

An AI-Driven Consumer Research Pipeline for Designing and Validating Advertising Strategies: Sweet Vegan NYC

Arunima Chandra and Mrinal Chaman, M.S. in Digital Marketing and Media

FACULTY MENTOR: Joseph Panzarella, M.S.



Katz
Katz School
of Science and Health

Introduction

- Small brands often rely on intuition rather than data when designing advertising — not because they lack discipline, but because traditional market research (focus groups, segmentation studies, concept testing) is out of reach for early-stage companies with limited budgets.
- Sweet Vegan NYC, an allergen-free chocolate brand, faced this challenge directly: a broad Easter campaign generated engagement but zero measurable sales — exposing a critical gap between advertising activity and conversion-ready strategy.
- This study tests whether an AI-assisted consumer research pipeline can serve as a low-cost alternative, producing the Emotional Resonance Model (ERM) — a three-stage framework linking AI-generated consumer insights to validated advertising outcomes.

Research Objectives:

- Identify who is most likely to purchase allergen-free vegan chocolates.
- Use AI-assisted techniques to develop data-grounded buyer personas.
- Test advertising concepts using persona-driven emotional messaging.
- Develop the ERM linking consumer emotional insights to marketing outcomes.



Approach

Multi-stage AI-assisted process: consumer language analysis, persona simulation, and real-world ad

- AI Market Exploration** — Map market structure, consumer language patterns, and purchase drivers
- Consumer Review Analysis** — ~1,200 reviews AI-coded for dominant emotions, sensory cues, and context
- Persona Development** — five personas built from validated emotional clusters — not assumed archetypes
- Synthetic Focus Group** — AI-generated reactions evaluated ad concepts before real media spend
- Meta Campaign Execution** — four creatives over four weeks (~\$800 spend); click-through-read (CTR), Cli ROAS and conversions tracked
- ERM Synthesis** — Performance cross-validated against emotional clusters to produce the model

Campaigns were structured as controlled comparisons between emotional and functional messaging, tested across comparable audience and budget conditions.

Measurement & Definitions	Limitations	Data & Attribution
1. CTR: Link clicks ÷ impressions	1. Small sample size (800 spend)	1. Meta Ads campaign data
2. CPC: Cost per click	2. Single brand and category	2. LocalIQ (2024) benchmarks
3. ROAS: Revenue ÷ ad spend	3. Platform-specific results (Meta Ads)	3. ~1,200 consumer reviews analyzed

Campaign Results

~\$800 AD SPEND	2.2x OVERALL ROAS	3-5% CAMPAIGN CTR	4 wks DURATION
--------------------	----------------------	----------------------	-------------------

Performance vs. Industry Benchmarks

METRIC	THIS CAMPAIGN	INDUSTRY BENCHMARK*
CTR	3–5%	~1.25%
CPC	~\$1.20	~0.58
ROAS	2.2x	1.5–3x

*Source: LocalIQ Facebook Advertising Benchmarks, Food & Beverage Category

Creative Performance Breakdown

CREATIVE	EMOTIONAL THEME	CTR	ROAS	KEY INSIGHT
Lunchbox Parent	Safety & Trust	~5.3%	Low	High clicks, weak conversion
Allergy Testimonial	Reassurance	~4.8%	1.55x	Trust messaging lifted credibility
Indulgent Treat	Inclusive Indulgence	3–4%	Low	Interest without urgency
★ Holiday Gift	Gifting & Celebration	~4–5%	3.1x	Highest conversion & ROAS

Table 2. Per-creative CTR and ROAS across the four ad variants. The Holiday Gift creative — anchored in Gifting & Celebration emotional cluster — produced the strongest conversion outcomes despite comparable click-through rates.

KEY FINDING

Emotion-driven campaigns emphasizing gifting and indulgence generated approximately 2x higher purchase performance than safety-focused messaging in driving purchase conversion.

Emotional Clusters Identified

Analysis of ~1,200 consumer reviews identified five dominant emotional drivers — the foundation for persona development and creative strategy.

EMOTIONAL CLUSTER	CONSUMER MOTIVATION	EXAMPLE CONSUMER LANGUAGE
Safety & Trust (30%)	Confidence in allergen-safe products	"Finally a chocolate my child can eat safely."
Inclusive Indulgence (25%)	Enjoying real treats without compromise	"Delicious and vegan – feels like a treat"
Gifting & Celebration (22%)	Inclusive gifts for friends & family	"Perfect gift for someone with allergies."
Wellness & Consciousness (13%)	Health-orientated lifestyle choices	"Clean ingredients, better-for-you chocolate."
Ethical Pride (10%)	Supporting ethical & vegan values	"Love supporting cruelty-free brands."

Table 3. Five emotional clusters surfaced from AI-coded consumer reviews, with prevalence percentages, underlying motivations, and representative consumer language used to inform persona development and creative direction

Emotional Resonance Model (ERM)

ERM is a structured, three-stage pipeline that converts AI-generated consumer emotional insights into validated advertising strategies — offering small brands a practical, low-cost alternative to traditional market research. ERM integrates consumer insight generation and market validation into a single, continuous learning system.

- Consumer Emotion Discovery:** AI-assisted analysis of ~1,200 consumer reviews → 5 emotional clusters identified
- Strategic Translation:** Emotional clusters mapped to buyer personas → persona-aligned advertising concepts developed
- Market Validation:** Real Meta ad campaigns test which emotional strategies drive CTR, ROAS & conversions.

Replicability for Lean Marketing Teams

The full ERM pipeline was executed for under \$1,000 in advertising spend. The framework is designed to be repeatable:

- Scrape publicly available competitor reviews
- AI-code reviews for dominant emotions, sensory cues and context
- Map clusters to structured, evidence-grounded personas
- Develop creatives aligned to top clusters; simulate resonance pre-spend
- Deploy top concepts as paid campaigns; validate against cluster predictions

Discussion: The Holiday Gift Creative succeeded not by stating product features, but by activating the Gifting & Celebration emotional cluster: warmth, inclusivity, and the joy of finding a safe treat for a loved one. Functional safety messaging achieved the highest click-through rates but weaker purchase conversion - suggesting it builds awareness and trust, while emotionally resonant messaging converts. This distinction is the central premise of ERM: emotional motivation, not functional reason, is the critical lever for conversion.

Conclusion

This study demonstrates that AI-assisted consumer research can replicate key stages of traditional market research for small brands — at a fraction of the cost.

Emotion Discovery Strategic Translation Market Validation

ERM provides a scalable, evidence-based framework for lean marketing teams to design, simulate, and validate emotionally resonant advertising — before committing media budget

Future Directions

- Expand review dataset to 5,000+ for more robust cluster formation
- Test ERM across additional product categories beyond confectionery
- Compare AI-generated personas against parallel human-led research

Acknowledgments

Katz School of Science and Health May 2026 Symposium;
Sweet Vegan NYC for providing campaign insights

References

