

CAN LLMs HELP UNCOVER INDOOR SATISFACTION PROFILES FROM OCCUPANT TEXT FEEDBACK?

Thomas PARKINSON¹, Stefano SCHIAVON², Wenhao ZHANG³, Clayton MILLER⁴

¹ University of Sydney; ² University of California, Berkeley; ³ National University of Singapore; ⁴ Singapore Management University

INTRODUCTION

Post-occupancy evaluation (POE) surveys capture both ratings and **open-text comments**, but the comments often remain unanalyzed.

We test whether local large language models (LLMs) can extract complaint features from occupant comments and use them to identify workplace satisfaction profiles.

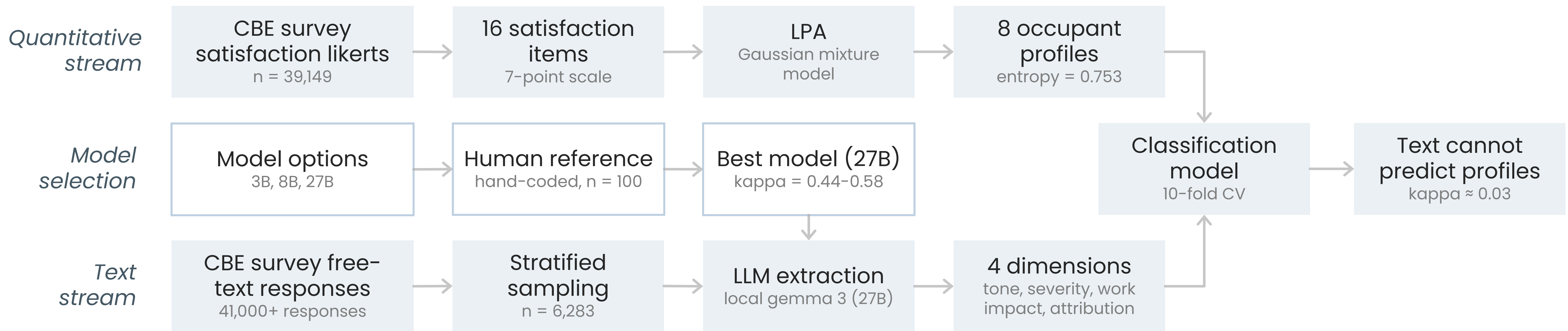
DATASET

UC Berkeley Center for the Built Environment (CBE) Occupant Survey database, filtered to US office buildings.

