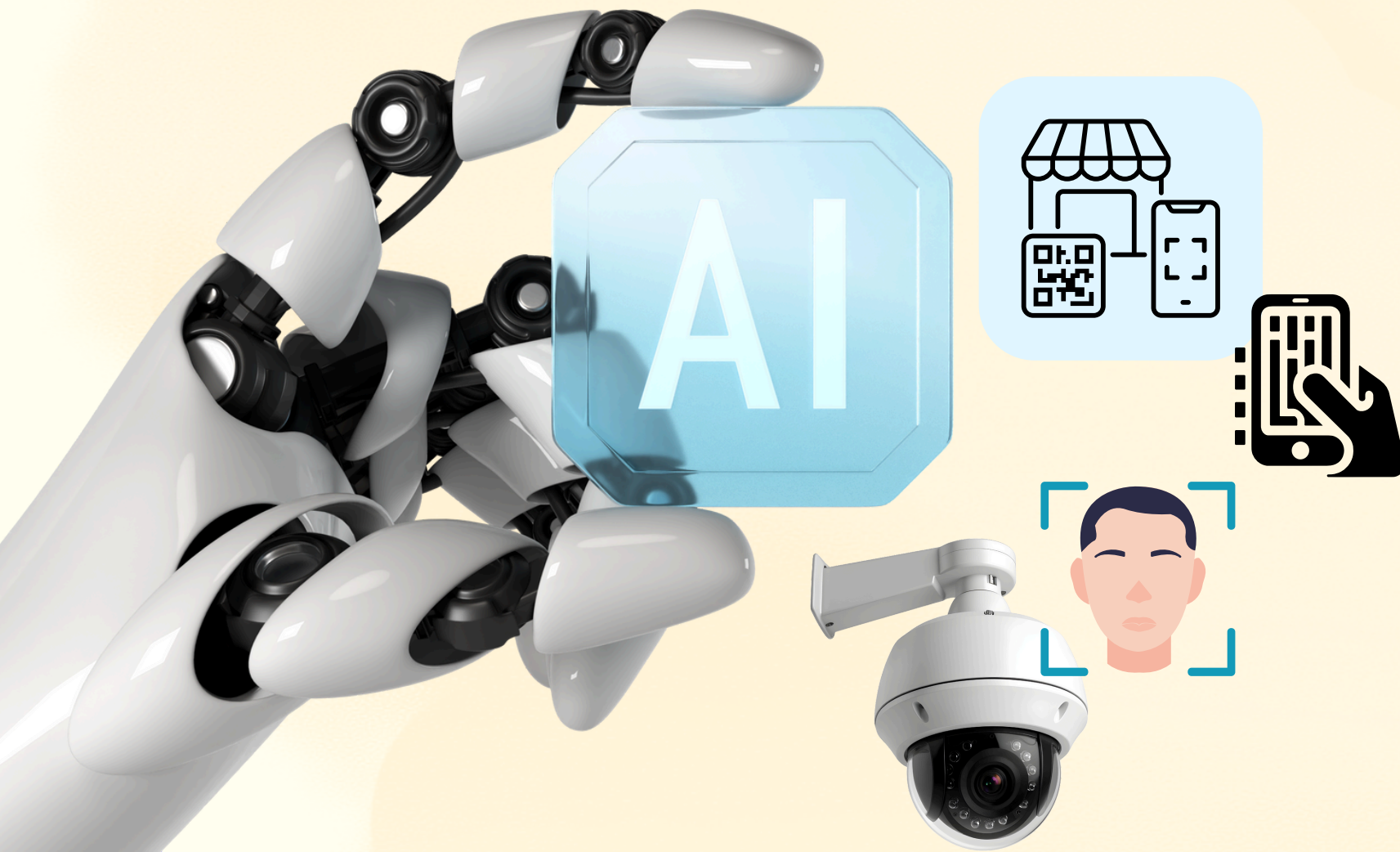
FROM ADOPTION TO AUGMENTATION

A Human Experience Framework for Smart Retail

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 **Presenter**

THE MOTIVATION



Smart retail integrates AI, IoT, and automation to reshape consumer experiences. Yet adoption **often fails due to emotional friction, trust deficits, and usability barriers.**

The study reveals five critical dimensions — **emotional resonance, trust and transparency, control and autonomy, usability and sensory accessibility, and social and ethical inclusion** — synthesized into the Augmented Retail Experience framework.



