

# ISMIE: A Framework to Characterize Information Seeking in Modern Information Environments

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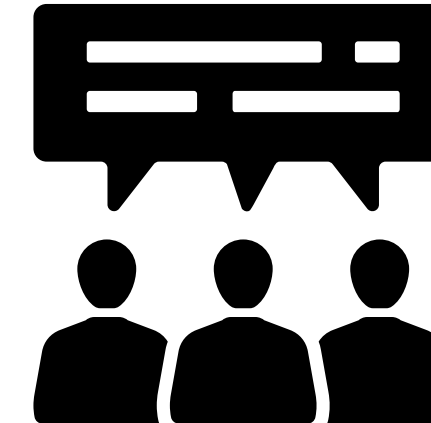
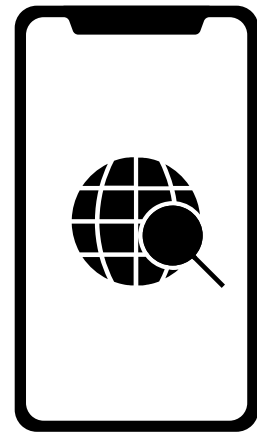
# A Illustrative Case



\*Images are generated by Gemini Nano Banana Pro



# Modern Information Seeking



**Modern information environments (MIEs) are so dynamic!**

**Do existing models capture these MIE dynamics?**



# RQ1 – Do Existing Behavior Models Capture MIEs?



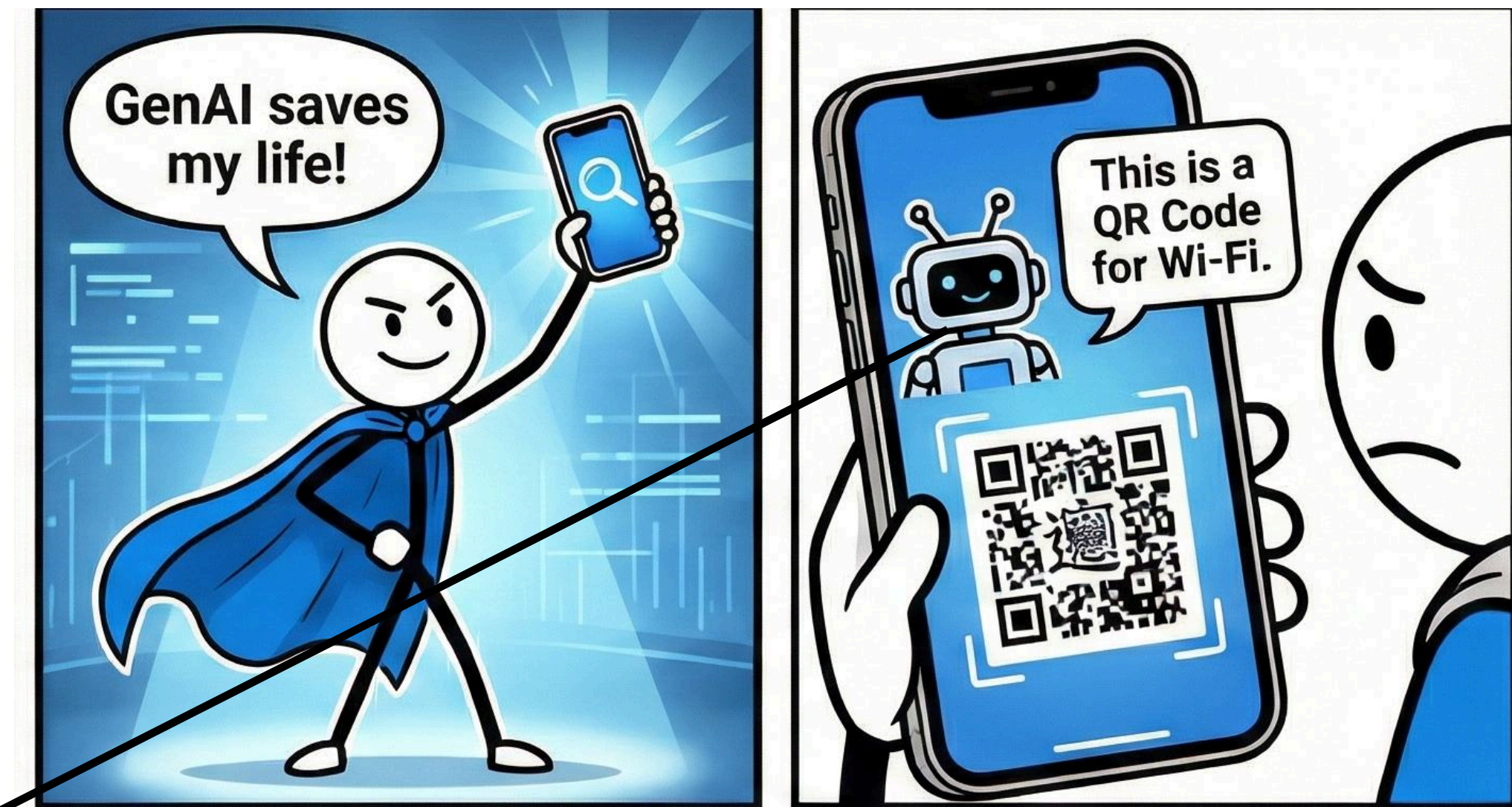
- We have assessing details of existing models in the paper

