Marketing Science Institute Webinar
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Assessing Artificial Marketing Intelligence

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Research Questions

- What does AI know about marketing?
- Does it know as much or more than humans?
- Can it serve as a Marketing Knowledge System?


1
STUDENT:
How can I learn about marketing?
Enroll in Marketing 101
• Structured learning
• Credible
• Time & money
amazon
Buy a Book
• In-depth
• Trusted content
• Takes time to read
Study Plan
• Read
• Watch
• Practice
• Review
Marketing Essentials
Watch a Sponsored YouTube Video
• Free and quick
• Practical tips
• May be biased
Ask AI
• Fast answers
• Personalized
• Is it reliable?
FOCUS LEARN GROW
CONSUMER BEHAVIOR
MARKETING MANAGEMENT
BRAND STRATEGY
2
POTENTIAL ENTREPRENEUR:
Great idea. Strong value proposition.
But I don't know marketing basics.
Who should I ask?
MY BUSINESS IDEA
VALUE PROPOSITION
✓ Solves real problem
✓ Saves time & money
✓ Better experience
BUILD SOLVE IMPACT
Former College Roommate
Majored in Marketing
• Knows the basics
• Good at explaining concepts
• Understands my background
My Brother
Teaches at Business School
• Strong academic knowledge
• Strategic thinking
• Busy schedule
Acquaintance
Works at Marketing Consultancy
• Real-world experience
• Market insights
• Practical advice
Ask AI
• Available 24/7
• Covers a wide range
• Is it deeply insightful?
3
MULTINATIONAL CORPORATION:
Should we enter this new market?
New competitors. New challenges. New opportunities.
TARGET MARKET: SOUTHEAST ASIA
MARKET POTENTIAL
2024 2025 2026 2027 2028 2029 2030
KEY QUESTIONS
• How big is the opportunity?
• Who are the key competitors?
• What are the entry barriers?
• What is the go-to-market strategy?
POTENTIAL BARRIERS
Intense Competition
Regulatory Hurdles
Cultural Differences
Distribution Challenges
THINK GLOBAL ACT LOCAL
4
MARKETING ACADEMIC:
Reviewing a manuscript for
a top marketing journal.
CONSUMER BEHAVIOR
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Manuscript Submission
Title: Reframing Customer Engagement: A Novel Paradigm Beyond Existing Marketing Frameworks
My Evaluation
Originality
Theoretical Contribution
Methodological Rigor
Managerial Relevance
Clarity & Structure
Overall Impact
Recommendation:
Accept
Minor Revision
Major Revision
Reject
EVIDENCE RIGOR IMPACT
Challenges existing frameworks. Intriguing!

Types of Marketing Knowledge

Foundational Knowledge:

- Established canon of validated principles & underlying mechanisms
- From academic textbooks, business education, empirical research
- Hard to train, often forgotten at point of decision

Marketplace Knowledge:

- Customers, competitors, company, collaborators, context (5 Cs)
- Proprietary firm data, localized market research, daily operations
- Hard to replicate; the core driver of modern competitive advantage

Do managers know the core concepts?

1. Ipsos surveyed 1,226 marketing practitioners across the US, UK, Canada, and Australia.
2. Respondents completed a 10-question “Marketing Anchors” assessment to test core marketing knowledge.
3. Only about 35% of marketers met the benchmark for basic “foundational marketing knowledge.”

Can LLMs serve as Marketing Knowledge Systems?

