MSR196

The AI-Only Workflow: Model and Report Adaptation Without Human Setup

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BACKGROUND

Cost-effectiveness models (CEMs) and reports are frequently adapted for use in different countries. Traditionally, this process has required either:

- **Manual effort** – time-intensive and error-prone
- **Rule-based automation (e.g., VBA, fields)** – deterministic, inflexible.

Recent attempts to integrate AI in the workflow have succeeded, albeit with critical manual work required at preprocessing stage (such as development of VBA code, manual field tagging, extensive templating).[1,2] This study propose a completely **agentic-AI only workflow with human-in-the-loop (HITL) review**.[3]

OBJECTIVES

The objectives of this study is to develop fully autonomous agentic-AI model and report adapter workflows with HITL and without any manual pre-processing, data extraction, VBA setup or field settings:

Autonomous Adaptation
Develop an agentic AI system capable of autonomously adapting real-world raw Excel- based CEMs and Word-based CE reports.

Eliminate Manual Processes
Eliminate reliance on manual tagging, preprocessing, or extensive templating for AI system adaptation.

Generative Adaptation
Provide context-aware, well reasoned adaptation for diverse country settings, ensuring relevance and effectiveness.

METHODOLOGY

Two AI agents were developed using context engineering and hybrid intelligence approach

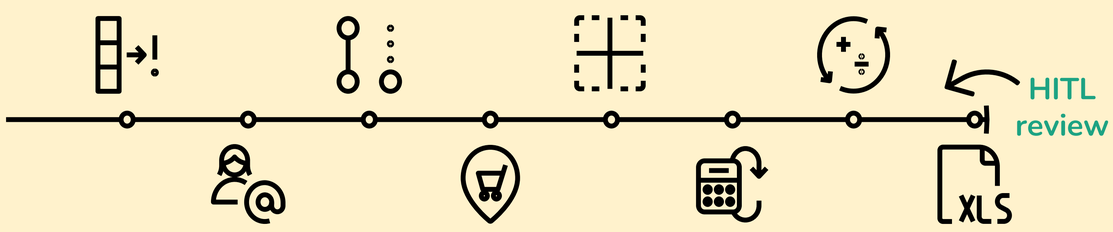
Model Adapter Agent

Input Global Model
Receive the raw global Excel CEM

Extract Model Structure
Extract the structure and parameters from the global model

Differentiate Cells
Differentiate between independent and dependent cells

Trigger Recalculations
Trigger recalculations and execute VBA routines



Input Country Sheet
Receive the country-specific input sheet*

Map Parameters
Map country-specific parameters to the global model

Replace Values
Replace independent values with local inputs

Output Adapted Model

*Upcoming version to include auto input data extraction

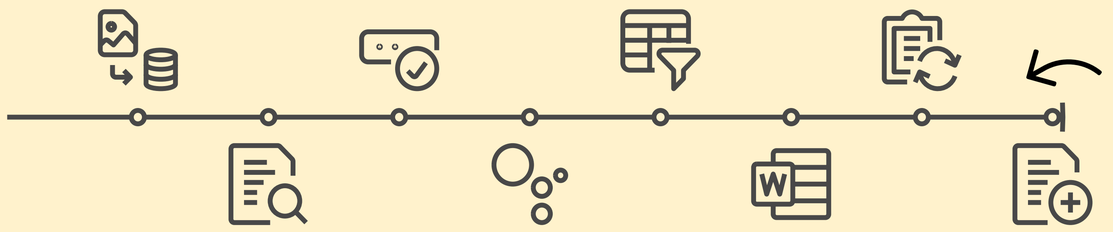
Report Adapter Agent

Input
Global raw Word technical report and raw Adapted Excel CEM are input

Validate Text
Validates text against outputs from the adapted model

Excel sub-Agent
Excel Agent retrieves updated data from the model

Update and Append
Iteratively updates and appends corrected section.