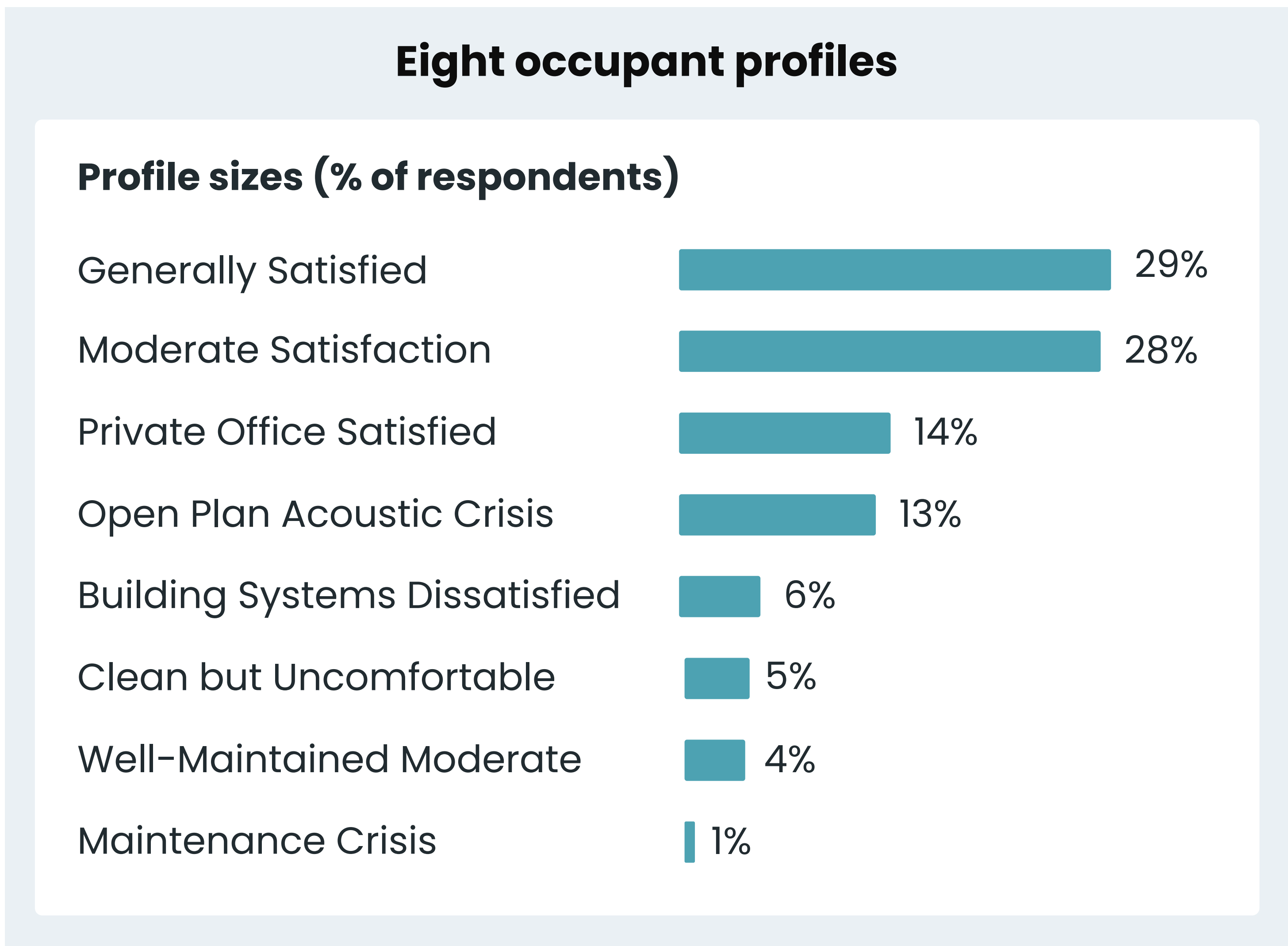


METHOD

We used Latent Profile Analysis (LPA) to group satisfaction ratings into workplace profiles, then used local LLMs to extract complaint features (**tone**, **severity**, **work impact**, **attribution**) and test whether features could identify those profiles.



KEY FINDINGS



Only the 27B model matched human-coded labels well enough for complaint features extraction

Model	Tone	Severity	Attribution	Impact
llama3.2 (3B)	<0.15	<0.15	<0.15	<0.15
llama3.1 (8B)	0.05	0.31	0.27	0.33
gemma3 (27B)	0.54	0.44	0.58	0.52

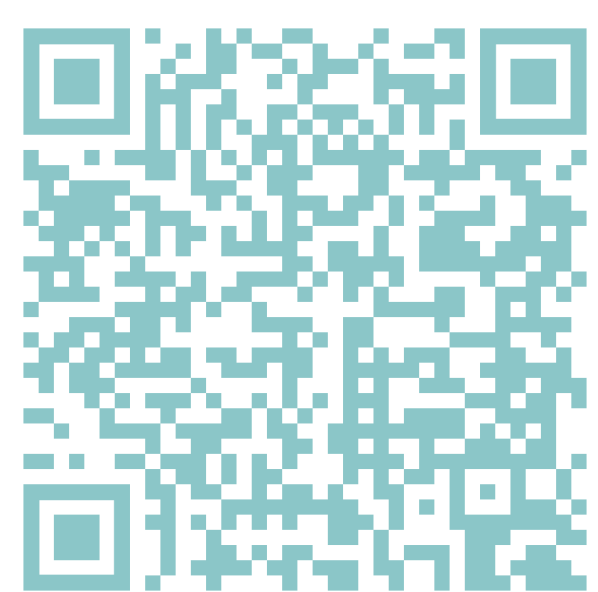
Cohen's κ vs. human coding (n = 100).

Complaint text $\neq$ satisfaction profile

LLM-extracted complaint features could not identify satisfaction profiles: 16.2% accuracy, barely above the 12.5% chance baseline.

CONCLUSIONS

- Only the **27B model** reached **moderate agreement** with human-coded labels for complaint features.
- LLM-extracted complaint features **could not** reliably identify workplace satisfaction profiles.
- POE **ratings** and **open-text comments** should be analyzed together, because they capture different parts of workplace experience.



FULL PAPER

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