

-SUMMARY-

SMART READING, SMART PEOPLE, SMART CITY

A Human-Centric Digital Library Model for Urban Inclusion in Kuala Lumpur: Pustaka KL Digital MADANI @ Bandar Sri Permaisuri

Abstract

This paper examines the transformation of public libraries into digital, inclusive, and community-driven knowledge hubs through the Pustaka KL Digital Madani initiative. Addressing the persistent digital divide in urban low-income communities, the study explores how a human-centric, technology-enabled library model enhances access to information, digital literacy, and social inclusion.

Using a mixed-method approach combining user surveys, platform analytics, and programme data, findings indicate significant improvements in digital engagement (+30% above target), high user satisfaction (86%), and measurable behavioural shifts toward interactive learning. The study proposes a **Human-Centric Digital Library Framework**, integrating access, content, skills, space, and data.

This study contributes to the growing field of smart city development by offering a scalable and replicable model for inclusive digital transformation, particularly in emerging urban contexts.

Keywords: Digital Inclusion, Smart City, Public Libraries, Urban Literacy, Human-Centric Design, Malaysia

1. Introduction

Urban development is increasingly shaped by digital infrastructure, yet access remains uneven. In many cities, low-income populations face structural barriers to digital participation, limiting educational and socio-economic mobility (van Dijk, 2020). Public libraries, traditionally viewed as repositories of knowledge, are now evolving into critical platforms for digital inclusion. In Kuala Lumpur, the Pustaka KL Digital Madani initiative represents a shift toward a **human-centric smart library model**, designed to bridge digital inequality. This study investigates the effectiveness of this model in transforming urban reading behaviour, enhancing access, and supporting inclusive city development.

2. Literature Review

2.1 Digital Divide and Urban Inequality

The digital divide extends beyond access to infrastructure, encompassing skills, usage, and outcomes (van Dijk, 2020). Urban low-income communities are disproportionately affected.

2.2 Public Libraries as Social Infrastructure

Libraries play a vital role in social inclusion, acting as “third places” that foster community engagement and lifelong learning (Oldenburg, 1999).

2.3 Smart Cities and Human-Centric Design

Smart city frameworks increasingly emphasize **people-first approaches**, integrating technology with social needs (Nam & Pardo, 2011).

2.4 Digital Transformation in Libraries

Digital libraries enhance accessibility, reduce cost, and enable scalable learning ecosystems (IFLA, 2021).

2.5 Research Gap

While digital libraries are widely studied, there is limited research on **integrated human-centric models combining physical space, digital access, and community engagement** in Southeast Asian cities.

3. Methodology

3.1 Research Design

A mixed-method approach was adopted:

- Quantitative: usage data, KPIs
- Qualitative: user surveys, feedback

3.2 Data Collection

- Survey (n = 150 users)
- Digital platform analytics
- Programme participation records

3.3 Sampling

Purposive sampling targeting:

- Low-income households
- Students
- Elderly users

3.4 Data Analysis

- Descriptive statistics
- Trend analysis
- Behavioural pattern analysis

3.5 Limitations

- Short-term evaluation period
- Single-site case study

4. Case Study: Pustaka KL Digital Madani

The initiative represents Kuala Lumpur's first fully digital public library, designed to address urban digital inequality. It provides:

- Over 30,000 digital resources
- Free access to devices and internet
- Inclusive learning spaces and programmes

Developed through a public-private partnership, the project aligns with **Sustainable Development Goals (SDGs 4, 10, 11)**.

5. Findings

5.1 Digital Engagement

Digital resource usage exceeded targets by approximately 30%, indicating strong adoption

5.2 User Satisfaction

An 86% satisfaction rate reflects high relevance and usability.

5.3 Behavioural Change

Users demonstrated:

- Increased digital confidence
- Shift toward interactive and self-directed learning

5.4 Community Impact

- Improved access to education
- Enhanced digital literacy
- Greater social participation

6. Discussion

6.1 Interpretation of Findings

The results suggest that **access alone is insufficient**; impact is maximized when combined with:

- Skills development
- Inclusive spaces
- Continuous engagement

6.2 Key Success Factors

- Human-centric design
- Free and equitable access
- Strong institutional partnerships

6.3 Challenges

- Device limitations
- Scaling infrastructure
- Sustaining engagement

6.4 Theoretical Contribution

This study extends smart city literature by operationalising **human-centric digital inclusion through library systems**, bridging theory and practice.

7. Proposed Framework Human-Centric Digital Library Model Core Components:

1. Access (devices, internet)
2. Content (digital resources)
3. Skills (literacy programmes)
4. Space (inclusive environment)
5. Data (real-time analytics & feedback)

This integrated model ensures both **access and capability**, addressing multiple layers of the digital divide.

8. Policy Implications

8.1 Government

- Embed digital libraries into national smart city strategies
- Prioritise funding for digital inclusion

8.2 Institutions

- Transition toward hybrid service models
- Adopt data-driven decision-making

8.3 Community

- Encourage lifelong learning
- Strengthen digital participation

9. Conclusion

The Pustaka KL Digital Madani initiative demonstrates that public libraries can play a central role in advancing digital inclusion and smart city development. By integrating technology, community engagement, and human-centric design, the model provides a **scalable and impactful solution** to urban inequality.

10. Future Research

- Longitudinal impact studies
- Comparative international analysis
- Integration of AI and adaptive learning systems