Section Review
Runs a section-by-section review of the report

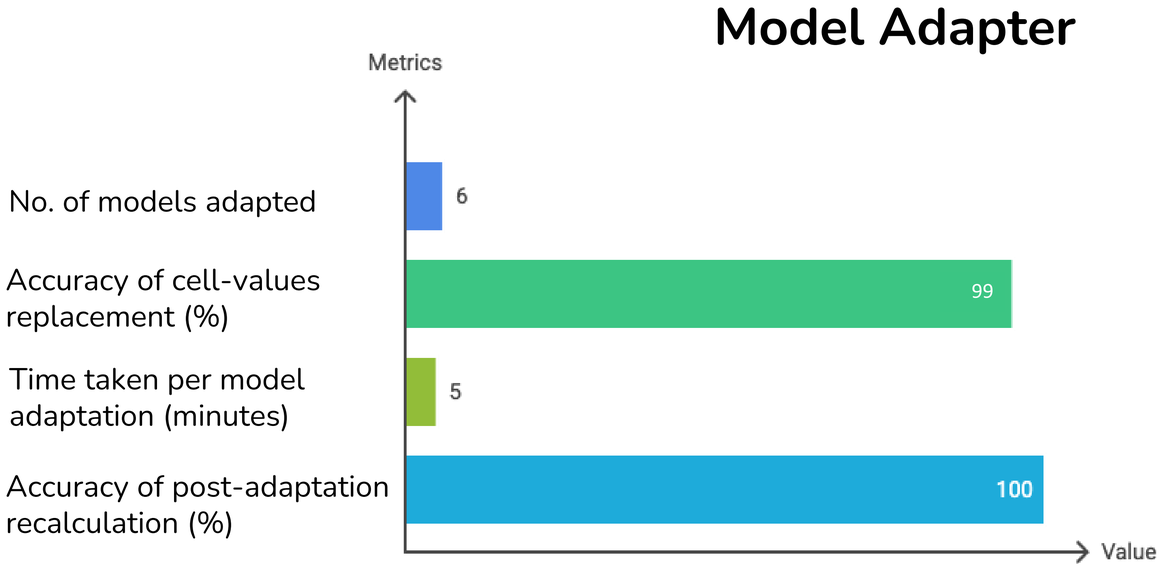
Instantiate Agents
Instantiates two agents when mismatches are found

Writer sub-Agent
Writer Agent rewrites the section with accurate interpretation

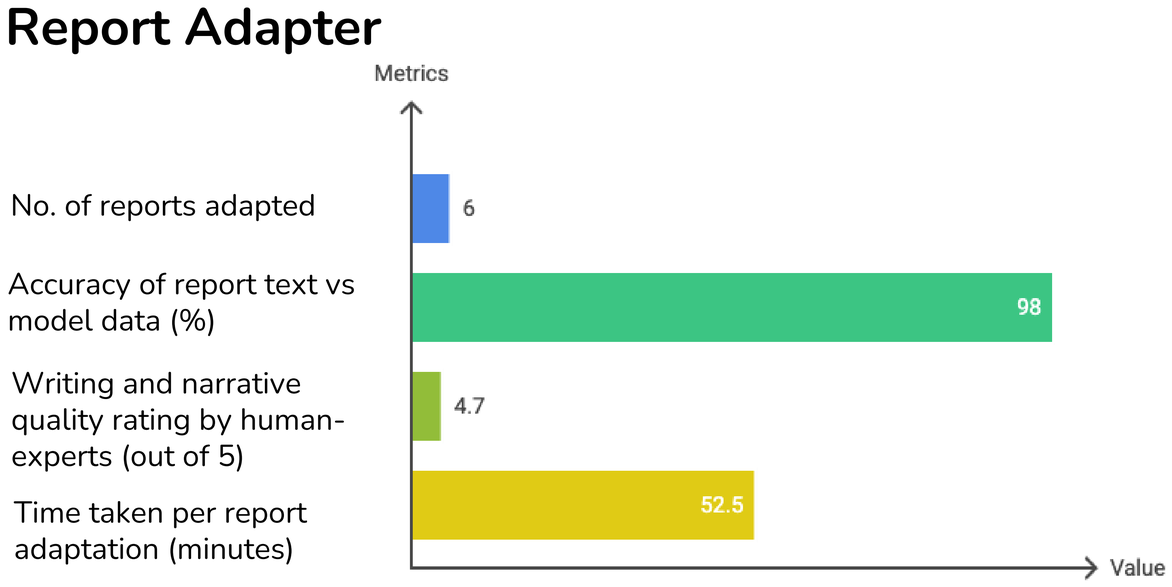
Output
A fully adapted country-specific report

RESULTS

Model Adapter



Report Adapter



CONCLUSION

- **Proof of concept:** Demonstrated a fully autonomous, agentic AI tool that adapts both Excel-based CEMs and Word-based technical reports
- **Accuracy and efficiency:** Achieved **~99% parameter mapping accuracy** in models and **>98% data-to-text alignment** in reports
- **True AI vs. automation:** Unlike heavy VBA or template-driven approaches, this workflow performs **contextual reasoning on raw, unprocessed model and report**
- **Implications:** Establishes a benchmark for distinguishing **agentic AI applications** from rule-based automation in HEOR

"True AI workflows, distinct from rule-based or limited semi-AI automation, transforms the way HEOR models and reports are adapted across countries."

REFERENCES

1. Rawlinson et. al, 2024. ISPOR Atlanta.
2. Rawlinson et. al, 2024. ISPOR Barcelona
3. Srivastava et. al, 2025

Financial Disclosure: Authors are employees of ConnectHEOR Limited. No external funding received to conduct this research and no conflict of interest to declare.

Poster presented at ISPOR in Glasgow, Scotland, 9-12 November 2025