- focusing on the situations that drive the knowledge gap (e.g., Saracevic, 1997)

- having limitation of considering various devices (e.g., Ingwersen, 2005)



# RQ1 – Do Existing Behavior Models Capture MIEs?

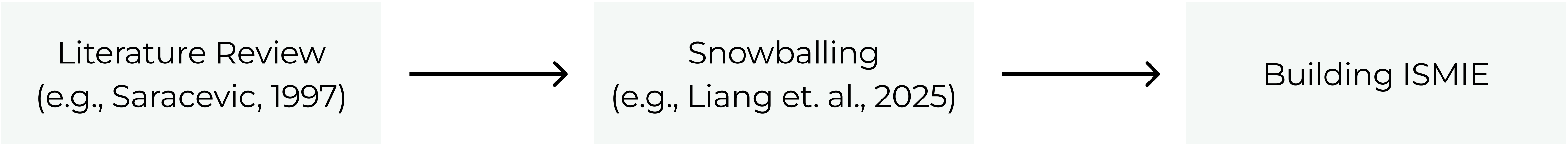


- They are limited to explain the intent of systems (e.g., Wilson, 1997)

Therefore, we should have an alternative tool for understanding MIEs

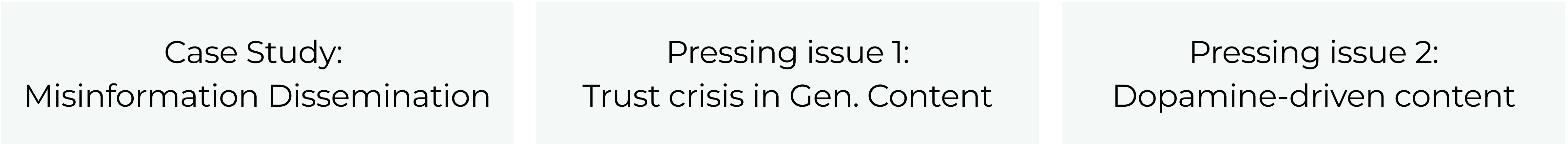
## ISMIE Framework Element Identification

Information seeking in Modern Information Environment Framework (ISMIE)