THE SMART RETAIL DISCONNECT

THE PROMISE



Smart retail aims to deliver personalized, seamless, and operationally efficient experiences through AI, IoT, sensors, and automation.

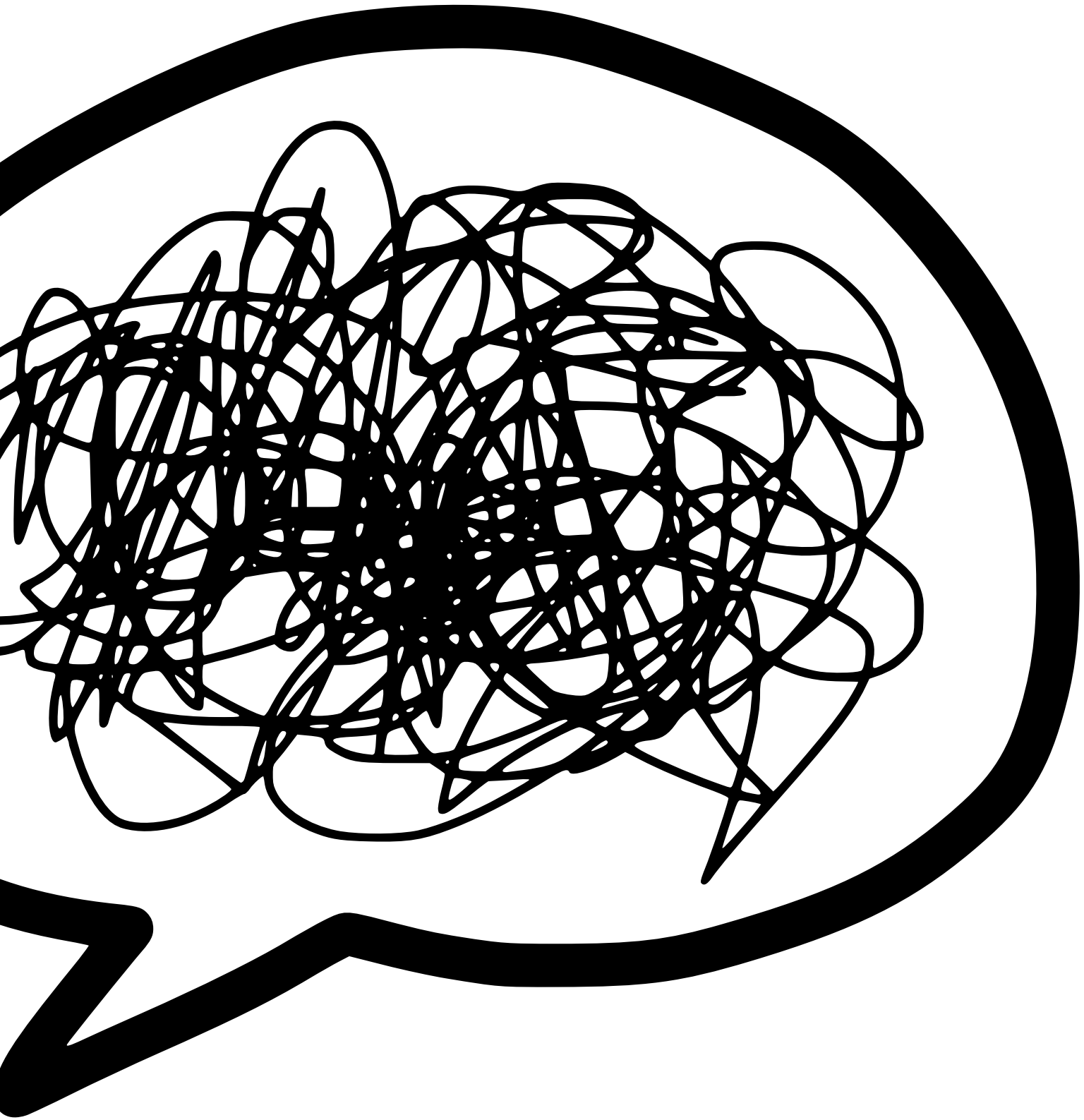
- Real-time monitoring and inventory management;
- Personalized content delivery;
- Automated checkout systems;
- Data-driven decision-making.