Potential limitations:

- Knowledge Breadth & Accuracy
  - Coverage gaps
  - Misconceptions
- Reasoning Capabilities
  - Limited higher-order reasoning
  - Limited numerical reasoning
- Human-AI Interface
  - Sensitivity to question wording (e.g., complexity, length)
  - Sensitivity to prompt design

Research Approach

Corpus Construction
- Identify marketing textbooks covering all major subjects
- Extract questions from instructors' manuals
- Focus on true/false and multiple-choice formats

Corpus Validation
- Verify answerability via automated & manual review
- Confirm answer correctness via expert evaluation
- Assess breadth of coverage across marketing subfields

Performance Measurement
- Pose each question individually to focal LLM
- Test commercial and open-source models
- Score responses against textbook answer keys

Performance Drivers
- Estimate sensitivity of accuracy to:
  - Knowledge domain
  - Reasoning demands
  - Linguistic question features

Experimental Manipulations
- Assess depth of understanding via experimental tests
- Test robustness to:
  - Question rewording
  - Answer reordering

Benchmark of Foundational Marketing Knowledge

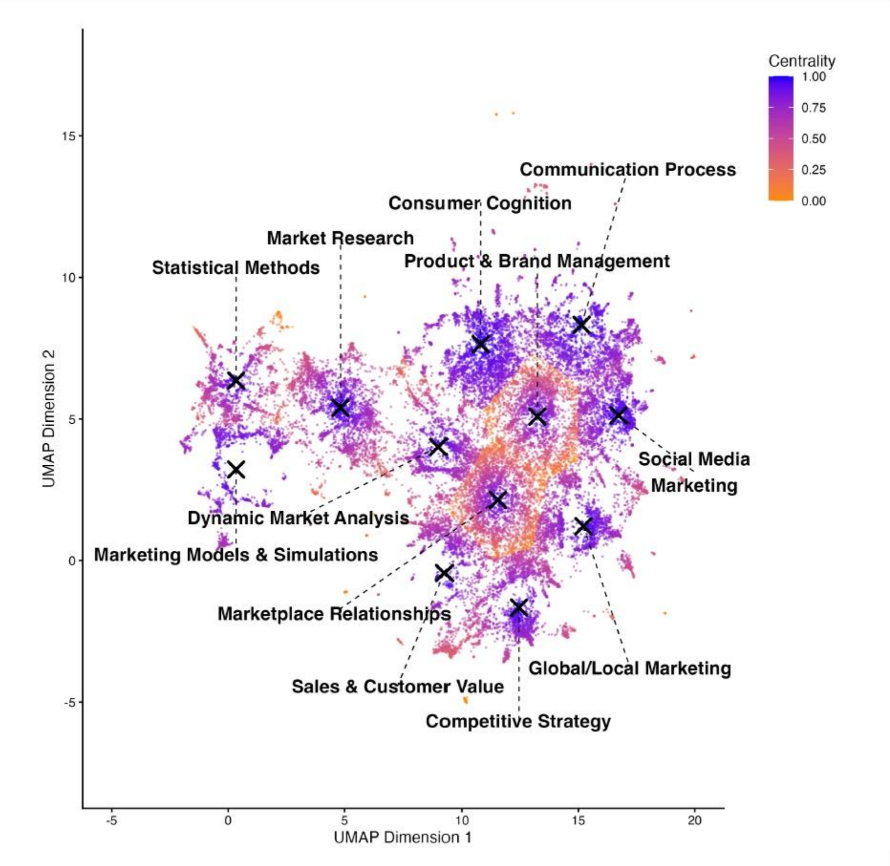
25	Recent marketing textbooks, average copyright year 2022
60%	Approximate coverage of commercial textbook adoptions at AACSB schools
32,990	Validated multiple-choice and true/false marketing questions
3,781	Open-ended discussion questions used as test supplement

Visualization of Question Coverage

The main analysis uses 12 data-driven topic clusters.

This reflects established, codified marketing knowledge.