## ISMIE Framework Validation and Applications

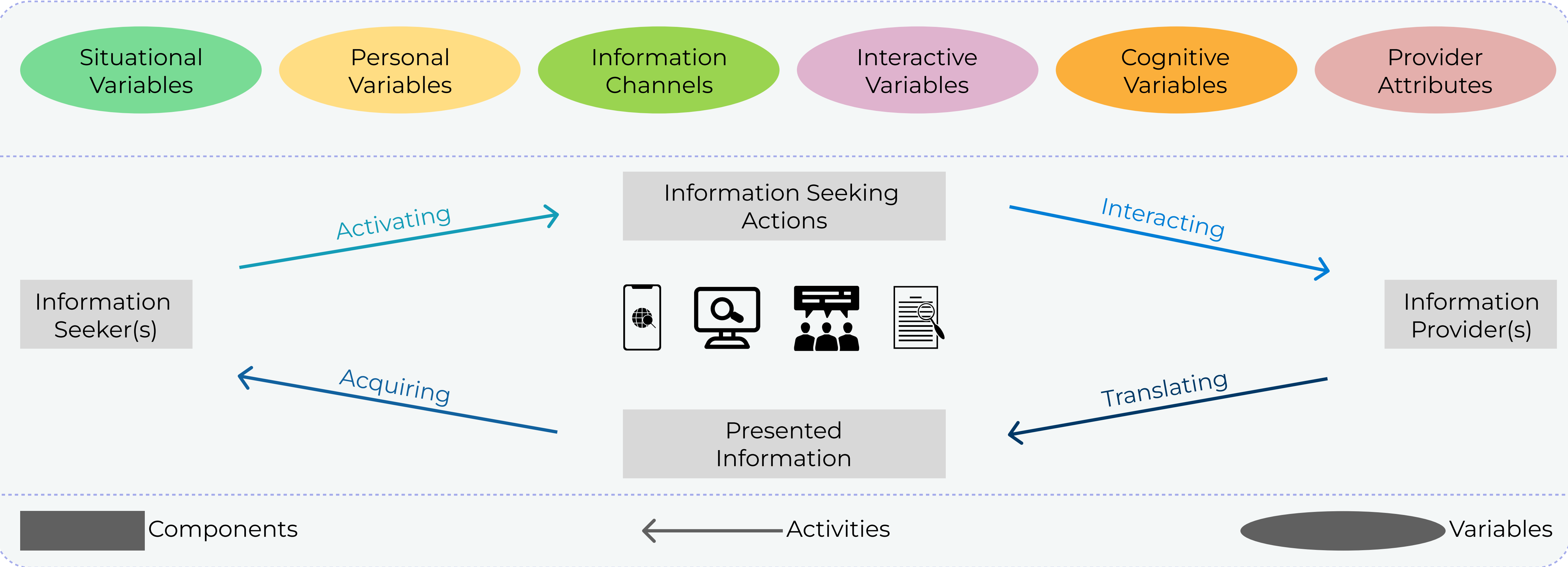
Characterization; Informing research questions and experimental design



Saracevic, T. (1997). The stratified model of information retrieval interaction: Extension and applications.  
Liang, Y., e. al. (2025). How Users Interact with Generative Information Retrieval Systems: A Study of User Behavior and Search Experience.