THE REALITY



Despite significant investment, adoption remains inconsistent. Many systems trigger avoidance or confusion rather than engagement.

- Emotional discomfort and loss of agency;
- Trust erosion from opaque systems;
- Digital exclusion of vulnerable users;
- Misalignment with user experience quality.



**Why do Smart Retail Systems
fail to sustain adoption when they
reach the human level?**

RESEARCH DESIGN

GRAY Literature Review

Trends, Statistics, Critical
Factors by Market Specialists

Sistematic Literature Review PRISMA

Critical factors
(success x failures)
Gaps in literature



Field Observation & Interviews

Smart Stores (3 smart stores)  
Tech Retail Fair (38 companies)  
18 Users  

Concept Model Proposal



OBJECTIVES

- **Identify** emotional, ethical, and usability barriers.
- **Understand** why users accept or reject smart retail systems.
- **Propose** a human-centered model: ARE – [Augmented Retail Experience](#).

RESEARCH DESIGN



Systematic Literature Review PRISMA

49 peer-reviewed articles analyzed from 495 initial results using rigorous PRISMA protocol and quality filters.



GRAY Literature Analysis

Strategic foresight reports from HSBC, WBCSD, Capgemini, and European Commission examined for industry trends.



Industry Insights

38 companies were interviewed at *Paris Smart Retail Exhibition*, capturing strategic perspectives and implementation challenges.