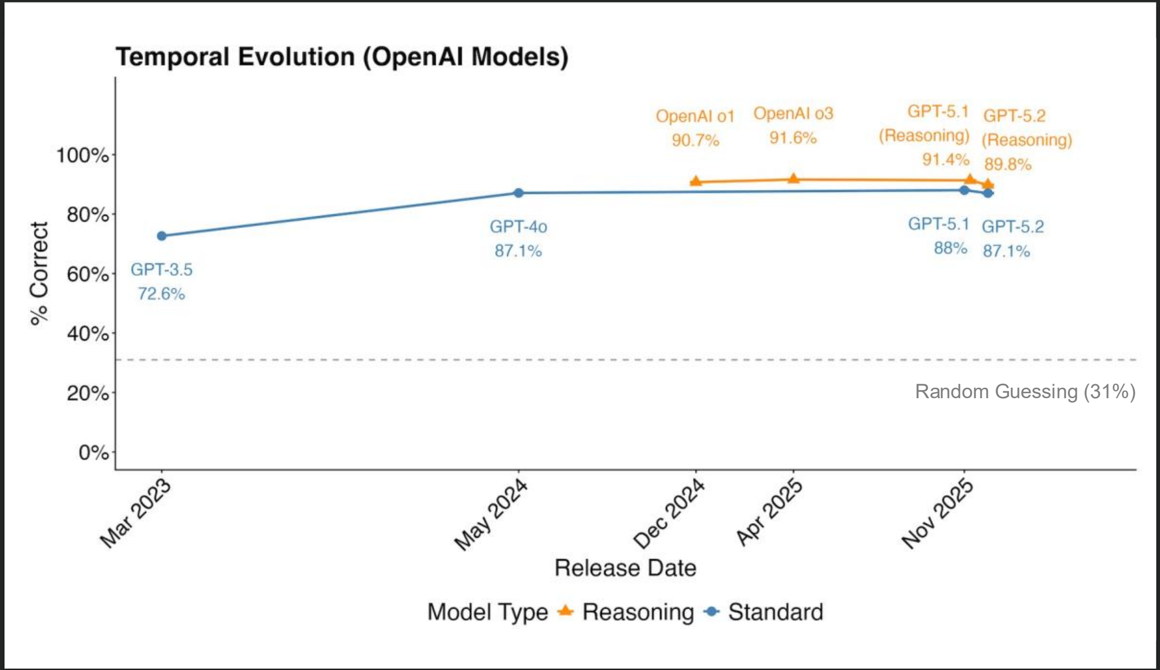
It does not test tacit marketplace knowledge or fast-moving frontier topics that have not reached textbooks.



Baseline LLM Accuracy

GPT-family model accuracy rose from 73% for GPT-3.5 to 87% for GPT-4o.

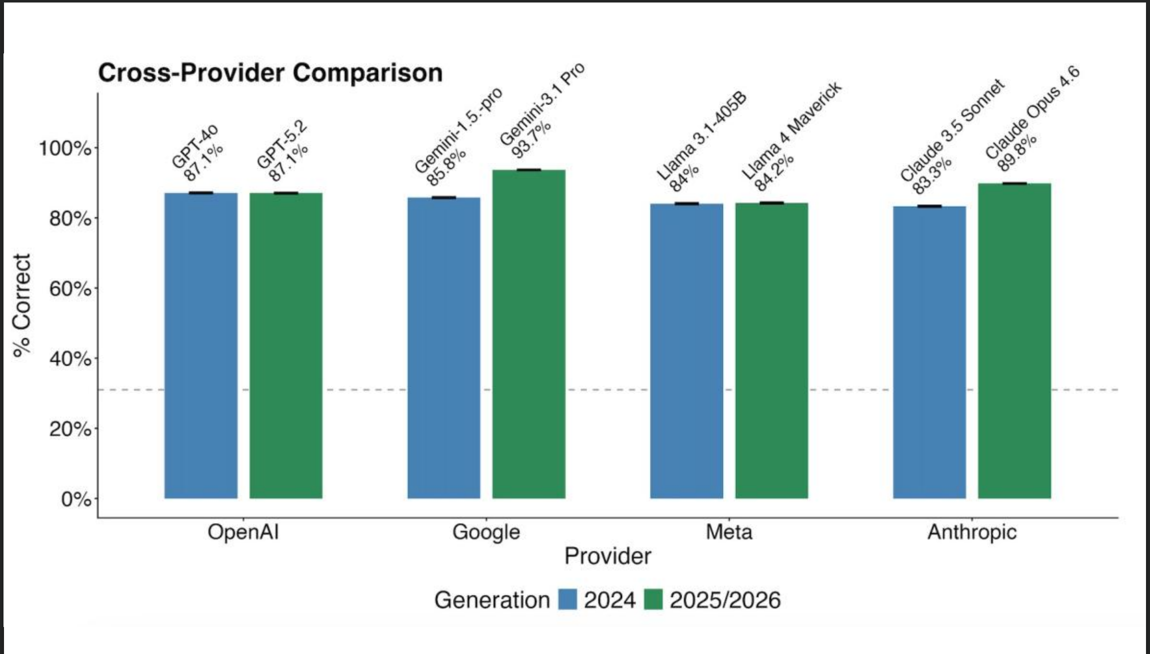
Reasoning variants reached about 92%.