# RQ2 - ISMIE Framework

## Information Seeking in Modern Information Environment (ISMIE)



A high-level framework rather than a focused model



# Application: Characterization



Information  
Seeker

Active Search



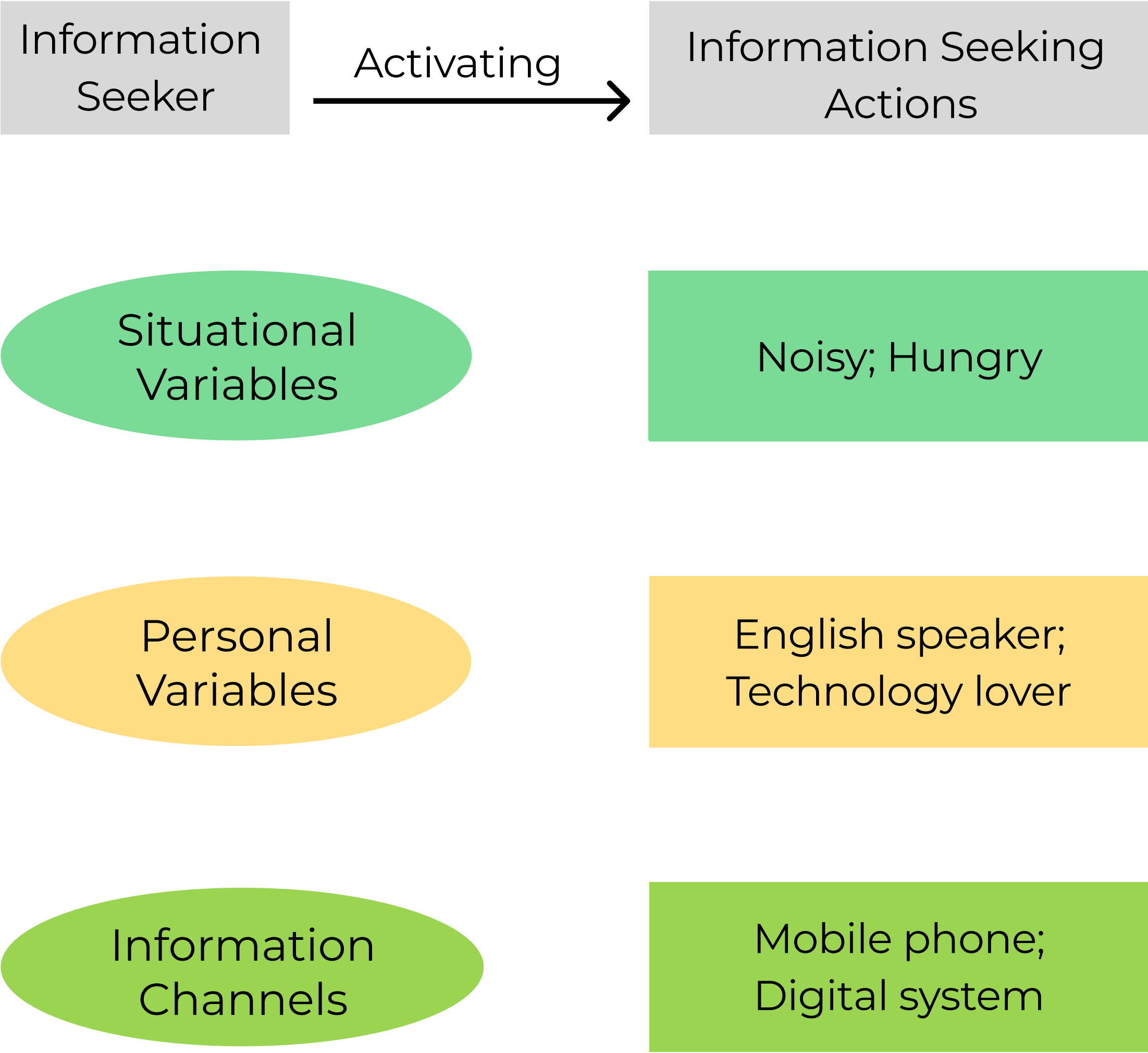
Information  
Provider

Presented  
Information

Components and activities are stable elements, regardless of technological advances