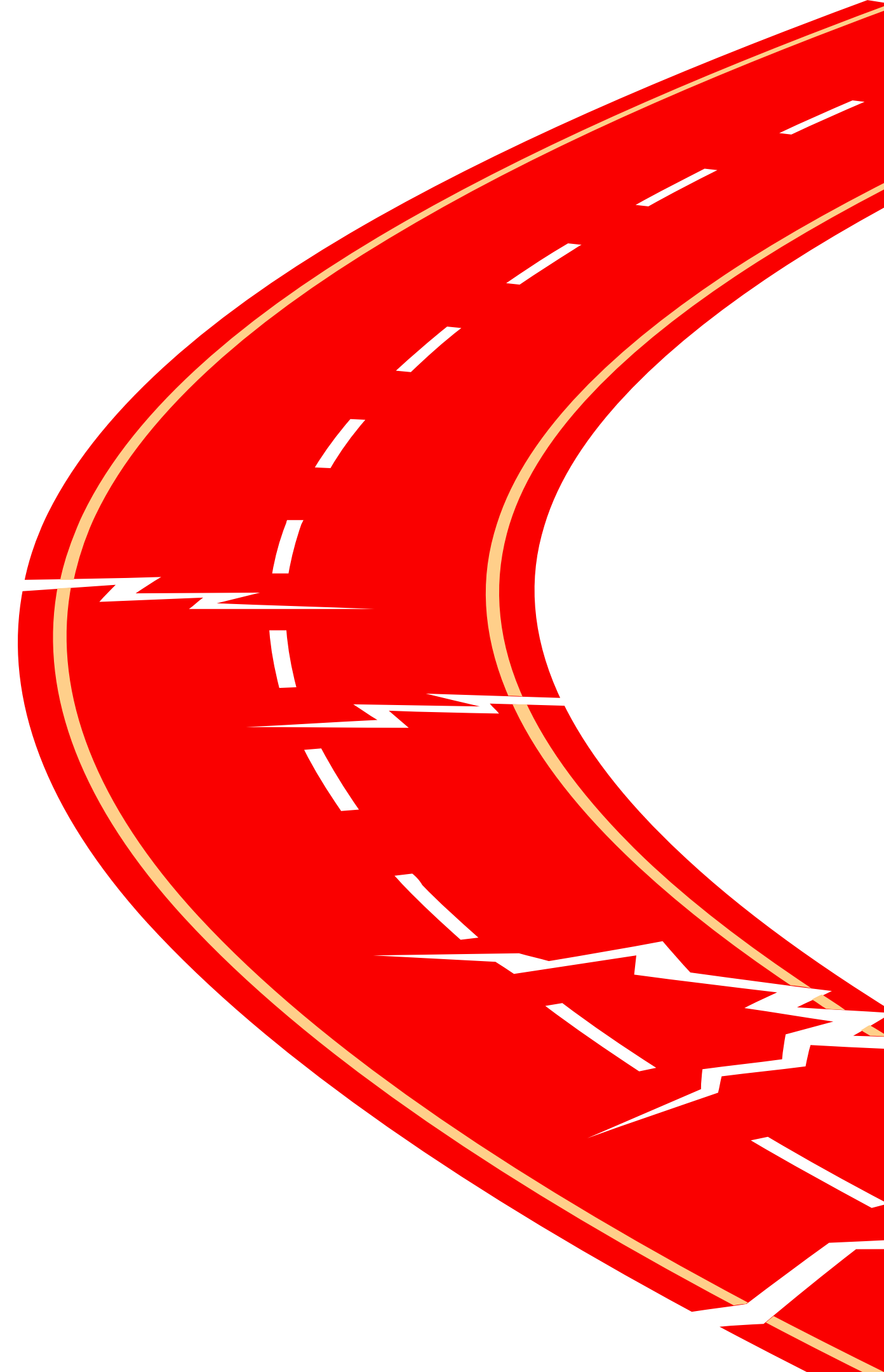
Field Observations and Interviews

Three smart stores visited (UK and Portugal) with 4 hours of behavioral observation(each) and 18 customer interviews.