Baseline LLM Accuracy (cont.)

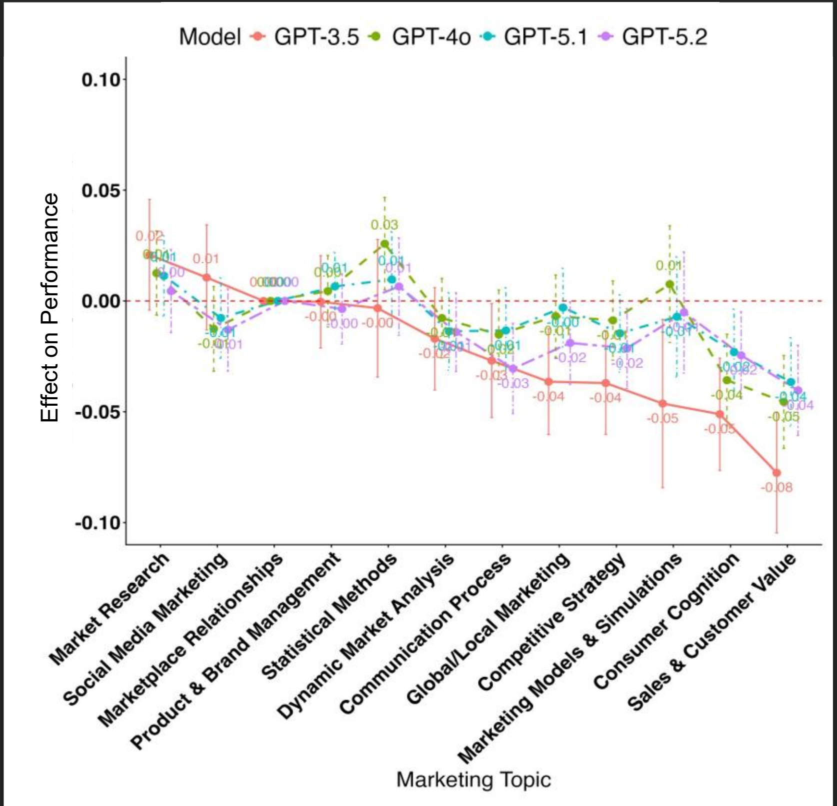
Across major 2025/2026 models, accuracy ranged from 84% to 94%.

Gemini was the top performer in this benchmark.