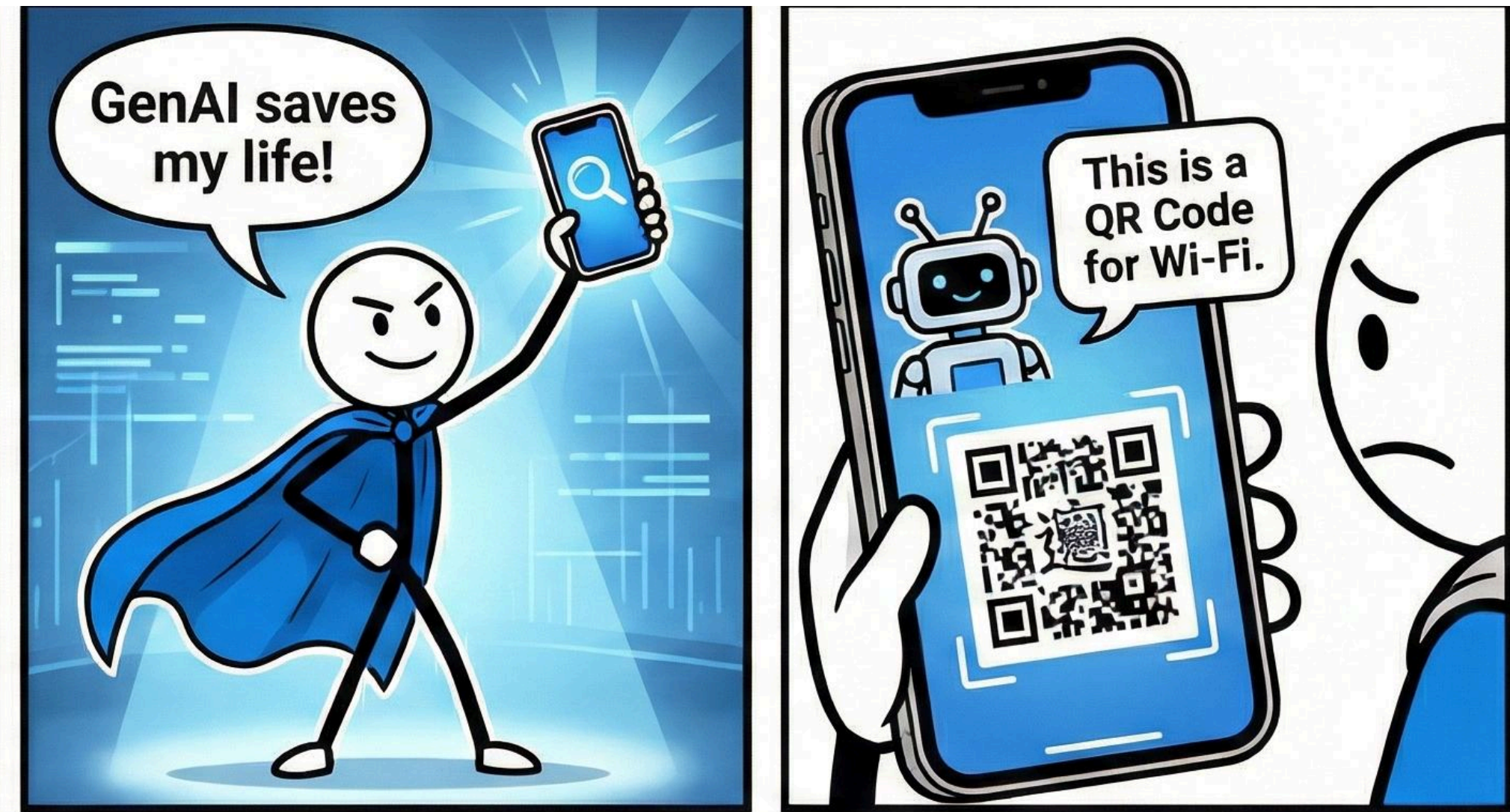
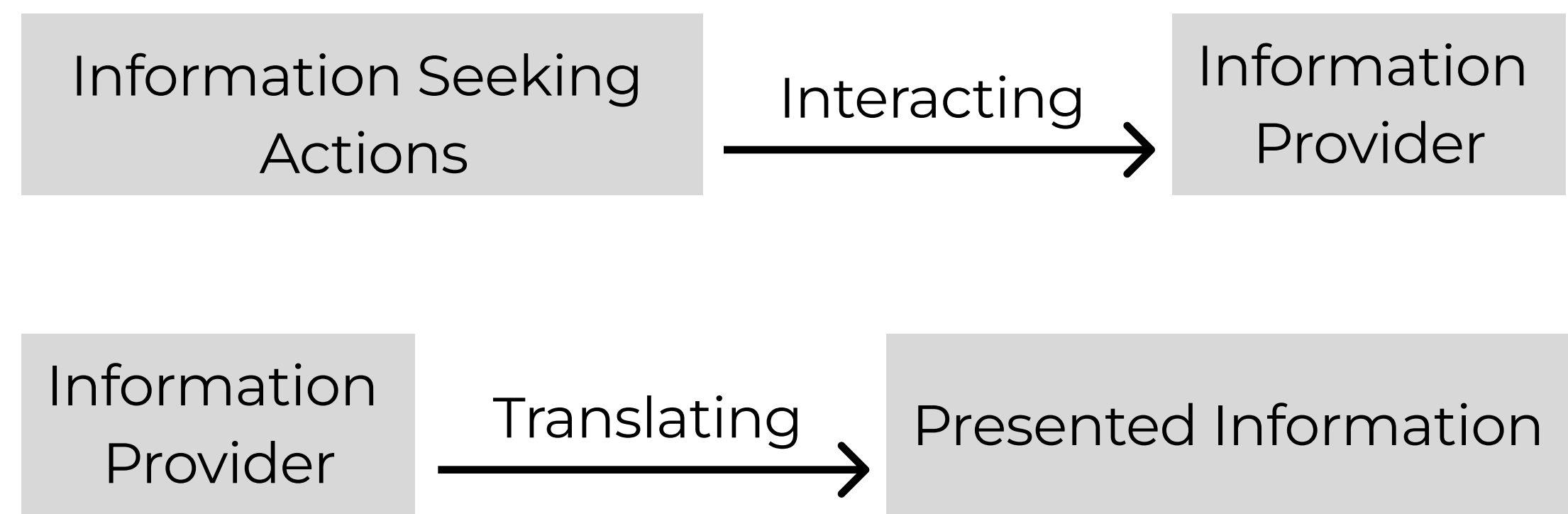
# Application: Characterization



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# Application: Characterization