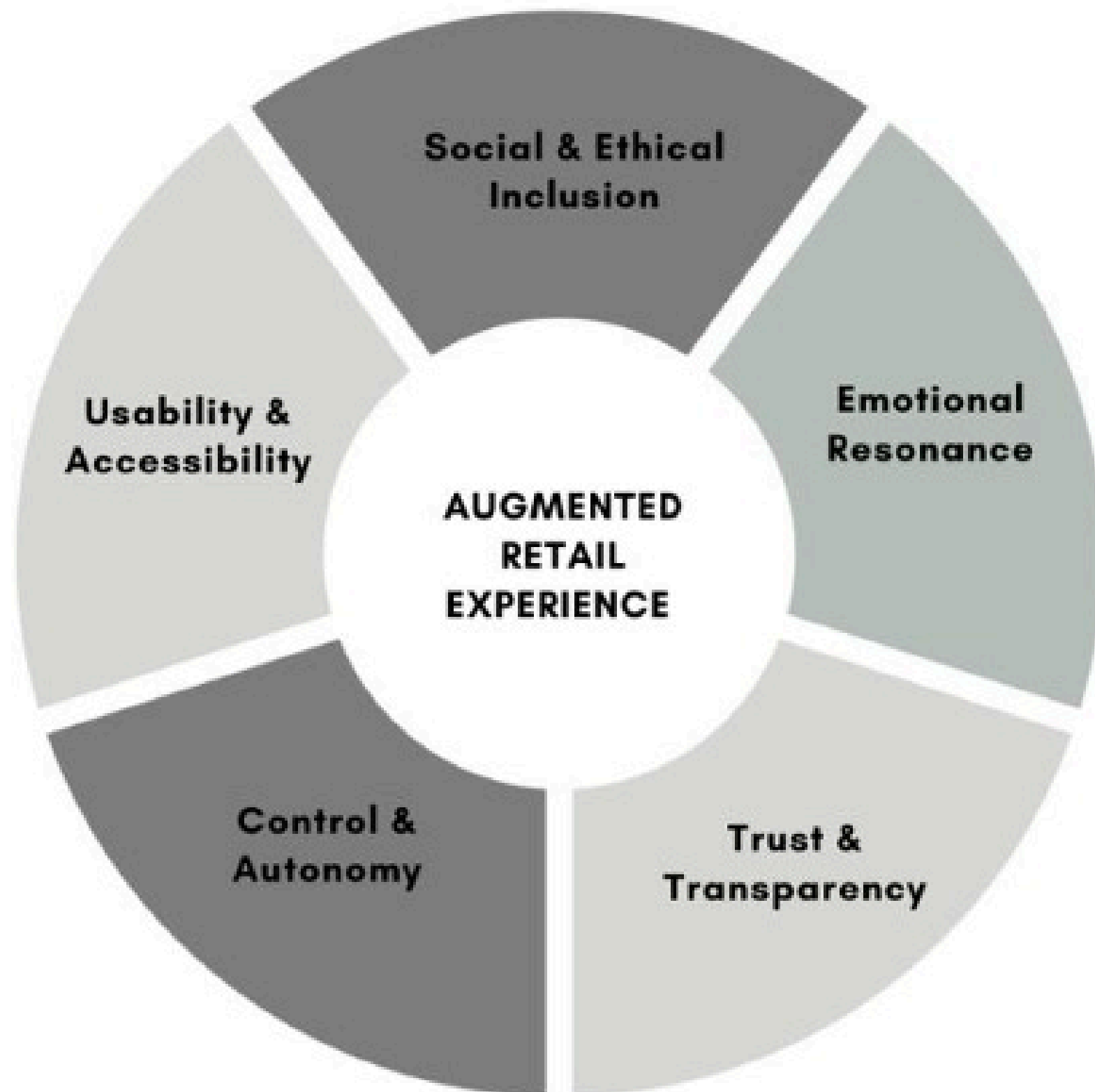
LITERATURE GAPS

Existing technology adoption and HCI models (e.g., TAM, UTAUT) focus on **cognitive and utilitarian factors**.

However, they **fail to explain emotional resistance, trust deficits, and inclusion barriers** that determine how users accept or reject smart retail systems.



CONCEPT MODEL PROPOSAL



1

Emotional Resonance

How users feel shapes how they adopt.

2

Trust & Transparency

No trust without clarity, no adoption without confidence.

3

Control & Autonomy

Technology must empower, not override.

4

Usability & Accessibility

If it's not easy or inclusive, it's not usable.

5

Social & Ethical Inclusion

Smart retail must work for everyone—or it doesn't work at all.

1 EMOTIONAL RESONANCE

Emotion Drives Technology Acceptance



Enjoyment & Flow

Gamified interactions and sensory immersion create positive emotions that compensate for perceived risks.



Aesthetic Appeal

Visual design and interface beauty generate positive emotions, increasing perceived value and acceptance.