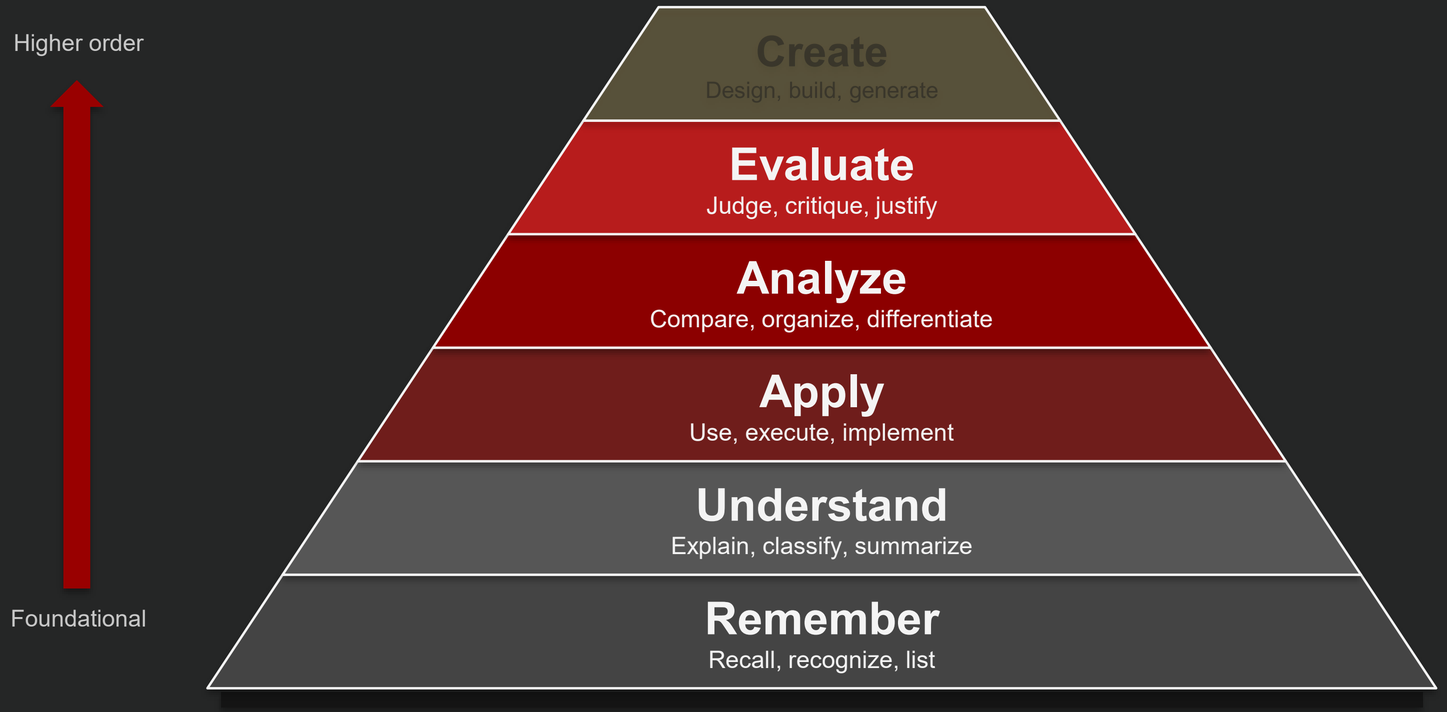
LLM Knowledge Coverage

- Models show few systematic blind spots
- Coverage improved across model generations; post GPT-4o, topic effects are small



