

EXECUTIVE SUMMARY

MINAS GERAIS RESEARCH SUPPORT FOUNDATION (FAPEMIG)

[DIGITAL POE SYSTEM]

Dissemination and Enhancement of Digital Interfaces for Post-Occupancy Evaluation of Environmental Quality in Residential Environments

USER INTERACTION



UX AND UI DESIGN

DIGITAL POE



TECHNOLOGICAL INNOVATION

DESIGN GUIDELINES



DESIGNERS & CONSTRUCTION

EMERGING TECH



IoT · AR/VR · AI

OVERVIEW

The Digital POE System brings post-occupancy evaluation (POE) into digital environments to assess the functional, behavioural and environmental quality of housing. This phase (FAPEMIG, 2024–2026) enhances and disseminates the system and its two artefacts: Meu Apê (My Home Assessment) and Como Você Mora? (How do you live?), embedding IoT, AR/VR and AI for richer data and user interaction. It is interdisciplinary across Architecture, Design and Computer Science (FACOM).

THE RESEARCH GAP

Most POE studies still depend on paper-based surveys and manual data processing, limiting scalability, replication, and data use. The lack of integrated digital platforms hinders efficient data collection, real-time analysis, and evidence-based decision-making. To address this gap, the APO System integrates digital data collection, automated databases, and interactive visualization tools, improving the efficiency, scalability, and accessibility of POE processes.

OBJECTIVES

- Enhance the Digital POE System — the web system that manages POE, builds questionnaires and stores data.
- Enhance and disseminate the two assessment artefacts: Meu Apê and Como Você Mora.
- Embed emerging technologies (IoT, AR/VR and AI) in the artefacts for richer data and interaction.
- Test the system and artefacts in a case study in Uberlândia and over the internet.
- Build housing databases to guide projects, policy and norms — oriented to SDGs 7, 11 and 12.

KEY FACTS

FUNDING

Minas Gerais Research Support Foundation (FAPEMIG)

NATURE

Innovation Stimulus Project (R&D)

PARTNERS

Architecture / Design (FAUeD) + Computer Science (FACOM)

ETHICS

CEP / UFU - CAAE 69517821.6.0000.5152

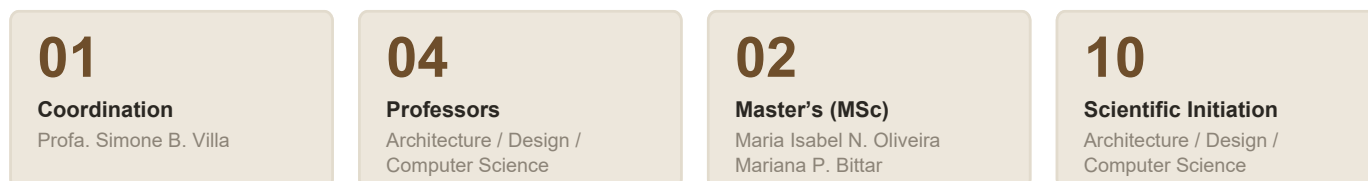
FIELD

Tubalina and Jardim Califórnia — Uberlândia/MG

METHODOLOGY — PROCESS



RESEARCH TEAM



CONTACT

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THE PRODUCTS

MEU APÊ (My home assessment)

WEBAPP · APARTMENTS

A science-based digital platform that evaluates environmental quality, comfort, energy efficiency, and resident behavior in apartment buildings. By combining Post-Occupancy Evaluation methodologies with intuitive digital interfaces, it transforms residents' experiences into actionable insights for better housing design and sustainable living.



SCAN TO OPEN

COMO VOCÊ MORA? (How do you live?)

WEBAPP · ALL HOUSING

An innovative digital assessment tool that explores how people experience and use their homes. Covering environmental, functional, and behavioral dimensions of housing, it helps residents understand their living conditions while supporting researchers, designers, and policymakers with structured housing-performance data.



SCAN TO OPEN

MAIN RESULTS

111

Questions in Meu Apê covering comfort, sustainability and apartment living

90

Questions in How Do You Live? evaluating housing quality across typologies

2

Assessment tools validated through usability testing, field studies and online applications

3

Emerging technologies integrated: AI, IoT and AR/Computer Vision

Digital Post-Occupancy Evaluation platform integrating web technologies, structured databases and emerging tools such as Artificial Intelligence (AI), Internet of Things (IoT), Augmented Reality (AR) and Computer Vision. Designed to generate scientific evidence on housing quality while empowering residents with knowledge about comfort, resource consumption and sustainable living.

KEY PUBLICATIONS

SIGraDi 2024 Digital Interfaces for Post-Occupancy Evaluation in Housing: enhancement of the app Como Você Mora 2.0	Villa & Vettoretti · SIGraDi 2024 Explores the redesign of Como Você Mora 2.0, improving usability, user engagement, and digital housing assessment.
AEDM Incorporation of post-occupancy evaluation in Building Information Modeling: a case study in Brazil	Dos Santos et al. · AEDM 2023 Demonstrates how Post-Occupancy Evaluation data can be integrated into BIM workflows to support evidence-based design.
PLEA 2017 How do you live? Evaluation of environmental quality of housing in Uberlândia (Brazil)	Villa & Saramago · PLEA 2017 Presents a housing assessment method linking residents' perceptions to environmental quality and comfort.
Frontiers Innovating digital POE platforms during the COVID-19 pandemic: co-production in social housing	Villa et al. · Frontiers 2023 Examines collaborative digital POE tools that enabled remote resident participation and housing research during the pandemic.

TECHNICAL INFORMATION

FRONT-END	Vue.js — responsive PWA + admin portal
BACK-END	Django (Python) — RESTful API
DATABASE	PostgreSQL — APO Digital engine
EMERGING	IoT · AR/VR · AI (in development)

CONTRIBUTIONS

- Social** — Awareness; water- & energy-saving habits.
- Policy** — Scientific databases guiding design & policy.
- Capacity** — Faster, replicable, lower-cost POE nationally.

SUSTAINABLE DEVELOPMENT GOALS



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