Narrative Engagement

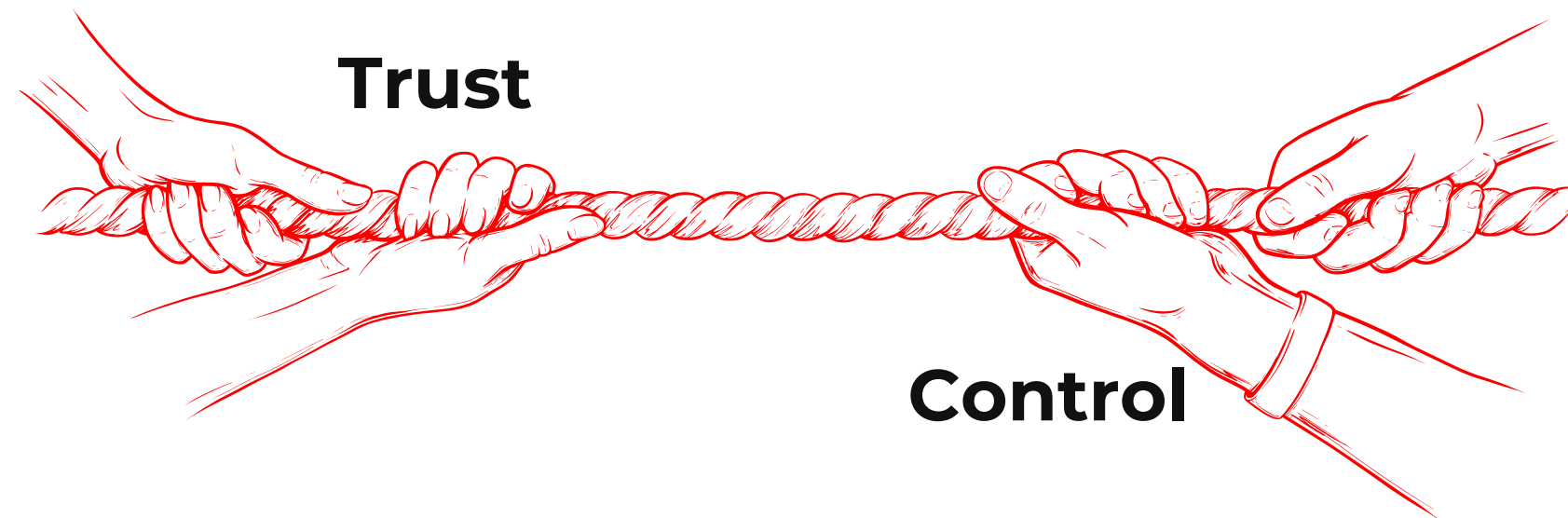
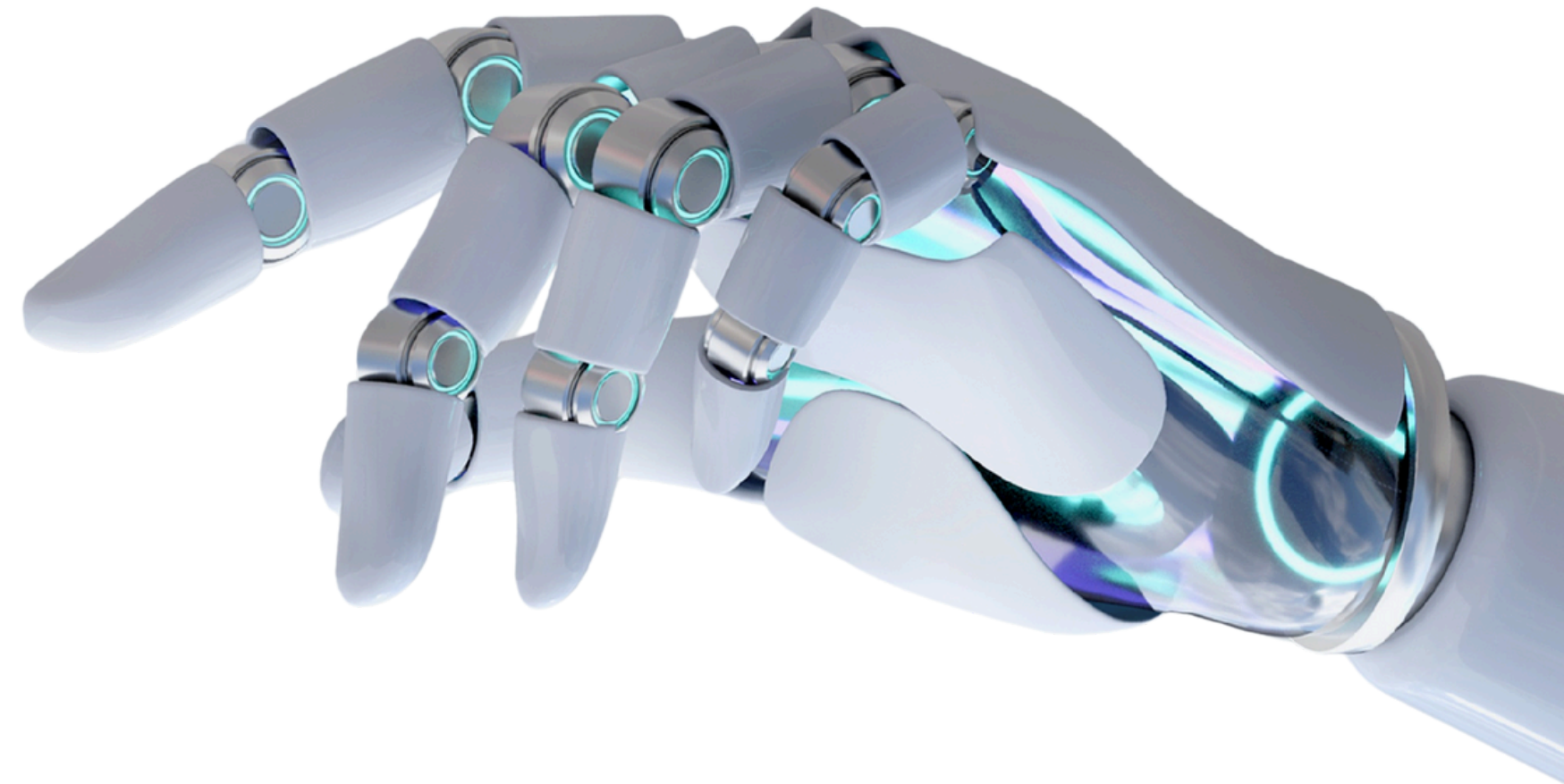
Story-driven product presentation in AR environments stimulates emotional memory and deeper connection.