Bloom's Taxonomy

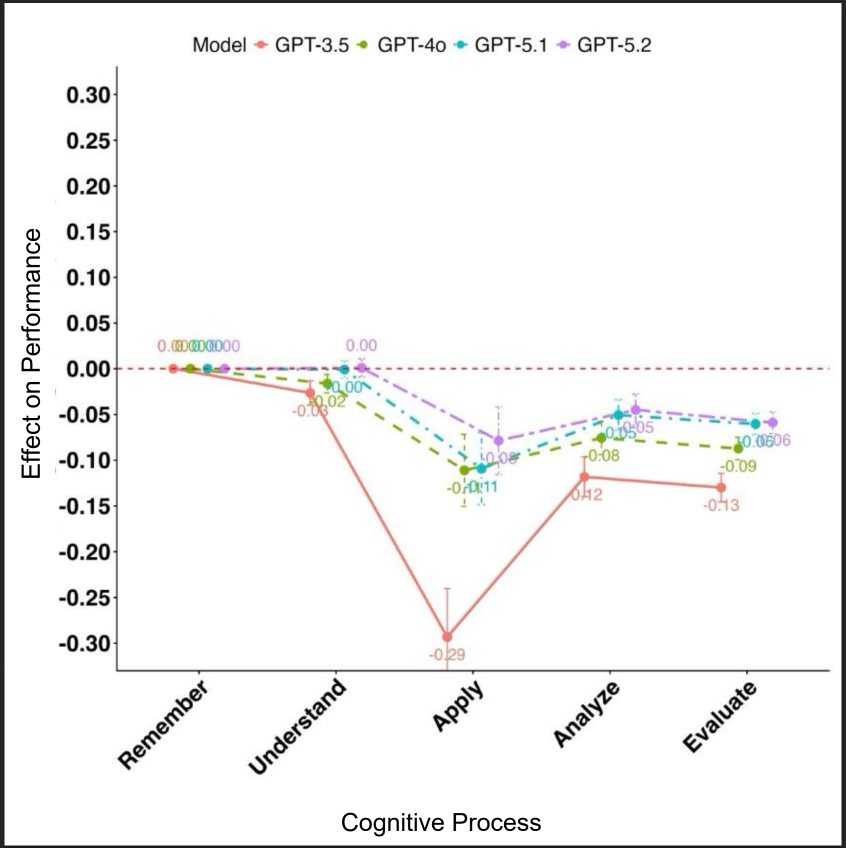
Cognitive process levels from foundational recall to generative synthesis



Lower-order processes form the foundation; higher-order processes build on them.

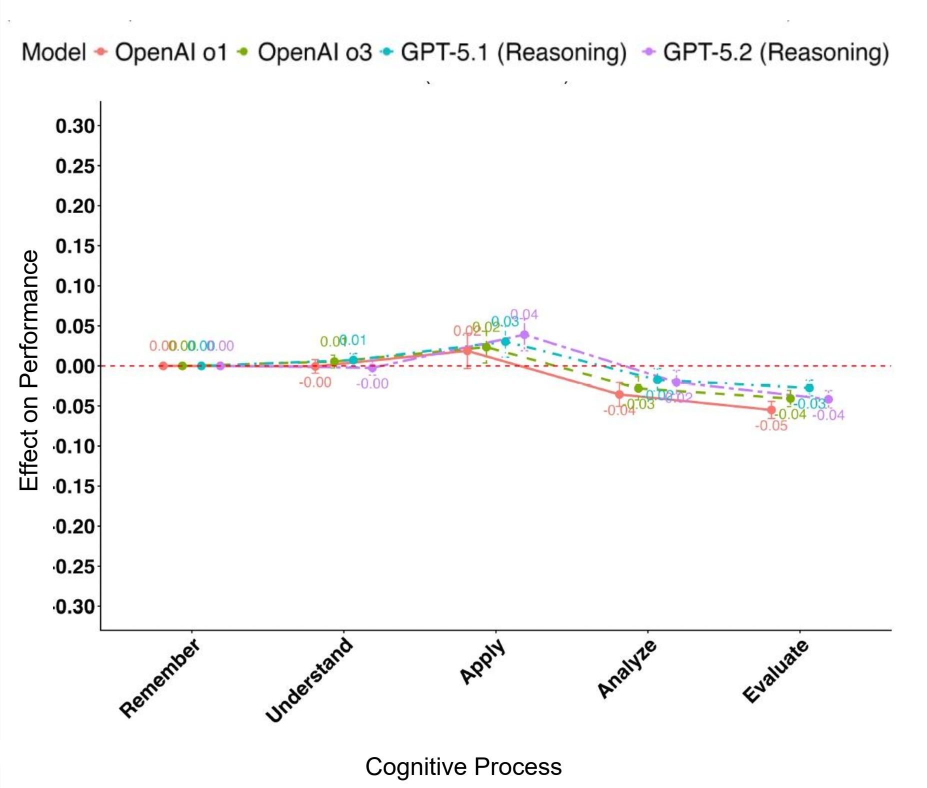
LLM Reasoning

- AI performs best on remembering and understanding
- Lower accuracy on applying, analyzing, and evaluating