Interactive  
Variables

- Interaction specifics
- Image modality
- Result display

Provider  
Attributes

- Provider characteristics
- Hallucinated
- Training data

\*Images are generated by Gemini Nano Banana Pro



# Application: Characterization

Presented Information

Acquiring

Information  
Seeker

Cognitive  
Variables

Internal states

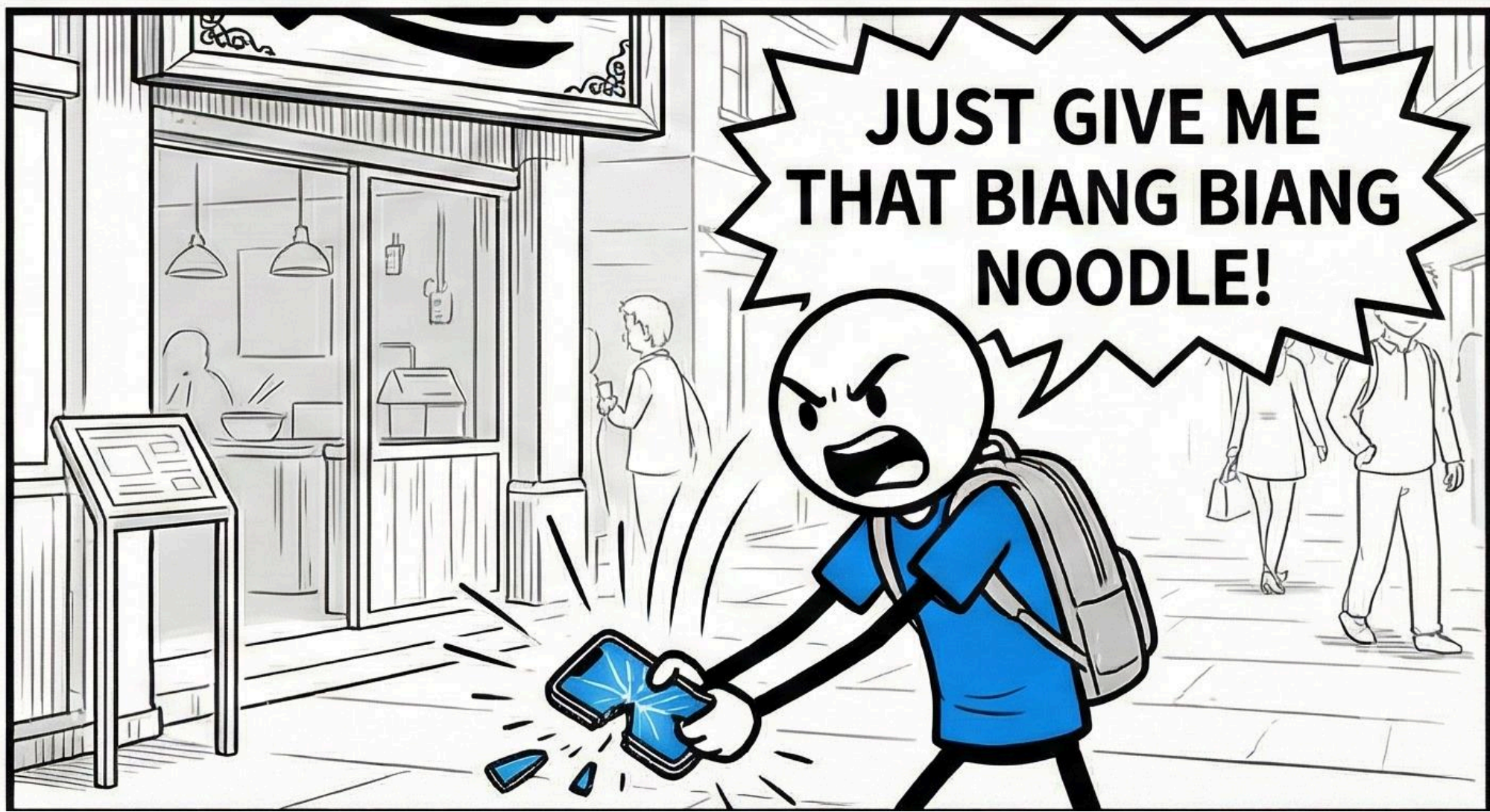
Personal  
Variables

Existing knowledge  
on noodle

Angry

Unconvinced

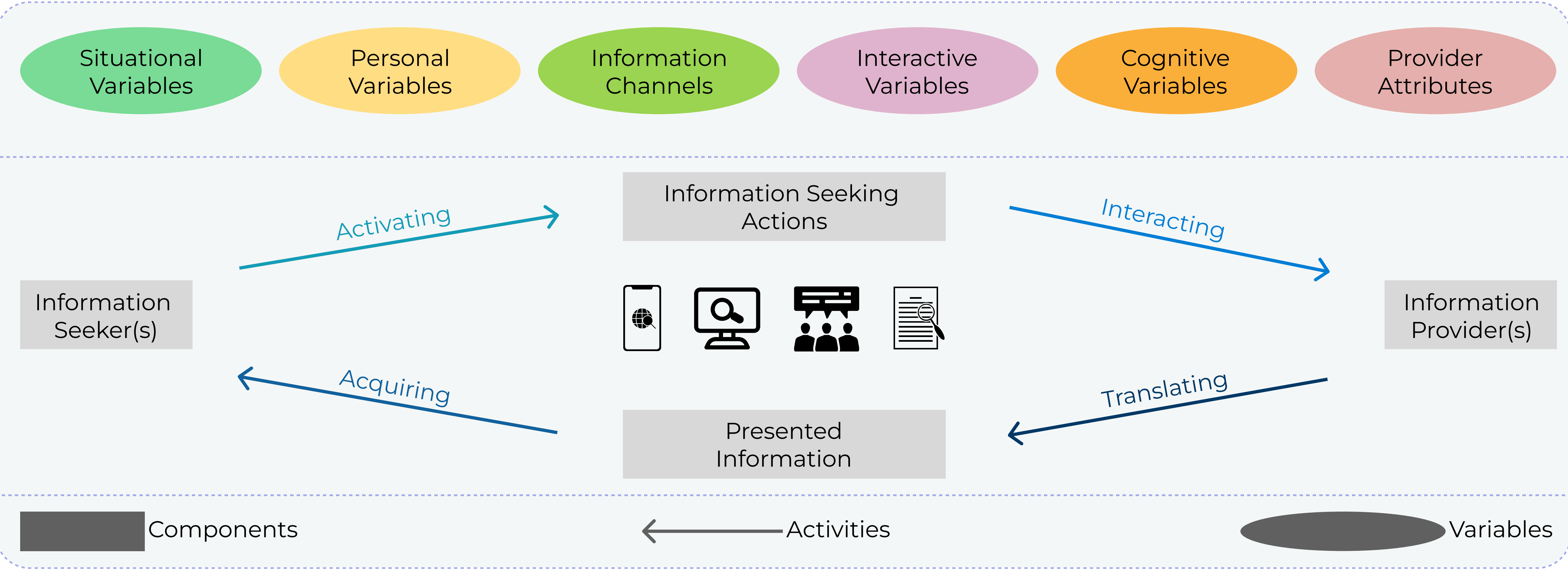
All variables affect all activities