2 TRUST AND TRANSPARENCY

The Trust Paradox

3 CONTROL AND AUTONOMY

Technology must empower, not overwrite.



Surveillance Concerns

Facial recognition and data tracking trigger fears of privacy invasion.

Control vs. Automation

High system autonomy can overshadow user decision-making, causing discomfort.

Transparency Gap

Algorithmic opacity reduces trust and perceived fairness in decision-making.

4 USABILITY AND ACCESSIBILITY

The Inclusion Gap

5 SOCIAL AND ETHICAL INCLUSION

Smart Retail must work for everyone - or it doesn't work at all



Home > News > TikTok

Published 17:24 24 Mar 2024 GMT

Elderly woman divides opinion as she rages over her 'hatred' for self-checkout machines

Self-checkouts aren't for everyone



Anish Vij

A video of an elderly woman struggling to work a self-checkout machine has seriously divided the crowd.

In a now-viral TikTok posted by @jvass424, we witness a very frustrated older woman who is seen yelling at a self-checkout machine for seemingly not doing its job, which I personally think is often the case.

Filmed inside a convenience store, the woman shouts: "I hate self-checkout!" in front of a queue of people.

1

Digital Literacy Barriers

Older adults and low-tech users struggle with self-service systems and app-based interfaces.

2

Accessibility Limitations

Interfaces lack support for cognitive, visual, and motor impairments. Multimodal interaction rarely implemented.

3

Social Exclusion Effects

Users excluded from digital retail experience frustration, lowered self-efficacy, and feel left behind.

4

Affordability Divide

Access assumes high-end smartphones, fast internet, or in-store mobility—excluding many users.

CONCLUSION AND FUTURE WORK

Conclusion

- The success of smart retail **depends on enhancing the human experience**, not just technological efficiency.
- **Emotion, trust, and inclusion** are key determinants of meaningful adoption.
- **Theoretical contribution:** integrates affective and ethical dimensions into HCI models.
- **Practical contribution:** provides an applicable framework for design and management of intelligent retail experiences.

Future Work

- **Expand empirical validation** of the proposed model across multiple countries, retail formats, and cultural contexts.
- **Deepen design-based studies** involving co-creation with consumers and underrepresented groups to test inclusivity and usability.
- **Investigate long-term dynamics of** trust, emotional engagement, and ethical perception as smart retail technologies evolve.





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THANK YOU