LLM Reasoning (Reasoning Models)

- Reasoning models show much smaller sensitivity to cognitive demands



LLM User Interface & Robustness Tests

Reword questions

-2.2 pts

Average effect on accuracy when wording changes but meaning is preserved.

Shuffle answer choices

-4.7 pts

Average effect on multiple-choice accuracy after answer options are reordered.

Clean-textbook subsample

87.7%

GPT-4o accuracy after removing textbooks with evidence of answer-order memorization.

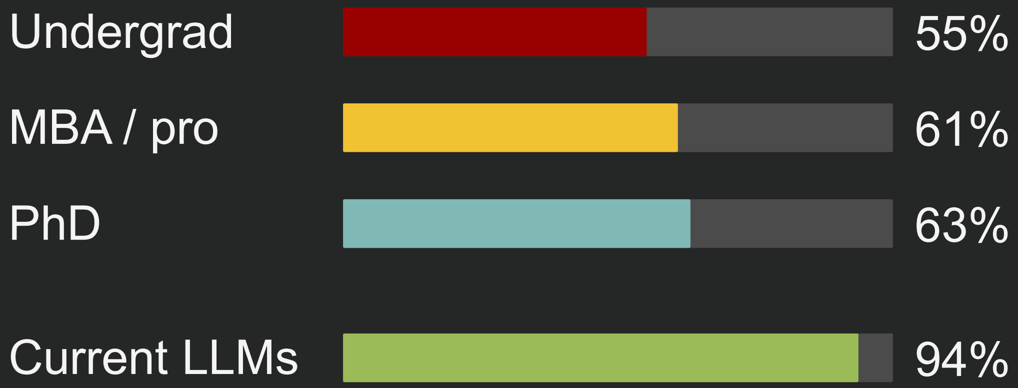
Open-ended check

3,781 discussion questions scored 78-83/100 across models. A 50-question human-coder validation correlated 0.844 with the LLM grader.

Conclusion: Performance remains high across evaluation modes, prompts, or question phrasing, and shows little evidence of memorization (rather than understanding)

Human Benchmarking

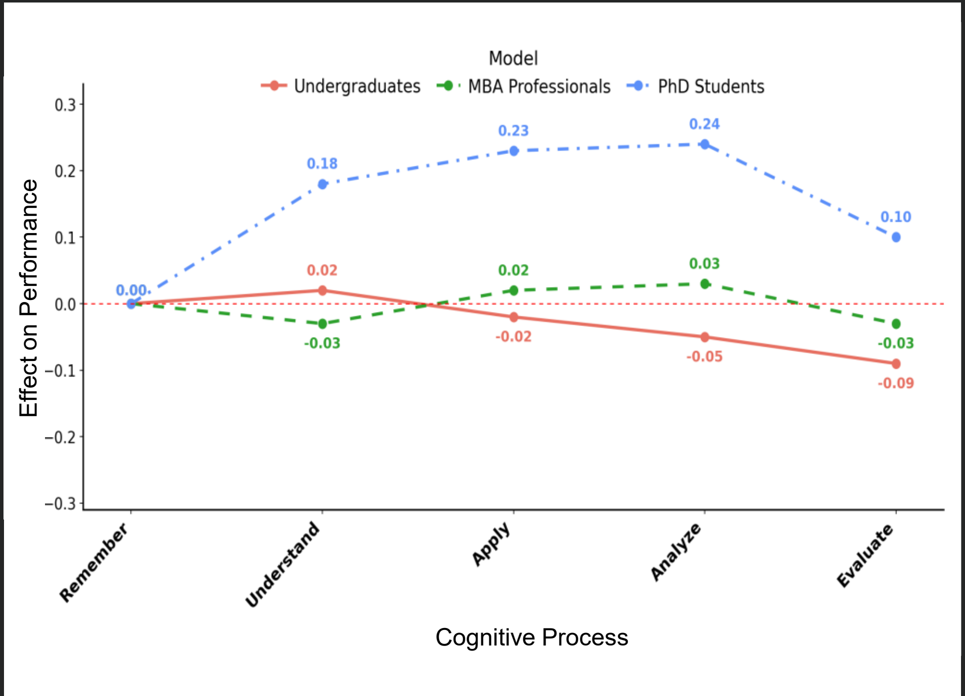
Overall accuracy by respondent group:



Range across current models: 84.2-93.7%

Human Benchmarking (cont.)

The human advantage shifts toward problem framing, judgment, and synthesis, especially with graduate-level education



Note: Based on relatively small sample sizes, see paper for details (including uncertainty estimates).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MARKETING SCIENCE
Challenges existing frameworks
EVIDENCE
Marketing foundations + frontier knowledge

The LLM as a Knowledge Layer

1. Frame the problem → **2. Retrieve foundations** → **3. Add marketplace insight**

1. Frame the problem

Convert a messy business issue into testable marketing questions.

2. Retrieve foundations

Use LLMs to surface frameworks, theories, and known trade-offs.

3. Add marketplace insight

Combine with customer data, competitor intelligence, and constraints.

Where the LLM gives confidence

- Explaining concepts and frameworks.
- Checking whether a decision logic aligns with fundamentals.
- Creating a first-pass map of relevant marketing lenses.

Where the manager remains accountable

- Interpreting ambiguous market contexts.
- Prioritizing among competing strategic objectives.
- Owning evidence quality, ethics, and implementation.

Competitive Implication

Foundational marketing knowledge is becoming table stakes

Segmentation, targeting, positioning, consumer behavior, brand equity, pricing frameworks, communications models.

Broadly accessible through general-purpose LLMs

Marketplace knowledge is becoming more valuable

Customer-specific insights, salesforce learning, category dynamics, proprietary experiments, operational constraints.

Still scarce, contextual, and firm-specific

Limitations and Guardrails

1. **Established knowledge is not frontier knowledge**

   The benchmark tests textbook-codified knowledge. Rapidly evolving areas such as AI in marketing are underrepresented until they enter teaching materials.

2. **Well-structured questions are not messy cases**

   The strongest evidence comes from unambiguous questions with an answer key. Real decisions involve ambiguity, trade-offs, politics, and incomplete information.

3. **Confidence is not verification**

   Use higher-reasoning modes for analysis.
   Verify claims and recommendations against evidence and organizational context.

Closing Thoughts

- The barrier to foundational marketing knowledge has fallen.
- The differentiator is knowing how to combine the canon with proprietary context, disciplined skepticism, and managerial judgment.

Burke, R. R., M. Matthe, and A. Leykin (2026), "Assessing Artificial Marketing Intelligence,"
MSI Report No. 25-127.

MSI Resources

WORKING PAPERS

Burke, R. R., M. Matthe, & A. Leykin (2025), **"Generative AI and the Commoditization of Marketing Knowledge,"** MSI Report No. 25-127.

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Rangaswamy, A., R. R. Burke, J. Wind & J. Eliashberg (1987), **"Expert Systems for Marketing,"** MSI Report, No. 87-107.

VIDEOS

Burke, R. R. (2024), "Measuring and Managing Shoppability," MSI-ARF Shopper 2024 Conference, Chicago, IL, April 18, https://www.msi.org/video/shopper-2024-recording/.

Burke, R. R. (2016), "Understanding, Measuring, and Managing Shoppability," MSI Webinar, November 16, https://youtu.be/CJc3-x0A_Ig.

Thank You!

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