# RQ2 - ISMIE Framework

## Information Seeking in Modern Information Environment (ISMIE)





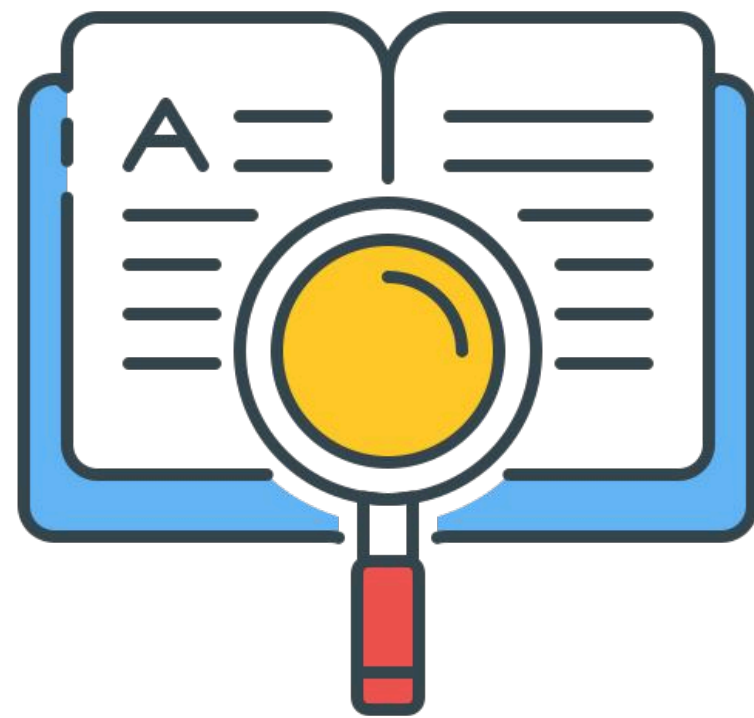
# More in The Paper

- The MIE is complex relationship network: variable to activity, activity to variable, etc.
- Discussion on MIE:
  - Active Information Provider
  - Variable importance
  - Non-linearity of IS: early abundance, multi-platform knowledge synthesis, and IS feedback loop
- Other applications of ISMIE:
  - How to Inform research and experimental design
  - Trust Crisis in AI-Generated Content
  - Dopamine-driven Content

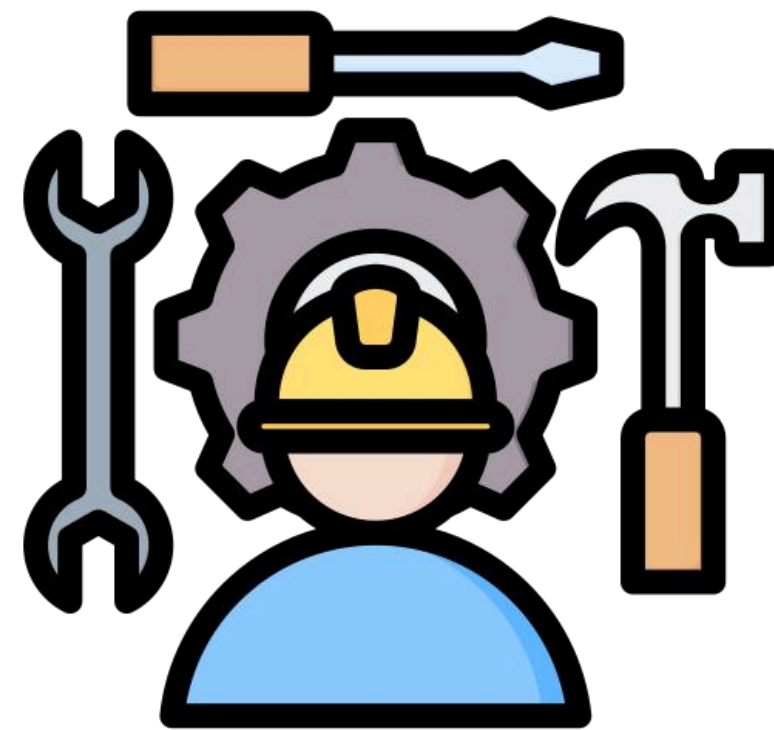


# Key Takeaways

ISMIE framework aim to initialise a discourse of characterising and conceptualising MIE.



Vocabulary and  
concepts



Instrument

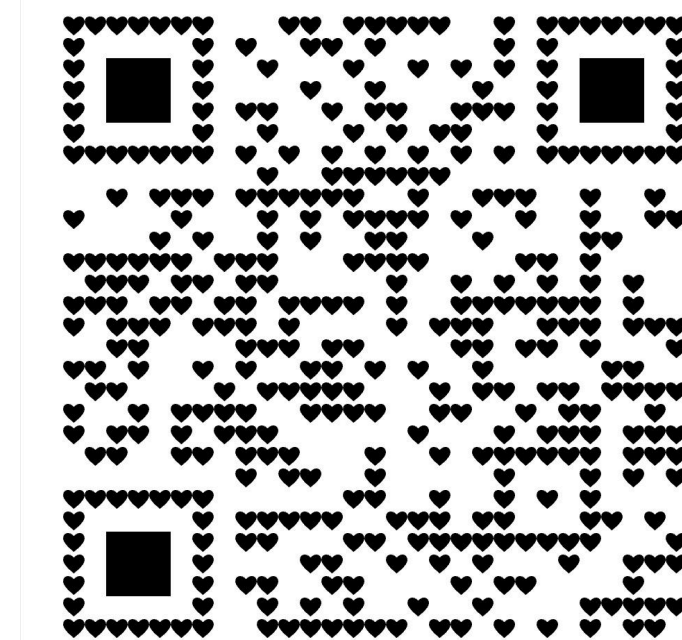


Insights of MIEs

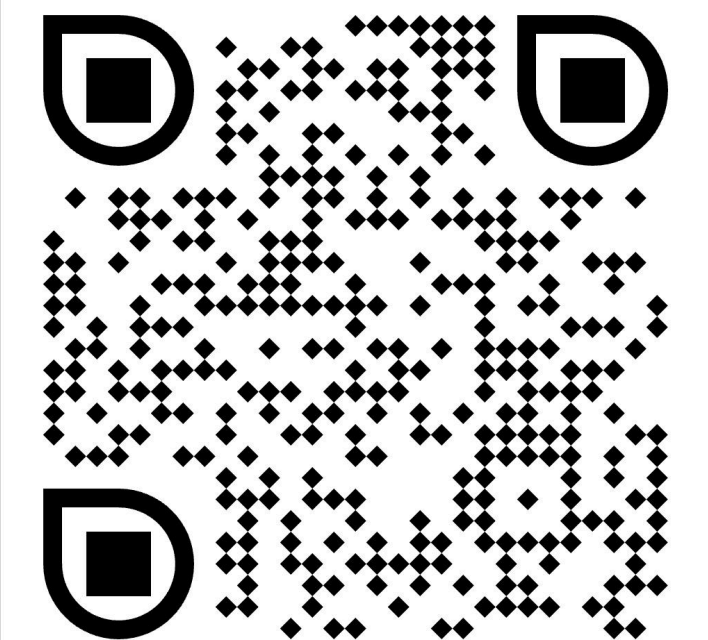


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ISMIE Paper



Shuoqi's Website